

Keck School of Medicine of USC

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# Innovations in Medical Education 2021 ONLINE CONFERENCE

Transforming Health Professions  
Education through Innovation



Live online Thursday-Friday, February 18-19, 2021

All content available until August 10, 2021

Registrants only at [whova.com/portal/webapp/imeoc\\_202102/](http://whova.com/portal/webapp/imeoc_202102/)



Presented by the Keck School of Medicine, Department of Medical Education

# Keck School of Medicine of USC

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# IME 2021 Online Conference Schedule

Thursday-Friday, February 18-19, 2021

[sites.usc.edu/ime-conference-2021](https://sites.usc.edu/ime-conference-2021)

## THURSDAY, FEBRUARY 18, 2021

7:30 AM - 8:45 AM

WORKSHOPS GALORE ROUND 1

 MedEd Certificate Workshop	<b>Design-Based Research.</b> <i>Daniel Novak, PhD.</i>
 Conference Workshop	<b>A Spoonful of Kindness: Leading and Coaching Others Through Self-Compassion.</b> <i>Velyn Wu, MD, FAAFP, CAQSM; Vicky Dunn, MBBS, MRCP, DRCOG; Lydia Nelson, BS; Julie G. Nyquist, PhD.</i>
 Conference Workshop	<b>Teaching Self-Regulated Learning Skills Using EPA Thinking in a Flipped Classroom.</b> <i>John Pelley, PhD, MBA.</i>
 Conference Workshop	<b>Present Like a Boss: How to Deliver Better Didactics.</b> <i>Albert J. Kim, MD, MACM; Joan P. Noelker, MD, MACM; Collyn T. Murray, MD, MACM.</i>

8:45 AM - 9:00 AM - BREAK

9:00 AM - 10:15 AM

WORKSHOPS GALORE ROUND 2

 MedEd Certificate Workshop	<b>Designing a Virtual OSCE.</b> <i>Alan Liu, MD; Kathryn Schaivone, MPA; Win May, MD, PhD, FRCP.</i>
 Conference Workshop	<b>Zooming into the Future: How to Adapt Common Educational Tools for a Virtual Learning Platform.</b> <i>(also presented Thurs. at 6 pm)</i> <i>Grant Christman, MD, MACM; Brandon Palmer, MD; Margaret Mou, DO; Reem Itani, MD.</i>
 Conference Workshop	<b>The Educator's Guide to Emotional Intelligence.</b> <i>Velyn Wu, MD, FAAFP, CAQSM; Fatuma Barqadle, MD, FAAP; Julie G. Nyquist, PhD.</i>
 Conference Workshop	<b>Peer Coaching for Faculty Development.</b> <i>Manu Madhok, MD; Lavjay Butani, MD.</i>

10:15 AM - 10:30 AM - BREAK

10:30 AM - 11:45 AM

WORKSHOPS GALORE ROUND 3

 MedEd Certificate Workshop	<b>Designing a Comprehensive Health Justice Curriculum for UME: From Longitudinal Structure to Session Design.</b> <i>Ronan Hallowell, EdD; Ricky Bluthenthal, PhD; Sonali Saluja, MD, MPH; Daniel Novak, PhD.</i>
 Conference Workshop	<b>Encouraging a Growth Mindset and Grit: Coaching for Long-term Success.</b> <i>Maria Munoz, MD; Nida S. Awadallah, MD; Velyn Wu, MD, FAAFP, CAQSM; Julie G. Nyquist, PhD.</i>
 Conference Workshop	<b>Integrating Cultural Humility into Patient Care: Self-reflection to Respectful Partnership.</b> <i>Dotun Ogunyemi, MD; Ali Darwis, MD; Kendall Johnson, BS; Amira Barmanwalla, MD.</i>
 Conference Workshop	<b>Building Tweetorials – An Opportunity to Bring the Classroom to Social Media.</b> <i>(also presented Thurs. at 6 pm)</i> <i>Anika Kumar, MD; Robert Daulton, BS; Nancy Chen, MD.</i>

11:45 AM - 12:15 PM – LUNCH BREAK

12:15 PM - 12:30 PM

**WELCOME** - Julie G. Nyquist, PhD, Conference Chair; Cha-Chi Fung, PhD, Conference Co-Chair

12:30 PM - 1:30 PM

 KEYNOTE ADDRESS	<b>DAVID A. ACOSTA, MD</b> - Chief Diversity and Inclusion Officer, AAMC <b>BREAKING THE SILENCE IN UNCERTAIN TIMES: ADDRESSING RACISM IN MEDICAL EDUCATION</b>
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1:30 PM - 1:45 PM - BREAK

1:45 PM – 3:00 PM

Abstract Titles

 Oral Presentations on Innovations: UNDERGRADUATE HEALTH PROFESSIONS EDUCATION	<b>1) Online Visual Learning Guide to Reduce Fear of Pelvic Examinations in Pre-Clerkship Medical Students.</b> <i>Tyler Stollman, BS.</i>
	<b>2) Psychosocial Orientation Among Allied Health Professional Students.</b> <i>Marina Gaeta, BS; Kirsten Wilkins, MD.</i>
	<b>3) A Remote Mentoring Program for Medical Students in Summer Research Programs.</b> <i>Andrew Ross, MD; Katie Yang, MS.</i>
	<b>4) Developing a Tutor Curriculum for the Clinical Skills Tutoring Program (CSTP) at UCSF.</b> <i>Chih-Chiun Chang, BS.</i>

<p>Oral Presentations on Innovations: GRADUATE HEALTH PROFESSIONS EDUCATION</p>	<p>1) <b>Improving Wellness: Defeating Imposter Syndrome Using an Interactive Reflective Workshop.</b> <i>Dotun Ogunyemi, MD; Tommy Lee, MD.</i></p> <p>2) <b>Improving Pediatric Emergency Training in Thailand: An International Collaboration.</b> <i>Jessica Bailey, MD.</i></p> <p>3) <b>Pediatric Resident Medical Education During COVID-19: Perspectives at a Single Institution.</b> <i>Eleny Romanos-Sirakis, MD.</i></p> <p>4) <b>A Remote Pediatric Academic Day: Changes to Medical Education in The Era Of COVID-19.</b> <i>Eleny Romanos-Sirakis, MD.</i></p>
<p>Oral Presentations on Innovations: MEDICAL EDUCATION RESEARCH</p>	<p>1) <b>Evaluation of Barriers and Facilitators of Resident Research Following Implementation of a Dedicated Research Program.</b> <i>Babak Tehrani, MS, MD.</i></p> <p>2) <b>A Qualitative Analysis of Interprofessional Learning During Experiential PharmD Education.</b> <i>Dalia Ameripour; Megan Matthews, MS.</i></p> <p>3) <b>Application Requirements for Residency Programs In Canada Under Pass/Fail Grading.</b> <i>Sean Nurmsoo, MS.</i></p> <p>4) <b>Characterization of Readership Statistics of an Open Access Medical News Site During COVID-19.</b> <i>Alex Chan, BSc; Andrew Cheung, MD, MBA.</i></p>
<p>Oral Presentations on Innovations: POTPOURRI</p>	<p>1) <b>Be My Ally: A Qualitative Study of Medical Students' Desired Faculty Responses to Microaggressions.</b> <i>Prabhjot Minhas, BS.</i></p> <p>2) <b>Reducing Health Disparities in Dermatology Medical Student Education.</b> <i>Sarah Gonzalez, BS; Fouad Abdola; Kathren Shango.</i></p> <p>3) <b>It's in the Syllabus: Assessment of Experiential Rotations Using a Web-Based Platform.</b> <i>Ying Wang, PharmD, APh; Maryann Wu, EdD.</i></p> <p>4) <b>Impact of a Faculty Development Course on The Probability of Promotion at a Health Sciences Center.</b> <i>Zuber D. Mulla, PhD; Sanja Kupesic-Plavsic, MD, PhD.</i></p>
3:00 – 3:15 PM – BREAK	
3:15 PM - 4:15 PM	Poster Session Topic
Moderated Poster Session 1	<b>Assessment</b>
Moderated Poster Session 2	<b>Learner Professional Development and Wellbeing</b>
Moderated Poster Session 3	<b>Communication Skills Development / Humanism and Professionalism</b>
Moderated Poster Session 4	<b>Potpourri / Transitions</b>
4:15 PM - 5:00 PM – DINNER BREAK	
5:00 PM - 6:15 PM	
Evening Repeat Workshop	<b>Zooming into the Future: How To Adapt Common Educational Tools for a Virtual Learning Platform.</b> (repeat from Thurs. at 9 am) <i>Grant Christman, MD, MACM; Brandon Palmer, MD; Margaret Mou, DO; Reem Itani, MD.</i>
Evening Repeat Workshop	<b>Building Tweetorials -- An Opportunity to Bring the Classroom to Social Media.</b> (repeat from Thurs. at 10:15 am) <i>Anika Kumar, MD; Robert Daulton, BS; Nancy Chen, MD.</i>
Evening Repeat Workshop	<b>Three Core Coaching Skills – The Secret Sauce to Enhance Your Teaching, Mentorship and Leadership.</b> (repeat from Fri. at 9 am) <i>Karen Souter, MD; Rumeena Bhalla, MBChB, MA.</i>
6:15 PM - 6:30 PM - BREAK	
6:30 PM - 7:30 PM	Poster Session Topic
Moderated Poster Session 5	<b>Skill Teaching</b>
Moderated Poster Session 6	<b>Curriculum Development</b>
Moderated Poster Session 7	<b>Teaching Methods</b>
Moderated Poster Session 8	<b>Promoting Medical Knowledge / Potpourri</b>

## FRIDAY, FEBRUARY 19, 2021

7:30 AM - 8:45 AM		WORKSHOPS GALORE ROUND 4
MedEd Certificate Workshop	<b>Using Your Character Strengths to Enhance Your Effectiveness and Wellbeing.</b> <i>Julie G. Nyquist, PhD; Maureen Strohm, MD; Velyn Wu, MD, FAAPF, CAQSM.</i>	
Conference Workshop	<b>Utilizing Online, Interactive, Adaptive Technology in Healthcare Education.</b> <i>Zilola Khashimova, MD.</i>	
Conference Workshop	<b>Developing a 21st Century Mindset in Medical Education - Lessons from Dr. Seuss.</b> <i>Caroline Tougas, MD; Adria Boucharel, MD; Palak Patel, MD.</i>	
Conference Workshop	<b>Guided Discovery Learning: Utilizing Large Group Case-Based Health Professions Education Virtually.</b> <i>Kendra Nordgren, MD; Amy Greminger, MD.</i>	
8:45 AM - 9:00 AM - BREAK		
9:00 AM - 10:15 AM		WORKSHOPS GALORE ROUND 5
MedEd Certificate Workshop	<b>Building and Recording a Great 10-Minute Presentation.</b> <i>Patrick Crispen, EdD; Nigel Lizaranzu.</i>	
Conference Workshop	<b>Feedback in Clinical Practice as Part of Culturally Responsive Teaching.</b> <i>Marianne Chen, MD; Pedro Tanaka, MD.</i>	
Conference Workshop	<b>Three Core Coaching Skills: - The Secret Sauce to Enhance Your Teaching, Mentorship and Leadership.</b> (also presented Thurs. at 6 pm) <i>Karen Souter, MD; Rumeena Bhalla, MBChB, MA.</i>	
Conference Workshop	<b>Teaching Medical Students and Residents How to Write Poems and Make Comics for Insight and Wellbeing.</b> <i>Tan Nguyen, MD; Johanna Shapiro, MA, PhD; Juliette McMullin, MD; Gabriella Miotto, MD, MPH.</i>	
10:15 AM - 10:30 AM - BREAK		
10:30 AM - 12:00 PM		Workshop/Abstract Title
MedEd Certificate Workshop	<b>Narrative Medicine: An Approach to Support Coaching for Professional Identity Formation.</b> <i>Pamela Schaff, MD, PhD; Deepthiman Gowda, MD, MPH, MS; Erika Wright, PhD</i>	
Oral Presentations on Innovations: COVID-INSPIRED INNOVATIONS	<b>1) A Virtual Internship Preparation Program for Medical Students Entering Pediatric Fields.</b> <i>Carmen Cobb, MD; David Gordon, MD.</i>	
	<b>2) Student and Faculty Perceptions of COVID-19 Emergency Online Clinical Education.</b> <i>Nimerta Sandhu, BS, MPH; Michael S. Weingarten, MD, MBA, FACS, FSVS.</i>	
	<b>3) International Pediatric Virtual Conference for Continuing Medical Education.</b> <i>Mindy Lee, BA.</i>	
	<b>4) Stuck at Home: The Impact of A COVID-19 Registry on Medical Education.</b> <i>Noor Habboosh, BA.</i>	
	<b>5) Designing and Developing A Virtual Statewide Internal Medicine Residency Program Showcase.</b> <i>Giuseppe Allan Fonseca, MS; Natasha Cigarroa.</i>	
Best of Cool Ideas: UNDERGRADUATE HEALTH PROFESSIONS EDUCATION	<b>1) Ensuring Skin of Color Representation of Visual Teaching Images in Pre-Clinical Medical Education.</b> <i>Ha D.H. Le, BA.</i>	
	<b>2) Virtual Reality Simulation to Increase Medical Student Empathy.</b> <i>Tyler Stollman, BS.</i>	
	<b>3) A Novel Remote Team-Based Learning Platform for Medical Students Using Readily Available Technology.</b> <i>Kathryn M. Eisenmann, PhD; Christopher L. Prevette, MS.</i>	
	<b>4) Clerkship Readiness Bootcamp To Facilitate Transition to Clerkship for Second Year Medical Students.</b> <i>Ericka Greene, MD.</i>	
	<b>5) Health Equity Focus: Clinical and Mentoring Skills Development for Future Physicians Through A Virtual Platform.</b> <i>Brigitte Huertas-Arias, MD; Alexa Manriquez, MD.</i>	
Best of Cool Ideas: MOSTLY GRADUATE HEALTH PROFESSIONS EDUCATION	<b>1) Increasing Skills in Anticipatory Guidance Through a Remote Parenting Elective.</b> <i>Karen Camero, MD.</i>	
	<b>2) Pandemic Elective: Helping Pediatric Residents Develop Systems-Based Practice Competencies.</b> <i>Adriana Hernandez, MD.</i>	
	<b>3) A Socially Distanced Virtual Platform for Simulation-Based Education.</b> <i>Aarti Jain, MD.</i>	
	<b>4) Use of Live-Stream Surgery Enables Surgery Faculty to Acquire Skills Using New Technology.</b> <i>Edward Chan, MD.</i>	
	<b>5) A One Year Proactive Coaching Program for General Surgery Interns.</b> <i>Nida S. Awadallah, MD; Teresa S. Jones.</i>	

12:00 PM - 12:45 PM - LUNCH	
12:45 PM - 1:15 PM	
	Hosted Zoom Networking Session 1
1:15 PM - 1:45 PM	
	Hosted Zoom Networking Session 2
1:45 PM - 2:00 PM - BREAK	
2:00 PM - 2:45 PM	
	Exemplar Title
	<b>Curricular Exemplar</b> <b>HIPE RCA2 Simulation: Introduction to Patient Safety Event Analysis and Investigation.</b> <i>Holly Olson, MD, MACM, FACOG; Lee Ellen Buenconsejo-Lum, MD, FAAFP; Susan Steinemann, MD, FACS.</i>
	<b>Curricular Exemplar</b> <b>Engaging Methods for Teaching Health Policy.</b> <i>Amy Clithero-Eridon, PhD; Danielle Albright, PhD; Karen Armitage, MD, FAAP; Gail Starr, RN; Gabriel Campos, JD, MBA; Cameron Crandall, MD.</i>
	<b>Curricular Exemplar</b> <b>Sci-Clin-ergy: A Framework for Integration Across Disciplines in Health Professions Education.</b> <i>Rory Kim, PharmD, MACM; Ian Haworth, PhD; Noam Morningstar-Kywi, MS.</i>
	<b>Curricular Exemplar</b> <b>Anti-Racism Training for Medical Education Leaders on a Trip to Alabama.</b> <i>Jeffrey Ring, PhD; Isoke Femi, PhD; Rabbi Michael Lezak.</i>
2:45 PM - 3:00 PM - BREAK	
3:00 PM - 4:00 PM	
	Poster Session Topic
	Moderated Poster Session 9 <b>Quality Improvement, Patient and Community-Based Projects / Potpourri</b>
	Moderated Poster Session 10 <b>Social Justice (Equity, Disparities, Access, Culture)</b>
	Moderated Poster Session 11 <b>COVID Inspired Focus on Teaching Techniques</b>
	Moderated Poster Session 12 <b>Online Resources / Online Teaching Methods</b>
4:00 PM - 4:30 PM	
<b>FINAL GATHERING - CONFERENCE AWARDS</b> Julie G. Nyquist, PhD, Conference Chair; Cha-Chi Fung, PhD, Conference Co-Chair	

Attendance at five MedEd Certificate Workshops (addressing key skills or timely topics) over three years can lead to a MedEd Certificate of Achievement from the Department of Medical Education, Keck School of Medicine of USC. You must be enrolled in the [Medical Education Conference Certificate Program](#).

**Accreditation Statement:** The Keck School of Medicine of USC is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

**2-Day Innovations in Medical Education Conference Credit Designation:** The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of 15.25 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credits commensurate with the extent of their participation in the activity.

**Disclosure Statement:**

The CME content included in this activity is not related to any ACCME defined commercial interest. Therefore, all course directors, faculty speakers, CME planners and moderators have no relevant financial relationships with any commercial interests to disclose.

# IME 2021 Keynote Address

## Breaking the Silence in Uncertain Times: Addressing Racism in Medical Education

Thursday, February 18, 2021 • 12:30 – 1:30 pm

### **David A. Acosta, MD**

*Chief Diversity and Inclusion Officer, AAMC*

The AAMC sent a call to action to academic medicine in June 2020 to make a stand against racism in medicine and hate in all its forms as a result of the George Floyd murder, the BLM protests, and the damaging impact that the COVID-19 pandemic laid bare in our most vulnerable communities. We stated that no longer could we afford to be bystanders, and silence was no longer an option. In academic medicine we have a voice and leadership matters. Using the power and privilege we have as medical educators and health professionals it's time to make the necessary system-based changes needed to address the subtle and not-so-subtle manifestations of racism in medical education. In this session we'll identify how structural racism manifests and discuss a framework to address structural racism and other work that the AAMC is preparing to assist medical educators in this difficult but necessary work.



**David A. Acosta, MD**, provides strategic vision and leadership for the AAMC's diversity and inclusion activities across the medical education community, and leads the association's Diversity Policy and Programs unit.

Dr. Acosta, a family medicine physician, joined the AAMC from the University of California (UC), Davis School of Medicine where he served as senior associate dean for equity, diversity, and inclusion and associate vice chancellor for diversity and inclusion and chief diversity officer for UC Davis Health System. He previously served as the first chief diversity officer at the University of Washington (UW) School of Medicine (SoM), where he established the Center for Equity, Diversity and Inclusion, and was the founder of the UW SoM Center for Cultural Proficiency in Medical Education.

Dr. Acosta earned his bachelor's degree in biology from Loyola University and his medical degree from the UC, Irvine, School of Medicine. He completed his residency training at Community Hospital of Sonoma County in Santa Rosa, Calif., an affiliate of UC San Francisco School of Medicine, and a faculty development fellowship at the UW Department of Family Medicine.



## Medical Education Conference Certificate Program (MedEd Certificate Program within the IME Conference)

Conference participants are being given the opportunity to earn a Certificate of Achievement through participation in a set of specially-designed workshops. The Department of Medical Education at the Keck School of Medicine of USC offers six interactive workshops each year at IME. The workshop activities are designed to maximize the transfer of knowledge and skills from the workshop setting directly to each participant's work setting. All registered conference participants can attend any of these workshops. The workshops are aimed at providing participants with the principles and essential skills needed by educators within key roles in undergraduate and graduate medical education settings: teacher, leader, scholar, and mentor.

Below is the three-step process to earn your IME Conference Certificate of Achievement.

Step 1: **Register** online at the link below so that we can track your participation.

Step 2: **Attend five MedEd Certificate Workshops** over three years during the IME Conference. To receive credit for each workshop you must submit the evaluation and feedback form online or provided in the session. Please make sure to enter your name and learning points.

Step 3: **Complete an online story form** about how you have changed your practice as a teacher, leader, mentor, or scholar based on your participation in two of the five workshops attended. Your story form will be sent to you after you complete your fifth workshop.

Remember, to be eligible to earn a certificate you **MUST** enroll.

Go to this link: <http://tinyurl.com/ime-meded-certificate>

# Welcome to the 2021 Innovations in Medical Education Conference

## CONFERENCE LIVE ONLINE DATES & TIMES:

**Thursday, February 18, 2021: 7:30 AM PST – 7:30 PM PST**

**Friday, February 19, 2021: 7:30 AM PST – 4:30 PM PST**

The event website will be open to everyone registered until August 10, 2021.

[www.whoava.com/portal/webapp/imeoc\\_202102](http://www.whoava.com/portal/webapp/imeoc_202102)

Visit [sites.usc.edu/ime-conference-2021](http://sites.usc.edu/ime-conference-2021) for more information.

## How to Have the Best Experience at the 2021 IME Online Conference:

- Make sure your Zoom app is up-to-date.
- Use Chrome for the best experience with Whova on a computer.
- Download the Whova mobile app (link below) for the best experience on a mobile device.
- Explore the Conference Agenda in the lefthand gray sidebar menu (at the bottom of the screen on the mobile app) and plan your schedule.
- Explore the opportunities to connect with other attendees provided by Whova.
- When it's time for any session you want to join, click on the green camera icon in the agenda to access the Zoom Meeting link.
- **Have fun! Ask questions of the presenters! Discuss the innovations and cool ideas!**
- Provide feedback to the presenters for every session you attend by clicking the Rate Session button or going to the Feedback link in the lefthand gray sidebar menu. *You must do this for every session you want to apply to a MedEd Certificate (make sure you sign up before the conference) or for CME Credit.*
- Come back to this website until August to explore everything you missed (all those posters...oral presentations... workshops... exemplars) and continue Q&A conversations.
- Check out the Conference Proceedings with all abstracts and presenter bios.

## Conference Outcome Objectives:

By the end of the conference, participants will be better able to —

- Utilize evidence-based principles of teaching, leading, mentoring, and educational scholarship in their work within health professions' education.
- Incorporate techniques for enhancing the learning environment and wellbeing for all participants within their educational setting.
- Enhance the teaching and assessment of their learners in relation to the six ACGME Core Competencies by adapting the cool ideas and innovations learned about at IME.
- Incorporate cool ideas and innovations into the development of curricula and teaching at all levels of health professions' education.

## Session Feedback and Evaluations:

The session evaluation and feedback forms are available online this year on the Whova conference event website. For your convenience, you can either click the Rate Session button found on each session page or find the session in the list at the Feedback link in the lefthand gray sidebar menu. Please complete your evaluations as soon as you leave the Zoom Meeting when the session is over. Your feedback is valuable to the presenters and will help us plan future meetings.

For those attendees who have paid the additional fee for CME Credit for this conference and completed evaluation forms (15.25 credits), an email will be sent after the conference with instructions to print your CME certificate.



# Abstracts for Thursday, February 18, 2021

TIME	SESSION	TOPIC	ABSTRACT TITLE	AUTHOR LIST	PAGE #
7:30 - 8:45 am	MedEd Certificate Workshop		Design-Based Research In Medical Education (DBR-ME)	Daniel Novak, PhD	22
7:30 - 8:45 am	Conference Workshop		A Spoonful of Kindness: Leading and Coaching Others Through Self-Compassion	Velyn Wu, MD, FAAFP, CAQSM; Vicky Dunn, MBBS, MRCGP, DRCOG; Lydia Nelson; Julie G. Nyquist, PhD	23
7:30 - 8:45 am	Conference Workshop		Teaching Self-Regulated Learning Skills Using EPA Thinking in a Flipped Classroom	John Pelley, PhD, MBA	25
7:30 - 8:45 am	Conference Workshop		Present Like a Boss: How to Deliver Better Didactics	Albert J. Kim, MD, MACM; Joan Noelker, MD, MACM; Collyn T. Murray, MD, MACM	27
9:00 - 10:15 am	MedEd Certificate Workshop		Designing a Virtual OSCE	Alan Liu, MD; Kathryn Schaivone, MPA; Win May, MD, PhD, FRCP	28
9:00 - 10:15 am / 6:30 - 7:30 pm	Conference Workshop		Zooming into the Future: How to Adapt Common Educational Tools for a Virtual Learning Platform	Grant Christman, MD, MACM; Brandon Palmer, MD; Margaret Mou, DO; Reem Itani, MD	30
9:00 - 10:15 am	Conference Workshop		The Educator's Guide to Emotional Intelligence	Velyn Wu, MD, FAAFP, CAQSM; Fatuma Barqadle, MD, FAAP; Julie G. Nyquist, PhD	32
9:00 - 10:15 am	Conference Workshop		Peer Coaching for Faculty Development	Manu Madhok, MD; Lavjay Butani, MD	34
10:30 - 11:45 am	MedEd Certificate Workshop		Designing a Comprehensive Health Justice Curriculum for UME: From Longitudinal Structure to Session Design	Ronan Hollowell, EdD; Ricky Bluthenthal, PhD; Sonali Saluja, MD, MPH; Daniel Novak, PhD	35
10:30 - 11:45 am	Conference Workshop		Encouraging a Growth Mindset and Grit: Coaching for Long-Term Success	Maria Munoz, MD; Nida S. Awadallah, MD; Velyn Wu, MD, FAAFP, CAQSM; Julie G. Nyquist, PhD	37
10:30 - 11:45 am	Conference Workshop		Integrating Cultural Humility into Patient Care: Self-Reflection to Respectful Partnership	Dotun Ogunyemi, MD (1,2); Ali Ghassan Darwish, MD; Kendall Johnson; Amira Barmanwalla, MD	39
10:30 - 11:45 am / 6:30 - 7:30 pm	Conference Workshop		Building Tweetorials – An Opportunity to Bring the Classroom to Social Media	Anika Kumar, MD, FAAP, FHM; Robert Daulton, BS; Nancy Chen, MD, FAAP, FHM	41
12:30 - 1:30 pm	Keynote Address		Breaking the Silence in Uncertain Times: Addressing Racism in Medical Education	David A. Acosta, MD	43
1:45 - 3:00 pm	Presentations of Innovations 1	Undergraduate Health Professions Education	Online Visual Learning Guide to Reduce Fear of Pelvic Examinations in Pre-Clerkship Medical Students	Stollman, Tyler; Ange, Brittany; Ennis, Ali; Latif, Erin; Brown, Shilpa; Wood, Elena	44
1:45 - 3:00 pm	Presentations of Innovations 1	Undergraduate Health Professions Education	Psychosocial Orientation Among Allied Health Professional Students	Gaeta, Marina; Brennan-Wydra, Emma; Encandela, John; Fahs, Deborah; Morford, Kenneth L.; Wu, Barry J.; Wilkins, Kirsten M.	46
1:45 - 3:00 pm	Presentations of Innovations 1	Undergraduate Health Professions Education	A Remote Mentoring Program for Medical Students in Summer Research Programs	Yang, Katie; Yu, John Paul; Stephenson, Jason; Kennedy, Tabassum; Ross, Andrew	48
1:45 - 3:00 pm	Presentations of Innovations 1	Undergraduate Health Professions Education	Developing a Tutor Curriculum for the Clinical Skills Tutoring Program (CSTP) at UCSF	Chang, Chih-Chiun; Phillips, Abigail; Rumrill, Sara-Megumi	50

TIME	SESSION	TOPIC	ABSTRACT TITLE	AUTHOR LIST	PAGE #
1:45 - 3:00 pm	Presentations of Innovations 2	Graduate Health Professions Education	Improving Wellness: Defeating Imposter Syndrome Using an Interactive Reflective Workshop	Ogunyemi, Dotun; Lee, Tommy.	52
1:45 - 3:00 pm	Presentations of Innovations 2	Graduate Health Professions Education	Improving Pediatric Emergency Training in Thailand: An International Collaboration	Bailey, Jessica; Burns, Beech; Hartenstein, Melinda; Sullivan, Danielle; Burns, Erin; Lin, Amber; Plainkum, Parit; Techapaitoon, Surangkana; Pandee, Uthen; Chan, Daniela; Ma, O John	53
1:45 - 3:00 pm	Presentations of Innovations 2	Graduate Health Professions Education	Pediatric Resident Medical Education During COVID-19: Perspectives at a Single Institution	Romanos-Sirakis, Eleny	55
1:45 - 3:00 pm	Presentations of Innovations 2	Graduate Health Professions Education	A Remote Pediatric Academic Day: Changes to Medical Education in the Era of COVID-19	Romanos-Sirakis, Eleny	57
1:45 - 3:00 pm	Presentations of Innovations 3	Medical Education Research	Evaluation of Barriers and Facilitators of Resident Research Following Implementation of a Dedicated Research Program	Tehrani, Babak; Liu, Michael A.; Murphy, Matthew; Tamaro, Dominick; Schiffman, Fred J.; Gentileco, Bethany; Rice, Louis B.; Chan, Philip A.	59
1:45 - 3:00 pm	Presentations of Innovations 3	Medical Education Research	A Qualitative Analysis of Interprofessional Learning During Experiential PharmD Education	Ameripour, Dalia; Matthews, Megan; Mirzaian, Edith; Wang, Ying; Kim, Rory.	61
1:45 - 3:00 pm	Presentations of Innovations 3	Medical Education Research	Application Requirements for Residency Programs in Canada Under Pass/Fail Grading	Nurmsoo, Sean; Ourfali, Mohamad Beshar; Bezuhly, Michael	63
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1:45 - 3:00 pm	Presentations of Innovations 4	Potpourri	Be My Ally: A Qualitative Study of Medical Students' Desired Faculty Responses to Microaggressions	Minhas, Prabhjot K.; Bullock, Justin L.; Hauer, Karen E.; Fernandez, Alicia; Lupton, Katherine L.; O'Brien, Meghan	66
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10:30 am - 12:00 pm	Best of Cool Ideas 1	Undergraduate Health Professions Education	Virtual Reality Simulation to Increase Medical Student Empathy	Stollman, Tyler (1); Ducleroir, Cody; Li, Yi; Brown, Shilpa; Wood, Elena	272
10:30 am - 12:00 pm	Best of Cool Ideas 1	Undergraduate Health Professions Education	A Novel Remote Team-Based Learning Platform for Medical Students Using Readily Available Technology	Eisenmann, Kathryn M.; Prevette, Christopher L.; McKeown, Kristin; Hamizadeh, Zowe; Menon, Bindu.	274
10:30 am - 12:00 pm	Best of Cool Ideas 1	Undergraduate Health Professions Education	Clerkship Readiness Bootcamp to Facilitate Transition to Clerkship for Second Year Medical Students (Best of Cool Ideas)	Greene, Ericka; Nyquist, Julie G.	276
10:30 am - 12:00 pm	Best of Cool Ideas 1	Undergraduate Health Professions Education	Health Equity Focus: Clinical and Mentoring Skills Development for Future Physicians Through a Virtual Platform	Huertas-Arias, Brigitte; Manriquez, Alexa; Evans, Devan; Sotelo, Javier; Rios, Melissa; Liley, Fasha.	278
10:30 am - 12:00 pm	Best of Cool Ideas 2	Mostly Graduate Health Professions Education	Increasing Skills in Anticipatory Guidance Through a Remote Parenting Elective	Camero, Karen	280
10:30 am - 12:00 pm	Best of Cool Ideas 2	Mostly Graduate Health Professions Education	Pandemic Elective: Helping Pediatric Residents Develop Systems-Based Practice Competencies	Hernandez, Adriana M.; Smit, Michael A.; Wu, Susan; Bender, Jeffrey M.; Thompson, Michelle A.	282
10:30 am - 12:00 pm	Best of Cool Ideas 2	Mostly Graduate Health Professions Education	A Socially Distanced Virtual Platform for Simulation-Based Education	Jain, Aarti; Kearn, Yvette; Brandon, Caroline.	284
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10:30 am - 12:00 pm	Best of Cool Ideas 2	Mostly Graduate Health Professions Education	A One Year Proactive Coaching Program for General Surgery Interns	Awadallah, Nida S.; Jones, Teresa S.; Jaiswal, Kshama R.; Christian, Nicole; Fainstad, Tyra; Nyquist, Julie G.	288
2:00 - 2:45 pm	Curricular Exemplar		HIPE RCA2 Simulation: Introduction to Patient Safety Event Analysis and Investigation	Olson, Holly; Buenconsejo-Lum, Lee; Steinemann, Susan; Deutsch, Melodee; Wong, Lorrie; Tokumaru, Sheri; Kawakami, Chad	290
2:00 - 2:45 pm	Curricular Exemplar		Engaging Methods for Teaching Health Policy	Clithero-Eridon, Amy; Albright, Danielle; Armitage, Karen; Starr, Gail; Campos, Gabriel; Crandall, Cameron	292
2:00 - 2:45 pm	Curricular Exemplar		Sci-Clin-ergy: A Framework for Integration Across Disciplines in Health Professions Education	Kim, Rory; Haworth, Ian; Morningstar-Kywi, Noam	294
2:00 - 2:45 pm	Curricular Exemplar		Anti-Racism Training for Medical Education Leaders on a Trip to Alabama	Ring, Jeffrey; Femi, Isoke; Lezak, Michael	296
3:00 - 4:00 pm	Poster Session 9, Poster #102	Quality Improvement, Patient and Community-Based Projects / Potpourri	Qualitative Analysis of the Worldwide Chiropractic Education Response to COVID-19 in Early 2020	Johnson, Claire; Green, Bart	297
3:00 - 4:00 pm	Poster Session 9, Poster #103	Quality Improvement, Patient and Community-Based Projects / Potpourri	Postpartum Contraception Initiative	Hernandez Schulte, Mayra A; Mody, Kaizeen; Cortez; Carla; Meas, Morodak	299

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3:00 - 4:00 pm	Poster Session 9, Poster #105	Quality Improvement, Patient and Community-Based Projects / Potpourri	Standardized Documentation Protocol Within Clinic of Gynecology Oncology	Violette, Caroline; Deshpande, Rasika; Khetan, Varun; Thomas, Kimeshia; Muderspach, Laila	302
3:00 - 4:00 pm	Poster Session 9, Poster #106	Quality Improvement, Patient and Community-Based Projects / Potpourri	Utilization of Quick Response Codes to Improve Patient Health Literacy in Psychiatry Clinics	Modi, Trisha; Shivaprakash, Namrata; Azam, Parsa; Wakefield, Sarah	303
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3:00 - 4:00 pm	Poster Session 9, Poster #108	Quality Improvement, Patient and Community-Based Projects / Potpourri	Stroll and Roll: A Need for Community Amongst Postpartum Women (Pilot Program)	Hernandez, Robert; Zapata, Geny	306
3:00 - 4:00 pm	Poster Session 9, Poster #110	Quality Improvement, Patient and Community-Based Projects / Potpourri	Integrating Drawing Into Patient Education Encounters	Wood, Elena; D'Eon Marcel; Holland, Jessica; Ennis, Ali; Andrews, Bill; Brown, Shilpa (5)	308
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3:00 - 4:00 pm	Poster Session 9, Poster #114	Quality Improvement, Patient and Community-Based Projects / Potpourri	Lack of Psychological Safety and Camaraderie Could Be Critical Factors for Decreased Sense of Joy	Wang, Ryan; Singh, Malkinder; M. Seraj, Siamak	316
3:00 - 4:00 pm	Poster Session 9, Poster #115	Quality Improvement, Patient and Community-Based Projects / Potpourri	Medical Student Didactics in the Era of COVID-19: Adapting and Overcoming	Galust, Henrik; Benton, Carleigh; Montano, Manuel	317
3:00 - 4:00 pm	Poster Session 10, Poster #116	Social Justice (Equity, Disparities, Access, Culture)	Defeating Unconscious Bias: The Role of a Structured, Reflective, and Interactive Workshop	Ogunyemi, Dotun; Barajas Eliseo	319
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3:00 - 4:00 pm	Poster Session 10, Poster #129	Social Justice (Equity, Disparities, Access, Culture)	Anti-Racism Through Personal Growth: A Virtual Book Club Series	Urbanowicz, Erin; Le, Mai; Moreland-Capuia, Alisha (1,2); Tacker, Katherine; Buxton, Heather	342
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3:00 - 4:00 pm	Poster Session 11, Poster #132	COVID-Inspired: Focus on Teaching Techniques	Teaching Congenital Heart Defects to Medical Students Remotely Using Online Team Based Learning	Wolfert, Adam; Garnett, Christopher; Dhuper, Sarita; Michelson, Hillary	347
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3:00 - 4:00 pm	Poster Session 11, Poster #143	COVID-Inspired: Focus on Teaching Techniques	"Pass the Baton": Sequential Team Leaders for Simulation Training	Brandon, Caroline; Kearl, Yvette; Jain, Aarti	365
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3:00 - 4:00 pm	Poster Session 12, Poster #146	Online Resources / Online Teaching Methods	PInfluencing Education: Is Social Media a Useful Adjunct to Online Learning?	McClenaghan, Rachael Eimear; Moore, Charles; Austin, Jill	371
3:00 - 4:00 pm	Poster Session 12, Poster #148	Online Resources / Online Teaching Methods	An Online Faculty Resource: Expanding Illness Scripts to Include Determinants of Equity	Kucybala, Karolina; Jackson, Molly Blackley	373
3:00 - 4:00 pm	Poster Session 12, Poster #149	Online Resources / Online Teaching Methods	Improving Efficiency in Learning Medical Knowledge via Keyboard Shortcuts	Leung, Kenneth; Ahmad, Kashif	375
3:00 - 4:00 pm	Poster Session 12, Poster #150	Online Resources / Online Teaching Methods	eBite: A Medical Education Blog for a Worldwide Community of Learners	Schlegel, Elisabeth Frieda Maria	377
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3:00 - 4:00 pm	Poster Session 12, Poster #153	Online Resources / Online Teaching Methods	Virtual Examination Room for ROP Management in Armenia	Sikder, Abu; Dickhoner, James; Espinoza, Juan	383
3:00 - 4:00 pm	Poster Session 12, Poster #155	Online Resources / Online Teaching Methods	Utilization of Visual Abstracts Versus Text Abstracts for User Engagement on Twitter	Wu, Constance; Chan, Alex; Cheung, Andrew; Succi, Marc D.	385
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## **Design-Based Research In Medical Education (DBR-ME)**

Daniel Novak, PhD

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**Workshop Description:** Design-based Research (DBR) is a systematic method for studying educational interventions in any environment. More than just another quality improvement strategy, DBR uses the design process to help researchers dig deeply into theory, practice, and implementation to uncover new insights into the social psychology of learning. In this workshop, learners will learn about the methodology as well as its immediate relevance to medical education, health justice education, and online learning.

### **Detailed Plan:**

#### **RATIONALE:**

Design-based Research (DBR) is a research approach that combines qualitative, quantitative, and design methods to support recursive and iterative cycles of investigation in any learning environment. In contrast to action research, DBR's systematic cycles of design produce both innovative learning experiences and generalizable, scholarly research on education products, practices, socio-cultural dimensions of learning, and the design process itself. DBR also builds on the work of educational design research (EDR) by centering community and learner stakeholders in the design of their own learning. The Design-based Research in Medical Education (DBR-ME) model is based on a review of research studies[3], and highlights features that are most relevant to medical educators.

#### **LEARNER OUTCOME OBJECTIVES:**

- Describe the key features and purpose of Design-based Research
- Articulate the differences between action research, PDSA, and DBR
- Simulate using the DBR-ME process to plan and develop a research project

#### **INTENDED PARTICIPANTS:**

This workshop is geared towards medical educators and instructional designers who are interested in developing research-based curricula at their home institutions. A familiarity with social science research traditions (qualitative or quantitative) would be beneficial, but no advanced knowledge is needed.

#### **METHODS:**

The interactive portions of the session will take the form of a 'worked example' discussion, where the audience will be presented with a real project that we are developing, and must make choices about how to use the DBR-ME process to develop the project. After small-group discussions, groups will report their solution back to the large group, and the instructor will show them his solution.

#### **ACTIVITY TIMELINE:**

- 5 minutes – Ice-breaker and orientation to the session
- 20 minutes – What is DBR, and How Can it Serve MedEd?.
- 35 minutes – Activity: Worked Example of DBR in MedEd
- 15 minutes – Discussion, Additional Questions, and Resources

#### **TAKE HOME TOOLS**

Learners will receive a 'take-home assignment' that will help them to develop their own Conjecture Maps, a key tool for developing DBR-ME projects.

### **A Spoonful of Kindness: Leading and Coaching Others Through Self-Compassion**

Velyn Wu, MD, FAAFP, CAQSM (1); Vicky Dunn, MBBS, MRCGP, DRCOG (2);

Lydia Nelson (3); Julie G. Nyquist, PhD (3)

(1) *University of Florida College of Medicine, Family Medicine Residency Program;*

(2) *USC Keck Family Medicine;* (3) *Keck School of Medicine of USC*

**Workshop Description:** Has making a mistake or failing to achieve a goal ever gotten you down? Why do some people seem to bounce back better than others? One answer is self-compassion; using self-kindness, common humanity and mindfulness to free oneself to take resilient action. Through real-life examples, participants will practice how they would coach a learner (or themselves) to be more self-compassionate when struggling or facing a challenge. Participants should complete an online survey prior to the session.

#### **Detailed Plan:**

##### **RATIONALE:**

Coaching in medical education is a learner-driven relationship where faculty foster the development of life-long learning skills with their learners(1). The research on self-compassion was begun by Kristen Neff and has now evolved to include its usage within medical education. Utilizing the skills of self-compassion in coaching helps learners trust themselves to be self-understanding and self-kind as they work on achieving improvement goals. Self-compassion has three elements; self-kindness to versus self-judgment, feeling part of common humanity versus isolation, and mindfulness versus over-identification with the error/disappointment/failure(2). Learners with lower levels of self-compassion tend to avoid situations where they might make a mistake or fail. Those with higher levels embrace challenges to learn new skills to improve performance and are better able to cope with times of academic failure (3,4,5). Faculty can increase academic engagement and lower risk of burnout by teaching learners how to manage their feelings around failure(6). This is accomplished by coaching learners to reframe difficulties and challenges as opportunities for learning while supporting their effort on the journey of development (2).

##### **LEARNER OUTCOME OBJECTIVES:**

- 1: Describe the positive and negative facets of self-compassion
- 2: Use self-compassion as motivation for personal learning and growth
- 3: Use the coaching relationship to develop self-compassion skills in learners and colleagues

##### **INTENDED PARTICIPANTS:**

This workshop is designed to improve skills of self-compassion in those at all career levels. It is applicable to students, residents, faculty and administrators.

##### **ACTIVITY TIMELINE:**

1. (20 minutes): Discuss self-compassion concepts (PowerPoint), review their survey results (link provided). Guide participants through an example of how to use self-compassion in a challenging situation through a 3-step process to reframe without blame.
2. (15 minutes): Interactive sharing in dyads/triads of personal moments of self-judgement, isolation or over-identification with mistakes and failures, discuss how to guide each other to reframe without blame, and video testimonial of a medical student's experience with self-compassion.
3. (15 minutes): Review the key elements of coaching, practice in dyads how each pair might they coach learners (two scenarios – one failure, one medical error) to reframe
4. (20 minutes): Open discussion about the skills needed to coach learners in self-compassion.

##### **REFERENCES:**

- 1) Deiorio NM, Camey PA et al. Coaching: a new model for academic and career achievement. *Med Educ Online* 2016; 21: 33480
- 2) Neff K. (2011) *Self-Compassion: The Proven Power of Being Kind to Yourself*. Harper-Collins

- 3) Babenko O and Oswald A. The roles of basic psychological needs, self-compassion, and self-efficacy in the development of mastery goals among medical students. *Med Teach* 2019; 41(4): 478-481
- 4) Richardson DA, Jaber S, Chang S et al. Self-Compassion and Empathy: Impact on Burnout and Secondary Traumatic Stress in Medical Training. *Open Journal of Epidemiology*, 2016; 6:161-166
- 5) Babenko O, Mosewich A, et al. Contributions of psychological needs, self-compassion, leisure-time exercise and achievement goals to academic engagement and exhaustion in Canadian Medical Students. *J Educ Eval Health Prof* 2018; 15:2
- 6) Wagner LK, Schindler S and Reinhard M. The Positive Facet of Self-compassion Predicts Self-reported Use of and Attitudes toward Desirable Difficulties in Learning. *Front Psychol*. 2017; 8:1353
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## Teaching Self-Regulated Learning Skills Using EPA Thinking in a Flipped Classroom

John Pelley, PhD, MBA

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**Workshop Description:** EPA thinking is integrative thinking that can be taught to MS1 students to improve academic performance and prepare them for future clinical training. Participants will learn how to conduct small group flipped classroom sessions that compare pre-entrustable (robotic thinking) associated behaviors with entrustable associated behaviors (integrative thinking). A summary discussion will examine how this can improve academic performance early while providing faster learning during clinical training.

### Detailed Plan:

#### RATIONALE:

In order for instruction to be effective, educators rely on the thinking skills of each learner. Underperforming learners often lack the integrative thinking skills that produce higher order learning leaving them unprepared for complex licensure-level questions. Fear of adopting new ways of thinking also creates a motivation problem these students to learn more effective skills. However, a new assessment concept, the Entrustable Professional Activities (EPAs) serves the dual purpose of motivation and instruction for developing learning skills. Since thinking always precedes action, the thinking that precedes clinical behavior determines entrustability. EPA Thinking depicts the thinking that determines entrustable behavior and, importantly, it also describes preclinical learning skills. A close inspection of the behavioral description and the vignette that accompany each EPA in the AAMC CEPA Faculty and Learner's Guide reveals a consistency in the underlying thinking. The pre-entrustable student consistently resorts to robotic, memorized thinking. Thus, pre-entrustable thinking will always produce pre-entrustable behaviors. Likewise, entrustable thinking which is anticipatory and integrative will always precede each EPA behavior. Integrative EPA thinking skills can be identified and taught in the first year of medical school prior to the training in clinical application by helping the students identify and compare their own thinking with pre-entrustable thinking and EPA thinking.

#### LEARNER OUTCOME OBJECTIVES:

In this workshop, either basic science or clinical educators will:

1. Learn to use the guiding questions that are supplied in the online, freely accessible modules to take a MS1 small groups deeper into understanding how their own learning impacts their future thinking in the clinic.
2. Learn to integrate suggestions for using the online Expert Skills Program for developing EPA thinking into the group session.

#### INTENDED PARTICIPANTS:

Basic science or clinical educators

#### ACTIVITY TIMELINE:

15 minutes - Introduce the general concept and online syllabus (non-credit elective, 1 hour per month) and display the materials.

30 minutes - Complete discussion of an EPA module in flipped classroom mode. Breakout groups will summarize their experience, questions and concerns.

15 minutes - Summarize findings of each breakout group for reconvened whole group.

30 minutes - Wrap up, planning for interaction and use of online course materials, proposal for collaborative implementation. Duration: 90 minutes

#### REFERENCES:

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- 3) Flynn, T. (2014) Core Entrustable Professional Activities for Entering Residency. Faculty and Learner's Guide. Association of American Medical Colleges.
- 4) Pelley, J. (2015) A Metacognitive Perspective. Keys to Effective Active Learning and Potential Barriers. IAMSE. ISBN: 978-1-4951-7341-7. [www.iamse.org](http://www.iamse.org).

### **Present Like a Boss: How to Deliver Better Didactics**

Albert J. Kim, MD, MACM; Joan Noelker, MD, MACM; Collyn T. Murray, MD, MACM  
*Washington University in Saint Louis School of Medicine*

**Workshop Description:** Anxious about presentations? Searching for ways to improve your lecture? The formal lecture is a teachable skill. This workshop will cover mistakes and pitfalls commonly found in didactic presentations while providing strategies to avoid them. Learn how to effectively present your message and actively engage your learner through preparation, storytelling, and slide design. Finally, this workshop will address special considerations in presenting in a virtual environment (i.e. how to use Zoom).

#### **Detailed Plan:**

##### **RATIONALE:**

The formal lecture is equipped to provide a substantial amount of information to a passive learner. This time-honored technique has withstood much ridicule, famously in “Ferris Bueller’s Day Off” or in the notorious phrase, “Death-by-Powerpoint.” Despite its disadvantages, it is still utilized heavily in many teaching environments and conference settings. This workshop will provide learners with the tools to leverage the advantages of this teaching method, actively engage lecture participants, and utilize technology in content delivery. The workshop will focus primarily on PowerPoint and keynote presentation formats, but the teaching points could be comparable with other presentation formats/tools as well.

##### **LEARNER OUTCOME OBJECTIVES:**

By the end of this workshop participants will be able to:

1. Describe how to plan a didactic lecture through storytelling and proper planning
2. Recognize common pitfalls in slide design and devise solutions to avoid them
3. Describe common pitfalls in lecture delivery and devise solutions to excel as a speaker.

##### **INTENDED PARTICIPANTS:**

IME participants of any training level. Appropriate for novice speakers or those with some speaking/lecturing experience who would like to improve their skills. Participants should bring their own laptops along with one of their personal presentations (maybe one they have already delivered, or one that they are currently developing.)

##### **ACTIVITY TIMELINE:**

Time in minutes

0-10: Intro/Examples - Two exemplar presentations on design and storytelling

10-30: Story Arcs - How to plan a lecture, create a story arc, and develop a unifying theme

30-50: Slide Design - Common mistakes made in slide design and how to avoid them. How to leverage technology and multimedia to your advantage

50-60: Delivery - Common mistakes in lecture delivery and how to avoid them.

60-75: Small Group 1 - Divide into small pairs, learners will present 5 minutes of their own lecture, 5-10 minutes to receive feedback from their partner utilizing tools just provided.

75-90: Small Group 2 - Same session as above after trading pairs, using a different presentation from another group member.

##### **TAKE HOME TOOLS:**

No specific tools. Group will be given presenters’ contact information if specific questions arise after the workshop.

### **Designing a Virtual OSCE**

Alan Liu, MD; Kathryn Schaivone, MPA; Win May, MD, PhD, FRCP  
*Keck School of Medicine of USC*

**Workshop Description:** During the COVID-19 pandemic, most medical school programs have either reduced or ceased all in-person activities. It can be challenging to convert in-person Objective Structured Clinical Exams (OSCEs) — used to assess history taking, data gathering, and physical examination of the patient, as well as medical knowledge, communication and patient interaction skills — to an online format. Learners must learn not only to interact with standardized patients virtually but also become conversant with the technology. Transitioning from in-person to virtual OSCEs using an online platform like Zoom requires extensive collaboration. In our workshop, we will discuss design strategies, preparation, implementation, and evaluation that will allow learners to achieve the identified goals and objectives with this new modality.

#### **Detailed Plan:**

##### **RATIONALE:**

Medical education continues to move towards a holistic assessment approach with emphasis on competency standards as described by the Core Entrustable Professional Activities (EPAs). Objective structured clinical examinations (OSCEs) are an effective assessment tool of learners in terms of history taking, data gathering, and physical examination of the patient. In addition to medical knowledge, communication and patient interaction skills are also assessed. With the COVID-19 pandemic, most medical school programs have either reduced or ceased all in-person activities. It can be challenging to convert in-person OSCEs to an online format since learners must learn not only to interact with standardized patients virtually but also become conversant with the technology. In addition, standardized patients will also need to be trained virtually. Transitioning from in-person to virtual OSCEs using Zoom (or a different platform) is feasible and requires extensive collaboration. In our workshop, we will discuss design strategies, preparation, implementation, and evaluation that will allow learners to achieve the identified goals and objectives with this new modality.

##### **LEARNER OUTCOME OBJECTIVES:**

At the end of the workshop, you will be able to:

1. Discuss some principles in designing a virtual OSCE.
2. Identify barriers to a successful virtual OSCE.
3. Appraise logistics needed to implement virtual OSCE.
4. Obtain feedback from all stakeholders.

##### **INTENDED PARTICIPANTS:**

Clinical educators from all healthcare professions in undergraduate and post graduate medical education with current or future roles in clinical assessment.

##### **METHODS:**

We will be using short didactics, large and small group discussions

##### **ACTIVITY TIMELINE:**

5 minutes: Introduction, Disclosures, Review of Learning Objectives  
15 minutes: Short presentation highlighting key steps in designing a virtual OSCE with facilitators  
30 minutes: Use two OSCE cases in breakout rooms to draft a plan  
20 minutes: Report out and discussion in large group  
5 minutes: Wrap-up  
TOTAL: 75 minutes

## TAKE HOME TOOLS:

1. Steps in Designing a Virtual OSCE
2. Reference Articles

### **Zooming into the Future:**

#### **How to Adapt Common Educational Tools for a Virtual Learning Platform**

Grant Christman, MD, MACM (1); Brandon Palmer, MD (1); Margaret Mou, DO (1); Reem Itani, MD (2)  
(1) Children's Hospital Los Angeles; (2) Texas Tech University Health Sciences Center

**Workshop Description:** The medical education world has needed to rapidly adapt from in-person education to virtual education due to COVID-19. When creating an engaging educational session, it is helpful to utilize the ASCI model. However, many of these techniques are more difficult to use in a virtual environment. In this workshop, the participants will determine which ASCI techniques can be adapted in the virtual learning environment (VLE) and learn how to use the techniques in the VLE (i.e. Zoom).

#### **Detailed Plan:**

##### **RATIONALE:**

The medical education community has needed to rapidly adapt from in-person education to virtual education due to COVID-19. Many educators have tried to adapt their previous in-person teaching sessions to the virtual format with multiple barriers encountered. When creating an engaging educational session, it is helpful to utilize the ASCI engagement model (attention grabbers, skill builders, catalysts and intensifiers) to teach in the cognitive or affective domain. However, not all techniques in the ASCI model can be easily adapted for the virtual learning environment. For instance, the commonly used Think-Pair-Share technique is much more difficult to implement virtually. In this workshop, the participants will determine which ASCI techniques can be adapted in the virtual learning environment, learn how to use the ASCI techniques in Zoom, and begin to re-build a lecture they have previously given in-person to be delivered virtually.

##### **LEARNER OUTCOME OBJECTIVES:**

At the end of this workshop, participants will better be able to:

- a. Review how ASCI techniques can be used to improve learner engagement in an educational session
- b. Determine which ASCI techniques can best be adapted for the virtual learning environment
- c. Facilitate a technique in each of the ASCI categories in the virtual learning environment
- d. Adapt an in-person session to become an engaging session delivered virtually

##### **INTENDED PARTICIPANTS:**

Educators for all levels of learners who have had to create or adapt sessions to be given through a virtual learning platform.

##### **METHODS:**

We have created an engaging, interactive workshop made for a virtual platform (such as Zoom). We will start the workshop by utilizing an attention-grabber technique that has been adapted for the virtual learning environment (VLE). We will then have a short didactic to review the ASCI domains and techniques commonly used for in-person teaching environments. Next we will utilize breakout rooms (each room will be assigned to one of the ASCI domains) to determine which ASCI techniques can and should be adapted for the VLE. This will also highlight how "Think-Pair-Share" can be adopted in the virtual learning environment. After 20 minutes in the breakout rooms, we will reconvene as a large group, and a member of the each breakout room will share their groups thoughts. In real-time, using the "whiteboard" function of the VLE (or a shared google document), we will re-create the table of ASCI techniques adapted for the VLE. The large group will then be brought back into their breakout rooms, and tasked with creating a short example of an ASCI technique adapted for the VLE. The breakout rooms will be moderated by one of the workshop leaders. We will then reconvene as a large group, and each breakout room will share their examples. As a conclusion, we will ask each participant to write a "takeaway" into a shared google document, which will be followed up on by the moderators 1 month after the workshop.

**TAKE HOME TOOLS:**

Finally, as homework, we will ask the participants to re-outline a teaching session they previously facilitated in-person and adapt it for the virtual learning environment using the newly recreated ASCI techniques.

### **The Educator's Guide to Emotional Intelligence**

Velyn Wu, MD, FAAFP, CAQSM (1); Fatuma Barqadle, MD, FAAP (2); Julie G. Nyquist, PhD (3)  
(1) Keck School of Medicine of USC; (2) University of Florida College of Medicine; (3) Keck School of Medicine of USC

**Workshop Description:** Emotional intelligence matters just as much as intellectual intelligence, maybe even more. This session will be an introduction to the key elements and conceptual frameworks of emotional intelligence (EI). Participants will review the spectrum of emotions before delving into how EI can be utilized to enhance learning environments, teaching and leadership skills and be catalysts for personal and professional development.

#### **Detailed Plan:**

##### **RATIONALE:**

The role of emotional intelligence in higher leadership and management has been well supported in industries such as business and tech but is still evolving in education and academic medicine. As medicine becomes more complex and medical training more demanding, the need for emotional intelligence training on all levels becomes more apparent(1). Goleman, a leading emotional intelligence expert, breaks down emotional intelligence into four domains: self-awareness, self-management, social awareness and relationship management(2). These four domains separately show up in both undergraduate and graduate medical education milestones and competencies in varying ways and like other professionalism and communication skills, the expectation is that educators will model and teach learners what they need to know(1). However, one area often missing in faculty development but crucial in building effective educators is the skill set of emotional intelligence. Emotional intelligence development efforts have been showed to increase personal and professional effectiveness, organizational productivity and even effective teaching(1,3). Thankfully, studies have also shown that emotional intelligence can be developed at any age(3,4).

##### **LEARNING OUTCOME OBJECTIVES:**

On completion of this session, the participants should be able to:

1. Describe Goleman's four domains of Emotional Intelligence
2. Summarize the impact that emotional intelligence has on learning environments and leadership
3. Generate the first steps of a personal action plan to improve their own emotional intelligence

##### **INTENDED PARTICIPANTS:**

This workshop is designed for students, faculty and administrators at all levels of medical education.

##### **ACTIVITY TIMELINE:**

Segment 1 ( 15 minutes): Attention grabber exercise: Emotional identification game. Participants will play a game in small groups where they label the emotions that they see displayed in pictures. They will be introduced to a framework for understanding and expanding their emotional vocabulary.

Segment 2(15 minutes): PowerPoint presentation on the four domains of emotional intelligence and benefits of emotional intelligence in education and leadership.

Segment 3 (20 minutes): Self-assessment of emotional intelligence. Participants will use a free online tool to assess their current level of emotional intelligence and share with one participant their reaction to their results.

Segment 4 (20 minutes): Activity: "Autopsy of a scenario" – participants will analyze a scenario between a faculty member and a learner. In small groups they will identify issues of emotional intelligence and formulate coaching tips for both the faculty member and learner in the situation.

Segment 5 (20 minutes) : Wrap up, questions and take-home challenge. Participants will be challenged with to identify one SMART goal regarding their own emotional intelligence development and create a first step toward achieving that goal. They will then share with one person their goal and receive encouraging feedback.

#### REFERENCES:

- 1) Cherry, M Gemma, et al. "Emotional Intelligence in Medical Education: a Critical Review." *Medical Education*, vol. 48, no. 5, Sept. 2014, pp. 468–478.
- 2) Goleman, Daniel, et al. *Primal Leadership: Learning to Lead with Emotional Intelligence*. Harvard Business School Press, 2013.
- 3) Roth, Christine G., et al. "Twelve Tips for the Introduction of Emotional Intelligence in Medical Education." *Medical Teacher*, vol. 41, no. 7, 2018, pp. 746–749
- 4) Bill T, et al. "How Emotionally Intelligent Are You?: Boosting Your People Skills." *Career Skills From MindTools.com*, [www.mindtools.com/pages/article/ei-quiz.htm](http://www.mindtools.com/pages/article/ei-quiz.htm)

**Peer Coaching for Faculty Development**  
Manu Madhok, MD; Lavjay Butani, MD  
*Children's Minnesota (1); UC Davis Health (2)*

**Workshop Description:** Peer-coaching is a distinctive type of coaching in which peers, who are often at a similar level of knowledge engage in an equal non-competitive relationship that involves establishment of goals, observation of a task, self-evaluation and coach feedback to improve task performance and support in the implementation of change. This workshop will discuss need and introduce coaching concepts and provide an outline to practice during the workshop and later at your home institution if suitable.

**Detailed Plan:**

**RATIONALE:**

Atul Gawande has made peer coaching popular with his own example to improve efficiency and better his patient outcomes by using a coach(1). Currently in academic medicine, peer coaching represents a shift from traditional advising and mentoring. It has been utilized to improve physician efficiency as well as reduce physician burnout(2). Data from academic institutions show that dedicated workshops and repeated peer coaching interventions may be needed to derive maximal benefit from this form of coaching(3).

**LEARNING OUTCOME OBJECTIVES:**

1. Discuss various reasons for burnout and stress in academic medicine
2. Describe the application of peer coaching to improve efficiency and reduce physician burnout
3. Practice skills of listening and providing peer feedback on simulated scenarios of academic physicians doing clinical rounds

**INTENDED PARTICIPANTS:**

Educators, clinicians and administrators involved in faculty and curriculum development with an interest in wellbeing and professional development of junior faculty.

**METHODS:**

This workshop will use a variety of methods including brief formal presentations, large and small group activities with debriefing utilizing a worksheet.

**ACTIVITY TIMELINE:**

- 1-10 minutes: introductions
- 10-30 minutes: Presentation on reasons for stress and burnout, peer coaching concepts
- 30-50 minutes: Large group review of a scenario of rounds by a clinician to identify exemplary practices and challenges that can be improved
- 50-70 minutes: Small groups review of two scenarios of bedside rounds by a clinician to practice peer coaching
- 70-85 minutes: Debriefing together from two groups
- 85-90 minutes: Take away messages

**REFERENCES:**

- 1) Atul Gwande. New Yorker magazine, Annals of Medicine, October 3, 2011 Personal Best, Top athletes and singers have coaches. Should you?
- 2) Bredella MA, Fessell D, Thrall JH. Mentorship in academic radiology: why it matters. Insights Imaging. 2019;10(1):107. Published 2019 Nov 15. doi:10.1186/s13244-019-0799-2
- 3) Cree-Green M, Carreau AM, Davis SM, et al. Peer mentoring for professional and personal growth in academic medicine. J Investig Med. 2020;68(6):1128-1134. doi:10.1136/jim-2020-001391

## **Designing a Comprehensive Health Justice Curriculum for UME: From Longitudinal Structure to Session Design**

Ronan Hallowell, EdD; Ricky Bluthenthal, PhD; Sonali Saluja, MD, MPH; Daniel Novak, PhD  
*Keck School of Medicine of USC*

**Workshop Description:** This workshop will share with participants how the Keck School of Medicine is approaching the design of a new required Health Justice curriculum for all incoming medical students starting in August 2021. Drawing on our previous Health Systems Science curriculum, a long-standing thread in Humanities, Ethics/Economics, Arts and the Law (HEAL) and our course in Professionalism and the Practice of Medicine, we are integrating and expanding topics covered in these areas to foreground Health Justice and Systems of Care, as a key component in learning how to become a physician-citizen-scholar. We will walk participants through the process of conceptualizing a curriculum to gathering institutional and instructional resources needed to carry out the curriculum to more granular approaches to designing individual sessions.

### **Detailed Plan:**

#### **RATIONALE:**

The persistence of health inequities in the United States leads to poor outcomes for millions of patients in marginalized groups. Systemic racism, poverty and other forms of marginalization that exist in U.S. society are also embedded in the health care system and in medical education. Over the past several years medical schools, the AAMC and the AMA have acknowledged the need for medical education to take seriously the social determinants of health that lead to inequities and to become champions of health justice. This workshop will share with participants how the Keck School of Medicine is approaching the design of a new required Health Justice curriculum for all incoming medical students starting in August 2021. Drawing on our previous Health Systems Science curriculum, a long-standing thread in Humanities, Ethics/Economics, Arts and the Law (HEAL) and our course in Professionalism and the Practice of Medicine, we are integrating and expanding topics covered in these areas to foreground Health Justice and Systems of Care, as a key component in learning how to become a physician-citizen-scholar. We will walk participants through the process of conceptualizing a curriculum to gathering institutional and instructional resources needed to carry out the curriculum.

#### **LEARNER OUTCOME OBJECTIVES:**

- Identify values, knowledge, skills and attitudes that you want learners to acquire from a health justice curriculum.
- Analyze the strengths and gaps in existing health justice-oriented content in your current curriculum.
- Identify key stakeholders that can help you build a health justice curriculum.
- Describe two next steps that will bring you closer to integrating health justice in your curriculum.

#### **INTENDED PARTICIPANTS:**

UME medical educators interested in Justice, Diversity, Equity and Inclusion curricula.

#### **METHODS:**

- Brief talks to share Keck approach and curriculum design process
- Breakout group activities
- Large group discussion

#### **ACTIVITY TIMELINE:**

- Log-on, icebreaker, orientation to the session.
- The Institutional Big Picture at Keck – Ricky Bluthenthal, PhD – Associate Dean for Social Justice.
- Overview of the Keck MD Program health justice curriculum development process.
- Breakout 1 – Identify values, knowledge, skills, and attitudes that you want learners to acquire from a health justice curriculum at your institution.
- Large group discussion
- Breakout 2- Health Justice curriculum inventory activity

- Large group discussion
- Wrap-up

TAKE HOME TOOLS:

- Health justice bibliography
- Stakeholder and champion map template

### **Encouraging a Growth Mindset and Grit: Coaching for Long-Term Success**

Maria Munoz, MD (1); Nida S. Awadallah, MD (2); Velyn Wu, MD, FAAFP, CAQSM (3); Julie G. Nyquist, PhD (4)

*(1) University of Texas Rio Grande Valley; (2) University of Colorado School of Medicine; (3) University of Florida College of Medicine; (4) Keck School of Medicine of USC*

**Workshop Description:** Coaching in medical education is a learner driven process that leads to increased utilization of a learners' skills and resources. Coaching is used to facilitate feedback and to enhance performance and learner outcomes. Helping learners develop and foster a growth mindset can encourage curiosity and be an important aspect of well-being. Utilizing grit helps learners move forward beyond barriers. Faculty can encourage these skills to help set the path for lifelong learning and development.

#### **Detailed Plan:**

##### **RATIONALE:**

A high percentage of learners struggle with burnout and/or lower well-being at some point in residency. [1,2] Research has shown that a growth mindset allows people to navigate stress and challenges better and may lead to higher levels of well-being.[3] In addition, grit can encourage self-regulation to help push past barriers or challenges when they occur.[4] Fostering a growth mindset and grit can help encourage curiosity and self-directed learning and can set the framework for life-long learning and development.[3,4] This faculty development session will provide faculty with coaching skills to encourage growth mindset and grit in learners. Participants will walk away with the skills to coach learners. In addition, participants will be able to guide learners to get gritty (persevere beyond barriers) to accomplish learning plans.

##### **LEARNER OUTCOME OBJECTIVES:**

1. Utilize growth mindset coaching techniques to help foster growth and development of learners.
2. Utilize "yet" and "not yet" to motivate learners and build confidence to create a plan to meet their goals.
3. Help learners get gritty and persevere beyond barriers to better accomplish their goals.

##### **INTENDED PARTICIPANTS:**

All participants interested in learning growth mindset and "grit" coaching techniques to support medical learners' individual self knowledge, goal setting, and work-life balance.

##### **ACTIVITY TIMELINE:**

The 60 minute faculty development session will consist of:

Section 1: Introduction to mindset (paired activity to share a fixed mindset trigger and practice yet and not yet to move toward a growth mindset)

Section 2: Introduction to grit- example stories of struggling learners and how they were guided to push past barriers (followed by interactive dyad/triad on sharing their stories of learners overcoming barriers)

Section 3: Key hints to coach in the moment and across time

Section 4: Open discussion, conclusion and wrap up

Timeline:

01-05: Review of objectives and introduction of presenters.

06-15: Introduction to mindset. Paired activity to share a fixed mindset trigger , practice "yet and not yet" to move toward a growth mindset.

16-30: Introduction to grit. Share stories of struggling learners and how they were guided to push past barriers, followed by interactive dyad/triad , sharing their stories of learners overcoming barriers.

31-45: Discussion on "Key hints" to coach in the moment.

46-60: Conclusion/wrap up.

##### **TAKE HOME TOOLS:**

Attendees will receive "Growth mindset worksheets" and "Grit" scales.

## REFERENCES:

- 1) Dyrbye LN, West CP, Satele D, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med.* 2014;89(3):443-451.
- 2) Raj KS. Well-Being in Residency: A Systematic Review. *J Grad Med Educ.* 2016;8(5):674-684.
- 3) Dweck CS. *Mindset: The New Psychology of Success.* Ballantine Books; 2008.
- 4) Duckworth A, Duckworth A. *Grit: The Power of Passion and Perseverance.* Vol 234. Scribner New York, NY; 2016.

### **Integrating Cultural Humility into Patient Care: Self-Reflection to Respectful Partnership**

Dotun Ogunyemi, MD (1,2); Ali Ghassan Darwish, MD (1); Kendall Johnson (2); Amira Barmanwalla, MD (1)

(1) Arrowhead Regional Medical Center, Colton, California; (2) California University of Science & Medicine, Colton, California

**Workshop Description:** Cultural humility is a lifelong commitment to compassionate self-evaluation, to redress the power imbalances in the patient-physician dynamic, and to develop mutually beneficial partnerships based on trust. Participants will become familiar with equity, disparities, structural determinants of health and cultural humility principles. They will participate in self-reflective exercises and self-assessments. The session will include inspirational video clips and interactive group activity.

#### **Detailed Plan:**

##### **RATIONALE:**

Health inequities are rooted in social injustices and social determinants of health that make some populations more vulnerable to poor health. Allostatic load because of health inequities leads to health risky behaviors, with immune, metabolic and cardiovascular disorders leading to disease. Taking care of and communicating effectively with patients and families across socioeconomic and cultural backgrounds requires cultural humility. Cultural humility is a lifelong commitment to self-evaluation and self-critique, to redress the power imbalances in the patient-physician dynamic, and to develop mutually beneficial partnerships based on trust. This mini course using interactive and reflective activities will teach core principles of health inequities, and cultural humility. The participant will practice the adoption of another-person-orientation regarding cultural identity and cross-cultural care to provide quality healthcare and effectively communicate with diverse patients.

##### **LEARNER OUTCOME OBJECTIVES:**

At the end of this session, learners will be able to:

1. Explore oneself as a cultural human being
2. Discuss equity, equality and disparities including role of structural social determinates of health and allostatic load
3. Identify ways to address power imbalance and take a culturally humble stand in relationship with others

##### **INTENDED PARTICIPANTS:**

Faculty, residents, medical students, nurses, social workers, and community outreach workers.

##### **METHODS:**

Learners will be engaged directly to become familiar with several core equity and cultural humility principles and will incorporate self-reflective exercises and self-assessments into teaching in real time. The session will split participants into groups and provide time for group work and demonstration.

##### **ACTIVITY TIMELINE:**

1. Pre-survey: Participants complete a short survey awareness and knowledge regarding Cultural Humility. This will provide baseline for the participants.
2. Interactive presentations on:
  - a. Culture; Health Equities; Health Disparities; Social Determinants of Health; Allostatic load
  - b. Competence vs. Humility, Cultural Humility Principles; Compassionate self-reflection;
  - c. Power Imbalance; Intersectionality; Institutional accountability & mutual respectful partnership;
  - d. Cultural Humility tools
3. Self-reflection Activity 1: Participants will complete a personal identity or cultural wheel. The participant will review changes over time, including privileges and subjugation to their various cultural identities
4. Video based intervention: Participants will view multiple video clips to include:

- a. Implicit Bias: Lifelong impact on education, workforce, and economy
- b. "I WILL BE GREAT" - Powerful Affirmations for Belief, Strength and SUCCESS
5. Self-reflection Activity 2: Participants will review their own Intersectionality; Identity & Power
6. Group Activity 1: Participants will practice cross-cultural interviews
7. Group Activity 2: Participants in groups will discuss cultural humility concerns and identify 3 strategies or recommendations
8. Post-survey: For wrap up, the participants will complete the short survey to objectively determine any changes in perception and knowledge
9. Questions and answers

### **Building Tweetorials – An Opportunity to Bring the Classroom to Social Media**

Anika Kumar, MD, FAAP, FHM (1); Robert Daulton, BS (2); Nancy Chen, MD, FAAP, FHM (3)  
(1) *Cleveland Clinic Lerner College of Medicine of Case Western Reserve University*; (2) *University of Cincinnati College of Medicine*; (3) *Banner University Medical Center Tucson*

**Workshop Description:** The #Tweetorial is a novel educational tool that allows educators and Twitter®'s medical education community to dynamically engage in remote learning through conversation beyond the classroom or patient care setting. Developing new educational content or repurposing pre-existing educational materials into Tweetorials empowers readers to engage in self-directed learning, while expanding and diversifying the author's learner communities.

#### **Detailed Plan:**

##### **RATIONALE:**

A tweetorial is a novel educational tool that leverages Twitter®'s networking power to educate learners outside traditional outlets. Tweetorials are threads of tweets designed to teach a specific topic or a unique skill. Through interactive polls, images, and links to primary literature, tweetorials offer a self-directed approach to learning. This method disseminates up to date information free from constrictive review structures while enjoying the benefits of on-going peer-review. Through conversion and dissemination of educational content on social media, learners and educators can continue the conversation outside of the classroom or patient care settings.

Pre-existing educational material such as lectures, handouts, or other didactic material may be repurposed into a tweetorial format covering basic science principles, clinical knowledge, or interpersonal skills. Educators can foster innovative connections and enjoy enhanced reach of teaching material.

Although Twitter® posts are limited by a character count, tweetorials may be used as pre or post reading activities to support learning. This asynchronous form of remote learning can transcend the medical education hierarchy. Learners can be involved in the process by helping to craft tweetorials. The process of curating learner-driven educational content empowers self-directed learning while sharing knowledge with the medical community. This further connects learner communities on Twitter® that may otherwise remain isolated. Through an expanded reach of educational material, lifelong learners from all training levels can connect virtually to educate themselves, solve problems, or promote a shared mental model.

##### **LEARNER OUTCOME OBJECTIVES:**

- Review Tweetorial Definition
- Discuss benefits of Tweetorials for Educating Learners
- Create a Tweetorial

##### **INTENDED PARTICIPANTS:**

Clinician Educators, Basic Science Educators, Students

##### **ACTIVITY TIMELINE (for 90 minutes):**

1. Introduction of Team (3 minutes)
2. Poll Everywhere Poll on Social Media Use (3 minutes)
  - a. Do you use Social Media?
  - b. What platforms do you use?
3. Introduction on Tweetorials with background (15 minutes)
  - a. Benefits of social media use (5 minutes)
  - b. Review educational tweet basics (5 minutes)
    - i. Review tweet character length
    - ii. Review #hashtag vs. @handle
    - iii. Review how to add images/videos
  - c. What is a tweetorial (5 minutes)
4. Benefits of Tweetorials from trainee - video (3 minutes)

5. Educational Tweet (19 minutes)
  - a. Demonstrate Educational Tweet creation from provided powerpoint slide (5 minutes)
  - b. Audience members develop an educational tweet from provided powerpoint slide (7 minutes)
  - c. Share Educational Tweets and Post on Twitter (2 participants) (7 minutes)
6. Create Quiz Tweet (5 minutes)
  - a. Demonstrate Quiz Tweet creation from a multiple choice question (3 minutes)
  - b. Demonstrate Answer Tweet creation from previous answers (2 minutes)
7. Creative process of tweetorial creation (10 minutes)
  - a. Demonstrate Tweetorial Creation from 3 provided powerpoint slides
8. Create from lecture (25 minutes)
  - a. Audience members create tweetorial from 3 provided powerpoint slides and 1 multiple choice question with an answer tweet (material to be shared by presenters) in Workshop Breakout Groups of 5. (20 minutes)
    - i. Breakout groups will introduce themselves, field and location of practice & 1 fun fact (5 minutes)
    - ii. Tweetorial/question/answer tweet creation (15 minutes)
  - b. Share tweetorial and post on twitter (1 participant) (5 minutes)
9. Question & Answer (7 minutes)

**Breaking the Silence in Uncertain Times: Addressing Racism in Medical Education**

David A. Acosta, MD

*Chief Diversity and Inclusion Officer, Association of American Medical Colleges*

The AAMC sent a call to action to academic medicine in June 2020 to make a stand against racism in medicine and hate in all its forms as a result of the George Floyd murder, the BLM protests, and the damaging impact that the COVID-19 pandemic laid bare in our most vulnerable communities. We stated that no longer could we afford to be bystanders, and silence was no longer an option. In academic medicine we have a voice and leadership matters. Using the power and privilege we have as medical educators and health professionals it's time to make the necessary system-based changes needed to address the subtle and not-so-subtle manifestations of racism in medical education. In this session we'll identify how structural racism manifests and discuss a framework to address structural racism and other work that the AAMC is preparing to assist medical educators in this difficult but necessary work.

## Online Visual Learning Guide to Reduce Fear of Pelvic Examinations in Pre-Clerkship Medical Students

Stollman, Tyler (1); Ange, Brittany (1); Ennis, Ali (2); Latif, Erin (1); Brown, Shilpa (1); Wood, Elena (6).  
(1) Medical College of Georgia at Augusta University; (2) University of Georgia College of Veterinary Medicine

**Problem Statement:** The pelvic exam is well known to elicit fear and anxiety in the novice learner (1, 2). These emotions can be detrimental to learning for students (3).

**Rationale:** Excessive fear and anxiety are shown to be detrimental to learning and performing for a first-time pelvic examination (2). Many studies have been conducted to reduce this fear and anxiety; however, no interventions have been unanimously acknowledged as the most optimal method to achieve these results (3). An innovative approach to the effective teaching of these procedural skills should be considered. Traditional resources for students learning the physical exam consist of either lengthy videos or textbook chapters. An interventional resource that is concise and allows students to interact more deeply with the course material was needed. Cognitive load theory suggests that good instructional design minimizes extraneous sources of load which can minimize students' stress in medical school. This study was designed to see if an innovative online visual learning guide on performing the female pelvic exam would reduce first-year medical student fear and anxiety of performing the exam.

**Methods:** The multimedia online visual learning guide (eGuide) was created by a team of medical educators, OBGYN clerkship director and medical illustrator. The eGuide comprises references to anatomy and guides learners through correct techniques for performing the pelvic and breast physical exams (positioning, draping, equipment, step-by-step procedure technique). Students were given access to the eGuide as a resource to use or not use as they prepared for their scheduled in class female pelvic exam. Survey data was collected from first-year medical students (N=372) during the physical diagnosis course. Immediately after the in-class pre-briefing for the pelvic exam, students completed surveys about their use of the eGuide as well as the Fear of Pelvic Examination Scale (F-PEXS), a demographics questionnaire, previous clinical experience (yes/no), and previously performed a pelvic exam (yes/no). The survey was optional; however, adequate time was given to all students to complete the survey before relocating to the simulation rooms to begin the pelvic exam.

**Results:** Due to the ordinal and non-normal nature of the data, non-parametric tests were calculated. Mann-Whitney U tests (Wilcoxon two-sample tests) were calculated to examine differences in the Fear of Pelvic Examination Scale (F-PEXS) for those who used e-guide vs. those who did not, those who had previous clinical experience vs. those who did not, and those who had done a pelvic exam vs. those who had not. Those who used the e-guide scored statistically significantly lower than those who did not ( $p=0.0312$ ). Similarly, those who had done a pelvic exam scored statistically significantly lower than those who had not ( $p<.0001$ ). To account for potential confounding in those who had done a pelvic exam, Mann-Whitney U tests assessing differences in F-PEXS total score among those who used e-guide vs. those who did not, in subjects that had not done a pelvic exam were calculated. In this cohort, those who used the e-guide scored statistically significantly lower on the total F-PEXS score ( $p=0.0062$ ).

**Potential Impact:** In this study we found that medical students appreciate compact and structural presentation of material. The multimedia eGuide can reduce students fear and anxiety of performing pelvic examinations in a similar way as previous pelvic exam experience.

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### **Psychosocial Orientation Among Allied Health Professional Students**

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**Problem Statement:** Clinician beliefs about psychosocial aspects of medicine correlate with patient outcomes but are rarely addressed in health professional education.

**Rationale:** Research shows psychosocial factors, including patient attitudes, behaviors, and social factors, impact patient care outcomes and illness experience for many medical conditions [1]. For clinicians to evaluate the impact psychosocial contexts have on patient health, clinicians must recognize the importance of these topics and be comfortable discussing them. Previous work explored how allied health professionals, including physicians, nurses, physician assistants (PAs), and trainees view the psychosocial aspects of medicine, but no study has compared psychosocial orientation among health professional students throughout their first year of training. Comfort with incorporating psychosocial factors into medical encounters appears to be teachable, therefore, identifying early health professional students' comfort with addressing psychosocial factors during clinical encounters could guide training needs and future directions for enhancing patient-centered communication skills.

**Methods:** This study examined first-year medical (MD), advanced practicing nursing (APRN), and physician associate (PA) students' perceptions toward the psychosocial aspects of healthcare before and after a required seven-month interprofessional longitudinal clinical experience course. These students completed a demographic survey at the study onset and the shortened Physicians Belief Scale (PBS)[2, 3], a measure of psychosocial orientation, at both timepoints. The PBS contains two subscales: Belief and Feeling (belief in importance of addressing psychosocial factors, e.g., "I focus on organic disease because I cannot treat psychosocial problems") and Burden (belief that addressing psychosocial factors is burdensome, e.g., "Patients will become more dependent on me if I raise psychosocial concerns"). Analysis of variance and multivariate regression were performed using SPSS.

**Results:** Of 266 total students in the first year class, 260 completed the survey in September 2018 (T1); 140 in March 2019 (T2), 123 of whom were matched (47.3% of T1 sample). At baseline, 70% of participants were female, 60.4% were under 25 years old, and 14.6% identified as a race/ethnicity underrepresented in medicine. By program, 39.4% of MD students, 56.1% of PA students, and 50.8% of APRN students from the T1 sample completed the T2 survey. Across the three programs at T1, PA students ( $p < 0.05$ ), male students ( $p < 0.001$ ), and students younger than 25 years ( $p < 0.05$ ) believed it was less important to discuss psychosocial issues compared with their MD student, female, and older counterparts. In addition, compared with MD students and male students, respectively, APRN students ( $p < 0.001$ ) and female students ( $p < 0.01$ ) felt that discussing psychosocial factors was less burdensome at T1. Male gender ( $p < 0.05$ ) and being a PA student ( $p < 0.01$ ) were associated with negative changes in both subscales (e.g., viewing psychosocial issues as both less important than more burdensome) from T1 to T2 in multivariate analyses.

**Potential Impact:** First-year MD, APRN, PA students who were female and older than 25 years were more psychosocially oriented than their male and younger peers. PA students became less psychosocially oriented over time, warranting further investigation. Our findings could be useful to those teaching clinical and communication skills in health professional schools.

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### **A Remote Mentoring Program for Medical Students in Summer Research Programs**

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**Problem Statement:** COVID-19 disrupted research experiences for medical students, and the loss of in-person mentorship necessitates development of novel support systems.

**Rationale:** Research mentorship is critical towards supporting the development of scientific inquiry skills in medical students and ultimately propels innovation in a field (1). Further, the early presence of a research mentor is an important determinant in student specialty selection (2). While early summer research programs have been shown to be particularly effective as educational experiences and recruitment tools (3), these potential benefits may be attenuated by the lack of on-site research opportunities during COVID-19. Therefore, to preserve the benefits of early medical student summer research, faculty must develop innovative supplementary programming to increase engagement for remote learners. We sought to address this need through student-driven synchronous sessions and asynchronous tools to promote research productivity.

**Methods:** We created a complementary support program for medical students completing a remote 10-week research program during the summer between their first and second years of medical school. This included 1) a series of biweekly mentoring sessions, 2) a centralized repository of resources to encourage submission of research for presentation, and 3) a final research presentation via department-wide webcast. In the faculty-facilitated biweekly mentoring sessions, 2-3 students would present on a rotating basis a synopsis of their research project, including any current challenges, followed by a group discussion to identify and share solutions and resources. Informal discussion is also allowed for discussion of radiology as a career and relationship-building with faculty and peers while working remotely. Asynchronous content, including instructions on applying for membership in radiology societies and a calendar of scientific meeting opportunities, was centralized through a learning management system (Canvas). At the end of the summer program, students delivered visual abstract presentations of their research to the Department of Radiology via videoconferencing. Using a 7-point Likert scale, we surveyed students before and after the summer program about their understanding of the training pathway and profession of radiology, self-assessed research skills, and interest in pursuing future research and radiology training. Pre and post-scores were analyzed using paired t-tests.

**Results:** From pre to post-program, students rated themselves as more familiar with the specialty of radiology as a whole (+1.38,  $p=0.020$ ) and with the training pathway to become a radiologist (+1.25,  $p=0.032$ ). They also rated themselves as having greater expertise in the field related to their research project (+1.88,  $p=0.004$ ), searching for and reviewing literature (+1.00,  $p=0.007$ ), using specific research tools (+1.25,  $p=0.011$ ), data collection (+0.75,  $p=0.020$ ), scientific writing (+1.13,  $p=0.015$ ), and oral communication of research (+1.13,  $p=0.026$ ). Students did not report increased interest in pursuing radiology as a career (+0.00,  $p=1.000$ ) nor in carrying out research in their future careers (+0.25,  $p=0.516$ ). Of the program components, 87.5% of participants found the facilitated mentoring sessions to be helpful, and 100% of participants found the final visual abstract presentations to be helpful. However, no students (0%) indicated that resources dedicated to helping them present their research at national conferences were helpful. In free-text comments, students indicated that they appreciated the amount of individual attention they received, and for future iterations of the program, they would like to have sessions dedicated to learning about subspecialties within the field of radiology.

**Potential Impact:** Providing additional mentoring to medical students completing remote summer research is perceived as helpful towards development. However, it does not necessarily increase student interest in pursuing that specialty. Future programs should provide additional exposure to the field of research through remote clinical shadowing.

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### **Developing a Tutor Curriculum for the Clinical Skills Tutoring Program (CSTP) at UCSF**

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**Problem Statement:** Peer tutoring programs do not consistently provide formal education and support to tutors to ensure they are effective teachers for other students.

**Rationale:** Peer tutor programs for clinical skills improve student performance (1,2) and learning experience (3,4), especially in the setting of remediation (2,5). However, these programs rarely provide formal education for tutors on how to be effective teachers to struggling students. We designed a tutor curriculum with six-core learning objectives that incorporates the Master Adaptive Learner (6) and Self-Regulated Learner (7) models to guide tutors to help students create learning goals, organize a strategic plan, and adapt their improvement strategy based on feedback. Our goal was to design and implement a tutor curriculum that improved the knowledge, skills, and confidence for tutors to be successful peer tutors. We hypothesized that peer tutors would be satisfied with the overall goals and specific objectives of the curriculum and that students would be satisfied with their tutors who had participated in the formal training.

**Methods:** We reviewed the literature for existing peer tutoring programs and clinical skills learning models. We conducted a needs assessment involving semi-structured interviews with key stakeholders to determine core learning objectives. IRB-exempt status was obtained. The delivery of curriculum content was through 1) an in-person tutor training session, 2) formal tutor curriculum written content, 3) online resources (including clinical skills educational material), 4) longitudinal support from faculty directors, and 5) monthly tutor skill-building and reflection sessions. To evaluate our curriculum, tutors received two surveys. The surveys assessed their overall satisfaction of the program, the specific learning objectives, and the delivery methods of curricular content. Items were graded on a 5-item Likert rating scale with an option for free responses as well. Additional qualitative data was obtained through a semi-structured tutor focus group session. We are in the process of organizing semi-structured, one-on-one interviews of students who participated in the program with dedicated questions regarding the perceived training and effectiveness of their peer tutor.

**Results:** For our pilot, we trained 10 tutors in January 2020, all 4th-year medical students who formally applied and were accepted to be tutors in the program. The in-person training session was found to be overall extremely useful (mean rating 4.8, with 1 = not at all useful and 5 = extremely useful, n= 5 responses). The lowest score was given to feedback skills practice (4.40) and higher marks given to the overview of the program (5.00), tutor curriculum materials (4.80), training session materials (4.80), and organization of session (4.80). At the end of the program, the mean rating of tutor experience in the CSTP was 4.71 (with 1 = not at all satisfied and 5 = very satisfied, n = 7 responses). The in-person tutor training session, online curriculum resources, support from directors, development of learning goals with the student, and clinical skills practice with the student received mean scores greater than 4.0 (range 4.00 – 4.43) representing satisfied responses. The qualitative feedback received noted “curriculum structure”, “director support”, and “learning resources” as positive elements of the tutor curriculum. The need for additional “tutor check-ins” and opportunities for “community-building”, “collaboration”, and “information sharing” among peer tutors were identified as key areas for improvement. Based on this feedback, we have incorporated monthly tutor community-building sessions for the second tutor cohort to provide additional faculty and peer support.

**Potential Impact:** This curriculum fills a gap by training and supporting tutors before and during their work with students. This has an impact on tutor satisfaction and effectiveness. We are expanding this program and training twice as many tutors this year. This innovation can be implemented and further adapted by other tutoring programs, locally and nationally.

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## Improving Wellness: Defeating Imposter Syndrome Using an Interactive Reflective Workshop

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**Problem Statement:** The prevalence of impostor syndrome in academic medicine with the implications on team wellness and performance highlights the need for effective intervention.

**Rationale:** Impostor syndrome is a psychological term characterized by chronic feelings of self-doubt and internalized fear of being exposed as an intellectual fraud. Implications of impostor syndrome in academic medicine include correlations with burnout, decreased performance, health and psychological defects. The purpose of this program was to determine if a reflective and interactive educational workshop can improve awareness, perceptions and knowledge regarding impostor syndrome.

**Methods:** At educational workshops; participants: 1) completed Young Impostor Syndrome (YIS) & Competence Quiz surveys; 2) watched an animated video presentation on the psychological basis and prevention strategies for the impostor syndrome; 3) participated in an interactive presentation; 4) self-identified and discussed impostor subtypes; 5) participated in small group discussions using case-based scenarios and thought questions to deliberate on corrective intervention strategies for impostor syndrome and 6) completed a post-intervention perception, knowledge and behavior-based survey using Kirkpatrick levels (1,2,3).

**Results:** This is an ongoing approximately 90-minute workshop series. Of the 54 participants to date, there were 65% females, 35% males, 53% residents, 33% medical students, 10% faculty and 4% staff. Overall, 50% were positive for Impostor syndrome (IS) on YIS. The 3 commonest determinants were: "hate making a mistake, or not doing things perfectly" in 89%, "believe that competitors are smarter and more capable" in 79% and "secretly worry that others will find out that you're not bright and capable" in 70%. For the impostor subtypes, participants classified as: Superwoman/man = 43%; Expert =33%; Soloist = 24%; Natural Genius = 13%, and Perfectionist = 12%. Life events that participants perceived as a cause of IS included: parent expectations = 56%, academic rat race = 33%; female gender = 35%, first-generation to college = 30% and academic transitions, career change or minority status = 19%. Post-intervention awareness of the negative impact of IS on stress, personal goals and teamwork was a mean of 3.9 (Liekart scale of 1-5). Participants also scored their ability to change behavior regarding personal IS and in the workplace as 3.2 (Liekart scale of 1-5). In group discussions, participants deliberated on processes to decrease impostor syndrome. Pre and post-intervention Impostor syndrome knowledge survey scores were 4.55(SEM=0.53) versus 5.59 (0.37),  $p=0.04$ .

**Potential Impact:** In this cohort, commonest IS subtypes were superwoman/man and expert. Contributors to IS were parents expectations, academic competition/promotion and female gender. Post-workshop, there was a significant increase in knowledge of IS. Participants demonstrated awareness of negative effects of IS; and the willingness to change behavior.

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### **Improving Pediatric Emergency Training in Thailand: An International Collaboration**

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**Problem Statement:** In Thailand, children account for 18% of emergency department visits, yet there are few providers with specialty training in pediatric emergency care.

**Rationale:** Thailand's emergency departments are staffed by pediatricians and emergency physicians, but there are few providers with expertise in pediatric emergency medicine (PEM). Understanding this need, we collaborated with Bangkok Dusit Medical Systems, Thailand's largest private hospital system, to develop a PEM training program designed specifically to improve care for children. While physician training is essential to optimizing outcomes for children, patient care in emergency settings is fundamentally multidisciplinary and the most effective training programs are those that incorporate nursing practice and address the entire medical team. By combining simulation and team-based education with web-based didactic materials, we hypothesized that we could develop, implement, and analyze a curriculum addressing elements of PEM care in Thailand, with resultant demonstrable increases in knowledge and teamwork among both physicians and nurses.

**Methods:** We conducted a prospective cohort study with five physician-nurse dyads from January 2018 to July 2019. Through review of the American Academy of Pediatrics' Content Specifications for PEM and the results of needs assessments with each of 3 participating study sites, we developed a course curriculum with 22 distinct modules, which were divided into basic and advanced courses, each administered over 6 months. Each course began with baseline testing, consisting of a written test and observation of several simulated PEM cases led by each physician-nurse team. Critical action checklists and validated teamwork assessment tools evaluated the simulations. Each term was administered remotely through electronic modules over the next 6 months, culminating in a final summative exam and repeat simulation testing. Paired t-tests were used to analyze performance on written exams and simulated emergencies before and after the courses. Additionally, participants submitted post-course feedback in order with the goal of improving and modifying the course for future cohorts.

**Results:** The primary outcomes for this study were improvement in measures of knowledge around pediatric emergency care and enhanced performance in simulated pediatric emergencies. The former was defined as statistically significant improvements in multiple choice written exams, while the latter was defined as statistically significant improvement in percentage achieved on critical action checklists and teamwork assessment tools. When evaluating written exam scores before and after the basic course, physicians improved from 59.4% (95%CI 51.4-67.4) to 97.0% (95%CI 96.0-98.0) ( $p < 0.001$ ), while nurses improved from 36.2% (95%CI 25.2-47.2) to 92.5% (95%CI 89.5-95.5) ( $p < 0.001$ ). For simulation testing among physician-nurse dyads, performance improved before and after the course, from 76% (67-85) to 96% (93-99) for critical action items ( $p=0.004$ ) and from 10.2 (9-11.4) to 13.2 (12-14.4) on measures of teamwork. For the advanced course, physicians improved on the written exam from 57.0% (95%CI 48.0-66.0) to 94.0% (95%CI 91.0-97.0) ( $p < 0.001$ ), while nurses improved from 37.0% (95%CI 33.0-41.0) to 88.0% (95%CI 83.0-93.0) ( $p < 0.001$ ). For simulation testing, performance improved from 76% (67-85) to 96% (93-99) for critical action items ( $p < 0.001$ ) and from 13.1 (12.3-13.9) to 14.4 (13.9-14.9) on measures of teamwork ( $p=0.004$ ). As such, all physician and nurse participants successfully met the agreed-upon criteria for completion of both the Basic and Advanced Course.

**Potential Impact:** To our knowledge, this is the first international project to successfully create, administer, and evaluate a longitudinal interdisciplinary PEM curriculum. Our curriculum is unique in its breadth and format, combining elements of traditional didactic teaching with simulation while honing both behavioral and medical skills in an iterative fashion.

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## **Pediatric Resident Medical Education During COVID-19: Perspectives at a Single Institution**

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**Problem Statement:** We describe faculty and residents' perceptions of educational changes made during the COVID-19 pandemic and their recommendations for future education.

**Rationale:** The Coronavirus Disease 2019 (COVID-19) pandemic altered medical education formats and practices. Starting in March 2020, social distancing recommendations and policies led to limitations on gatherings, and led training programs away from traditional in-person lectures. Reports of electronic learning ("e-learning"), especially in asynchronous form, have increased over the last decade and vary in effectiveness.[1-3] During the pandemic, programs made various urgent changes to embrace technology and distance learning in order to limit disruptions in education. We present the pediatric resident and faculty perspectives on the distance learning models utilized and determined their recommendations for ideal learning formats post-pandemic.

**Methods:** The traditional in-person pediatric resident noon conference lectures, grand rounds and other educational sessions were held remotely using ZOOM technology. An anonymous survey was e-mailed to 35 faculty members and 24 pediatric residents at Staten Island University Hospital, Northwell Health. The faculty were surveyed as to the teaching modalities used prior to COVID-19 and those used during the pandemic. They were asked how they rated several questions on a 5-point Likert scale: the level of resident engagement (1=never, 5 = always), ease of teaching (1=very difficult, 5= very easy) and satisfaction with resident education (1=very dissatisfied, 5= very satisfied) during the pandemic. The residents were asked to rate their level of engagement (1=never, 5=always) during educational sessions through the pandemic and effectiveness of resident education compared to prior to the pandemic (1=much worse, 5= much better). Both faculty and residents were asked their preference for future educational models. The results are reported as percentages, mean scores and standard deviations (SD). The scores from the faculty and residents were compared using an independent 2-tailed t-test. Statistical significance was documented with a p-value of <0.05. The project did not meet criteria for human subjects' research; review by the Institutional Review Board was not required.

**Results:** 17 out of 24 (71%) pediatric residents and 17 out of 35 (49%) faculty members completed the survey. Only 1 faculty member (6%) reported teaching remotely prior to COVID-19, but this increased to over 94% of faculty during the pandemic. Similarly, 100% of faculty taught using in-person lectures prior to the pandemic, and that decreased to 24% during the pandemic. The use of online resources provided to the residents did not significantly change due to COVID-19. Small group in-person teaching did decrease with the pandemic. The residents rated the effectiveness of the remote lectures as compared to in-person lectures with a mean score of 3.12 out of 5, with approximately 65% of residents indicating that the remote lectures were approximately the same as in-person lectures in terms of the effectiveness of teaching and learning. The faculty rated the ease of teaching remotely and satisfaction of resident education during the pandemic with mean scores of 3.7 and 3.53 out of 5, respectively. The residents and faculty rated the level of resident engagement with education during the pandemic with mean scores of 3.65 (SD 0.6) and 3.06 (SD 0.96), respectively. However, the residents rated their own level of engagement higher than that perceived by faculty (p=0.04). The majority of both pediatric residents and faculty both recommended a hybrid model for future post-pandemic resident education, with 82.4% of residents and 94.1% of faculty recommending a hybrid model.

**Potential Impact:** Residents and faculty reported that residents were engaged in distance learning, and faculty reported ease of teaching and satisfaction with resident education. The majority of both residents and faculty recommended a future combination "hybrid" model, suggesting that the benefits of both can be combined to optimize resident learning.

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## **A Remote Pediatric Academic Day: Changes to Medical Education in the Era of COVID-19**

Romanos-Sirakis, Eleny  
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**Problem Statement:** Due to social distancing restrictions of the COVID-19 pandemic, the format of our annual Pediatric Academic Day had to be reconfigured.

**Rationale:** The Coronavirus 2019 (COVID-19) pandemic altered medical education formats and practices. Starting in March 2020, social distancing recommendations and policies led to limitations on gatherings and training programs away from traditional in-person lectures. During this time of the COVID-19 pandemic, programs made various changes to embrace technology and distance learning in order to limit disruptions in education. Reports of electronic learning (“e-learning”), especially in asynchronous form, have increased over the last decade and vary in effectiveness [1-3]. However, the data regarding synchronous remote medical conferences is limited. We present our experience with the implementation of a distance learning Pediatric Academic Day; we are not aware of any other similar distance learning academic day conferences described in the literature.

**Methods:** Each pediatric resident in our program presents scholarly activity at the annual Pediatric Academic Day (PAD) held in June each year. Due to COVID19, the large in-person session for PAD was unable to be scheduled. The abstract submission process remained the same, however, the format was changed to a create a remote PAD. The event was broken up into 3 remote sessions utilizing ZOOM technology. The first session was held for 1 hour, encompassing the four oral presentations, each 10 minutes in duration with 5 minutes for questions. Two concurrent poster sessions were then scheduled, and participants could choose from either session or view segments of both. Each resident showed their poster electronically as a whole and then presented the aspects of their work and poster over a 5-minute interval, leaving 2 minutes for questions from the audience. The residents who were unable to attend the session provided their posters electronically, and the posters were shown to the audience to allow for review. Each group had a host to assist with muting the audience, facilitating the questions from the audience, and troubleshooting any technical difficulties. In addition, each group also had a timekeeper and member of the pediatric scholarship and research committee to ensure smooth transitions and to ensure adherence to the schedule. An anonymous survey was e-mailed for completion by participating faculty and residents and responses were provided on a 5-point Likert scale.

**Results:** Seventeen pediatric residents and 17 faculty members completed the survey. Overall, residents found it easy to present in this method (mean score of 4.2 out of 5). The scores from both groups for satisfaction, level of engagement, and effectiveness in promoting learning were all more positive than neutral (mean score range 3.35-4.71 out of 5). Faculty, however, gave higher scores in these categories compared with residents ( $p < 0.05$ ). In addition, faculty were more likely to recommend this forum for future sessions as compared with the traditional format, but this was not a statistically significant difference (mean scores 3.06 for residents and 3.88 for faculty,  $p = 0.065$ ). Comments provided focused on the poster sessions; both faculty and residents wanted the opportunity to view all posters, rather than only those from one poster session group.

**Potential Impact:** We created a remote Pediatric Academic Day to replace our annual in-person session due to the COVID-19 pandemic. This event showcased resident scholarly activity and was well-received by participants. Based on feedback received, we would ideally implement a hybrid model in the future to maximize the benefits of both remote and traditional formats.

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### **Evaluation of Barriers and Facilitators of Resident Research Following Implementation of a Dedicated Research Program**

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**Problem Statement:** Research in residency is vital for training and career development. However, improving this research while maintaining clinical training is a challenge.

**Rationale:** Limited quantitative data exists on barriers and facilitators to resident research. Additionally, improving research output is challenging considering the already condensed clinical curricula. The internal medicine program at Brown University aimed to evaluate contributors to research productivity as well as the impact of an intern research conference. The goal was to identify further areas of need, as well as quantify any improvements that were made after implementing the research conference.

**Methods:** The authors reviewed research outcomes, perceived barriers, and facilitators to research for all senior internal medicine residents from 2015-2020 at Brown University. Senior residents were asked to fill out a research evaluation form prior to graduation. The evaluation consisted of questions that pertained to: type of research performed, overall level of research interest, magnitude of selected barriers to research in residency, prior publication and conference presentations, and residency-acquired publications and conference presentations. Starting in 2015, a new research director was recruited and implemented several institutional changes in an attempt to improve research productivity. In 2015, intern orientation included a one-hour training on research basics and expectations. Beginning in 2016, this was expanded into an intern conference where every intern was covered for half a day in order to receive training on research methodology, IRB introduction, and research approaches by expert biostatisticians and researchers. Interns also received guidance on how to utilize REDCap and statistical support for their projects. Interns were made aware of newly added research resources as well, including improved linkage to faculty mentors and a chief resident to help with research. The research day served as an opportunity to familiarize interns with the steps research requires, in addition to disseminating all of the available resources and spur interest in research.

**Results:** Two-hundred and sixty residents completed training during this time. Baseline research interest and publication counts were similar among residents from 2015-2020. Lack of time was the most significant barrier to research among residents (83%), followed by statistical support (53%), mentorship (50%), IRB process (50%), experience (41%), and interest (21%). After implementation of an intern research day as well as focused research support for residents in 2016, residency-produced manuscripts and national presentations increased from 8 to 65 and 9 to 65, respectively. Prior original clinical research had the strongest relationship with producing at least one publication (OR 5.3, CI 2.9-9.5) or national presentation (OR 4.6, CI 2.5-8.4). Total prior publication count had a small correlation with residency publications (OR 1.1, CI 1.0-1.2). Research interest was a stronger predictor of publications (OR 3.2, CI 2.2-4.5) and national presentations (OR 2.2, CI 1.6-3.0). The research barriers had a significant negative effect on the odds of publication, but not on national presentations.

**Potential Impact:** This is among the first studies to calibrate the impact of individual research barriers and facilitators on research output during internal medicine residency, and our results may guide future resident recruitment. Additionally, we found that the early implementation of a research day has the potential to enhance research productivity in residency.

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**A Qualitative Analysis of Interprofessional Learning During Experiential PharmD Education**

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**Problem Statement:** Interprofessional education (IPE) is required in health professions' curricula, but how well these recommendations are met is not well-established.

**Rationale:** Graduates of healthcare programs must be prepared to collaborate in clinical environments upon graduation (1). Interprofessional Education Collaborative (IPEC) is a group of professional educational organizations that identified four competencies that should be taught across all health professions curricula: Values/Ethics, Roles/Responsibilities, Interprofessional Communication, and Teams/Teamwork (2). The expectation is that there are components of IPE in both didactic and experiential portions of the curriculum. While there have been studies on the types of IPE programs implemented and student satisfaction, there is limited data on whether or not programs are successfully achieving the IPEC competencies. The objective of this study was to assess how well student reflections from interprofessional experiences during the experiential component of a PharmD curriculum met the IPEC competencies.

**Methods:** A survey was developed by the health professions programs at the University of Southern California to assess interprofessional experiences. At the School of Pharmacy, the survey was sent to first through third-year students after each of 5 total introductory experiential rotations and to fourth-year students after each of their 6 advanced rotations. Surveys were collected from June 2017 to August 2019. Information collected included student demographics, type of practice setting, type of healthcare professionals involved, and context of collaborations. This was used to assess which settings had greater interprofessional collaboration, the healthcare members involved, and the context of the collaborations. Three reflections were qualitatively evaluated to assess alignment to the four IPEC competencies: Values/Ethics, Roles/Responsibilities, Interprofessional Communication, and Teams/Teamwork. Reflections "met" a competency if they addressed key elements of the competency in the experience. In other words, experiences met elements of the competency, but student success was not evaluated. Keywords were identified that mapped to each competency and were used as a codebook to categorize reflections. The number and types of competencies met, and the level of involvement was recorded. Chi-square tests were used to compare responses between groups, including inpatient vs outpatient experiences and first vs fourth-year student reflections.

**Results:** The PharmD student response rate on the IPE survey was 30%. Responses were spread out across all professional years with 29% of total responses from first-year students (P1), 37% from second and third-year students (P2/P3), and 34% from fourth-year students (P4) (n=1360). The majority (86.1%) of student reflections met one or more competencies with 35.6% meeting one, 33.4% meeting two, 14.5% meeting three, and 2.6% meeting all four in a single rotation. The IPEC competencies of Roles/Responsibilities and Teams/Teamwork were most prevalent in student reflections with 48% of all reflections aligning with each of these competencies. Interprofessional communication was found in 35.9% of reflections while Values/Ethics was least prevalent at 24.5%. Student reflections were also assessed for reports of active engagement in interprofessional interactions. Active engagement was compared between P1 and P4 student experiences. As expected, active participation increased across all competencies as students advanced in the curriculum at the following rates comparing first vs. fourth-year rotations: Values/Ethics (11.1% vs 14.8%), Roles/Responsibilities (18.9% vs 32.8%,  $p < 0.05$ ), Interprofessional Communication (17.6% vs 23.6%), and Teams/Teamwork (14.9% vs 34.8%,  $p < 0.05$ ).

**Potential Impact:** PharmD students have opportunities to engage in IPE across experiential rotations from P1 through P4 years. Most students meet at least one competency during each experiential rotation and active engagement in IPE increases as students progress in the curriculum. Values/Ethics is the least met competency and may require more intentional teaching.

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### **Application Requirements for Residency Programs in Canada Under Pass/Fail Grading**

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**Problem Statement:** The prevalence of various residency application requirements at postgraduate training programs in Canada is currently unclear.

**Rationale:** In recent years, some Canadian medical students have reported that Canadian residency programs have begun requiring proxies for academic ability from residency applicants. To the best of our knowledge, the prevalence of this practice among all residency programs in Canada has not been investigated. This requirement may be in response to a shift in Canadian medical education toward pass/fail grading systems and away from letter grades, making differentiation between applicants on the basis of academic performance more difficult. Without differentiated grades, medical school transcripts contain little objective information (1). Pass/fail grading was introduced to improve student well-being, and the outcomes are well documented (2). However, residency program directors prefer differentiated grades among applicants (3). With no Canadian equivalent to USMLE exam scores, it is important to understand the prevalence of the use of proxies for academic ability in lieu of medical school grades.

**Methods:** We built a database of residency program application requirements using data retrieved from the CaRMS website (Data was retrieved between May 1st and July 15, 2017). Requirements for residency programs with multiple sites were recorded separately. Residency programs were organized by specialty. We recorded the specific requirements of each residency program using Microsoft Excel. We then analyzed the proportion of residency programs requesting each application item, in each specialty. We also considered the differences in program size by using the total quota of positions available to compare institutions and specialties with differently-sized residency programs by weighting item requirements by the number of positions available in each residency program and institution. From this, we calculated both the proportion of residency programs and the proportion of residency positions that require submission of a proxy item in order to apply.

**Results:** There was wide variability in requirements across Canadian residency programs. 13 of 15 ophthalmology programs required results of a comprehensive eye exam conducted by an ophthalmologist. Among otolaryngology programs, 2 required or strongly recommended the inclusion of an ophthalmological report with the application. After weighting by the number of available positions in each residency program, we found that 31% of Canadian residency positions required submission of pre-medical records in order to apply. Of the 514 CaRMS-rankable residency programs we identified in Canada in 2017, 28% of programs required pre-medical records from applicants. This requirement varied widely by specialty and institution. A majority of positions in public health, radiology, nuclear medicine and dermatology required these, while they were not required anywhere for applications in neurosurgery, pathology, and medical microbiology. 9% of programs did not require them. One residency program required applicants' MCAT score.

**Potential Impact:** Requirements to include a premedical record may be an unintended consequence of the widespread shift in Canadian medical education away from numerical and letter grades. 9% of residency programs do not require medical school transcripts at all. This may provide a preview of the United States residency match if USMLE exams become pass/fail.

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### **Characterization of Readership Statistics of an Open Access Medical News Site During COVID-19**

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**Problem Statement:** There is a lack of literature investigating how COVID-19 has impacted consumption of medical literature and news.

**Rationale:** Compared to the past, there are many alternatives to direct journal access, such as podcasts, blogs, and news sites for physicians and the general public to stay up to date with medical literature. Prior studies have reported news consumption to increase as a result of COVID-19. Currently however, there is a scarcity of literature that investigates these readership characteristics of open access medical news sites and how they may have shifted with COVID-19.

**Methods:** All data for the study was gathered from 2MinuteMedicine.com, an open-access medical news organization that publishes 10 physician-written text and visual abstracts weekly summarizing and reviewing new medical research. In this retrospective observational study, the average views, actions (defined as the sum of views, shares and outbound link clicks), read times, and bounce rate (probability to leave a page in <30s) were compared between COVID-19 articles (N = 40) to other articles (N = 145) published between January 1 to May 31, 2020, via Mann-Whitney test. An online survey was also sent to readers to further characterize readership demographics and preferences scored by Likert Scale.

**Results:** Mann-Whitney test revealed that COVID-19 articles had significantly more views (Median = 296) than other abstracts (Median = 110),  $U = 748.5$ ,  $p < 0.001$ . There were no differences in average view times or bounce rate. Non-COVID-19 articles did however have more actions (Median = 2.9) than COVID-19 articles (Mdn = 2.5)  $U = 2070.5$ ,  $p < 0.05$ . On a Likert scale of 1 (Strongly disagree) to 5 (Strongly agree), survey data from 130 responses revealed that readers preferred staying up to date with emerging literature surrounding COVID-19 using open-access medical sites such as 2MM than direct journal access ( $M = 3.89$ ,  $SD = 1.05$ ). A greater proportion of survey takers also indicated open access news sources to be one of their primary means of staying informed (75.4%) than direct journal article access (54.0%). A lesser proportion of readers indicated to be reading less than one full-length medical study following introduction to 2MM (31.8%) compared to prior (16.9%).

**Potential Impact:** Results demonstrate that there is a significantly increased viewership in open access medical news during the pandemic and that these sources represent an important source to inform and introduce readers of emerging medical literature.

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## **Be My Ally: A Qualitative Study of Medical Students' Desired Faculty Responses to Microaggressions**

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**Problem Statement:** There are critical gaps in the evidence base on students' perceptions regarding best practices for faculty response to microaggressions.

**Rationale:** Microaggressions are statements or actions causing indirect, subtle, or unintentional discrimination against members of a marginalized group. In the clinical environment, microaggressions arise from a variety of sources and negatively affect the clinical learning environment and the clinical care for patients (1-4). Many faculty describe uncertainty or fear about responding to microaggressions due to concern that they may do or say the wrong thing and be labeled as racist or sexist (5). Unfortunately, this discomfort can result in faculty inaction during times in which trainees most need faculty support to combat the impact of microaggressions. Acknowledging that it is impossible to prevent all microaggressions, faculty must be equipped with evidence-based skills to identify and intervene when they occur. Our work aims to explore student perspectives on effective faculty interventions against microaggressions.

**Methods:** This is a qualitative study to analyze data from focus groups of medical students using a social constructionist lens. All third- and fourth-year medical students at the University of California, San Francisco received an email invitation to participate in a focus group, with a reward of a \$20 gift card offered for participants. Over Zoom, participants discussed four provided scenarios, each focusing on a microaggression category (microassault, microinsult, microinvalidation, environmental microaggression) where the student was the recipient of the microaggression (6-7). Microaggressions targeted hypothetical students' race/ethnicity, gender, appearance, and ability. Focus groups explored learners' perspectives on how faculty should ideally respond to each microaggression by probing possible responses, perceived facilitators and barriers to responding, and personal experiences with effective and ineffective faculty intervention. After professional transcription of focus group audio, we applied the framework method to code and analyze data. The research team, which included two white faculty members, one Latina faculty member, one black resident and one South Asian medical student, considered reflexivity through frequent group discussions.

**Results:** We conducted seven focus groups (5-7 students each) with 39 students, lasting an average of 86 minutes. Participants included 15 (38%) Asian, 12 (31%) Black, 5 (13%) Latinx, 17 (44%) White, 1 (3%) Native American and 1 (3%) Middle Eastern students. Thirteen (33%) identified as men, 25 (64%) women, 1 (3%) non-binary and 15 (38%) lesbian, gay, bisexual or queer. Students recommended that faculty anticipate that microaggressions would occur on clerkships and ask students when they began working together for their preferences on how students would feel best supported after a microaggression. Students largely desired some form of faculty response or acknowledgement of microaggressions. In-the-moment, participants wanted faculty to consider the context, the student, patient, faculty, and the microaggression itself. Students identified different severity in the microaggression scenarios and felt that microassaults demanded an immediate response, whereas other microaggressions promoted more debate among participants. An ideal faculty response was timely, proportional to the microaggression intensity, emphasized the clinical value of the student, and mitigated microaggression reoccurrence. After the microaggression, students highlighted the value of additional discussion with the faculty either individually, in a team debrief, or through follow up discussion with the patient.

**Potential Impact:** Study results will be used to design student-informed, evidence-based guidelines for faculty development in microaggression response. By developing a toolbox of anticipatory discussions, timely interventions, check-ins and debriefing, faculty will be equipped to foster safer learning environments for trainees.

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**Reducing Health Disparities in Dermatology Medical Student Education**  
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**Problem Statement:** Dermatological medical education lacks representation in skin of color leaving medical students unprepared for the diverse dermatological patient.

**Rationale:** African Americans face higher morbidity and mortality in many skin pathologies due to misdiagnosis or late diagnosis. Darker skin tones may have different presentations of diseases that future physicians may not be able to recognize. This module was created for Wayne State University School of Medicine in the city of Detroit, in which African Americans make up 78.6% of the population. Medical school education may benefit from a skin of color module, educating future physicians on how to diagnose skin diseases in darker skin tones. Moreover, dermatology is the second least diverse specialty. This lack of diversity may lead to disparity in care amongst minority groups. Increased diversity and innovation at the medical school level are imperative to addressing these disparities.

**Methods:** An optional, online module, titled "Skin of Color" was made available to the 295 second year medical students enrolled in the Musculoskeletal/Dermatology/Peripheral Nervous System Course at Wayne State University SOM in Detroit, MI. Consent was obtained via an information sheet at the beginning of the pre-and post-test surveys. The surveys were completed anonymously and voluntarily. 145 students began the pre-test, 118 completed the pretest, and 77 students completed the pretest, module, and the post-test. The module comprised 13 vignettes with images of various rashes, infections, and cancers in darker skin tones. Confidence in diagnosing skin infections and skin cancer in African Americans, recognizing morbidity and mortality disparities in African Americans, and confidence in approaching skin diseases in skin of color was assessed on the pretest and posttest to assess confidence in approaching the diverse patient before and after the module. Data was collected using an anonymous login ID that was unique to each student. Confidence was measured using a 1-5 Likert scale, with 1 being least confident and 5 being most confident. A paired t-test was used to determine if a significant increase in confidence occurred after completion of the module.

**Results:** We observed a statistically significant increase in confidence in diagnosing skin infections and skin cancer in African Americans, recognizing morbidity and mortality in African Americans, and confidence in approaching skin diseases in skin of color.

**Potential Impact:** Students found the module to be useful and would like to see inclusivity integrated into the curriculum. Students declared that they would like to see manifestations of skin disorders in other minority skin tones and compare them to Caucasian skin types.

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### **It's In the Syllabus: Assessment of Experiential Rotations Using a Web-Based Platform**

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**Problem Statement:** In experiential education, it is difficult to assess the consistency of the student experience across thousands of rotation sites.

**Rationale:** Given the public concern regarding the skills and efficacy of healthcare professionals, along with the increased demands for accountability of health profession schools (1,2), it is critical for healthcare educators to have a better understanding of their didactic and experiential curriculum. This issue is particularly challenging for experiential learning because of the diversity in rotation sites and the backgrounds of preceptors. To improve understanding of the experiential curriculum, coverage of program outcomes, learning objectives, entrustable professional activities (EPAs) (3), disease states, teaching and assessment methods, and activities need to be determined for each rotation. To address this issue, we developed AARDVARC-POWER (Automated Approach to Reviewing Developing Valuable Assessment Resources for your Curriculum - Preceptors Offering Wisdom through Experiential Rotations) to facilitate the collection of information through completion of rotation syllabi.

**Methods:** AARDVARC was originally developed at the USC School of Pharmacy in 2017 with the core function of creating a web-based portal for faculty to produce their didactic course syllabi in a standardized format online. By developing this web-based syllabus portal with query fields, multiple points of data were able to be collected automatically from faculty as they were developing their syllabus for students each semester. This included program outcomes, learning objectives, teaching and assessment methods, course readings, coverage of topics in the curriculum, and faculty teaching hours. With the success of using the platform for the didactic curriculum, AARDVARC was expanded to the experiential curriculum in 2019 and became known as AARDVARC-POWER. This new software is currently used for assembly of syllabi in rotations offered in the final year of the PharmD program. They are completed by preceptors with direct knowledge of the specific rotation. AARDVARC-POWER is also able to automatically collect information on site-specific learning objectives, EPAs, disease states encountered, and the daily activities at each rotation site, in addition to collecting the standard AARDVARC data from syllabi.

**Results:** AARDVARC-POWER is now used by more than 50 preceptors with 123 syllabi completed or in-progress since 2019. Preliminary data from AARDVARC-POWER have shown that the three program outcomes that are covered most often across APPE rotations include: 1) leadership, 2) professionalism in interactions with other healthcare providers, and 3) self-awareness. EPAs that student pharmacists are most engaged in while on their rotations include: 1) use of evidence-based information to advance patient care, 2) collection of information to identify a patient's medication-related problems and health-related needs, and 3) analysis of information to determine the effects of medication therapy, identify medication-related problems, and prioritize health-related needs. AARDVARC-POWER data have shown that the disease states most encountered during students' rotations are: 1) hypertension, 2) type 2 diabetes, and 3) dyslipidemia. Teaching and assessment methods most utilized by preceptors include: 1) observation, 2) readings (journal or papers), and 3) oral presentations.

**Potential Impact:** Data analytics from AARDVARC-POWER have allowed us to improve our assessment of experiential rotations. The results have provided us with the means to discuss important programmatic and curricular changes. We believe this approach could be applicable to experiential education in all healthcare programs.

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### **Impact of a Faculty Development Course on the Probability of Promotion at a Health Sciences Center**

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**Problem Statement:** Medical educators desire access to faculty development programs which can provide them with the tools that are critical to advance in academic rank.

**Rationale:** Our Institutional Faculty Development Course (IFDC) is targeted at junior and mid-level faculty and focuses on enhancing their teaching and assessment skills, development as scholars, while establishing a network of colleagues. IFDC participants are nominated by their department chairs. The 8-month IFDC is offered once a year, and presents 80 hours of material (40 hours needed to graduate). The curriculum consists of four domains: teaching, scholarship/research, clinical skills/simulation (for practicing clinicians), and leadership development. The objective of our study was to quantify the association between graduation from our annual comprehensive IFDC and promotion from assistant professor to associate professor.

**Methods:** A retrospective cohort study (October 2008-October 2019) was conducted using publicly-available faculty data. Our institution's IRB reviewed our protocol and deemed it exempt from formal review (IRB # E20124). A total of 148 IFDC graduates were compared to 87 non-graduates. Subjects were full-time assistant professors at Texas Tech University Health Sciences Center El Paso at the start of follow-up. The binary outcome was promotion to associate professor. The outcome was measured annually. Follow-up ended when the faculty member left our institution, was promoted to associate professor, or the study ended, whichever came first. A longitudinal (repeated measures) logistic regression analysis was performed using generalized estimating equations (GEE), an independent working correlation structure, and robust (empirical) standard errors. Adjusted odds ratios (OR), 95% confidence intervals (CI), and P-values were reported from the GEE logistic regression model.

**Results:** The 235 faculty members contributed a total of 1015 records. The average ages (standard deviation) of IFDC graduates and non-graduates were 40.7 (8.6) and 40.3 (7.4) years, respectively. More than half of the IFDC graduates were female (54.1%) and 44.8% of the non-graduates were female. The prevalence of a primary care specialty was 40.5% in IFDC graduates and 39.1% in non-graduates. A positive association was detected between IFDC status (graduates vs. non-graduates) and being promoted to associate professor after controlling for time, age, sex, ethnicity (Hispanic), and specialty/discipline in a GEE logistic regression model: adjusted OR=12.88, 95% CI: 3.07 – 54.05, P=0.0005. Faculty members who were 40 years of age or older had three times the odds of being promoted during the study period than faculty who were younger than 40 years: adjusted OR=3.06, 95% CI: 1.17 – 7.98, P=0.02.

**Potential Impact:** Completion of our IFDC was strongly correlated with promotion to associate professor at our health sciences center. Institutions that rely primarily on grand rounds and brief workshops to deliver professional development opportunities should consider creating a comprehensive, longitudinal faculty development course.

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## The Correlation Between Volunteering at Student-Run Free Clinics and Educational Performance

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**Problem Statement:** Student-run free clinics rely on medical students to volunteer their time, but little is known about the effect on student's educational performance.

**Rationale:** Student-run free clinics (SRFCs) have become an essential part of medical education and their daily operations rely on medical students to volunteer their time despite having a strenuous workload. A 2015 study showed that students valued the early training opportunity in SRCs, but little was known about the effect of participation on student's skills and knowledge (1). Three studies tried to gauge how service-learning or volunteering at SRFCs affected educational performance, but all three came to a different conclusion (2,3,4). This observational study aims to determine how the amount of time spent at JayDoc Free Clinic affects educational performance. If volunteering at JayDoc does not negatively impact educational performance, volunteer rates should improve, which then improves the care we can provide the patients and the number of patients we can see on any given day. Additionally, a positive correlation could further support the importance of SRFCs in medical education.

**Methods:** Volunteer rates were collected retrospectively from JayDoc's volunteer portal for the University of Kansas Medical School graduating classes of 2021 and 2022. The total number of volunteer shifts for each student during their first two years of medical school was collected. Two separate analyses were performed on the data. The first was to compare those that volunteered more than once to those who have never volunteered at JayDoc. The second was comparing those that volunteered more than seven times to those that volunteered one time or less at JayDoc. Unpaired t-tests and ANOVA were used to compare academic performance among groups. ANCOVA was used to compare Step 1 performance by group, controlling for multiple-choice exam performance.

**Results:** Within the class of 2021, there were 139 students who volunteered more than once and 35 students who did not volunteer at JayDoc. Compared to those who did not volunteer, students who volunteered scored 1-2 percentage points higher on phase I multiple-choice exams and 5 points higher on Step 1. However, group differences were not statistically significant based on unpaired t-tests at the 95 % level of confidence ( $p = 0.11$  and  $0.09$ , respectively). For the second analysis, 57 students volunteered one time or less and 48 students volunteered more than 7 times at JayDoc. The low and high volunteer groups were significantly different on both exam performance and STEP 1 performance with the high volunteer group earning higher scores on each measure. The ANCOVA analysis revealed a significant effect of the exam performance covariant and no STEP 1 score difference. All analyses used  $\alpha = 0.05$  associated with a 95% confidence level. We are currently evaluating the class of 2022 data. The data analysis should be completed well before February 2021. We also plan to further analyze the class of 2021 and 2022's exam performance, looking specifically at questions on the exam that target the application of learned material known as Bloom level 2 questions.

**Potential Impact:** If volunteering at JayDoc Free Clinic does not negatively impact educational performance, volunteer rates should improve, which then improves the care we are able to provide the patients and the number of patients we can see on any given day. It will also emphasize that SRFCs are not just helpful to the patients, but for students education as well.

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## **Randomized Controlled Trial Assessing Effectiveness of Test-Enhanced Learning Collaborative Feedback**

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**Problem Statement:** Feedback is an essential component to Test Enhanced Learning (TEL), however the effectiveness of different TEL feedback methods is not known.

**Rationale:** TEL has shown positive effects on learner memory retrieval in health professional education programs. Learners also receive some form of feedback on responses, however, the effect of feedback on learning and retention in TEL has not been well evaluated. Feedback activities also support or inhibit learning based on how they are perceived by the individual learner and it is important to explore the effectiveness of different TEL feedback approaches. According to the co-constructive framework, feedback should be reserved for a dynamic and co-constructive process in a shared social or cultural space to challenge a learner's way of thinking, acting, or being to support growth. Therefore we sought to answer the following research question: Does a collaborative feedback process with faculty-facilitated small group discussions improve clerkship students' medical knowledge acquisition and perceptions of feedback effectiveness compared to a non-collaborative feedback process?

**Methods:** In a randomized controlled trial in September 2018 to May 2019, 55 medical student volunteers were randomly assigned to one of two small groups for eight 60-minute sub-topic based learning sessions during their 4-week neurology clerkship at the Geisel School of Medicine at Dartmouth. The majority of students participated at Dartmouth Hitchcock Medical Center in Lebanon, New Hampshire, while other students video linked for each session at two remote sites. The two sessions took place concurrently and began with a TEL component where students individually took the same 10-item multiple-choice test over 15 minutes on the CANVAS learning management platform. The students were informed that test results would not affect their final clerkship grade. Each session was facilitated by one of seven core neurology clerkship didactic teaching faculty. The control group (N=27) received their scores with correct and incorrect answers immediately after the test, and written explanations for all the answers were available to them after each session. The collaborative feedback group (N=28) discussed their responses with their facilitator's guidance during each session based on their anonymous answers, and the written explanations were also available to the students after the session. Outcomes were compared using student responses to an end of clerkship 5-point survey on the TEL feedback effectiveness and the neurology National Board of Medical Examiners shelf exam scores.

**Results:** Fifty-seven percent of the collaborative feedback participants rated their TEL feedback as very effective or better (4 or 5), while none of the non-collaborative group members rated their TEL feedback effectiveness as very effective ( $p < 0.001$ ). Only 36% of participants found the TEL feedback 'very effective' at reinforcing their strengths, however, the proportion was higher in the collaborative feedback group (29%) compared to the answer sheet group (7% ;  $p < 0.042$ .) A higher proportion of students found the collaborative feedback was very effective at identifying areas to improve (39%), compared to 11% of the answer sheet group ( $p < 0.017$ ). Thirty-six percent of participants found generating action plans to improve was 'very effective' and the proportions were not statistically different by group. The exam scores for the two groups were not significantly different.

**Potential Impact:** Collaborative Feedback in TEL can be used to improve student perceptions of feedback effectiveness and engagement after individually completed tests. A non-collaborative feedback method was not perceived as effective by students. There was no difference in medical knowledge acquisition between collaborative and non-collaborative feedback groups.

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## **Practice Makes Perfect: A Study on Practice Anatomy Practicals and Student Grades and Comfort**

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**Problem Statement:** Many students encounter anatomy for the first time in medical school, which causes a good deal of academic difficulty and stress.

**Rationale:** To address the issue of students not being, or not feeling, prepared for practical anatomy examinations, this study created practice anatomy practicals. The purpose of this study was to assess whether participation in a student-led practice anatomy practical examination will improve their grades in the official practical exam, compared to students who did not. The secondary goal of this study was to assess whether students' participation in the practice practical improved their comfort and confidence levels in their anatomy knowledge.

**Methods:** For each of USF Health Morsani College of Medicine's (USF MCOM) four first-year courses, student preceptors planned to create (with faculty advisement) and proctor a practice practical anatomy examination mirroring the format of the official exam. This included questions on skeletal and cadaveric anatomy as well as radiological structure identification. 90 of the 180 USF MCOM first-year medical students (MS1s) participated in a practice practical before an official anatomy practical examination. Each of these practice practicals was followed by a second-year medical student (MS2) -led review session explaining important points related to each structure. The participating students' grades were compared to the grades of the students who did not participate. In addition, participating MS1s also completed pre-and post-surveys assessing their comfort and confidence levels in their anatomy knowledge.

**Results:** For course 1, the first practice practical, the control group that did not participate in the practice practical had an average official anatomy practical raw grade of 48.4 (n = 90, standard deviation = 7.6). The intervention group (who participated in the practice practical examination) had an average official anatomy practical raw grade of 51.7 (n = 90, standard deviation = 4.1). The difference of means is 3.389 (standard deviation = 0.907, p<.001) under a two-sample T-test. When converted to exam scoring, the students who did not participate in a practice anatomy practical had an average official anatomy exam score of 81% while the students that did participate had an average official score of 86%. For the practice practical for course 1, the overall mean score improvement between post- and pre-intervention survey questions regarding comfort level in anatomy (measured on a scale of 1-10) was  $1.55 \pm 1.20$  (IQR: 1.00 – 2.25), which was significantly different from zero, p<0.0001 (paired t-test). This indicated that the intervention significantly affected comfort level with the anatomy course, knowledge level among peers, and preparedness for the official anatomy exam. There was no significant association between past anatomy exposure and comfort levels. The student-led practice anatomy practical was repeated for course 2 with a similar significant difference in grades and pre and post comfort levels.

**Potential Impact:** A practice practical was planned to be run each of the four first-year courses but, with the proven exam grade difference, we had difficulty with high demand for the participant spots. This research project was discontinued in exchange for collaborating with USF MCOM faculty in creating practice practicals integrated into the official curriculum.

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### **Creating Space for Reflection with Narrative Medicine**

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**Problem Statement:** The pandemic limits clinical encounters for students. A narrative based elective promotes communication, empathy and awareness of bias in medicine.

**Rationale:** We saw a lack of opportunities for students to process their experiences in medicine and their transformation into doctors. At our institution, COVID-19 restrictions translated into a need to rapidly develop high-quality, meaningful virtual learning. Campus-wide, several electives were created to continue building skills relevant to clinical education. With COVID-19, the need for space to safely self-reflect became more urgent. We saw the humanities as an indispensable and refreshing element in achieving these goals. We developed a novel format for a Narrative Medicine elective in order to: augment students' awareness of humanistic elements of patient encounters; language their growth as learners; and teach the value of narrative in clinical writing, social media and public health. Communication skills are an essential but often under-emphasized element of medical education. We structured our course to include active discussion, historical writing, and self-analysis of writing.

**Methods:** The design of the course began as a 4-part series held over two weeks, which was ultimately expanded to a 5-part series. Each 2-hour session was held live over web-based meeting software by core faculty and trainee facilitators, engaging small groups of students with a maximum of 6 students per session. The facilitators were a cross-disciplinary group of leaders from family medicine, pediatrics and internal medicine, as well as faculty in behavioral health and library science. Each session was designed as comprehensive topic coverage with key themes threading through all sessions for reinforcement. Each session was taught independently by 1-2 designated facilitators, allowing for schedule flexibility and modularity as needed for facilitator and student schedules. Prior to the start of each course, students were administered a survey assessing their interest and familiarity with narrative medicine. The sessions were as follows: "Introduction to Narrative Medicine and Framework", "Bias in the Electronic Health Record", "Modern Media", "Pandemics Through Time", and "Voice, Non-Dominant Narratives, and Therapeutic Narratives". Each session was preceded by a pre-reading and writing assignment and followed by a pertinent post-session assignment. Assignments ranged from essay-based to non-traditional formats like recording their own podcast episode, developing a concept map, and verbal storytelling to peers.

**Results:** A total of 21 students were enrolled in the course over a 5 month period. Pre- and post-course surveys were administered to assess skill-building and pre-course knowledge and attitudes. A total of 9 pre-session and 4 post-session surveys were returned. Questions included a combination of narrative and Likert scale questions. Students were asked to rate their level of agreement with a series of questions on a 1-5 scale, with 5 correlating with strong agreement. Questions such as "I often reflect on my day-to-day experiences" were met with neutral (62.5%) to agree (37.5%). 75% of students agreed with the statement that "I believe my medical school courses so far have prepared me to be an empathetic medical professional" while 25% of students were neutral or disagreed. All students agreed or strongly agreed with the statement "I believe that compassion fatigue is a major concern for many physicians." In the post-course survey data, students uniformly reported strong agreement that narrative medicine was a useful way to develop communication skills (100%). There was also 100% agreement with, "I believe after taking this course I will have a better understanding of the patient perspective or experience". A 3-month follow-up survey was sent to the first class of students. Two responses were received and revealed students had incorporated self-reflection into their day and reported feeling more equipped to elicit narratives from and communicate clearly with patients.

**Potential Impact:** This novel narrative medicine elective was well-received by students with demonstrable gains in their self-rated communication skills and engagement with patient narratives. One major limitation was the lack of response to surveys. Allowing time for survey completion in the first session and final session may reduce the loss of follow up.

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## **Google Quizzes: Real-time Feedback to Enhance New Remote Practical Format**

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**Idea:** First-year medical students take a Google Quiz to gauge comprehension and understanding of material to provide faculty with real-time feedback.

**Rationale:** In response to COVID-19, medical school curricula were moved to distance-learning or hybrid modalities, limiting communication between faculty and students. Gross Anatomy (GA) was arguably the foundational science discipline most impacted by emergency remote learning decisions. In-person GA dissection labs especially emphasize engaging learning strategies; disturbing in-person interaction between new medical students and faculty may impair understanding of material in all disciplines. This was noted during emergency remote-GA taught to end-of-year MS1s during the first months of the pandemic; after this experience, rising MS2s voiced their opinions and collaborated with faculty to create a distance learning GA curriculum for entering medical students. By offering faculty a way to assess student understanding in real-time, professors can alter the subsequent sessions appropriately. Practical assessments were changed as well, so this offers students practice with the new format.

**Methods:** The quiz was given to 210 MS1s at the beginning of each 3-hour lab session. There were a total of 9 lab sessions during a 5-week period, each held over Zoom. Each quiz contained 3-5 questions with 1 minute allotted per question, created and administered using Google Quizzes (GQ). The process was as follows: 1) Creation: Questions were based on the previous lab session's material and representative of the new question format in remote summative practical. 2) Distribution/administration: Quiz links were distributed to GA faculty at least two days in advance by MS2 students in the Medical Educator Pathway. Faculty members posted the link into the Zoom chat at the start of the session for student access. This was the first activity in each lab. 3) Monitoring results: Professors were easily able to access the Google spreadsheet that updated with students' answers in real-time; these spreadsheets are created automatically when answers are submitted through a GQ. Although quizzes were not graded, the answers allowed professors to check: attendance, students' comprehension of questions, as well as short-term retention and understanding. 4) Review: Questions were promptly reviewed on a shared PowerPoint via Zoom. The results helped professors tailor their explanations of answers and subsequent lab-talk. Quiz questions were not made available to students by faculty afterwards, although some students took screenshots during the review.

**Evaluation Plan:** 1) Accountability: We have spreadsheet data to confirm the time the quiz was taken, number of students that took the quiz, student answers, and professors' viewing history to see when professors accessed the data. Faculty were also able to access data from other faculty classrooms to compare results. 2) Reaction: Two qualitative surveys (one for MS1 students and the other for participating faculty) will be distributed after completion of unit lab sessions and exam week. They are designed to evaluate utilization of these quizzes from the faculty and student perspectives. Ongoing anecdotal evidence is extremely favorable for faculty and students. 3) Learning: We will look at students' answers to see if the quizzes encouraged independent preparation and learning. We will analyze final examination results to see if there is any correlation between the two forms of assessment. Furthermore, the survey will also seek to understand students' attitudes towards the quizzes, whether they took snapshots of them to use for study, and if students perceived them as helpful for their summative exam performance. 4) Behavior: Quiz results will be reviewed longitudinally to determine students' progress and improvement throughout the unit.

**Potential Impact:** The GQ is one of the most successful tools discovered during emergency remote learning. As medical education continues to adapt to the pandemic, real-time student performance results can guide faculty as they adjust remote or in-person sessions to align with students' needs and level of understanding.

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## **Confidence and Preparation: Informing USMLE Step 2 Clinical Knowledge Exam Study Strategies**

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**Problem Statement:** There is a paucity of evidence-based guidance on Step 2 CK exam study strategies relative to Step 1.

**Rationale:** The USMLE Step 1 and Step 2 CK exams, typically taken at the end of the second year and in the fourth year of medical school, respectively, are central to medical licensure and the residency match process. Traditionally, Step 1 has played a more significant role than the Step 2 CK exam in the residency match process, particularly as it relates to a student's prospects of securing an interview (1). As Step 1 transitions to pass/fail in 2022, the Step 2 CK exam score will become a more valuable tool for residency programs in evaluating applicants (2). It is anticipated that these programs will put increased weight on the Step 2 CK exam score. Students vary widely in their approach to studying for the Step 2 CK exam and there has been little data demonstrating approaches or tools that are effective for students preparing for the exam. With the elimination of a score for Step 1, there is now a need to identify evidence-based study strategies to help students prepare for the Step 2 CK exam.

**Methods:** We distributed post-exam surveys to all second year and fourth-year students at the David Geffen School of Medicine at UCLA within 1 month of receiving their exam score on the USMLE Step 1 or Step 2 CK exam, respectively (as applicable). Survey participation was optional. Data described in this study reflects the cohort of students who completed the Step 1 exam in 2019 and the Step 2 CK exam in 2020/2021. Students were asked a mix of multiple-choice and open-ended questions related to specialty interests, study schedules, and resources used. In addition, students were asked to subjectively report their feelings of "exam preparedness" and "score satisfaction" for both the Step 1 and Step 2 CK exam, and to compare their feelings of exam preparedness and score satisfaction between both exams using a 5-point scale, where 5 indicated feeling significantly more prepared or satisfied with Step 2 CK compared to Step 1, and 1 indicated feeling significantly more prepared or satisfied with Step 1 compared to Step 2 CK. We isolated data from students who stated they felt significantly more prepared for Step 2 CK than Step 1 to identify patterns in their study strategies. We compared data from this subgroup to all responders and also compared their responses to similar study-strategy questions on the Step 1 exam survey.

**Results:** A total of 119 students completed the Step 1 exam survey in 2019. Of these students, the largest group of students reported taking 6 weeks for a dedicated study period (n=41) and reported studying 10-12 hours per day during their dedicated time (n=41). Most students (n=102) started studying prior to the start of their dedicated study period; however only 16 students started studying before the start of the second year of medical school. We found that some students reported feeling more prepared and satisfied with their Step 1 scores than others and anticipate similar patterns for students who took the Step 2 CK exam with some key differences which will be elaborated further in our study. Thus far, a total of 54 students in 2020 completed the Step 2 CK survey after receiving their exam score. 21 of these students indicated feeling significantly more prepared for Step 2 CK compared to Step 1. We anticipate receiving additional surveys in the coming months as more students complete the exam. We intend to report on specific trends and factors, including patterns of behavior and resources used among students who report feeling they were significantly more prepared for the Step 2 CK exam compared to the Step 1 exam.

**Potential Impact:** The USMLE Step 2 CK exam is a capstone of clinical education and an increasingly important component of residency program applications as we transition to a pass/fail Step 1 exam. We hope that by comparing trends on study strategies we can help guide individual approaches and institutional recommendations for Step 2 CK exam preparation.

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## **Creating an Online Evaluation Tool Accessible by Portable Device for Intern Observed H&P**

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**Problem Statement:** We have found decreased participation in first year pediatric residents and hospitalists in completing observed H&P.

**Rationale:** Key elements in a pediatric history and physical exam (H&P) make it stand apart from the standard H&P taught in medical school. It is vital to provide feedback to first-year pediatric residents to help develop their communication skills to children and caregivers and develop their critical thinking skills in the hospital setting of the acutely sick child. It has been shown that a delay in feedback provides a lack of clarity and detail in performance to the learner [2]. Also, using the traditional pen and paper format resulted in lost evaluation forms or minimal feedback given to the residents that did not translate to formative change. The evidence shows that using a smartphone-based evaluation tool has increased faculty engagement[1]. We hope to create an online platform that is easily accessible through a smartphone or tablet device to improve participation in directly observed H&Ps and ultimately improve communicative and critical thinking skills of first-year residents.

**Methods:** We have created a new online grading rubric on Qualtrics, which evaluates 4 major domains including history taking, physical exam, plan of care and communication skills. We found that our grading rubric was geared towards an outpatient encounter and have revised the evaluation tool to account for key elements that are unique to an inpatient pediatric H&P. This online evaluation can be accessed via a portable device including a smartphone, tablet or laptop with a provided Quick Response (QR) code. We will make the QR code accessible for the learners and observers by distributing it throughout the resident and physician workspaces in the hospital. This evaluation will be opened at the time of the observed history and physical exam by the pediatric hospitalist in the inpatient setting when an appropriate patient is identified. For the subsection of each of the 4 domains (history, physical, plan of care, communication), the observer will document "yes or no" if the learner has completed the task. We will then use the Likert Scale to provide the learner with feedback on how well they completed each section along with a free-text comment field. Observers will be instructed to complete the grading rubric the same day as the observed H&P is done for optimal feedback to the learner. Once submitted, the evaluation will be sent directly to the pediatric resident for review as well as to the pediatric residency program.

**Results:** In order to assess if our tool is successful and effective, we will compare intern and pediatric hospitalist participation to previous years. We will obtain intern and pediatric hospitalist feedback on the effectiveness of utilizing this evaluation tool. Based on the feedback we receive from all parties, we will continue to improve on specific aspects of our evaluation tool. A measure of success would be if we see 100% participation from the intern class. If this platform proves to be an effective evaluation tool, we hope to observe the learner twice throughout their intern year to assess for improvement over the course of the year. As a secondary study, we then would like to create a second grading rubric that will allow the observer to provide feedback on documentation of the observed pediatric H&P and assess for accuracy of documentation.

**Potential Impact:** Our overall goal is to create an evaluation tool that is accessible for the learner to receive feedback in an efficient, timely manner. Our hope is that this will be easily integrated into the existing workflow for both residents and pediatric hospitalists. If successful, we hope to share this with other pediatric residency programs.

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### **Virtual OSCEs During COVID-19: A Paradigm Shift in Training the Next Generation of Nurse Practitioner Students**

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**Problem Statement:** In response to school shut downs amid the COVID-19 pandemic, nurse educators implemented a virtual objective structured clinical examination (OSCE).

**Rationale:** A virtual platform was created to assess the feasibility and utility of training standardized patients (SPs) to serve virtually in the capacity as actors in providing similar experiences as those demonstrated in face-to-face settings. The rationale was twofold: a) to assess the effectiveness in using a virtual training method for FNP students with aims to assess (FNP) students' clinical skills as an alternative method to the traditional face-to-face OSCE format and b) to assess clinical decision reasoning using pediatric case studies and debrief methods post encounters.

**Methods:** A descriptive study was employed involving 36 FNP students enrolled in an online/hybrid Nursing 601 Childrearing and Childbearing clinical course at the Suzanne Dworak-Peck School of Social Work, Department of Nursing Spring 2020 course. Students resided in various geographical regions within the United States. In collaboration with Dr. Win May, Director of the Standardized Patient Program and faculty from the Keck School of Medicine, Clinical Skills Education and Evaluation Center (CSEEC), standardized patients identified by the CSEEC were trained virtually and participated in mock dry-runs in preparation for the scheduled OSCE. Four faculty from the Suzanne Dworak-Peck Department of nursing provided faculty oversight and debriefed students.

**Results:** Students (N = 36) enrolled in a childbearing/childrearing clinical course participated in the virtual OSCE experience using Zoom. The experience included a briefing and debriefing session. Students were evaluated for their cumulative learning and ability to assess two adolescent patients: one acute with behavioral problems presenting for a checkup and one with a headache. Findings (Results): Students (n = 29; 83%) completed a nine-item online survey following the experience. Students (79%) preferred face-to-face experiences as an opportunity to connect with faculty and peers. Student feedback on the feasibility and utility of using virtual OSCE experiences with SPs to demonstrate their clinical capacities in a pandemic situation was positive. Assessment scores showed all students who participated in the virtual OSCE experience demonstrated the ability to cultivate clinical decision reasoning skills.

**Potential Impact:** The use of a virtual platform for simulated OSCE experiences is feasible in training nurse practitioner students enrolled in a FNP program. Standardized Patients (SPs) provided a virtual training experience conducive for students to transfer history and physical assessment skills in cultivating the necessary skills needed in demonstrating competency.

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## **Piloting Observable Professional Activities in the Assessment of Emergency Medicine Trainees**

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**Idea:** To pilot a novel assessment tool using observable behaviors to improve workplace-based assessment of milestone sub-competencies.

**Need/Rationale:** The ACGME requires residency programs to assess residents on their clinical competency based on nationally established milestones for each specialty. While the milestones framework represents a more generalized assessment, the need persists for workplace-based assessment tools used to observe specific behaviors within the milestone sub-competencies. Workplace-based assessment of emergency medicine residents is particularly difficult as faculty interactions with residents are sporadic and brief. As GME moves towards competency-based assessment, residency programs need to develop robust assessment tools to ensure their learners are prepared for graduation. Previously established workplace-based narrative assessments have demonstrated little correlation to the milestones sub-competencies, leaving competence to be implied when assessment data is lacking. While no set of published observable practices in emergency medicine exists, the following tool was created to assess residents on observable behaviors that translate to the sub-competency domains within the emergency medicine milestones framework.

**Methods:** A series of “Shift Cards” were created as a workplace-based assessment tool aimed at targeting the milestone sub-competency domains. Data fields were created based on Observable Professional Activities that are being actively developed by an American Medical Association grant-funded national work group. Due to the acuity based pod model of our Emergency Department, the Shift Cards were designed to target specific behaviors that would most likely be observed during a shift based on the nuances of each pod. The Shift Cards were internally reviewed amongst a group of educational content experts within the residency program for accuracy in content and response process. Shift Cards were piloted for a 3-month time frame and feedback was gathered from resident and faculty stakeholders. A longitudinal series of faculty development seminars took place that provided instruction and highlighted best practices for completion of the Shift Cards. Faculty compliance was monitored and incentivized through its integration into annual faculty merit scores. Shift Cards were subsequently provided to the Clinical Competency Committee for use in the semi-annual evaluation of residents.

**Evaluation Plan:** Evaluation of the “Shift Cards” will be performed at the end of the academic year. We will survey residents, faculty, and Clinical Competency Committee members for their reactions to the assessment tool. Additionally, we will analyze whether assessments made on the new “Shift Cards” tool identified specific milestone sub-competencies at a higher rate compared to previously published emergency department workplace-based assessment tools.

**Potential Impact:** As GME continues its evolution toward competency-based assessment, this framework could serve as a model for on-shift assessment of residents through the use of EPAs, particularly in the field of emergency medicine where internal variables unique to the specialty create a challenging assessment environment, and literature on this subject is scarce.

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## Measuring Objective Otologic Surgical Skills through Machine Learning

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**Idea:** To develop methods to extract data from videos of mastoidectomies and produce objective measures to describe surgical techniques defining competency.

**Rationale:** Traditionally, an Otolaryngology resident's competency in performing a mastoidectomy is assessed by experienced surgeons through subjective evaluations obtained weeks to months after the procedure was performed. The evaluations are prone to bias and human. Intra-operative videos are routinely utilized during these surgeries to demonstrate procedural techniques and to illustrate interesting cases. Despite the availability of this technology for decades, research pertaining to objectively measuring and analyzing what happens during both trainee and expert otologic surgery is sparse. In preliminary work carried out by our group (1-2), videos of mastoidectomies have been analyzed manually frame by frame or with the use of Kinovea-0.8.27 video analysis software. We obtained objective measures of total distance and average speed of the drill, the patient's head, and the suction irrigator, the average stroke length, and correlations between movements of the dominant and non-dominant hand. Some characteristics in these preliminary data correlated with the experience level of the surgeon; however, it was quickly realized that this data collection methodology lacked efficiency and accuracy.

**Methods:** New methodology was developed utilizing MatLab, a mathematics software, to breakdown the components of each mastoidectomy video into frames and pixels, isolate the instruments of interest, and track their motion. This proved to be significantly more efficient and moderately more accurate than prior results. To further improve accuracy, we have turned our attention to utilizing convolutional neural networks to allow for machine learning to extract data and analyze the videos.

**Evaluation Plan:** As more data are input into the networks, we teach the machine learning system to recognize, isolate, and measure various aspects of a mastoidectomy. We will first assess the system's accuracy in differentiating between an expert and a novice surgeon. We will then assess the factors of surgical technique and behavior that play a role in this differentiation. We hope to determine definable milestones based on these factors. Finally, we will implement video-review sessions and focused intraoperative teaching for the development and improvement of these skills.

**Potential Impact:** The goals of this project are to improve surgical education, training, and outcomes. This will occur through the development of an automated, objective means of skills assessment. We will then be able to better determine behaviors that correlate with surgeon competency and improve performance, outcomes, and hopefully patient safety.

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## **Implementation of Video Review in a Trainee Simulation Curriculum Utilizing a Unique Assessment Tool**

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**Idea:** Utilizing video-review in a simulation curriculum to increase self-reflection and adjustment while validating a unique trainee assessment tool.

**Rationale:** Critical resuscitation events are rare occurrences in pediatric patients. Research shows that teams need significant improvement in skills including response times, role identification, communication, procedural skills, and adherence to standard of care guidelines. Furthermore, studies have shown that there is a progressive loss of retention of procedural/resuscitation skills. Residency training programs are designed to measure successful achievement of competency through performance in a multitude of clinical settings including managing acutely ill patients. However, residents endorse a lack of confidence in their competency during resuscitation events. The purpose of this project is to further augment an existing simulation resuscitation curriculum by introducing video-assisted debriefing and self-reflection for long-term retention and adjustment and validate an Entrustable Professional Activities (EPA)-based assessment tool for evaluation of residents during resuscitations.

**Methods:** This study is currently in progress at CHLA, the population being the program's 105 current pediatric residents. Collaborators from various departments formulated unique resuscitation scenarios, mapped them to applicable ABP Entrustable Professional Activities (EPAs), and committed to offering these simulations to residents. These simulations will be video recorded. An EPA assessment tool developed in 2019 will be utilized for both faculty assessment of residents and resident self-assessments. The EPA tool is linked to a QR code that allows for tracking of residents' progress through the simulation curriculum and compilation of EPA data. Each resident's faculty- and self-assessment EPA data will be tracked, de-identified and analyzed. A set of standardized faculty facilitators will independently review each recorded simulation and evaluate the resident performance using the EPA assessment tool. Interrater reliability will then be used to validate the EPA assessment tool. Additionally, this study will use the framework established by Kolb to allow for reflection and actionable change after the simulation intervention. After each session, all residents will have a group debrief. An experimental group of residents will be invited to a post-simulation video feedback session, where they will review the recording, receive constructive feedback from facilitators, and re-evaluate performance. The control group of residents will not participate in the video reassessment.

**Evaluation Plan:** The primary outcome will be measuring the dose-dependent relationship between resident competence in leading resuscitations, as measured by self- and facilitator-EPA scores, and number of simulation exposures. Content validity for the EPA Assessment Tool has been established through prior validation and expect consensus, but this study will seek to validate other elements of Messick's framework including response process through user feedback, internal structure with interrater reliability and intra-class correlations (PGY1 with more exposures has higher EPA scores than PGY1 with fewer exposures), and relations with other variables by assessing for inter-class correlations (PGY3 & PGY2 & PGY1 scores). The Kruskal-Wallis test will be used to identify a difference and Spearman Rank will be used to identify correlation linearity. The secondary outcome will be the difference in resident competency and skill retention in residents exposed to video feedback as compared to those without video feedback. Changes in faculty- and self-evaluations after video review will also be analyzed. The Mann-Whitney U test will be used to compare the two groups.

**Potential Impact:** The long-term outcomes of the project can potentially validate a simulation curriculum that improves resident competence in resuscitation events and a trainee assessment tool for use at Children's Hospital Los Angeles, while also providing a framework for curriculum development for other trainee programs.

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### Personal and Professional Development in a Coaching Model

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**Problem Statement:** The current medical education model creates challenges in providing structured coaching and assessment of personal & professional development.

**Rationale:** Having strong coaching relationships can be of unparalleled influence on the development of medical students into physicians. While this has long been known, many of these relationships are considered outside the purview of the medical school curriculum. Across the country, schools are considering methods to formalize these relationships that support students' professional development, and as a result, we are seeing the prevalence of new coaching programs increasing throughout the United States. The overarching goal of the emerging coaching programs is to help students learn to self-monitor and integrate external feedback to reach their full potential. The challenge with implementing coaches is four-fold: training the coaches, establishing a supportive culture within the medical school classes, providing enough oversight to make this a part of the curriculum and ensure quality, while also letting relationships grow organically.

**Methods:** Non-evaluative community faculty interested in connecting with students outside of clinical practice were recruited for this pilot year. Coaches need to embody the professional traits including help-seeking behaviors, healthy coping skills amid stress and conflict, trustworthiness, and leadership skills. Coaches were trained in delivering feedback and teaching students how to provide and receive feedback effectively. They were presented the UNR School of Medicine curriculum to provide transparency on medical students' current experiences and were given instruction on assessing professional development using Medical Education Program Objectives. Student introductory training was conducted to convey the goals of the coaching program and set expectations for the coach-coachee relationship. 11 coaches were introduced to the Class of 2022 in their transition module from preclinical to clinical training in the month prior to the start of clerkships. Coaches participated in a minimum of 4 designated "checkpoints" after the initial meeting where professional development topics were discussed with their assigned students. Data is collected from coach and student evaluations throughout the year using the Kirkpatrick model for evaluating training outcomes.

**Results:** We are currently gathering data during the pilot year of our program. Preliminary data from the coach onboarding and student training suggests strong support for relationship potential (81.5% somewhat or strongly agree they'll connect with someone who will help them grow personally and professionally) and curriculum content (79.6% somewhat or strongly agree the coaching program will provide content that is relevant to them as a future provider). In addition to the strong support for the curricularized coaching relationship, our preliminary results suggest that there may be some trepidation around the value of such a program (37% of students neither agree nor disagree, somewhat disagree, or strongly disagree that the coaching program is a valuable resource at the school, and 42.6% of students neither agree nor disagree, somewhat disagree, or strongly disagree when asked if they would recommend coaching to their fellow medical students). Our on-going data gathering plans are as follows:

First survey: following student training

- Level 1: reaction to/satisfaction with program
- Level 2: evaluates actual learning (competency)

Second survey: after initial group meeting with coach

- Level 1: on-going reaction to/satisfaction with program
- Level 2: after spring individual meeting
- Level 3: transfer of behavioral changes to the professional setting
- Level 4: results and impact of changed behavior on the environment

**Potential Impact:** Coaching programs in medical education provide enhanced team functioning and increased psychological flexibility amongst physicians. Integration of the program into the curriculum of the Class of 2022 demonstrated that this requires on-going investment and commitment from both the coach and coachee.

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## **Analysis of Medical Student Metacognition and the Impact of Motivation and Emotional Stability**

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**Problem Statement:** Medical student metacognition is directly impacted by intrinsic and extrinsic motivation and mediated by emotional stability.

**Rationale:** Metacognition is a twenty-first-century requirement for optimal student learning and higher standards of achievement.<sup>1</sup> Educational initiatives and curricular reform have necessitated the use of higher-order cognitive skills in learners in order to thrive in a competitive academic environment. Sustaining this high level of mental energy is challenging and requires motivation and emotional stability<sup>2</sup> and needs to be examined.<sup>3</sup> The purpose of this study is to analyze the predictive relationship of medical student motivation on metacognition as mediated by emotional stability.

**Methods:** In 2019-20, forty-one medical students voluntarily completed three self-reported surveys: Metacognitive Awareness Inventory (58-items, scale: 0=false, 1=true); Academic Motivation Scale (28-items, scale 1=does not correspond, 5=corresponds exactly); Five-Factor Personality Inventory (IPIP-120, scale: 1=very inaccurate, 5=very accurate) to measure emotional stability. Single sample t-tests used to compare mean metacognitive awareness scores to instrument midline. Pearson correlations (r) and stepwise multivariate linear regression were used to predict metacognitive awareness scores from motivation and establish mediation via emotional stability. Inter-item reliability reported via Cronbach alpha. IBM® SPSS® 24.0 used for statistical analysis. The study is IRB approved.

**Results:** The range of metacognitive awareness ( $\alpha=0.82$ ) scores was 22-50 with a mean (sd)=37.1 (6.8) and was significantly ( $p<0.001$ ) above the instrument midline=26. Statistically significant (all  $p<0.001$ ) Pearson correlations were reported between metacognitive awareness and: motivation ( $r=0.6$ ), metacognitive awareness and: emotional stability ( $r=0.6$ ), and between motivation and emotional stability ( $r=0.4$ ). Statistically significant linear regression ( $R^2=0.7$ ,  $p<.001$ ) of metacognitive awareness on motivation facets of: Intrinsic motivation to know and learn, intrinsic motivation towards achievement/accomplishment, extrinsic motivation through rewards/constraints, introjected regulation (self-regulation), internalization of extrinsic motives, and amotivation. Emotional stability ( $\alpha=0.8$ ) mediated the motivation facet of internalization of extrinsic motives ( $\beta=0.0$ ).

**Potential Impact:** Medical student metacognition scores were wide-ranging and directly impacted by motivation. A wide-spectral response of intrinsic motivation, extrinsic motivation and amotivation predicted metacognition scores, but only extrinsic motivation was mediated by emotional stability requiring a collective regulation of student cognition and emotion.

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## **Impact of Being a Medical Student Peer Instructor on Professional Skills and Career Development**

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**Idea:** Being a peer instructor influences a medical student's leadership skills, professionalism, career development, and fosters a sense of belonging.

**Need/Rationale:** While previous studies have assessed the benefits of peer tutoring and instruction (Allikmets, 2016), the potential benefits of content creation on creators, especially medical students, is still unknown. Prior work has shown “tutor self-perceived benefits included skills in professionalism and development in the understanding of knowledge” (Burgess, 2014). However, this work was unable to determine the discrete impact on specific areas of focus, did not study the effects of content creation, and emphasized the need for further research in this field. Students who were involved in another interprofessional peer teacher training program reported an increased likelihood of tutoring and teaching in the future (Burgess, 2017). In this case, however, the results were not quantified or specific, and did not uniquely study the experiences of medical students. We aim to fully understand the qualities gained by medical student peer content creators for KOLI (Keck Online Learning Initiative), Keck Anatomy Mentorship Program (KAMP) mentors, Keck Peer Instruction Program (KPIP) instructors, and academic coaches, and how participation in these programs influences their career goals.

**Methods:** In this cross-sectional study, current and former 2nd, 3rd, and 4th-year medical students from the Keck School of Medicine of USC (KSOM) will be asked to evaluate the impact their participation in KOLI, KAMP, KPIP, and/or academic coaching had on their leadership skills, professionalism, career development, and instigating a sense of belonging. The data will be collected in an anonymous, de-identified REDCAP survey. Each students' identity will be anonymous and assigned to an alphanumeric code by our Faculty advisor. All identifying information, chiefly email addresses and USC ID (as no other identifying information are collected), will be removed. Descriptive analyses will be conducted to understand the nature of the data collected. Appropriate univariate and multivariate analyses (e.g. t-tests, regression) will be performed to determine whether and how participation as KOLI content creators/editors, KAMP mentors, KPIP instructors, and/or academic coaches influences students' leadership skills, professionalism, career development, and feelings of sense of belonging. Responses from open-ended questions will be coded and used as both quantitative and qualitative data. Data from the 2015-2016, 2016-2017, 2017-2018, 2018-2019 and 2019-2020 populations of KOLI content creators and editors, KAMP mentors, KPIP instructors, and/or academic coaches will be used for the analyses described here.

**Evaluation Plan:** We aim to identify specific benefits gained by medical students who participate as KOLI content creators, KAMP mentors, KPIP instructors, and/or academic coaches. KOLI is a student group dedicated to creating and updating content in a memorization aid program (MAP) through the Memorang platform. This platform provides flashcards, multiple-choice, matching, and mini-game studying modes. KAMP is a mentorship program in which mentors help mentees navigate and understand human anatomy in the Gross Anatomy Lab. KPIP is a program where peer instructors provide high-yield, subject-specific, interactive lectures to their students. Academic coaches are one-on-one peer tutors. KOLI content creators, KAMP mentors, KPIP instructors, and academic coaches will be invited to anonymously complete an online survey through REDCAP. The survey will assess the degree to which the peer instructor perceives the impact of being a peer instructor on their own personal development. The questions will be focused on the areas of leadership, professionalism, career goals, and sense of belonging within medical school. The survey will also include open-ended qualitative questions, which will be coded and used as both quantitative and qualitative data.

**Potential Impact:** Through this study, we aim to pinpoint the skills gained through peer tutoring which will allow us to continue developing and expanding these programs to further the growth of future

physicians who can effectively teach other physicians and lead the field of medicine in combating the rapid changes to come.

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### **Medical Student Social Awareness as Impacted by Anxiety and Personality across Time**

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**Problem Statement:** Low levels of medical student social awareness limits their ability to understand and interact with their colleagues and is impacted by personality.

**Rationale:** Social awareness gives you the ability to understand and respond to the needs of others and is one of the hallmarks of interpersonal emotional intelligence.<sup>1</sup> Unlike self-awareness which involves looking inward to learn about yourself, social awareness is looking outward to learn about and appreciate others. Decreased social awareness can result from the anxiety caused by being in unfamiliar social settings.<sup>2</sup> In addition, intrinsic characteristics such as the personality traits of extroversion and conscientiousness will impact social awareness.<sup>3</sup> The purpose of this study is to analyze the impact of medical student anxiety and personality on social awareness across the first two years of medical school.

**Methods:** In 2017-18, 205 of 500 M-1/M-2 medical students (130 M1/75 M2) voluntarily completed self-reported electronic surveys using the following validated instruments: (1) Trait Emotional Intelligence Questionnaire (TEIQue-sf, scale: 1=completely disagree, 7=completely agree) to measure social awareness scores; (2) State-Trait Anxiety Inventory for Adults (STAI-AD) (1=almost never, 4=almost always) to measure anxiety, and (3) Five-Factor Personality Inventory (IPIP 50-5, 1=very inaccurate, 5=very accurate) to measure conscientiousness and extroversion. Independent t-tests and Cohen's d effect sizes determined difference in mean self-awareness scores between M1 and M2 medical students. Pearson (r) correlations and stepwise multivariate linear regression were used to predict social awareness scores from anxiety and personality scores. Inter-item reliability determined with Cronbach alpha. IBM® SPSS® 24.0 was used for statistical analysis. This research was IRB approved.

**Results:** The empirical range of social-awareness (alpha=0.7) scores was 1.0 - 7.0 with a mean (sd)=5.2 (1.1) and 84% were significantly ( $p<0.001$ ) above the midline score=4.0. Social awareness scores were significantly higher ( $d=0.4$ ,  $p<0.024$ ) for M-1 students (5.5 (0.9)) than the M-2 students (5.1 (1.2)). Anxiety scores were significantly lower ( $d=0.4$ ,  $p<0.010$ ) for M-1 students (37.9 (8.2)) than the M-2 students (41.3 (9.0)). No significant difference in conscientiousness or extroversion scores for M1 and M2 students. There were statistically significant Pearson correlations for the M-1 students between the factors of social awareness and (a) anxiety ( $r= -0.5$ ,  $p<.001$ ), (b) conscientiousness ( $r=0.6$ ,  $p<0.001$ ), and (c) extroversion ( $r=0.6$ ,  $p<0.001$ ). These three correlations all significantly decreased ( $p<.050$ ) for the M-2 students to: (a) ( $r=0.1$ ,  $p<0.112$ ), (b) ( $r=0.2$ ,  $p<0.022$ ), and (c) ( $r=0.2$ ,  $p<0.036$ ), respectively. M-1 Students: Linear regression of social awareness as the outcome variable generated a significant predictive model ( $R^2=0.5$ ,  $p<.001$ ). The significant predictors included conscientiousness (beta=0.4), extroversion (0.3), and anxiety (0.2). M-2 Students: Linear regression of social awareness as the outcome variable generated a significant predictive model ( $R^2=0.3$ ,  $p<.048$ ) which included of the single predictor of conscientiousness (beta=0.2).

**Potential Impact:** Medical student social awareness scores and its association with personality and anxiety decreased over their first year of medical school. This suggest that personality traits and emotional instability no longer impact the ability to understand and respond to the needs of others after their first year and other characteristics should be examined.

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**A Longitudinal Clinical Teaching Elective for Medical Students: Bringing MedEd Theory to Life**  
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**Idea:** The Clinical Teaching Elective (CTE) is a longitudinal course in which M4 students use deliberate practice to teach case based clinical encounters.

**Need/Rationale:** After graduating from medical school, residents are expected to step into the role of an educator to medical students despite minimal instruction or deliberate practice. Now required by the Liaison Committee on Medical Education and Accreditation Council for Graduate Medical Education, "Residents as Teacher" curricula have gained popularity (1). To prepare future residents for this role, it is imperative that formal training on teaching in medical education be incorporated into medical school curricula. Near-peer teaching is used to provide medical students informal teaching experience by way of tutoring, teaching assistant, and mentorship programs (2, 3). Few medical schools have started electives to instruct students on how to be effective teachers. We developed a novel year-long and longitudinal course that develops fourth-year medical students as teachers within Clinical Skills. Unique to this course, student teachers engage with learners by observing their simulated patient interactions, leading group discussions surrounding simulated patient cases, and providing feedback on student history-taking and physical exam skills, clinical decision-making, professionalism, and communication.

**Methods:** The CTE was a collaborative effort among Clinical Skills (CS) Course Directors and two fourth-year medical students (M4) who served as the pilot student instructors for the first year of the elective. The elective was designed as a longitudinal elective in which students receive credit towards graduation requirements. The large majority of time spent in the elective involves teaching in the UCCOM Simulation Center where M4 student instructors teach first and second-year medical students. Each session, in addition to simulated patient case topics, will emphasize the application of a key topic within medical education (i.e. independent learning, clinical reasoning, reflective practice, and dual-process reasoning). Student instructors will utilize a variety of resources to reinforce these topics along with dedicated time for individual and group reflection on the application of medical education topics. Student teachers also further investigate medical education pedagogy to incorporate during teaching sessions. Student instructors will also deliver informal lunch talks, create a clinical teaching podcast, attend resident as teacher didactics, and reflect on their performance as educators by watching recordings of their sessions in CS with faculty.

**Evaluation Plan:** During each session, student learners and course directors will be asked to complete an anonymous survey evaluating the performance of the student instructor. The survey will use Likert scales to evaluate: instructor's effectiveness of teaching about case topic, instructor's ability to promote a collaborative learning environment, and instructor's ability to provide feedback about clinical reasoning to student learners. The survey will include a space for open-ended comments on teaching from both student instructors and faculty. Course directors will utilize video review to further evaluate the performance of student instructors after each session. Course director surveys will include a Likert scale rating student instructor's teaching effectiveness, promotion of collaborative learning environment, and provision of actionable feedback.

**Potential Impact:** A novel CTE for fourth-year medical students that emphasizes medical education pedagogy prepares students to become effective residents. Additionally, it may fill a teaching shortage, improve pre-clinical education, and enhance professional identity formation for students prior to residency.

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## **Watch Us Flex: A Strategy for Building a Strong Med School Community Under the Weight of a Pandemic**

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**Problem Statement:** Medical educators face the challenge of building and strengthening community for first-year medical students during a pandemic.

**Rationale:** The pandemic has altered the way we train health care providers (1). Medical schools have had to adjust teaching models to ensure that students get a quality education (2). Ensuring that students at a new medical school can build the community that is central to learning and is particularly difficult during a pandemic, presents a unique challenge (3). Social learning theory suggests that interaction with and observation of others in a social context is integral to learning (4). However, the need for distancing and masks and the shift of some in-person learning activities to an online environment alters and adds complexity to these social interactions. Without traditional opportunities to build community, students are at risk of failing to learn the relational skills that are critical to being a physician. To address these issues, we designed a Community Agreement activity that used several educational technologies to foster a sense of community.

**Methods:** An entering medical school class created a community agreement through assigned pre-session tasks and a 90-minute synchronous session via Zoom. Students participated in-person in small, physically distanced groups in a classroom equipped with a Zoom-connected collaboration board. To avoid digital inequities, students were provided MS Surface Book 2 laptops preloaded with software, digital pens, an iPhone, and headsets. Pre-session activities included reviewing a community agreement framework and reflecting on the prompt: "What do you need from your classmates in order to feel safe and supported so you can do your best work?" The session started with a short, didactic exercise followed by a move to Zoom breakout rooms. Students shared their learning needs in the small group as a volunteer collected themes and ideas on the Zoom whiteboard. After discussion, students wrote an agreement statement with a partner and uploaded it to a shared Poll Everywhere Q&A survey. In sync with their classmates, students used their laptops or iPhones to individually up- or down-vote the statements. Students reviewed and discussed the statements and returned to the main room where a representative reported the group's support or dissent of statements before students cast a final individual up-or down- vote. The agreement was finalized by a student representative from each group in a follow-up meeting facilitated by the Office of Student Affairs.

**Results:** The community agreement building session was completed by the 2020 entering class at Kaiser Permanente School of Medicine (KPSOM) during the 1st week of the Early Immersive Experience (EIE) course. Six classrooms were mapped out to accommodate students in-person, following COVID-19 safety restrictions and all 50 students attended in-person along with their facilitators. Since students posted their prework paragraphs onto our LMS for their small group peers to review before class, they came together quickly to generate community agreement statements. A total of 29 statements were generated with strong support for 12 after the second-ranking vote. Student representatives finalized the agreement during the final EIE week with 10 statements that included both relational and operational agreements in addition to aspirational statements consistent with KPSOM's mission, vision, and values. The final agreement was shared with the KPSOM community and will be edited or renewed annually. The Zoom-based session allowed a large group to come together to create an agreement with individual input from everyone. Anecdotal feedback on the activity was strongly positive. Our Founding Dean and CEO noted that the student-created Community Agreement was, "sophisticated, thoughtful, and respectful." We will follow this and subsequent cohorts through their years at KPSOM and monitor the role of community agreements in establishing and upholding a positive learning environment.

**Potential Impact:** Our Community Agreement activity will serve as a model for how medical educators can use technology to build and foster community during uncertain times. Medical educators should

develop these skills and infrastructure in advance to enable the flexibility to pivot more efficiently while still achieving the objectives of community building.

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## **Emotional Intelligence: Increasing Empathy in Third Year Medical Students**

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**Idea:** Third-year medical students will hone their interpersonal skills and develop ways to increase empathy in quarterly emotional intelligence sessions.

**Need/Rationale:** Empathy has traditionally shown a decline in the third year of Medical School, which can lead to a loss of resilience and eventual burnout (1). This curriculum is comprised of exercises from the Lynn Leadership Group that emphasize the emotional intelligence indices of self-awareness, self-regulation, others awareness, and relationship management (2). Participants engage in these exercises through reflective work in order to help them think logically, communicate clearly, and meet the Physician Competency Reference Set (PCRS) #8 - Personal and Professional Development (3).

**Methods:** A curriculum comprised of exercises from the Lynn Leadership group would be deployed over a period of one year. These exercises would aim to equip participants to fulfill the PCRS #8 - Personal and Professional Development Indicies (3): (1) Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors; (2) Demonstrate healthy coping mechanisms to respond to stress; (3) Manage conflict between personal and professional responsibilities; (4) Practice flexibility and maturity in adjusting to change with the capacity to alter behavior; (5) Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients; (6) Provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system; (7) Demonstrate self-confidence that puts patients, families, and members of the health care team at ease; (8) Recognize that ambiguity is part of clinical health care and respond by using appropriate resources in dealing with uncertainty.

**Evaluation Plan:** An emotional intelligence self-survey would be deployed to measure the 4 dimensions of emotional intelligence: self-awareness, self-regulation, others awareness, and relationship management. This would be administered before and after participation in the emotional intelligence curriculum to determine if students are retaining information from the course.

**Potential Impact:** This curriculum has the potential to increase empathy and interpersonal success for third-year medical students, thereby fulfilling the Physician Competency Reference Set (PCRS) #8 - Personal and Professional Development (3).

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## **Clinical Training In COVID-19: Evaluating An Online Patient Simulation By 2nd Year Medical Students**

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**Idea:** During the height of the pandemic, AltaMed Health Services implemented an online patient simulation platform to train second-year medical students.

**Need/Rationale:** The COVID-19 pandemic has brought on an unprecedented lack of summer clinical opportunities for medical students. The most important part of medical education training comes from experiences gained from direct patient care, therefore the need to find alternatives cannot be overemphasized. Online programs have traditionally been used for independent assessment, evaluating knowledge based off of a patient scenario rather than as a comprehensive learning tool. The goal of the AltaMed National Medical Fellowships (NMF) – Primary Care Leadership Program (PCLP) is to increase the number of primary care physician leaders committed to careers in medically underserved communities. Our scholars illustrate that when given the right tools and resources, online medical education clinical training is not only feasible but moreover, beneficial in teaching clinical skills.

**Methods:** AltaMed PCLP scholars had 47 hours of virtual clinical time embedded into the curriculum using Kaplan's iHuman platform, supplemented by a variety of virtual workshops including presentations on mentoring and motivational interviewing. In addition to a traditional medicine curriculum, the program emphasized patient-centered communication and social determinants of health screening through a health equity lens. Through a tiered-mentorship approach, scholars were presented a patient case by the program director, reviewed the case with their designated partner, and taught the case to AltaMed Health Careers Opportunity Program pre-med scholars with faculty support.

**Evaluation Plan:** The virtual component of the program was evaluated through a pre and post-survey, daily written evaluations, and a qualitative focus group. Scholars' confidence in how to take a patient history and physical, screen for social determinants of health, develop patient treatment and management plans, gather essential and accurate patient information, convey patient findings to peers, and how to demonstrate patient-centered communication all increased. In addition, to evaluate the impact of a virtual platform on student engagement, we compared surveys with the previous summer 2019 AltaMed PCLP on-site program, which scored extremely high in these categories. The results showed no drop off in developing a sense of comradery, community, and feeling supported by faculty and staff. In the future, scholars' knowledge gained will be evaluated through a series of objective structured clinical examinations (OSCEs), surveys, and free-response questions. The OSCE rubric developed will emphasize a health equity component screening for social determinants of health.

**Potential Impact:** The AltaMed Summer Program demonstrates that, with vetted faculty who have a passion for teaching, scholars who are committed to serving the medically underserved, and a strong curriculum foundation, online clinical platforms may be used to develop future physician leaders who are committed to achieving health equity.

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### **Med2Med: Adaptation & Impact of a Peer to Peer Support Network on Student Wellness During COVID-19**

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**Idea:** A Peer-to-Peer support network for medical students to improve student wellness and decrease the stigma around help-seeking.

**Need/Rationale:** Studies have shown medical students have a higher prevalence of anxiety and depression than age-matched peers and up to 11% admit to suicidal thoughts in the past year (1). Help-seeking behavior is often avoided due to perceived norms which dictate that having a mental health problem can be viewed as a weakness or can lead to decreased success in their career (2). To address this problem, the LCME guidelines now call for “an effective system of personal counseling for its medical students that includes programs to promote their well-being and to facilitate their adjustment to the physical and emotional demands of medical education” (3). A pilot study consisting of resident-led voluntary reflection groups for medical students found that over 90% of participants agreed the groups helped them feel more connected to one another. Additional wellness-related benefits were observed indicating that this is a promising model that deserves future study (3). We aimed to enhance support and decrease the stigma of help-seeking through the start of a student-led peer support network at Wayne State University School of Medicine (WSUSOM). Rather than one to one student support, the program focuses on interaction in group settings to build community.

**Methods:** Med2Med was created as a student-run Peer-to-Peer support pilot program that was available to all 600 pre-clerkship students. An introductory anonymous survey was sent to all first- and second-year students to gauge interest before implementation. Over 84% (n=54) of respondents stated that a program like this is needed within the medical school and over 80% (n=54) stated that they would attend at least one session. Sessions took place once a month from June 2019 until February 2020 with 20+ students in attendance. The program started as 1-hour lunchtime sessions led by medical students who completed training in mental health first-aid. Students were broken into small groups and asked to discuss their “rose and thorn” of the week or their high and low points. It was then up to the students, with the assistance from Med2Med leaders, to facilitate healthy dialogue around life stressors, working to connect to their peers on a deeper level. Student leaders were mentored by a psychiatry faculty member. During the COVID-19 pandemic, we switched to an online format, using Zoom to host virtual sessions. Using this virtual method, we expanded to all 1200 students. Virtual sessions have had fewer students in attendance than in-person programs, encouraging us to tailor Med2Med more effectively to a virtual environment and meet students’ diverse needs. We plan to evaluate this program’s impact and its potential for incorporation into wider efforts to expand mental health resources.

**Evaluation Plan:** We will continue to track Med2Med sessions to ensure we are reaching our target level of one session per month. We are in the process of developing a program evaluation survey which aims to assess four factors: social support, learning environment, self-efficacy to manage stressors and mental health, and mental wellbeing. Students will also be asked how this program could expand to further meet their needs, for example through changes in meeting time/frequency or topic-focused sessions. Surveys will be first be administered to all pre-clerkship students and results will be compared between those students who have attended at least one Med2Med session and those students who have not attended any Med2Med sessions. We will then expand surveys to clerkship students and results will again be compared between those who have attended at least one virtual session and those who have not. We will ask students if attendance increased their likelihood to seek help when needed. We will integrate student feedback into our session planning, making adjustments as needed.

**Potential Impact:** After two years of Med2Med sessions, students have shared many positive anecdotes. If this pilot program proves to be impactful, it will serve as an example of how student-

initiated programs with faculty support may positively impact student wellbeing and the learning environment.

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## **Virtual Student and Faculty Run Initiatives that Support Medical Student Wellness**

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*Wayne State University School of Medicine*

**Idea:** Development of virtual wellness initiatives by students and faculty to support medical student health and well-being.

**Need/Rationale:** Studies of North American medical students show a higher prevalence of anxiety and depression than age-matched peers (1). In response, the LCME guidelines now call for “an effective system of personal counseling for its medical students that includes programs to promote their well-being and to facilitate their adjustment to the physical and emotional demands of medical education” (2). A recent study also found that medical students are experiencing increased anxiety due to the COVID-19 disruption, yet are less likely to seek support (3). To date, there is little data on the impact of virtual wellness initiatives on medical students’ overall health, but as we were forced to adapt to a virtual educational setting, we must also continue to support student health on this new platform in accordance with the LCME guidelines. With these realities in mind, programming at Wayne State University School of Medicine (WSUSOM) pivoted to virtual student and faculty-run initiatives rapidly developed to prioritize student wellness during the pandemic and beyond. As the largest single-campus medical school in the U.S., our virtual initiatives allow us to reach all of our students and appeal to various student interests and needs.

**Methods:** Our virtual wellness initiatives were targeted to all 1200 medical students and can be divided into three categories: 1) optional initiatives held live over Zoom, 2) mandatory curriculum held live over Zoom, and 3) ongoing initiatives held on social media platforms. For optional initiatives on Zoom, students were asked to vote on a list of potential initiatives through a poll on each class’ Facebook page. Students voted on the sessions they found most appealing. Initiatives with less than four student votes were not implemented. 6-15 sessions were offered every month starting in April 2020. Virtual small groups were conducted over Zoom and consisted of 3-15 students who signed up for initiatives of their choice, led primarily by fellow students. Virtual initiatives included CrossFit workouts, yoga classes, Med2Med (a virtual support network), bring-your-own pet therapy, book discussions, how-to cook sessions, and meditation. Mandatory curriculum includes large group wellness-focused panels for each class of 300 students. Ongoing initiatives held on social media included a 21-day meditation challenge via WhatsApp Messenger and Instagram wellness challenges. The meditation challenge was led by a student who sent reflection prompts to interested peers through a WhatsApp group. Instagram photo challenges consisted of monthly topics pertaining to self-care and health. Students submitted photos to Instagram for their peers to see, fostering a sense of community online.

**Evaluation Plan:** These initiatives were developed to support student wellness in a virtual setting and foster connections between peers to reduce feelings of isolation. We will continue to track the number of sessions offered to make sure we are reaching our target level of initiatives per month. Following future optional virtual initiatives, we plan to assess student wellness based on factors of physical health, mental health, and sense of overall support through a student survey after event participation. We will continue to track student participation based on Zoom attendees and social media participants to gauge which initiatives foster the most interest. Student feedback of all mandatory curriculum events will continue to be analyzed. Comments or additional recommendations made by participating students will be reviewed. Overall improvements in student wellness will be assessed through our bi-annual survey of all students at WSUSOM. If proven to be impactful through our surveys and evaluations, we will further adapt our initiatives for long-term sustainability. We will continue to integrate our virtual initiatives into our health and wellness curriculum as we adapt to a more virtual society in the upcoming years.

**Potential Impact:** Supporting future physicians’ wellness is vital because of its impact on physician health and patient care. Understanding which virtual initiatives foster a sense of community can help

medical schools create a positive environment for students, using both optional and mandatory sessions, especially during times of increased stress and isolation.

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### **Grit and Mindset in Surgical Residents**

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**Idea:** A mentorship program with the concepts of Grit, Mindset and Emotional Intelligence in surgery residents to promote wellbeing and decrease attrition.

**Need/Rationale:** Medical training is hallmarked by multiple transitions that disrupt the usual responsibilities by systematically placing more leadership tasks and responsibilities on trainees. Transitions consist of personal characteristics, task readiness and contextual factors. The intersection of these three components is how one navigates discontinuity potentially leading to burnout or satisfaction. Grit and mindset are included under the category of personal characteristics. Opportunity exists to foster these characteristics in residents, thereby enhancing personal growth and performance. One of the major challenges to residency training is the high level of burnout and attrition. Resident burnout has been associated with greater risk of medical error and decreased patient satisfaction. Mindset, Grit and Emotional Intelligence are concepts which have been applied in leadership development. They have each been associated with improved performance and well-being. Through this framework of a mentorship based program, we hope to reduce attrition in surgical residency and improve personal growth and career satisfaction through a structured program in Grit, mindset and emotional intelligence.

**Methods:** Faculty mentors will be required to attend a workshop on Grit, Mindset, Emotional Intelligence and Well-Being (known as "core concepts"). At the conclusion of these sessions, faculty will be able to: Discuss the core concepts. Utilize these concepts as they provide mentorship and coaching to their assigned mentees. Develop learning plans incorporating these concepts. Identify residents in which any of these concepts are threatened. Promote the use of these concepts in the learning environment as they teach and provide evaluative data. PGY1 residents will participate in the mentorship program. Interns complete an online assessment tool for the core concepts. They will be provided with their results. Individual data will only be disclosed to program administration if the data from the well-being index demonstrates that the individual is at high risk for personal or professional consequences. During orientation, the residents will participate in a 1.5 hour workshop to review these concepts and the mentorship program. At the conclusion, trainees will be able to outline these core concepts and utilize them during their meetings with mentors. Mentorship meetings are expected to occur several times per year. In addition, ABSITE scores, faculty and peer evaluations will be reviewed during the meetings. Faculty will incorporate the core concepts as they develop individual learning plans across all six ACGME competencies, promote wellbeing and career development.

**Evaluation Plan:** The first marker of the success of this program will be the percentage of residents and faculty who complete the core concept surveys distributed periodically throughout training. Second, feedback received during the workshops will be important. Suggested areas for improvement will be evaluated and reviewed for workshop enhancement with the goal of maximal engagement. Concluding the first year of training, each resident will complete a brief reflection on the mentorship program and how/if it has benefited them. We ask them to comment on whether core concepts have been incorporated into daily life and professional development. Long term success will be determined by noting trends in attrition as they compare to core concept survey scores as well as the success of remediation along the ACGME competencies of professionalism, interpersonal skills and communication. Our program is in its first year after two local surgical residencies combined to form one program. No one should be left behind and all trainees (and faculty) have the support they need. This program will help the clinical curriculum committee be alerted to developing issues and provide residents and faculty with tools to be successful professionally and personally.

**Potential Impact:** The core concepts presented in this idea have implications to reduce burnout, enhance professional satisfaction and promote a culture of mutual respect, support and positivity. These factors will translate to improved clinical outcomes and overall success of our program.

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## **The Use of Storytelling to Enhance Engagement and Team Cohesion Amid COVID**

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**Idea:** The target learners are the GME Staff. GME staff will use virtual storytelling to find renewed meaning and connection with their work.

**Need/Rationale:** The COVID-19 pandemic has forced many employees to work remotely. This sudden and prolonged work environment has resulted in staff members experiencing a disconnection with other team members. The staff have expressed issues of social isolation, decreased sense of well-being and disengagement due to the loss of structure and routine. The use of storytelling supports improved engagement, teamwork, well-being and ultimately, shared team goals (1).

**Methods:** The intervention will focus on the 15 GME staff over a 6-month timeframe. The intervention will include the following 1) Videotaped interviews of each staff member to share their 'story of self' (1) using script and prompts. Each interview will last up to 20 minutes. 2) Staff will have access to these video sessions of team members on demand. 3) Staff will complete their reflection on the process, the impact that they experienced sharing their story, and hearing other team member's stories.

**Evaluation Plan:** An engagement survey will be used pre- and post-activity to measure the change in participant views and perceptions associated with their work and well-being as a result of the intervention.

**Potential Impact:** In order to adjust to the new reality of working remotely, opportunities and interventions to enhance well-being and connection with others using innovative methods such as virtual storytelling must be explored.

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## **By Learning You Will Teach, By Teaching You Will Learn: Teaching-to-Teach Together**

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**Idea:** An innovative collaborative « teaching-to-teach » curriculum combining medical educators and their learners to improve educational effectiveness.

**Need/Rationale:** Clear evidence from studies (1) have shown that residents and their faculty lack sufficient education and training in teaching and teaching assessment. Studies (1,2) have also demonstrated the efficacy and satisfaction of various teaching programmes. Based on an informal anecdotal survey of local medical students, residents and faculty, there is a perceived need from all learner levels to improve the quality of teaching skills, teaching assessment methods and delivery of feedback on teaching. Based on effective resident-as-teachers curricula by others (1,3) and applying the principles of collaborative medical education, we have planned an intervention aimed to improve teaching effectiveness of both residents and faculty within the UMKC orthopedic surgery residency program. Ultimately the goal is to equip the participants to effectively fulfill their roles as teacher, learner and leader throughout their careers.

**Methods:** This idea was crafted with orthopedic residents as learners and their faculty as teachers in mind. Residents will be divided based on training year and paired with faculty into collaborative learning groups. Groups will attend quarterly classroom-based 2-hour sessions facilitated by a medical education expert. Each year, residents would be grouped with attendings according to the upcoming year's rotation schedule. Learners would participate in active learning techniques such as interactive lectures, role play and simulation, reflective writing, video analysis and small group discussions. The curriculum will aim to teach the principles of educational theory and adult learning as well as practical skills appropriate for each learner level. They will also participate in interactive exercises to practice their teaching skills with feedback. The quarterly workshops would culminate in an OSTE for the residents that faculty would evaluate. The faculty would discuss their evaluations and debrief with the facilitator providing direct feedback to the residents. Longitudinally the residents and faculty will be paired for yearlong teaching mentorships.

**OBJECTIVES:** At the end of the sessions, learners should be better able to:

- 1 - Describe the main principles of collaborative education
- 2 - Apply the principles of adult learning to their clinical teaching
- 3 - Express confidence, comfort and willingness to improve teaching within their program

**Evaluation Plan:** Workshop attendance sheets and adherence to the teaching plan will assess accountability. Post-workshop surveys and final yearly program evaluation will determine participant reaction such as satisfaction, perceived learning and program efficacy and quality of teaching sessions. Comparing pre/post written test scores, review of self-reflections, resident OSTE scores and review of faculty assessments and feedback will determine learning. End-of-rotation performance evaluation forms focusing on teaching and follow up on commitments to act will assess learner behaviour. Impact will be assessed by learner evaluation forms of their supervisors and subsequent participation and interest from faculty and residents.

**Potential Impact:** Potential institutional impact is significant for improvement in the education and educational satisfaction of faculty, residents and students, generalizable to all specialties and institutions. Specifically, the hope would be to help streamline and standardize the learning experience within the program.

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### **Building a Novel “Resident as Teacher” Curriculum at an Urban Emergency Medicine Residency Program**

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**Idea:** To develop clinical teaching skills and confidence in rising third-year emergency medicine residents through a longitudinal education curriculum.

**Need/Rationale:** The ACGME specifies proficiency in basic educational and assessment activities as a core competency for resident physicians. However, many programs lack formal training to prepare residents for these responsibilities. Results from a needs assessment at our program suggest that residents and faculty perceive variability in the effectiveness of senior residents as clinical teachers. Furthermore, our residents feel that they would benefit from more formal training on clinical teaching skills. Formal “Resident as Teacher” curricula have been shown to improve both skills and confidence of residents as educators. However, existing curricula often focus on preparing residents for elective rotations or protected teaching shifts. Residency programs in resource-limited settings or those with high levels of resident autonomy may rely more heavily on residents for day-to-day clinical teaching of junior learners. Indeed, results from our needs assessment suggest that senior residents in our program perform the majority of on-shift teaching. In these environments, such models may inadequately prepare senior residents for such a substantial teaching role. Thus, we sought to design a rigorous, longitudinal teaching curriculum to meet this need.

**Methods:** Prior to developing our local teaching curriculum, we piloted our needs assessment survey with a member of each stakeholder group to ensure clarity and feasibility. Finalized surveys were then emailed to all 76 PGY1-PGY4 residents and to 10 emergency medicine faculty within the division of medical education. Based on the results of this survey, a teaching skills curriculum will be implemented targeting our 20 current PGY2 residents, spanning the end of their PGY2 year into the beginning of their PGY3 year. The course will be scheduled during protected educational time and will include three, 90-minute sessions on a video conferencing platform and one in-person didactic session in June 2021. At the outset of the curriculum, participants will be asked to create personal development goals for themselves as resident educators. Using modalities such as lecture, small group discussion, and simulated teaching exercises, faculty educators will cover topics such as bedside teaching skills, diagnosing learner needs, and giving and receiving feedback. During mock teaching exercises, residents will be directly observed by education division faculty to ensure targeted, real-time feedback. Participants will also be given proctored time to create and share their own teaching materials such as visual learning aids for on-shift mini-review talks. A final session in early PGY3 year will require residents to reflect upon their application of techniques developed during the curriculum.

**Evaluation Plan:** 1) Accountability: We will track the number and duration of curriculum sessions as well as resident attendance at both video and in-person sessions. 2) Reaction: Participants will evaluate individual sessions through brief end-of-session evaluation forms; additionally, follow-up surveys at the end of the curriculum will elicit resident feedback on course educators, content and curricular design. 3) Learning: Participants will be asked to recall topics covered during previous sessions at the start of every new session. Resident teaching behaviors will also be assessed through direct observation during in-person simulated encounters as described above. Following completion of the curriculum, residents and faculty will complete follow-up surveys to evaluate senior residents’ confidence, motivation and effectiveness in clinical teaching, in comparison to pre-intervention results. 4) Behavior: Early in their PGY3 year, participants will be asked to reflect on their experiences with clinical teaching since the completion of the curriculum. At this time, they also will develop a commitment-to-act for future clinical teaching opportunities that will be reviewed as part of their semi-annual evaluation with a residency office faculty member.

**Potential Impact:** This innovation could improve on-shift education in our program for both resident teachers and learners, while also preparing residents for future teaching roles in other practice environments. If effective, it could serve as a model for other training programs with similar clinical learning needs in high-volume, resource-limited settings.

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### **Integrating EHR into the Current Pre-Clinical Curriculum at the UCSD School of Medicine**

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**Idea:** To integrate EHR use into an existing part of the pre-clinical education at the UCSD School of Medicine, the Problem Based Learning sessions.

**Need/Rationale:** The use of EHR has been widely adopted worldwide for its safer data storage, ease of communication, organization, and billing compared to paper charts. EHR, however, has certain disadvantages, such as potential breaches of confidentiality, difficulty navigating charts, and increased administrative burden, which has led to physician burnout (1). To tackle these challenges, many institutions have realized the need for EHR training early in the curriculum. In a survey conducted by the AAMC, 140 out of 141 medical schools indicated that their students used EHR during clinical clerkships during the 2014-2015 academic year (2). Despite this, EHR training remains limited in the pre-clinical curriculum. The AMA acknowledged these shortfalls in medical school and residency program EHR training systems and designed a policy in 2018 that encourages all institutions to develop EHR training to prepare trainees for the clinical rotations (3). This project will demonstrate pathway one medical school is taking to provide opportunities for students to practice EHR skills and gain confidence in navigating the EHR prior to the start of their clinical rotations.

**Methods:** 1) Integration of PBL case into EHR format: One PBL case will be selected from the late-Winter and Spring quarters of the MS1 curriculum at the UCSD School of Medicine. By then, students are expected to have become familiar with the structure of PBL sessions. The case will be selected based on multiple criteria including a) Length: shorter cases will be given preference to lower pressure on students' and facilitators' times during the sessions, and b) Cases with lab values and images (X-ray, MRI...etc.) will be given preference so as to teach students how to access such data. Each PBL case is normally discussed over two sessions, which include several follow up visits. Each visit will be integrated into the EHR including any associated lab values, exam findings, etc. The visits will still be introduced in sequential order; meaning students will not be able to proceed to the next visit until the one before has been viewed. 2) Instruction material: Guidelines on how to navigate the case and access specific patient information will be developed and provided to faculty and students prior to the case. Addition of EHR component will not change the case learning objectives and facilitators will be provided additional guidance on how to navigate the case in the non-production EHR. Students may refer to the developed instructional materials during clerkships.

**Evaluation Plan:** A post-session survey will be administered to the students after each case to assess students' perception of their own comfort with EHR before and after the case, and their general attitudes towards the experience. The survey will be anonymous and administered via Qualtrics, an online platform.

**Potential Impact:** Electronic Health Records have been largely adopted worldwide, and every physician must be proficient in using the EHR as part of patient care. In most settings, medical students are expected to develop proficiency in using the EHR during their clinical years. This project will help prepare UCSD students for such expectations.

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### **A Multimodal Functional History Module to Teach Medical Students to Address Function and Disability**

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**Idea:** To cultivate medical student skills and comfort in interviewing patients with disability through a multimodal module on obtaining a functional history.

**Need/Rationale:** While people with disabilities (PWD) are the largest minority group in the United States, most medical school curricula lack explicit content that teaches students to care for PWD. Recent data shows that 52% of medical schools, at most, incorporate any kind of disability education during students' four years of training. [1] The lack of organized curricula leaves medical students and, ultimately, physicians without the tools to provide culturally and medically competent care for their patients, leading to poor health outcomes among PWD and patient dissatisfaction with care. [2] In evaluating our medical school's curriculum, we found that there was no explicit detailed training on how to screen for and assess patients with a disability during a clinical encounter. Yet, all clinicians will undoubtedly care for patients with one or more disabilities (including physical, sensory, intellectual, developmental, mental health) during their careers. We saw the need to develop and implement curricular content to prepare medical students to interview PWD and assess patients' abilities to interact with their environments, access healthcare, and engage in their communities.

**Methods:** We expanded our medical school's Interviewing and Communication Skills (ICS) course to provide first-year students with their first formal exposure to screening for functional impairment and interviewing PWD. Specifically, we embedded functional history as a subsection of the full social history students learn to obtain for all patients, and developed a multimodal suite of materials/experiences to teach the functional history. Our approach was informed by literature review and input from medical students and educators with and without disabilities. Each 160- student first-year class will receive this functional history training beginning in November 2020. Students will receive an ICS course guide with a functional history section that provides a rationale, a graphic tool we designed to guide functional assessment, related readings, and required written reflection questions about experiences with disability. Students will also be directed to a video we created that includes student and faculty testimonials and a short lecture to 1) highlight potential barriers to conducting complete clinical encounters with PWD, and 2) describe how physicians can mitigate these barriers. Students will apply content from these materials during the 3-hour ICS social history session, which will include practice obtaining a functional history from PWD in real-time and a de-brief with peers and faculty.

**Evaluation Plan:** We will use qualitative assessment methods to evaluate our curricular content. Prior to the social history session, students will complete a set of reflection questions that assess their previous experience(s) with disability and expectations for their interviews with PWD, providing a baseline of students' familiarity with the function and disability content we are presenting. After the social history session, students will complete a reflection on their encounters with PWD, as interviewers and/or as observers. We will perform thematic analysis on pre-and post-session reflections to assess themes of comfort and confidence in caring for PWD, perspective on skills necessary for successful encounters with PWD, the language used when referring to PWD, and learning needs relating to disability. In addition, we will review standard course feedback to inform iterative improvements to our function and disability module. Combined, this evaluation plan will enable us to examine the impact of our curricular intervention on skill development and sensitivity to disability, as well as the acceptability and feasibility of the intervention within the context of the Interviewing and Communication Skills course overall.

**Potential Impact:** Our curricular content aims to train the next generation of physicians to address function during clinical encounters and provide sensitive, comprehensive care for PWD. We plan to disseminate our materials beyond our institution to advance the needed expansion of explicit disability education in U.S. medical schools.

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## **Learning From the Experts: Using Patients to Improve Resident Understanding of Opiate Use Disorders**

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**Problem Statement:** Primary care physicians are on the front line of identifying opiate use disorder but few finish residency ready to treat people.

**Rationale:** An estimated 8% of people in California suffer from substance use disorders (SUDS) and, in 2017, there were 2199 opioid related overdose deaths in the state (1, 2). Primary care physicians are on the front line of preventing, identifying and treating people with SUDS and opiate use disorder (OUD), and yet a minority of primary care physicians finish their residency training ready to treat patients with SUDS and licensed to prescribe medication assisted treatment (MAT) (3). This project aimed to improve resident knowledge and attitudes towards caring for people with substance use disorders by integrating the patient experience into the residency curriculum.

**Methods:** We recruited patients with lived experience of substance use disorders to teach family medicine residents about their experience of receiving care. We began by consulting with the Medical Center's Patient and Family Centered Care department, who operate seven councils with over 90 volunteer Patient Advisors. They provided advice about the process for recruiting new patient advisors. We then recruited broadly for patients who were willing to share their stories. We developed promotional brochures, recruited face to face at patient groups, and had physician partners reach out patients. After several months, we recruited 3 patients who were willing to share their stories. We developed a resident driven session which began by training residents in how to ask open ended questions, listen and engage well with patients. Then residents developed questions and interviewed patients about their experience of receiving care. Due to COVID we had to run the patient session virtually rather than in person. Even so, patient stories were remarkably powerful and left a big impression on residents.

**Results:** We developed a survey to assess changes in knowledge and attitudes towards treating patients with substance use disorders among residents. Residents were surveyed before participating in the residency's substance use disorder curriculum and the survey will be repeated once residents complete the curriculum. Baseline data indicated that residents are very motivated to learn about substance use disorders and to use medication assisted treatment in their practice, with 100% of residents (n=18) interested in learning more about prescribing buprenorphine for treating opioid use disorders. While there was a high degree of motivation among residents to treat patients with substance use disorders, only 22% of residents felt comfortable diagnosing opioid use disorder before the training started. No residents (0%) felt comfortable treating patients with buprenorphine for opioid use disorder. This indicates that further training is essential to ensure that future primary care doctors are appropriately equipped to treat chemical dependency and chronic pain.

**Potential Impact:** Training the next generation of primary care physicians is critical for improving our community's ability to effectively treat patients with substance use disorders. This project is an important step forward to ensure resident training is comprehensive, evidence based, and patient centered.

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### **A Social Worker-Directed Workshop in the Management of Difficult Patients and Families**

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**Idea:** Acquisition of skills for managing difficult patients and families via a social worker-guided workshop for post-graduate multidisciplinary fellows.

**Need/Rationale:** Healthcare providers frequently experience difficult interactions with patients or their families and these are estimated to account for 15-30% of all provider-patient-family interactions (1). The reasons can be multiple and at their most extreme involve patient or family incivility or aggression directed towards healthcare personnel. Multiple studies have documented the negative impacts of rude or aggressive behavior on provider and patient happiness, patient care and safety, healthcare teamwork efficacy and provider burnout (2). Despite their frequency, many providers report feeling inadequately prepared to deal with difficult patient or family interactions (3). Our own HRSA Pediatric Pulmonary Center fellows attribute this to inadequate formal training. To address this need, we propose a 2-session class and workshop to explore the reasons for difficult provider-patient-family encounters and to explore, and then practice, practical strategies to prevent or mitigate breakdowns in communication. Our fellowship program includes fellows drawn from multiple disciplines within healthcare, including social work and psychology. We will use a pulmonologist and two social workers to facilitate the workshop.

**Methods:** Learners will be ten post-graduate fellows drawn from different disciplines within healthcare (medicine, nursing, social work, dietary, psychology and respiratory therapy) and enrolled in our Children's Hospital Los Angeles HRSA-Maternal and Child Health Pediatric Pulmonary Center training program. Learners will participate in a one-hour classroom session followed by a 2-hour workshop session delivered within weekly HRSA-fellowship meetings. In the first session, the nature of the problem will be introduced along with course goals and objectives. Participants will work in small groups to share previous experiences of difficult patients/families and develop cases for use during session 2 workshop role-playing. Prior to the second session, fellows will complete reading assignments to explore the theoretical basis of disruptive behavior and learn techniques for dealing with disordered communication. In the second session, clinical social workers will briefly review practical approaches to disruptive patients and families and discuss the effect of emotional state and implicit bias in communication. The workshop progresses to paired role-playing exercises to practice learned techniques. The session is concluded with a group review of lessons learned from the workshop and individual commitments to action.

**Evaluation Plan:** (1) Accountability. The number of sessions, their duration, the number of attendees and professional demographics, the number of assignments submitted and cases discussed will be recorded for course review. (2) Reaction. Course participants will complete an evaluation form at the end of the workshop session to assess the degree of new learning, perceived utility of workshop exercises and satisfaction with the workshop. (3) Learning: Fellows will be evaluated on an assignment (MEQ) submitted prior to the second session to assess main learning points from a book chapter and assigned original papers. This assignment will ask learners to describe an example of a difficult patient-provider-family interaction and apply the principles learned. At the end of the second session, learners will be assessed on their application of learned principles in role-playing exercises. (4) Behavior. Group follow-up and feedback will be solicited two months after the workshop to determine whether concepts and skills learned during the sessions have been applied to cases of a difficult patient or family. Reasons for not employing learned techniques will be assessed.

**Potential Impact:** This workshop aims to develop the skillsets necessary to manage difficult provider-patient-family interactions. One aim is to improve the satisfaction of both provider and patient in their interactions. Another potential outcome is improvement in quality of care. If successful, this workshop could be disseminated to other healthcare settings.

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### Using Improvisation Techniques to Teach Communication Skills for Dementia Care

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**Idea:** Using improvisation techniques to teach skills for communicating with patients experiencing the behavioral and psychological symptoms of dementia.

**Need/Rationale:** A recent survey of primary care physicians found that 87% expect to see increases in patients living with dementia in the next five years, with 51% noting inadequate options for continuing education and training (Alzheimer's Association, 2020). Patients with dementia experience symptoms such as memory loss, confusion, disorientation, and behavioral and psychological symptoms. Communicating effectively with these patients in medical or long-term care settings requires empathy, active listening, and techniques such as validation and redirection. Improvisational ("improv") training has been shown to improve coping skills in family caregivers of people with dementia (Brunet et al., 2019) and is a technique used with increasing frequency in medical education (Hoffmann-Longtin et al., 2018). This novel workshop aims to teach trainees essential skills through improv for communicating effectively with patients with dementia, thereby improving the care provided to this growing segment of the population.

**Methods:** This 90 minute workshop, piloted with a small group of geriatric medicine fellows, included an initial 30 minute lecture on a) common dementia symptoms and the communication barriers they create; b) group discussion of past interactions with patients or others with dementia symptoms, and the typical reactions they often illicit, including failed attempts to correct, reorient, or redirect; c) communication strategies; and d) the basic tenets of improvisation (e.g., active listening, agreement, partnership, flow, presence, and playfulness). The latter part of the workshop included active engagement with fellows, playing a series of improv "games," such as Yes/No Storytelling, Word Association, and Mirroring. Games are demonstrated by the instructor, and then facilitated in pairs or small groups. These activities are distinct from "role playing" physician-patient interactions, but rather involve verbal, visual, and physical exercises to demonstrate the impact of being seen, heard, and understood by others. Throughout, the instructor paused for trainees to reflect, discuss, and apply the experiences to physician-patient interactions, focusing on the impact of listening skills, attention, and spontaneity on communications with patients with dementia. This workshop was originally designed to be taught in a physical classroom setting, however all improv activities were converted and implemented through a video-based online platform due to the COVID-19 pandemic.

**Evaluation Plan:** This pilot workshop evaluated the following learning objectives: a) increased understanding of the challenges faced by people living with dementia and their family caregivers, and b) acquisition of new improv-based techniques for responding to patients with dementia experiencing memory loss, confusion, or disorientation. Pre- and post-surveys measured trainees' self-perception of their knowledge and skills in these areas before and after the workshop. The post-survey, gauged the effectiveness of the improvisation activities as a learning method, and inquired if the fellows incorporated any of the techniques into their communications with patients living with dementia in the 60-day period since attending the training. 66% (n=3) of the fellows reported that they have incorporated improvisational techniques into communications with patients living with dementia. Open-ended narrative questions provided trainees with an opportunity to share insights gained during the workshop, and offer suggestions for improvement. This pilot program administered to a small sample of fellows suggests positive perceptions of the training, achievement of the learning objectives, and utility in patient care.

**Potential Impact:** Innovative teaching methods for building patient communication skills are critical to prepare clinicians for the growing challenge of caring for patients living with dementia. Improvisation techniques can improve quality of care, and enhance trainees' experience by incorporating interactive play and movement into medical education instruction.

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### **De-Escalation in the ER: Care of Acutely Agitated Psychiatric and Substance Abuse Patients**

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**Idea:** An innovative workshop wherein emergency medicine (EM) residents build verbal de-escalation skills for caring for acutely agitated patients.

**Need/Rationale:** In the US, the number of emergency room visits for primary mental health complaints and substance use disorder is on the rise (1,2). Due to the nature of their illness these patients are at high risk of becoming agitated, necessitating the implementation of de-escalation techniques and in some cases, physical restraints and anxiolytic medications. Thus, emergency medicine (EM) physicians must demonstrate a high level of competence in managing these situations, creating the need for consistent, organized training for EM residents in caring for the acutely agitated patient. Unfortunately, 59% of EM residents in US residency programs state that more formal training is needed in managing psychobehavioral conditions (2). This idea involves the development of a formal curricular unit to assist residents in building verbal de-escalation and persuasion skills for proposing necessary medications to acutely agitated patients. Methods have been selected based on adult learning principles (Ambrose, 2010): 1) quality of learning is enhanced by goal-directed practice coupled with targeted feedback, and 2) mastery of concepts is achieved via integration and application.

**Methods:** The intervention is planned for implementation with ten EM residents and will take place over the course of three sessions. The goal of the intervention is mastery of verbal de-escalation and persuasion skills for use with agitated patients in clinical practice. The method is a hybrid approach utilizing classroom-based and SIM modalities. 1) The first two sessions (2 hours) are held in a classroom setting and introduce verbal de-escalation and persuasion techniques, utilizing the American Association for Emergency Psychiatry Project BETA De-escalation Workgroup tool (3). Instructional methods include small group discussion where learners share one story of an incident with a patient; two-person role-play utilizing the resident stories submitted, and team interviews using an avatar. 2) Session 3 (3 hours) is held in the simulation center where residents complete standardized SIM scenarios, integrating/applying skills acquired in the classroom. Session opens with a 15 minute introduction. Thereafter, each simulated interaction will take no more than 15 minutes, directly followed by 10 minute debriefing/assessment, and 5 minute passing period allowing station rotation. Each learner completes four total SIM cases. The final 45 minutes of session are allotted for group-wide debriefing, discussion, and reflection. 3) Residents are assessed by a trained evaluator during each SIM, utilizing a standardized rubric. Debriefing sessions provide targeted and timely feedback.

**Evaluation Plan:** Accountability will be ensured via tracking of attendance by the targeted EM learners and successful execution of all program sessions. Learning will be assessed via 1) successful completion of standardized multiple-choice quiz following classroom sessions (with opportunity for a retake as necessary), and 2) successful application of acquired knowledge/skills as determined by an assessment of SIM cases by trained evaluators, utilizing a predetermined grading rubric and designated passing score. Residents' reactions will be assessed via a confidential survey after the workshop to determine if the workshop met their perceived need for formal instruction in managing acute psychobehavioral emergencies. This will be followed with a focus group convening 3 months following intervention to determine fulfillment of curriculum goals (i.e. successful integration of skills into clinical practice) and identify areas of needed improvement for future workshop sessions.

**Potential Impact:** If this intervention is found to be effective, it could serve as a model for other emergency medicine programs seeking to enhance EM resident competence and confidence in treating psychobehavioral conditions, thereby providing safer and improved quality of care for patients suffering from psychiatric and substance disorder-related agitation.

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## **Reading Room to Bedside: Interpersonal and Communication Skills for Radiology Faculty Development**

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*Connecticut Children's; University of Connecticut School of Medicine*

**Idea:** A virtual faculty development workshop series to improve the interpersonal and communication skills of radiology faculty during the COVID19 pandemic.

**Need/Rationale:** Radiologists today face mounting expectations to conduct more direct patient communication as a matter of optimal patient-centered care from both patient groups and professional organizations.<sup>1-9</sup> The ACGME now requires that graduating radiology trainees be able to communicate “complex and difficult information, such as errors, complications, adverse events, and bad news”.<sup>10</sup> Radiologists face considerable barriers to meeting these standards. Nationally, even veteran physicians experience substantial stress communicating with patients about unexpected or difficult diagnoses.<sup>12</sup> Opportunities for robust ongoing ICS training or skill maintenance following completion of a radiology GME program are scattered and faculty express uncertainty is how best to teach these skills to trainees.<sup>12,13</sup> Several local academic radiology department’ program evaluations demonstrated that interpersonal and communication skills teaching was suboptimal. Furthermore, radiology residents pursuing advanced training in or employment in increasingly patient-facing arenas of radiology reported being underprepared for engaging in difficult conversations with patients and families.

**Methods:** As a pediatric hospitalist with an interest in teaching communication skills, I was approached to design a faculty development program for the radiology teaching faculty at 3 diagnostic radiology residency programs in the greater Hartford, CT region to further develop interpersonal and communication skills. The designed curriculum spans an entire academic year and consists of six 120-minute sessions. The sessions cover general principles of non-violent communication, crucial conversations and emotional intelligence; developing rapport with limited prior contact; delivering “bad news”; diffusing highly-emotional situations; special considerations for communication with pediatric patients; and introduction to teaching and assessing ICS in the clinical setting. Given the limitations of the COVID-19 pandemic, and drawing from the literature of teaching ICS successfully to radiology residents, the major teaching techniques to be employed are virtual large group didactics, small group work viewing and debriefing videos of communication interactions, individual work conducting and appraising personal emotional intelligence instrument scores, and standardized patient virtual encounters for skill-based practice with direct feedback.

**Evaluation Plan:** To measure the effectiveness of this curriculum, I will conduct session evaluations following each installment and end-of-curriculum program evaluation assessing learner attitudes and reaction. Knowledge acquisition will be measured using pre-post brief multiple-choice assessments. Skill acquisition will be demonstrated using a standardized, published observational instrument, the Kalamazoo Communication Assessment Tool for Radiologists, for each specific learning case, video, or standardized patient interaction. In addition, self-report knowledge, skill, attitude changes will be measured pre-and post-curriculum. To evaluate for downstream effects within the educational environment over time, resident scores on ICS sub-competencies could be tracked to demonstrate if faculty development translates into improved resident performance. For impact level outcomes, aggregate patient satisfaction scores could be compared pre-and post-curriculum to evaluate for behavioral change and impact on patient care.

**Potential Impact:** Using approaches demonstrated to be successful in achieving long-term skill acquisition in radiology residents, this curriculum is designed to improve radiology faculty interpersonal and communication skills. The educational environment for the radiology trainees and patient care delivery by radiology faculty may also be enriched.

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### **Humanism Symposium Online: Bringing Humanistic Care to Preclinical Education**

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*University of Maryland, Baltimore*

**Idea:** A student-led preclinical elective to promote humanism in medicine and foster growth of compassionate medical practice, adapted to an online format.

**Need/Rationale:** The Humanism Symposium aims to create a space for preclinical medical students to reflect on personal and professional growth while engaging in meaningful conversations about compassionate patient care. Patient autonomy is well understood to be an important factor in medical care. Patient-centered care has been associated with improved satisfaction and self-management. The physician-patient relationship has long been touted as sacred in literature, pop culture, and historic references. This connection is essential in maintaining optimum patient care and preventing physician burnout. Integrating these values in preclinical medical education allows students to develop a philosophy for their own medical practice while simultaneously creating faculty and peer mentorship opportunities. In order to foster the caring nature that draws students to medicine, it is imperative to create a supportive learning atmosphere without losing sight of the ultimate goal: patient-driven care. The move to a virtual format is necessitated in the time of this global pandemic. In the absence of in-person interaction, the human interaction and depth of conversation encouraged by The Symposium – regardless of its online format – will be paramount.

**Methods:** Each session of this course will be held on a virtual platform, Zoom. Weekly sessions will last for two and a half hours and be conducted over the course of 13 weeks. Session topics are decided by the student leaders, yet the course itself hinges on discussion led by current students. Student leaders, and often a panel of invited faculty, act as facilitators for each session. A Google site for the course provides an online space hub of information. This includes a calendar and syllabus for the year, session information including assigned pre-readings, and an area to submit course requirements.

**Evaluation Plan:** In a course developed to celebrate and highlight human interaction, a virtual format is not without its limitations. To address the lack of in-person meetings we have planned additional opportunities for small group, in-person, socially distanced activities. Instead of typical ice-breaker activities of years past, we will incorporate virtual improv-style activities designed to highlight the importance of communication and build a safe space amongst the students. Instead of moving to a corner of the room to participate in small groups, we will utilize Zoom breakout rooms to allow a smaller, more intimate space for more students to share their thoughts. Finally, we plan to empower students to provide constructive feedback. We feel that room for flexibility to shifting aspects of our course layout, particularly in the virtual format, will be a crucial aspect of the methodology.

**Potential Impact:** Given the goal of this course to enhance and augment preclinical training and support, an evaluation will be conducted on a pass/fail basis. Passing the course will be contingent upon completion of requirements designed to foster collegiality among classmates and wellness for individuals. Requirements include: 1) leading a class discussion on assigned reading materials; 2) completion of three elective activities outside of the classroom designed to enhance wellness during the pandemic and/or connection to the city of Baltimore; 3) completion of a personal reflection highlighting a topic of the student's choosing from his/her life or interests; 4) completion and showcasing of a final creative project.

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### **Medical Ethics and Redemptive Narratives: Developing Humanistic Medicine through Holocaust Narrative**

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**Idea:** Learn the relevance of narrative analysis while examining medical ethics. Develop critical analysis and elicitation of Type I & Type 2 narratives.

**Need/Rationale:** This innovative pedagogical activity engaged medical and health professional students to use narrative analysis to examine ethical processes and decision making in medical contexts. It offers the opportunity to learn about medical ethics through the testimonies of individuals who were forced to participate in medical experiments in the name of science and advancement. Narrative analysis allows for participants to become aware of tacit assumptions, beliefs, and values about the world. Moral stance-taking in narrative analysis allows for participants to explore how human beings navigate ethical tensions and apparent contradictions in order to develop coherent identities across time and space (Barber & Moreno-Leguizamon, 2017). Holocaust narratives in particular are effective for navigating moral dilemmas in medicine (Clark, 2005). Students will specifically examine narratives as movements through contestation toward empowerment. Students will learn how participants in the testimonies engage in moral stance-taking concerning medical experiments during World War II. Ultimately, this activity takes students through a complete cycle of what it means to live, share, and analyze narratives as well as analyze effect and empathy.

**Methods:** Prior to the activity, students read excerpts from articles about Nazi medical experiments. One article was about eugenics ("Creating the Master Race"). The second article will be about euthanasia. Once the students had the necessary background information about the Holocaust, the eugenics and euthanasia programs and its impact on medical ethics, they learned about narrative analysis and how it can help us understand the moral dilemmas and ethical practices of survivors of Nazi medical experimentation. Students then viewed the testimonies of selected Holocaust survivor(s). One example is the case of Eva Kor, who along with her twin sister, were subjected to dehumanization and medical experimentation. First, students watched all the testimony clips without transcripts. Then, students watched the same clips with transcripts. This allowed for observation of the four levels of transcription: code, prosody, semiotics, and ideologies (Author 1, 2013). Students were asked to identify moral stances along the continuum of 1) Shock; 2) Anger; 3) Acceptance/Bargaining; 4) Empowerment. The second clip that students watched was of Jack Robbins, a Nuremberg Trials Expert witness who speaks broadly about the complicity of the medical profession during World War II. Students were asked to reflect on their moral stances and discuss.

**Evaluation Plan:** Our evaluation consisted of both formative and summative performance measures. Our formative assessment included an analysis of classroom discourse transcripts and student writing. We specifically look for moral stance-taking as well as narrative length to measure shifts in engagement. We used multiple codes in order to ensure the validity and reliability of our measures. Specifically, we coded moral stance-taking in relation to the narratives. Type I narratives were rated according to the five-point scale of moral stance, linearity, tellability, tellership, and embeddedness. Thus, type 1 narratives consisted of singular moral stances, highly linear, high in tellability and tellership, and low in embeddedness. Type 2 narratives were emergent and opposite of the continuum: singular moral stance, low in linearity, low in tellability and tellership, and highly embedded. Thus, type 2 narratives pointed to moral dilemmas that were contradictory and in process. Our summative assessment consisted of pre and post-tests with questions related to medicine, ethics, and WWII. This was used to establish a baseline in order to determine movement in ethical reasoning in relation to narrative analysis.

**Potential Impact:** This pedagogical innovation contributes to the growing field of medical humanities and narrative medicine (Greene, Pearson, Uwhubetine, Rowley, & Chung, 2020). We demonstrate how

medical instructors and students can use narrative analysis to understand the moral dilemmas and ethical practices of the survivors of Nazi medical experimentations.

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### **Enhancing the Spirit Catches You Curriculum to Infuse a Disability Perspective in Medical Education**

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**Idea:** Prepare medical students to provide disability sensitive care through the integration of disability content in existing Spirit Catches You [1] curriculum.

**Need/Rationale:** Patients living with disability experience significant disparities in both access to medical care and health outcomes [2]. One key area for improvement is within the physician-patient relationship. Many patients living with a disability express concern that physicians are unable to fully understand their disabilities and needs. A dearth of disability education for physicians may directly perpetuate these inequities. Nationally, only half of all medical schools incorporate any kind of disability education into their 4-year curriculum [3]. In order to better serve patients with disabilities, we need to efficiently and expediently mobilize for curricular change within medical education. Part of this effort includes identifying and capitalizing on opportunities to modify curricular elements common across many medical institutions. The Spirit Catches You and You Fall Down by Anne Fadiman is a text commonly used in medical education to highlight differences between the Hmong culture and that of the United States healthcare system. The book centers a protagonist, Lia, who has a disability, which provides an opportunity to infuse disability themes within existing Spirit Catches You curricula.

**Methods:** The Spirit Catches You is required reading for our school's incoming medical students. The curriculum relating to the book does not currently include a disability perspective. We created a 10-minute presentation and shortlist of discussion questions centered around disability themes in the book. We designed the materials to complement the existing curriculum on the book's cultural themes. A fall 2021 implementation is being explored. The 160-member first-year medical school class would receive the intervention during their first week of school, integrated into the existing Spirit Catches You curriculum. Students and faculty would be provided with our pre-recorded presentation and questions prior to existing 90-minute book discussion groups (each 10-12 students, faculty preceptor). An existing collaborative group writing assignment would provide the opportunity to articulate lessons learned. Our presentation centers around the question "How is Lia's epilepsy understood by the various cultural groups represented in the book?" We use three cultural lenses to explore the meaning of epilepsy for Lia and her family: Hmong, medical, and disability culture. Disability culture is defined, and students will be asked to reflect on the importance of disability culture in Lia's story. Definitions of epilepsy and disability will lay the foundation for discussion of medical and social models of disability. Live small group discussion questions emphasize cultural humility and intersectionality.

**Evaluation Plan:** Our Spirit Catches You lesson will be assessed as a standalone curricular component and as the introductory disability experience in a longitudinal disability curriculum. As a standalone, impact on students' ability to articulate the principles of disability culture, humility, and intersectionality will be assessed through thematic analysis of written discussion group assignments in response to the pre-existing prompt to list takeaways "to use in the future to improve cross-cultural communication and care." Findings will be compared between years pre-and post-implementation of our disability intervention. As part of a longitudinal disability curriculum, the assessment will include IRB-approved surveys that query a single medical school class year cohort about knowledge of disability terminology, culture, and healthcare disparities pre-and post-session. The cohort will also be surveyed over four years for 1) retention of principles presented in The Spirit Catches You curriculum, and 2) perception of the value of The Spirit Catches You curriculum in providing a foundation for integrating subsequent disability knowledge and skills. Faculty focus groups will be used to assess feasibility and acceptability of the intervention.

**Potential Impact:** If effective, the materials presented here can introduce disability as a valued lens and imbue disability humility from the beginning of medical school, in turn providing a foundation for the development of a disability-sensitive workforce. The materials can also be utilized within training programs across healthcare professions.

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## **Implementing a Medical Humanities Compendium to Support Artistic Expression in Clinical Practice**

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**Idea:** Develop a longitudinal experience through didactics and artistic competitions that will integrate humanities into the medical education curriculum.

**Need/Rationale:** As a new medical school located in the bicultural/bilingual South Texas Rio Grande Valley region, we train competent, compassionate physicians who serve the needs of our underrepresented Hispanic community. We offer an innovative learning experience designed to instill superior standards of scientific, clinical, research, and professional acumen. Concurrently, central to a well-rounded graduate medical education (GME) curriculum is the prioritization of the art of caregiving. The perceived loss of empathy among residents in the clinical setting can lead to negatively impacted patient care and physician burn out. Teaching character is as important as teaching medical knowledge and patient care; however, they have traditionally not been awarded similar value in the modern medical curriculum. Character is part of the Accreditation Council for GME (ACGME)'s competency of professionalism, one of six categories in which learner progression is assessed in the training continuum. When encountering difficult situations, residents have the chance for sustained, thoughtful reflection, as well as to appreciate and reconcile multiple perspectives to be better prepared to respond well when they encounter these dilemmas in the clinical setting.

### **Methods:**

Objectives:

- Explore how arts & humanities broaden clinical acumen;
- Improve self-expression through the arts
- Enhance the sense of emotional well-being & communication
- Expand the ability to self-express & analyze data by sharpening perceptions via art
- Augment ability to engage in clinical settings with empathy
- Foster creativity & appreciation of commonalities & differences through arts & humanities

An introductory session will cover the role of humanities in medicine for the development of professionalism and empathy using avenues such as narrative medicine. Thereafter, we will host a quarterly competition to promote humanistic skill and professional conduct as it pertains to ethics and humanities through artistic expression. Each quarter, we will announce a different theme and invite participants to interpret the theme and submit a personal piece for the opportunity to win an award. Submissions may be original works of poetry, painting, music, and more. All submitted work will be published in an end-of-year compendium of artistic works. In line with each quarterly competition, we will also host a workshop that mirrors the selected theme for that quarter, in which presenting faculty will review an aspect of medical education as it relates to that specific theme of humanities.

Themes include:

- Bicultural & Bilingual Experience of the RGV
- Personal Reflections from Times of Crisis
- The Personal Experience of Being "Different"
- Racial Equity & Social Justice in Healthcare

**Evaluation Plan:** Competencies and formative assessments have become the norm in medical education evaluation. Through the use of quarterly pre-and post-intervention surveys, focus groups and follow-up, we hope to demonstrate positive changes in medical student's and resident's professional interactions with patients, patient families, peers, and their medical community. Evaluations will include participants' perceptions on communication skills, capacity to collaborate, empathize, and achieve a patient-centered focus through personal and professional development and reflection. Sample questions

used to collect reflections from participants will include how a session influenced their capacity to respond to patients or relate to their peers as well as how they feel medical humanities influence their role as a provider. Should deficiencies be identified, we will explore how program improvements can be made and implement these in the following year. These activities will ensure that evaluation methods are appropriate to the project's objectives.

**Potential Impact:** Findings will be shared at regional and national meetings to spur creativity at other current partner institutions. Incorporating medical humanities in the curriculum will provide an overall impact on improved physicianship including empathy, compassion, patient care, and preventing burn out.

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### **Moral Moments in Medicine: An Interprofessional Health Humanities Elective**

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**Idea:** To develop a virtual elective for health professional students to form trans-disciplinary communities in the health humanities.

**Need/Rationale:** The twin pandemics of racial injustice and coronavirus have upended clinical practice in 2020. Students entering the health professions are grappling with questions that will follow them through their careers: How do I provide equitable care to all my patients? What does it mean to be a 'good clinician'? How do I retain a humanistic spark in an increasingly technocratic environment? What is my purpose? While these questions are not new to health professional students, the socially-distanced nature of virtual learning make it even harder for them to create the communities that are integral to professional identity formation; students who are isolated from peers are at higher risk of burnout and moral injury [1]. We have created a novel interprofessional virtual elective, bringing the resources of the medical humanities and medical ethics to bear on these twin pandemics, allowing students to form new, trans-disciplinary connections that will inform their professional identity as they enter their respective careers. This work is funded by the Purpose Project at Duke University, a campus-wide initiative to promote student resilience and meaning-making in their educational careers.

**Methods:** Students from the Schools of Medicine, Nursing, Physical Therapy, and the Physician Assistant Program enrolled in the elective in September 2020 and will complete at least 20 hours of coursework during the academic year. Each student in the elective chose one of several themed seminars, which meet monthly. To promote trusted communities, seminars are limited to 10 students each and co-led by two faculty members from different schools. For 2020-2021, the themes are: Voices in Pandemic: Stories of Resistance and Social Justice; Plague Literature, Past and Present; Documenting Pandemic through Photography; Epidemics, Disparities, and History; Covid Stories: Narrative medicine in the midst of Epidemic. The remaining 8 hours of credit are earned through a menu of options: Bioethics Interest Groups (1 hr each): Monthly discussion of pertinent topics in bioethics; Book club: (4 hr) Reading & discussion of a narrative related to pandemics or race in healthcare; Pandemic movie nights (3 hr): Share a movie experience and explore connections to COVID-19; Walks through Social History (2-3 hr each): Covid-permitting, walks to local areas exploring how history has shaped health disparities. Humanities in Medicine Lectures (1 hr each): Invited speaker series, if related to disparities, disease, and/or social justice; Webinars (1-2 hr each): Online webinars sponsored by campus organizations or external events, if related to pandemics or social justice.

**Evaluation Plan:** Students will be evaluated on seminar participation as well as short written reflections on their individual options chosen. Students also took the Interprofessional Attitudes Scale [2] immediately after enrollment and will take it again at the end of the course. Pre-post exploratory analysis will be conducted to determine if participation in the elective increased students' comfort with interprofessional teams. Additionally, focus groups will be conducted at the conclusion of this pilot elective in order to develop additional options for future years.

**Potential Impact:** This elective has the potential to influence the development of future interprofessional and trans-disciplinary teaching at our institution and at others. The predominantly virtual format is translatable to a variety of locations and could even allow the possibility of cross-institutional collaboration in future.

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## **Evaluation of Indigenous Cultural Competency Teaching Sessions in a Residency Program Curriculum**

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**Idea:** Develop, implement and evaluate a curriculum for Indigenous health and cultural competency in a Canadian residency training program.

**Need/Rationale:** Cultural safety, when the receiver or care determines whether the care received was safe, is important for all individuals. In Canada, there is a history of racism and trauma inflicted on Indigenous populations in addition to health disparities relative to non-Indigenous populations. The Truth and Reconciliation Commission of Canada 2016 called for medical education to implement cultural safety training related to Indigenous health (2). The Royal College of Canada has also included Indigenous health in the learning objectives for accredited programs across Canada. Prior to the implementation of this curriculum, these objectives have not been formally incorporated into the PM&R residency program educational curriculum at the University of Alberta.

**Methods:** The curriculum content will cover and expand on the information in the Royal College of Canada Indigenous Health Primer (3), including key terminology, an outline of the historical trauma, the spectrum of cultural competency and racism, conducting research, health policies and health disparities. Information relevant to Indigenous populations and health legislation in our local region is also included. The curriculum will be delivered over four two-hour sessions. The sessions will be held during the regularly scheduled protected academic time for the 15 residents in the PM&R program at the University of Alberta. Each session will contain a didactic component and 2 small group discussions. The didactic component will cover key concepts, terminology, and history. Small group discussions will be 10-15 minutes long, with 5 residents per group and one moderator to facilitate and guide discussion.

**Evaluation Plan:** Learners will complete an anonymous pre and post curriculum assessment designed to evaluate changes in baseline knowledge and perceptions. There are 8 multiple choice questions to assess knowledge-based content from the Royal College Indigenous Health (3). There are 12 statements with a corresponding rating scale designed to assess perceptions pertaining to Indigenous health and culture (1). The pre-assessment will allow participants to indicate prior exposure to Indigenous culture and health. The post-assessment will include the same 20 questions, and opportunity for narrative comments and general feedback. Anonymous unique identifiers will be randomly assigned to each participant to maintain anonymity during the assessments and in order to measure change over time. Anonymity is important to improve safety for the residents to express their perceptions and feedback openly. Evaluation outcomes will include paired t-test analysis of change in knowledge or perception scores following the last session, and thematic analysis of narrative comments provided by participants.

**Potential Impact:** Developing an Indigenous health and cultural competency curriculum will guide learners towards achieving cultural humility and promote cultural safety for Indigenous individuals. Establishing a curriculum with specific content and delivery methods may facilitate implementing the curriculum in other Canadian residency programs.

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### **The Dramatistic Pentad in Medical Education: Application to Physician Behavior in House M.D.**

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**Idea:** Kenneth Burke's Dramatistic pentad provides an organized methodology for rhetorical analysis well-suited to the medical education environment.

**Need/Rationale:** Medical dramas like House M.D. are frequently utilized in medical education as an engaging medium for instruction on ethics, professional norms, and medical errors [1]. However, little has been written on the application of critical social communication theory to the analysis of medical dramas in the medical education setting. Such an application is necessary because popular culture texts shape and reinforce beliefs and behaviors in subtle ways [2] and because medical dramas often display violations of professional norms [3].

**Methods:** Kenneth Burke's Dramatistic pentad can be applied to the analysis of popular culture medical narratives used in medical education using the following five-prompt approach. Students will be directed to watch the episode or scene to be analyzed, then answer the five prompts with justifications for their answers. After, students' answers can be discussed collaboratively or turned in individually. The five prompts are as follows:

1. Identify the five elements of Burke's pentad—act, agent(s), agency, scene, and purpose—for each scene in question.
2. Compare the pentad components and identify one as the scene's dominant absolution motive.
3. Classify the dominant absolution motive in one of three categories. Transcendence refers to motives that absolve by appealing to a higher calling. By contrast, mortification refers to a situation in which the agent confesses guilt and is punished for it in order to be purified and redeemed. Lastly, victimage refers to absolution through blaming. Two sub-types of victimage are present in dramatistic analyses: the comic fool, when something inevitable is portrayed as causing the agent's action, and the tragic hero, when the agent blames something else, but ultimately suffers mortification for their actions.
4. Repeat for the number of scenes to be analyzed.
5. Collectively analyze the narrative's dominant motive classifications.

**Evaluation Plan:** Evaluation plans will assess students' ability to both follow the five-prompt method outlined in this abstract and critically analyze their findings. To illustrate its potential, the Dramatistic pentad is applied to six scenes from three episodes of the television show, House M.D. Two professional norm violations were selected per episode for demonstrative analysis. The analysis demonstrated utilization of the comic fool (x3) and transcendence (x4) justifications to provide redemption for Dr. Gregory House's patterns of errant behavior in House M.D. As a comic fool, House is absolved from his sins due to his intelligence, effectiveness, gender, arrogance, and position in the hospital. When transcendence is used, Dr. House is absolved because he follows the higher callings of knowledge, saving lives, and the greater good. If audiences can be led to excuse Dr. House for these reasons, they could also be led to excuse real physicians for similar reasons. This includes physicians-in-training, who through the show are normalized to the use of similar justifications for inappropriate physician behavior.

**Potential Impact:** Implementation of the Dramatistic pentad in medical ethics education could improve the quality of students' interaction with popular media sources, promoting more deliberate reflection and engagement with the material, in addition to improving awareness of how popular media influences perceptions of morality and professional norms.

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### **Impact of Interprofessional Education on Professional Students in the Medical Field**

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**Idea:** Determine the efficacy of IPE amongst students from varying medical professional programs to ultimately establish a collaborative means of practice.

**Need/Rationale:** In the healthcare field, many different professionals develop specific skill sets through their respective training programs. It is vital that these professionals work together while recognizing their individual duties in certain medical scenarios. Research has shown that ineffective teamwork amongst these professionals can lead to tragic consequences in the outcomes of their patients (1). Interprofessional Education (IPE) is a vital component in medical education, and can effectively develop well-rounded medical professionals upon their completion of training (1). IPE plays a role in improving the quality of patient care by augmenting communication amongst health care professionals. While there is limited literature regarding IPE, the few articles published on this topic have proven its efficacy and positive impact on students, depending on the context, planning, and delivery of IPE information within medical curriculum (2). Therefore, the monitoring of the effectiveness of IPE events is key. This research examines the impact of three IPE events on students in order to maximize positive outcomes for all.

**Methods:** Three virtual IPE events were hosted by the University of Nevada, Reno IPE Consortium. Each event focused on different medical topics that training healthcare professionals could experience as an interprofessional team, including Oral Health, Advanced Care Planning, and Diversity and Diagnosis. Students were evaluated at each event and asked to complete both a pre- and post-survey. For this evaluation, two published instruments were utilized. The Interprofessional Collaborative Competency Attainment Survey (ICCAS) and the Interprofessional Attitude Scale (IPAS) instruments were combined and slightly modified to better reflect the needs and evaluation goals of these events. The instrument concepts were not changed, however, the phrasing of concepts were slightly modified to elicit proper comprehension and honesty in responses during the self-evaluation process. Additional questions involving the effectiveness of virtual IPE events were evaluated since IPE curriculum is usually administered in-person. These events included students who will become future Physician Assistants, Nurse Practitioners, Social Workers, Doctors, Nurses, and Public Health administrators. The goal of these instruments was to gauge how medical professionals view interprofessional roles and interactions, and how these views changed with increased exposure to IPE content.

**Evaluation Plan:** This project was designed to evaluate healthcare students' perceptions of interprofessionalism in the medical field. Nine different IPE-centered categories of assessment were evaluated through this project. These categories included communication, collaboration, roles and responsibilities, collaborative patient/family-centered approach, conflict management and resolution, team functioning, attitudes of teamwork, roles, and responsibilities, interprofessional biases, and effects of online learning. For each category, we evaluated the variation between the different types of professional students and the disparity seen between those with varying levels of past medical experience. In addition, we analyzed students who preferred working in groups compared to those who preferred working alone and the changes in student perspectives following consecutive exposures to IPE curriculum. Student responses to each event were also evaluated, with a future goal of developing and hosting IPE events that are effective and efficacious. This data will be used to further develop a comprehensive and complete training for IPE students within the parent institution of the University of Nevada, Reno.

**Potential Impact:** The survey data will be used at the parent institution to implement the most effective means of delivering IPE curriculum. The overarching goal is to provide other medical institutions with the information necessary to provide a consistent, sufficient IPE curriculum that students can utilize in the healthcare setting.

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### **Innovative Teaching: Foundation of Clinical Reasoning in the Basic Science Curriculum**

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**Idea:** Promoting patient-care centered learning of undergraduate medical students through a clinical reasoning pedagogy.

**Rationale:** Learning clinical reasoning is necessary to make the difficult transition from the basic sciences to clinical competence. Without clinical reasoning skills, basic science knowledge is poorly applied and integrated into patient care [1] While many US medical schools try to teach clinical reasoning and emphasize its importance in all four years of medical education, few have developed dedicated courses. A majority of faculty feel that their students have poor clinical reasoning skills [2]. A recent consensus statement from a group of UK medical educators outlined 5 core domains of clinical reasoning pedagogy and highlighted the role clinical reasoning plays in the development of diagnostic skills critical for clinical practice and patient safety [3] Attempts to teach clinical reasoning as an introductory curriculum and a pilot project have been reported using a flipped classroom and a case-based pedagogy [4,5]. The feedback of stakeholders was reported to be favorable in both studies. Our interventional program, Foundations of Clinical Reasoning (FCR), shows how optimal clinical care of patients is founded on knowledge of the basic sciences.

**Methods:** FCR was delivered to 2nd -year medical students for 3 consecutive terms. Students learned how to develop clinical reasoning skills using three main domains, Pathophysiology, Infectious Disease and Therapeutics. Disease presentation required students to identify a chief complaint, which was then used to make system-based differential diagnoses. Basic science knowledge was required to explain all aspects of a disease, including presentation, pathophysiology and treatment. This approach required application of pathophysiology at the organ, tissue, cellular and molecular level. Students learned the patient presentation, including symptoms, physical findings, laboratory test results and imaging, correlations with basic science principles. They then applied concepts with multiple clinical cases and tested their abilities to solve clinical problems in quizzes. The clinical faculty (specialty in pathology) and medical science faculty (specialty in immunology) developed and delivered FCR session materials. These were published as pre-reading, student notes and session products. The faculty trained two other faculty members during the FCR sessions. Students had options for their preferred learning modality: 1. In-Classroom, 2. Live Interactive Online Sessions and 3. Virtual Self-learning on Video Platform. We made live interactive online sessions available with advanced technology in 2020 for students who participated remotely due to the COVID-19 pandemic.

**Evaluation Plan:** The effects of the FCR pedagogy on learning clinical reasoning were evaluated with the survey, which consists of 8-Likert scale questions. The answer options include 'agree,' 'neither agree nor disagree' or 'disagree.' The response rate was 58% and 43% in In- Classroom and Interactive Live Online Sessions, respectively. The number of participants in Virtual Self-learning on Video Platform based on the recorded Interactive Live Online Sessions was unknown; however, 55 students responded to the survey. The observed overall mean '%Agree' was 83% based on the feedback from the combined, 8 survey questions, three subjects and three instructional delivery methods. For the last question, 'Are you ready to apply clinical reasoning skills to solve clinical cases in high-stakes exams?', most students (88%) responded that they developed clinical reasoning skills for problem solving. One of the authors (HY) observed their gradual progression and improved learning as active, spontaneous interactions for questioning and answering between students and faculty increased over time. To validate the FCR effects, student performance in Step 1 of the cohorts of FCR participants and non-participants will be assessed.

**Potential Impact:** Understanding of disease from patient presentation to molecular levels through organs and cells could be key for mastering basic science concepts. Enhancing clinical reasoning of

undergraduate medical students with effective pedagogies and technology may improve student's abilities to apply basic science knowledge and concepts to patient care.

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### **Augmented Reality Medical Student Teaching within Primary Care**

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**Problem Statement:** The coronavirus pandemic has had a significant impact on medical education worldwide, particularly for medical students (1).

**Rationale:** As NHS hospitals and primary care services around the UK prepared for the pandemic, university students were sent home and clinical placements abruptly ended. Experiential learning is key in medical education and the pandemic has interrupted this passage of development (2). At a time where the progression of medical students is more vital than ever, the use of innovation technology will be essential in allowing them to develop clinical skills and knowledge remotely. Hololens Augmented Reality (AR) headset allows students to be virtually present in a consultation and interact with both user and patient.

**Methods:** In September 2020, an AR teaching session was piloted for the first time in a primary care setting in the UK with a group of medical students from Oxford University. The students were socially distanced in a separate teaching room, whilst the primary care physician trainer carried out a consultation wearing an AR headset. The headset allowed the students to view the consultation virtually from a 'doctors perspective', whilst the trainer could see and interact with the both patient and students. The trainer was able to open and view images in an augmented construct, which the students could view, these included example scans and observations. Medical student experience was collected using questionnaires and a brief interview.

**Results:** From the feedback the three students provided, all would recommend the session to their peers. Thematic analysis of interviews gives insight to key areas of learning. The first was being able to "see" the consultation from a doctor's perspective and the second was interacting with an "actual patient". All agreed AR would be a beneficial addition to their course if they were to be removed from clinical placement due to COVID-19, or to supplement hospital or primary care education. One limitation highlighted by our patient was that they were unable to see the students and screens in the GP trainers augmented reality construct. This changed the dynamic of the consultation and further work integrating patient feedback will be needed to assess the impact of AR on the patient experience. The limitations raised by the students were centred around technical issues. These should be quick to resolve with AR training and preparing the AR screens before each session.

**Potential Impact:** AR teaching offers live patient contact remotely, allowing students to further their learning amid the COVID-19 restrictions. In a time where both students and trainers are required to adapt their teaching and learning styles quicker than ever before, it has great potential to ensure continuity of education as a second wave of COVID-19 threatens.

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### Using the “Systematic Review Lite” Model as an Innovative Tool for Medical Student Education

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**Idea:** Developing research skills is important for medical students. We propose the “systematic review lite” as an effective means to deliver these skills.

**Need/Rationale:** Acquiring research skills and attributes is recognized as an important learning outcome of medical education by the AAMC and GMC. Indeed, in a survey of experts, the seven highest ranking attributes found necessary for a professional to possess were the same for both researchers and clinical practitioners. These seven skills included: an inquiring mind, core knowledge, critical appraisal skills, understanding of the evidence base for professional practice, understanding of ethics and governance, ability to work in a team, and ability to communicate. Systematic reviews (SR) are widely recognized as a cornerstone of evidence based medicine (EBM). A SR project can confer on students numerous benefits, including an excellent opportunity to develop essential research skills. Here, we report on the successful use of a rapid low-cost systematic review process, the “systemic review lite” (SRL) model, and propose its wider adoption into medical school curriculums. The SRL model presents numerous benefits; namely, it allows students to develop essential research skills, empowers students to produce meaningful research outcomes, and can be completed in a short period that can easily be incorporated into a medical school curriculum.

**Methods:** A systematic review lite (SRL) on the timing of pharmacological thromboprophylaxis (PTP) after traumatic brain injury was undertaken by a group of first year medical students from The University of Edinburgh Medical School as part of a 10-week student selected component. As part of the “lite” method, students wrote a project protocol under the direction of their faculty advisors but did not publish this. In the first filter, studies were excluded if full text or English translation were not available. Non-human studies and studies on neonates and children were excluded. Authors were not contacted for missing data and individual references were not individually hand searched and cross checked for relevant publications. In the second filter, full text articles were assessed and excluded if they lacked appropriate comparators. Studies were extracted by three independent assessors and cross checked. Data was extracted to Review manager 5.3 (Cochrane Collaboration 2014). Quality was assessed by two independent reviewers using the Newcastle-Ottawa Scale. Results concluded that early PTP may reduce the risk of VTE in traumatic brain injury, particularly in the more severely injured. The process allowed students to develop skills and produce a viable abstract and poster of the findings. This has since been accepted at the European Society of Intensive Care Medicine 33rd Annual Congress.

**Evaluation Plan:** The systematic review lite format proved to be viable method for conducting research and acquiring key skills. The students delivered clear results in a short time frame. While the methodology was not as comprehensive as possible, we argue this is a useful compromise, particularly when a definitive prospective study is likely to be needed anyway to resolve a clinical problem. Similar to a traditional systematic review, the outcome was a valuable summary of current data to direct future research. In addition to producing meaningful research, anecdotal data suggests the project allowed students to foster research skills in 6 of the 7 previously mentioned essential skills. To evaluate this, we propose a pre- and post-project survey assessing student self-reports on these skills. We would also survey if such projects produced peer-reviewed publications/presentations. This would be further evaluated with feedback from the project faculty advisors. Although this project was completed prior to the COVID-19 outbreak, it would be well suited to an environment of virtual collaboration. In a time where other direct research may not be as available to students, it would still provide a viable opportunity to undertake first-hand research.

**Potential Impact:** The systematic review lite model can be used by other medical schools for engaging students while teaching valuable research skills. SRL can be implemented over 10 weeks under a principal investigator. By giving students ownership over the project, students experience independent research while also learning key skills in the curriculum.

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### **Utilizing the After Action Review Process for Crisis Management in Medical Education**

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**Idea:** Medical schools need a coherent strategy to evaluate the stages of crisis management to maintain a record that is useful in future crisis response.

**Need/Rationale:** During the Coronavirus Disease 2019 (COVID-19) pandemic, many organizations have aptly used the phrase “building the plane while it is flying.” Under typical circumstances, organizations have time to plan for anticipated events and reflect on these events as they plan for the future. But how can an organization, such as a medical school, evaluate its response to a crisis as the situation continues to unfold? A structured reflection process to evaluate a medical school’s changes to curricular operations in the initial stages of crisis management appears necessary, although few models for this process exist. Here, a novel approach was applied to review the University of Pittsburgh School of Medicine’s (UPSOM) response to COVID-19 and adaptation of its curriculum: the After Action Review (AAR) process. This process, adopted from the United States Army, focuses on strategies for self-reflection for future improvement. The objective was to use this approach to prepare the school for future crises and to explore avenues for curricular reform.

**Methods:** The process began with a subcommittee discussion on the importance of reviewing the medical school’s response to the initial “shutdown” as a way to prepare for its future curricular operations. Working groups of faculty, staff, and students were asked to reflect on significant events, create possible survey questions if additional information was needed from faculty/staff/students, and answer the four AAR “central questions” in the context of the group’s focus area. The working groups focused on five critical areas (online teaching and learning, student/faculty support, governance, technological resiliency, crisis communication). Each group reflected on the timeline and events, and through the AAR process, supplemented by survey data, constructed a narrative account of significant events and developed focused recommendations for future crisis response. The survey consisted of in-house questions developed in consultation with the working groups (who were asked to reflect on their own personal experiences in their respective roles) as well as questions adopted from the Council for Higher Education Accreditation’s “Questions for Quality.” Furthermore, a detailed timeline was created and included curricular events/Curriculum Committee decisions as well as external events (Liaison Committee on Medical Education guidance, SOM actions, University actions, local COVID-19 cases) for context.

**Evaluation Plan:** Through this structured reflection process, multiple areas of strength within the UPSOM’s response to the crisis were identified. The AAR process revealed the extent of adaptability and engagement of each faculty, staff, and students during the initial crisis phases. The process also demonstrated that despite the implications of a global pandemic and the need for a rapid and complete transition to remote instruction, the UPSOM continued to operate and provide students with sufficient preclinical and clinical education without interruption to graduate timelines. At the same time, the process allowed for identification of several areas of improvement that were agreed upon from faculty, staff, and students. Importantly, these steps and strategies are not specific to the COVID-19 pandemic and can be adopted for future crisis management or even curricular reform.

**Potential Impact:** This review process can serve as a model for 1) the efficient and convenient use of documentation built from the report, 2) preparedness for future shutdowns, and 3) normalization of the AAR process in all facets of a medical school’s curricular operations.

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### **The Current and Near Future Impact of COVID-19 on Aesthetic Fellowship Programs**

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**Problem Statement:** To study the current and near-future impact of the COVID-19 pandemic on both ASAPS-endorsed and non-endorsed aesthetic fellowship programs.

**Rationale:** COVID-19 has caused a significant impact on the United States healthcare field due to the high intensity of cases as well as shortages of PPE, hospital beds, and ventilators [1]. The Centers for Disease Control (CDC) originally called for all elective and non-emergent cases to be postponed until the COVID-19 curve of cases had flattened [2]. This particularly affects surgical fields, as they had to reevaluate and shift current practices in order to minimize the spread and allocate proper PPE and resources for COVID-19 positive patients and frontline workers. This further affects surgical residencies and fellowships, aesthetic fellowship surgery included, where most of the training depends on surgical experience. These changes caused programs to shift focus and establish rapid solutions so that residents and fellows can still receive training without delay [3]. The impact of the COVID-19 pandemic on current and upcoming aesthetic surgery fellows has not yet been evaluated.

**Methods:** A 23 question anonymous web-based survey was sent electronically to all aesthetic surgery fellowship directors with an active program in the United States, found through the Aesthetic Society (ASPAS) website. Surveys were sent and collected from April 18, 2020 through May 14, 2020, through Qualtrics®, then analyzed with Microsoft Excel® and descriptive statistics. A follow-up survey was sent to directors with 7 questions, and data was collected from June 6, 2020, through August 18, 2020. A 23-question survey was additionally sent out through the ASPAS to aesthetic surgery fellows in order to gain their first-hand insight. Data for the fellow specific survey was collected from June 6, 2020, through August 18, 2020. The surveys included questions pertaining to the impact on the fellow's surgical and clinical experiences, financial status, as well as if there were any adjustments in their training. Additionally, questions were included to determine any impact on the interview process and training for fellows starting in July 2020 and 2021. Demographic questions regarding location were included in the survey, and fellowship directors and fellows were given the opportunity to share any additional comments on the topic.

**Results:** There was a 65.5% response rate for the initial director survey (19/29). All directors reported that the COVID-19 pandemic had an impact on aesthetic surgery fellows. 73.7% of directors recognized at least a "moderate impact" on educational experience, and the same percentage reported the same for clinical experiences. Only 5.3% of directors reported that they believe COVID-19 would have a "significant impact" on their fellows becoming well-trained surgeons, and only 5.3% of directors reported that they believe there will be a "significant impact" on the new fellows starting in July 2020. Nine directors (31.0%) responded to the follow-up survey. 28% (9/32) of fellows responded to the fellow specific survey, and all fellows reported that COVID-19 had at least some impact on their fellowship experience. 66.7% of fellows reported that COVID-19 will have a "mild impact" on their ability to become a well-trained aesthetic surgeon. Impact on 2020 and 2021 fellows was not as significant as with the current fellows. Data showed that aspects of training were shifted and that facial aesthetic surgery in particular had been greatly impacted.

**Potential Impact:** Telemedicine, educational efforts, and standardization of new guidelines can be increased to minimize loss of fellow training due to COVID-19. Ongoing evaluation and shared experiences can assist fellowships in customizing programs to provide an educational environment that balances patient needs and well-being in this period of rapid adaptation.

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## Using Deliberate Practice Skills to Improve Pediatric Urology Fellow Training

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**Idea:** Through the Pediatric Urology Skills Project, faculty and fellows will develop and assess deliberate-practice frameworks for six common procedures.

**Need/Rationale:** Introduction of deliberate practice into training has been shown to help develop mastery of skills in a variety of fields and professions including multiple areas in medicine (2). Deliberate practice (DP) involves usage of specific practice goals, immediate feedback regarding performance and adequate opportunity to refine skills (2). By introducing DP processes into pediatric urology training, there is potential to improve the acquisition of surgical knowledge and technique, especially when accompanied by focus feedback from faculty. A disparity exists between ideal and actual feedback practices in the OR (3). There have been multiple studies which have described feedback tools for giving specific step-by-step post op feedback but there are none in pediatric urology. In pediatric urology we do not have the prerequisite detailed breakdowns for commonly performed procedures. To address this national challenge, we propose a two-step process: 1) develop a repository of data with detailed structure of key operations to teach and assess surgical skills; and 2) piloting of these checklists with fellows utilizing trained faculty.

**Methods:** The primary learners will be pediatric urology fellows across the country (~25/year) within their single clinical year. The main outcome goals are to 1) develop frameworks for six key surgical procedures in pediatric urology to guide deliberate practice; and 2) pilot each tool developed with a sample of fellows (~5). Each framework will include major steps of the operation. Each major step will be broken down further into sub-steps. Each procedural framework will then be used to develop DP strategies for fellows, an assessment tool, and key DP feedback points for faculty. A national taskforce of program directors and senior fellows will be assembled to develop the frameworks. National cooperation will ensure that leaders in the field contribute to frameworks in which they possess particular expertise. In Step 2 of the this process, each of the six frameworks (DP strategies, tool and feedback points) will be piloted by at least 5 fellows. In formulating this taskforce our long-term goal is to determine specific surgical techniques that are most common across all procedures and which are most important for becoming surgically proficient. In this way, we can focus on ensuring that fellows master the component skills necessary to perform more complex procedures since many procedures are rarely performed. This will help standardize the educational experience fellows receive nationally and provide a common structure to deliver high quality feedback for all surgical procedures.

**Evaluation Plan:** The evaluation will have multiple steps. 1) Work of the taskforce will be tracked over the first four months for completion of the materials for the six procedures. 2) During the pilot phase (8 months) we will use a common online tracking form to record each pilot usage with accompanying user assessment. The faculty will focus on assessing accuracy of the steps and sub-steps for the procedure, and the usefulness of the checklist in providing feedback. The fellows will rate the usefulness of the framework in preparing for the operation, and the usefulness of the immediate feedback provided by faculty during deliberate practice. 3) Learner behavior (surgical skills) will be assessed through directly observing fellows and will be able to determine level of mastery for each of the six procedures. These data will help inform the specialty in this pilot round about current level of skills. 4) Impact will be assessed across time as the deliberate practice frameworks become fully integrated into programs. Since most of the 25 programs will be part of the project, this will be possible as learner behaviors associated with using deliberate practice for acquisition of new skills are tracked and performance assessed.

**Potential Impact:** If successful, this project will impact education within our entire sub-specialty (pediatric urology) and could also provide a model for other small surgical sub-specialties to enhance their competency-based training and assessment of learner operative performance.

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### **The Knowledge Games: May the Odds be Ever in Your Favor**

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**Idea:** To combine gaming and adult-learning theory to enhance residents' engagement and peer connection by implementing the first annual "Knowledge Games"

**Need/Rationale:** Residency presents a unique challenge where learners often work at different clinical sites, and thus both miss out on key portions of the curriculum and the opportunity to interact with their classmates. In the era of COVID, this has become an even larger consideration as didactics and clinical experiences are being presented remotely(1) and limitations of physical gatherings have amplified the difficulties in social connection. In addition, widespread application of adult learning theory to residency education is lacking. Many programs still use traditional formats (such as lectures) for didactics, which seldom allow for active learning. Key learning methods of proven benefit like retrieval practice or spaced repetition(2) are not used; instead lectures are scattered throughout the year without being revisited. Gamification can bridge this gap by simultaneously incorporating adult learning theory and improving learner motivation and engagement(3). We developed "The Knowledge Games" to capitalize on gaming, technology and adult-learning theory to reinforce didactic material covered remotely, offer additional "touches" with learners we otherwise struggled to accomplish during the pandemic, and foster social connection.

**Methods:** Each week, residents (n = 22) attend Academic Half Day, which involves a topic presentation and discussion presented by a sub-specialist. Few attend the session in person, with the rest of the residents viewing remotely. To help enforce key principles learned, the program director (PD) sends a question related to the material presented in prior weeks to all residents via secure group text. Residents are instructed to respond to the PD directly to allow all residents the opportunity to engage in retrieval practice when it is convenient for them. The first person to respond is awarded a point. The following day, answers and rationale are shared via group text and the daily winner is announced. At the end of the month, the resident with the most points is awarded a small prize. Rules are intermittently changed to allow for multiple winners (for example, during the month of September each post-graduate year [PGY] cohort competed as a team).

**Evaluation Plan:** We have found that by providing daily case-based questions pushed via group text, learners can engage in material asynchronously. They are also able to participate in retrieval practice for the main concepts learned during their didactic time, and the content of questions can be repeated over time to facilitate spaced repetition. Instructors can interact with the residents to provide explanations for common incorrect responses. Importantly, residents can interact with, and cheer on each other. To further evaluate the impact of this activity, we will track the number of individual daily winners over time and evaluate the distribution between the PGY levels. We will also survey the residents to understand how this activity increases their engagement with Academic Half Day, and how it affects their connection to their classmates. We may also track change in in-training exam performance compared to prior cohorts of residents who did not participate in the Knowledge Games.

**Potential Impact:** The Knowledge Games may have significant impact on knowledge retention and learner satisfaction without much added faculty time. This activity would be easily adaptable to any program of any size in any specialty. Importantly, it may also be a low effort, high yield intervention to improve the feelings of social isolation that COVID-19 has created.

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### **Training New Coordinators: Designing an Institutional Professional Development Program**

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**Idea:** Designing an institutional training program for new residency and fellowship program coordinators in Graduate Medical Education.

**Need/Rationale:** Program Coordinators play a valuable role in the successful function of any residency or fellowship program. Research indicates this niche profession is vital for successful operation of any Graduate Medical Education program, but “there is no formal path for new coordinators to gain the necessary skills to perform the job”(Dubois, Marsh, Demers, 2017, p.114). It is noted, “in many cases training for the role is obtained through on-the-job trial and error” (Dubois, Marsh, Demers, 2017, p.732). Interestingly, “high turnover and burnout likely result from the discrepancy between ACGME requirements and the lack of recognition in many institutions; [one] survey found 33% program coordinators turnover in the prior 12 months” (Feist and Gilbert, 2019, p.732). Based on this evidence as well as in influx of new coordinators at our institution and a desire they expressed for training, the Program Coordinator Training Group program at Children’s Hospital Los Angeles was established.

**Methods:** The program is designed to provide formal training to newly hired Program Coordinators, equipping them with the skills necessary to thrive in their role. Our projects’ aims are focused on professional development and development of community practice. Specific learning outcomes include operating the institutions Resident Management System (RMS), becoming familiar with ACGME general program guidelines and annual program timeline, and developing the ability to describe the role of a Program Coordinator as defined by the ACGME. This pilot program was designed using the four levels of Kirkpatrick Model of Training Evaluations and Paulo Freire philosophy of critical pedagogy or problem-solving education. Participants understanding of new concepts were measured by the 4C model: Connections, Concepts, Concrete Practice and Conclusions. The Program Coordinator Training Group program launched in April 2020, conducting monthly 1.5-hour virtual training sessions for six-months. Training sessions covered a litany of topics including fellowship/residency program cycle, MyEvaluations (CHLA’s RMS), ACGME fundamentals, Continuing Medical Education, and several other key areas. Assignments included monthly Learning Log entries, video and reading resources. Additional support components implemented were peer mentorship, virtual check-ins, and Microsoft Teams support group.

**Evaluation Plan:** All participants were required to complete a post-assessment survey to assess if our program was successful in meeting our pilot program objectives and aims. Results are pending; we should have complete data by 11/1/2020.

**Potential Impact:** Significance will be updated after review of finalized data. We anticipate our results depict participants developed a stronger sense of community by participating in our training program. Additionally, we hope it demystified possible position expectations while supporting professional development and development of community practice.

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### **Preparing Incoming Medical Students for Success Using Online Prematriculation Coursework**

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**Problem Statement:** Current incoming medical school students come from diverse academic backgrounds and can feel unprepared for the initial rigor of medical school.

**Rationale:** The undergrad pre-med curriculum has changed as modern education evolves. Today's incoming freshman have very diverse academic backgrounds with some majoring in hard sciences while others in fine arts. The MCAT has historically been used by admissions committees as the academic equalizer to give a needed objective measure to judge both their ability to succeed in medical school and their aptitude and preparedness for a medical career. There are academic subjects not reflected on the MCAT that are helpful to the incoming students that are not currently required for application, and therefore some students are more prepared for the initial coursework than others. Our curriculum stresses student-led learning. We hypothesized that releasing pre-matriculation material to all incoming students would allow for better initial student experiences and grades as all students would have a basic level of knowledge to better participate in initial student-led activities.

**Methods:** Prematriculation programs have been implemented in many medical schools to prepare students for initial coursework and level the academic playing field. To better prepare students for our program, basic science educational material was provided to all students. Faculty members in biochemistry and microbiology prepared required foundational online content and associated self-assessments that were released to students 5 weeks before the start of the first classes. Prematriculation material for genetics, immunology and physiology was purchased from an outside vendor and those coordinated online lectures and self-assessments began 3 weeks before classes started and continued in a self-paced fashion throughout the course. Faculty and students were told that the material covered in the prematriculation content was foundational to the content released as graded material by the faculty, and this prematriculation material would be seen on the exams, sometimes alone, but often as material integrated into higher-order questions. Students took surveys on their initial satisfaction of the core curricular content of the first course, and their later satisfaction as the course ended. After the course was completed, the students' demographic and academic data submitted through AMCAS was analyzed to assess the level of academic preparedness for starting school and was correlated with their performance on the prematriculation material and their grades for their first course.

**Results:** The purpose of the study was to determine the correlation of completing prematriculation material with course satisfaction and grades. Students were initially divided by their transcripts into two comparative subject pools demonstrating either significant science preparedness or possible lack of science knowledge by their completed academic classes. The initial and final course surveys were also subjectively scored for a degree of perceived satisfaction with the content of the course. Correlations were measured for student grades in the course for the prepared students versus the non-prepared, and showed that academically prepared students performed somewhat better and had a higher degree of course satisfaction. The effect of fully completing the prematriculation content on the course grade was also measured across these two groups and showed that low performing students that did not do well on the prematriculation material were at a greater risk for lower course satisfaction and grade performance. Other applicant performance data such as MCAT and GPAs was also analyzed for correlation to compliance to prematriculation content and course grade. Finally, clinical experiences like working as a medical scribe and volunteering in a clinical environment were also analyzed for correlation to initial performance in medical school to see if these academic vs real-world experiences were a better predictor for initial success in course grades and student satisfaction.

**Potential Impact:** Findings demonstrated that prematriculation material had an impact on students without strong science backgrounds. Although not a panacea to cure student preparedness, students

who were more engaged with online prematriculation material earned higher grades and reported increased curricular satisfaction compared with their peers.

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## **Developing a Well-Received Pre-Matriculation Program: Evolution of MedFIT at UNR Med During COVID-19**

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**Problem Statement:** Production of a robust, skills-based online and in person hybrid orientation program for matriculating medical students during a pandemic.

**Rationale:** MedFIT is a 2-week, robust orientation program for matriculating first year students. The program implemented a skills-based approach over a lecture-based approach to combat the boredom offered by many orientations. The goal of MedFIT was to prepare students for the academic rigors they would soon face in their first year of medical school, but in a low-stakes environment. Sessions held during the orientation included mock lectures and anatomy labs, as well as mock written tests and practicals. These assessments are offered to students to allow them to experience taking a medical school assessment without the risk of failing. Additional sessions offered provide information on study skills, physicianship, professionalism, team-building, and mentorship. The Pack Mentor program is a formal peer mentorship system in which students are paired with a second-year medical student who serves as their mentor for the remainder of their first year and beyond (1).

**Methods:** The MedFIT curriculum incorporated the following content areas: Gross anatomy, histology, and physiology lectures; clinical sessions (e.g. history-taking, physical exam skills); student success sessions (e.g. study skills, career advising); informational sessions (e.g. financial aid); nutrition for students and patients; Student Outreach Clinic training; a mock written exam; a mock lab practical exam; Family Day; and A White Coat Ceremony. Additionally, the seventy incoming first-year medical students were allocated into eighteen groups, each consisting of three to four members. These student groups were formed based on certain characteristics including demographics, prior work and medical experience, as well as academic background. Each group was assigned a second-year medical student to serve as a mentor. The one second-year student with 3-4 first-year students is termed a "Pack," after UNR's mascot. The Global MedFIT Committee, consisting of faculty and previous Pack Mentors, oversaw the MedFIT planning process. This involved creating the schedule/content, selecting pack mentors, and training new pack mentors. At the conclusion of the MedFIT orientation, qualitative and quantitative data about the MedFIT program was collected through surveys. The results were then analyzed by the UNR Med Global MedFIT Committee. The committee uses the responses from students to help guide improvements that are made to the MedFIT program on an annual basis.

**Results:** The feedback and overall scores from the MedFIT surveys for years 2020, 2019, 2018 and 2017 are presented here. Overall, feedback from each subsequent class has been increasingly positive and rewarding, demonstrating the effectiveness and benefit of the MedFIT program as a means of transitioning into medical school. Despite the hybrid in-person/online MedFIT program held in 2020 due to the COVID-19 pandemic, overall ratings of the program were as positive as the previous year. Qualitative data from the Class of 2024 (MedFIT 2020) indicated that most students enjoyed the introduction to UNR Med, meeting their fellow classmates, and meeting their pack mentors prior to the official academic school year beginning. Students felt more prepared overall in regards to time management, social support, and academic resources. Additionally, students appreciated the opportunity to practice taking a written exam and lab practical in a low-stakes environment in which their grades did not impact their record. The most common constructive feedback revolved around the hybrid in-person/online nature of the program for 2020. Students recommended more active learning and participation during online informational sessions and more opportunities to meet their classmates before entering a primarily-online first year of school.

**Potential Impact:** Matriculating students cultivated lasting relationships with upperclassmen, practiced study skills in a low-stakes environment, and left prepared for their first year. MedFIT has proven its success and adaptability through both in-person and hybrid programs, and has continued as the orientation program for UNR Med for the last five years.

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## **Labor and Delivery Survival Guide Developed for Family Medicine Residents**

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### **Problem Statement:** Labor and Delivery Survival Guide Developed for Family Medicine Residents

**Rationale:** Family physicians continue to provide much of the obstetric care for rural America (1). Unfortunately, it is also one of the rotations where residents in Family Medicine (FM) tend to struggle (2). In our hospital we conducted a needs assessment and found that two-thirds of our residents also reported struggling. In response to this need two FM residents, with the guidance of a faculty member, began in 2018 to develop a Survival Guide for Labor and Delivery (L & D). The Survival Guide was made available to our resident in 2019. It is an easily accessible (digital and print version) instruction manual designed to meet the learning needs of our residents on L&D, as well as the ACGME Family medicine milestones requirements. L&D Survival Guide provides a centralized location for important practice information and well as a reference and resource on daily practice details on L&D. This study was designed to determine the usefulness of the guide.

**Methods:** The participants in this innovation were 8 PGY1 FM residents 2019-2020. The Survival guide is a 22-page manual for residents to utilize during their Obstetrics rotation, which is an 8-week experience in Labor and Delivery. San Joaquin General Hospital is a county hospital with 150 deliveries per month, where most patients are high risk pregnancies. The PGY1 residents work alongside nurse midwives, with no senior resident on the rotation. Residents are supervised by Obstetrics/Gynecology and Family Medicine Faculty. The manual was created using the Dick and Carey (3) instructional model (identify goals, task analysis, identify learner behavior and characteristics, develop performance objectives, develop content and program evaluation). All steps were followed. The manual has 8 areas of focus. The areas are: 1) Orientation to the rotation; 2) Roles and responsibilities; 3) Work efficiency; 4) Documentation; 5) Communication protocols; 6) EMR, Cerner Order sets; 7) Important Contact Numbers; and 8) Readings and resources. To assess the impact of the manual, we have utilized both quantitative methods, use of specific survey monkey survey focused on the manual and qualitative debriefings at the end of each rotation with all of the residents in 2019-2020. The manual has had two revisions based on the ongoing feedback by residents.

**Results:** The qualitative debriefings throughout the year resulted in making additions to the manual to meet specific learner needs. For example, the authors added more content about the rotation itself especially the expectations for pre-sign-out rounds in the morning, as well as adding references. The authors (PGY2 and PGY3 residents in 2019-20) collaborated with the rotating residents to make changes. The quantitative data collection in June 2020 using survey monkey to gather anonymous data A 4-point importance scale was utilized (unimportant, slightly important, important and very important in relation to learning within the Obstetrics rotation). All PGY1 residents, n=8, completed the survey. The overall rating for the survival guide was 3.75/4 with 7 of the 8 residents rating the Survival Guide as very important to their learning within the rotation. Use of the OB Survival Guide 3.0 has now been made a permanent part of the rotation. The program will also continue to query residents in rotation debriefings about the Guide as well as including it in the annual survey on Maternity Care and Learning.

**Potential Impact:** The OB Survival Guide has been shown to be effective for use by PGY1 residents in one program. Other Family Medicine and Obstetrics/Gynecology Programs as well. as Nurse Midwife training programs could modify the document for their own usage. It will be made available to all IME attendees.

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## Psychiatry Bootcamp to Prepare for the Intern Year Transition

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**Idea:** Psychiatry Bootcamp to help prospective interns gain skills required for success as a first year resident in psychiatry.

**Need/Rationale:** The transition from medical school to internship is often associated with the perception of unpreparedness across specialties. To address this issue, many medical schools have implemented a “bootcamp” to teach essential skills needed to transition to internship. Most research done in this area applies for specialties that focus on skills done in simulation labs or procedural skills. In many cases, learners report an increase in confidence and self-perceived competence (1). They have also viewed it to be an essential part of their professional training even years after the intervention (2). Psychiatry would benefit from similar interventions prior to starting internship. Easing this transition involves skill building in addition to consideration of personality characteristics and contextual factors such as relationships with supervisors and peers (3). This bootcamp will focus on the skill portion in combination with character skill discovery. A psychiatry bootcamp will help to meet these needs and if effective, can serve as a model for institutions to train competent and more confident learners to begin their postgraduate medical training.

**Methods:** Participants will be 10-15 M4 students who have matched into psychiatry. The bootcamp is a 2 half-day experience (spring 2021) designed to prepare students (character and skills) for internship. Prior to the bootcamp, students will complete a pre-intervention assessment of character-related skills using four tools: Resilience Scale, Mindset Self-Assessment Tool, VIA Character Strength Survey, and Grit Scale Quiz. This will be followed by a team-based assessment of character strengths on the first day. The skill portion will include psychiatric interviewing, behavior chain analysis, and de-escalation techniques. Techniques will be introduced in brief didactic presentations including interactions through use of progressive disclosure cases and think-pair-share. Additional classroom techniques include review of video case vignettes. Skills will be built using role-play and standardized patients with direct faculty observation to allow assessment of individual learner skills. At the end of the bootcamp, students will complete a written self-reflection about the bootcamp experience and develop a personal plan of action related to their character-related skills. Students will be surveyed 3 months into intern year on the progress of their plan.

**Evaluation Plan:** 1) Accountability: We will track attendance, timing of the activities, and level of participation in each activity so that we can modify the plan for next year as needed. 2) Reaction: All sessions will be assessed via session evaluation forms completed by learners to gain their opinions on quality, organization, and usefulness to them in their transition to residency. A resident survey 3 months after implementation will assess perceptions about the usefulness of the elements of the bootcamp. 3) Learning: Throughout the didactic sessions, board type questions will be given to assess their knowledge acquisition. A written reflection about the vulnerability and perception of patients with personality disorders will be monitored for depth of reflection. Direct observation of participation in small group activities and work with a standardized patient will provide in vivo feedback to learners. 4) Behavior: Learners will create a plan of action/commitment to act which we will follow-up on as part of the 3-month post-participation survey.

**Potential Impact:** For rising psychiatry interns to be adequately prepared for residency, they must be equipped with adequate character skills and relevant knowledge/skills prior to internship. If effective, this bootcamp can serve as a model for other institutions to ease the transition to residency.

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### **Practice Gives Skill: Preparing Students to Present Evidence in Clerkships**

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**Idea:** Building an evidence-based practice module using principles of self-directed learning to prepare medical students to present evidence in clerkship.

**Need/Rationale:** Our Transition to Clerkship (T2C) course occurs immediately prior to starting of clerkship rotations and includes an evidence-based medicine (EBM) module. T2C had been synchronous and in-person for all Year 3 medical students, but due to the COVID-19 pandemic, content needed to be revised to be delivered virtually. This prompted instructors of the EBM module to re-envision the content to increase emphasis on the main module deliverable: a practice oral evidence presentation. This deliverable was also identified for increased emphasis from prior years' students and course faculty leaders. Furthermore, it addresses Core Entrustable Professional Activities (1) and identified needs to practice oral presentation (2). The content was revised to be asynchronous and to further develop learner skills in finding evidence related to a clinical question, synthesizing that evidence, and then supportively practicing (3) the new skill of presenting an oral evidence synthesis for a clinical setting.

**Methods:** Learning objectives for the EBM module focused on: 1) identifying tools for finding evidence at the point of care, 2) using effective search strategies for finding evidence, including guidelines, 3) synthesizing evidence into a brief oral evidence presentation, and 4) practicing delivery of an oral evidence presentation, including giving and receiving feedback. Instructors provided learners with frameworks and instructions to support their success with the activities, which were designed to be accomplished in 2 - 3 hours. The module consisted of pre-work and a paired activity. The pre-work focused on context for clinical oral evidence syntheses and on finding quality evidence. The paired activity consisted of selecting from a menu of topics, finding a relevant guideline and a primary study, synthesizing evidence found, recording and presenting a brief oral update to a peer, and providing peer feedback. To encourage self-direction as well as teamwork (3), learners were asked to complete the pre-work and organize with their pre-assigned partner an online meeting to practice presenting the oral brief as well as providing feedback according to a rubric for one another. Learners each submitted and recorded a video of themselves delivering their brief evidence oral presentation. In this format, learners are able to deliberately practice an oral evidence presentation in a safe environment assuring a supported practice opportunity before moving into the clinical environment.

**Evaluation Plan:** Instructors viewed each student's submitted video based on the peer feedback rubric and then provided aggregate feedback to the students. Instructors also reviewed all of the submitted peer feedback forms with an eye to how learners analyzed each other's performance. Both instructors agreed that this was a more effective way to assess the quality of student work related to the activity and their ability to provide constructive peer feedback. Instructors also asked learners to provide (optional) immediate feedback about the EBM module. Students responded that the instruction was effective and that they appreciated the overall organization and structure, learning how to find guidelines, and the opportunity to practice presenting in a safe environment. The School of Medicine also solicited student feedback about the EBM module, with largely positive results. In preliminary feedback, most students who rated the module rated it as very effective (in line with or better than other sessions in T2C). There were many favorable student comments such as, "I loved the EBM project and found it especially useful specifically to 3rd year." Instructors were impressed by the high level of engagement that students demonstrated for the activities in this module, as compared with prior years' in-person sessions. In the future, instructors hope to seek additional feedback from learners once they are further along in clerkship rotations and integrate further goal-directed practice.

**Potential Impact:** Synthesizing and orally presenting evidence in the clinical space is a core skill (1) requiring practice and feedback. Providing measurable, skills-based learning activities immediately applicable across all clerkships will help learners more readily succeed and perform in clinic.

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### **Evaluating the Utility of Using Single-Lead Versus 6-Lead Mobile Electrocardiography in Teaching ECG**

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**Problem Statement:** Teaching ECG in undergraduate medical education can be challenging given minimal clinical experience and the nuances of the subject matter.

**Rationale:** Teaching clinical concepts in pre-clerkship medical education can be challenging. Cardiovascular physiology, including electrocardiogram (ECG) interpretation and analysis, have proved difficult for first year medical students. In prior years, implementation of an active learning ECG activity using AliveCor KardiaMobile, medical-grade single lead ECG was successfully utilized for teaching ECG interpretation. The KardiaMobile is an FDA-approved medical device intended to record, store, and transfer single channel ECG rhythms and is widely used by patients outside of the clinical setting. By including the newly developed KardiaMobile 6-lead ECG to the existing active learning ECG session, we hope to improve the quality of cardiovascular physiology education at University of California, Irvine School of Medicine. Here, we describe the use the KardiaMobile iOS- and Android-enabled 6-lead ECG device to improve the hands-on learning experience and interpretation of cardiovascular physiology.

**Methods:** Prior to the active learning ECG activity, all students took the same nine-question ECG interpretation quiz through the Canvas course management software to establish a baseline of student understanding. The quiz contained two questions on ventricular hypertrophy and two questions on axis deviation. Students were then randomized to participate in either a single-lead ECG or 6-lead ECG activity. One day prior to the ECG active learning session, students were given a digital handout detailing the instructions for the activity. Students organized into groups of 3-5 students with sufficient distance between groups and proper PPE to comply with UCISOM COVID-19 guidance. The single-lead ECG activity focused specifically on detecting hypertrophy, while the 6-lead ECG activity focused on detecting axis deviation. During the activity, students were encouraged to work through the different exercises and answer associated questions. Activities included interpreting ECG readings, comparing ECG readings, and autonomic regulation. After the active learning session, students again completed the initial ECG quiz in order to determine the benefit of both the single-lead and 6-lead ECG activities in teaching ECG in a first year, pre-clerkship medical physiology course. Students also completed a Qualtrics survey to assess attitudes regarding the utility and applicability of the ECG activity to their classroom learning.

**Results:** Scores for the ECG interpretation quiz improved following the active learning session, regardless of the device (single lead or 6-lead) used during the active learning session. There was also no difference on hypertrophy or axis deviation questions regardless of the device used during the active learning session, suggesting that either KardiaMobile device was sufficient to teach these concepts. Regarding the post-session attitudes survey, 90% from the single-lead group and 95% of the 6-lead group of students either agreed or strongly agreed that the AliveCor KardiaMobile device was a valuable addition to the "Reading ECG" session in Physiology. 78% from the single-lead group and 79% of the 6-lead group of students felt that using the AliveCor KardiaMobile device helped further their understanding of ECGs. Additionally, inclusion of the 6-lead Kardia device was not found to be detrimental to the existing active learning ECG session. The 6-lead Kardia device was not inferior to the currently-used single lead Kardia device.

**Potential Impact:** The new KardiaMobile 6-lead ECG device was easily integrated into the existing active learning ECG session. After the activity, quiz scores improved regardless of ECG KardiaMobile device used. The 6-lead KardiaMobile device represents a novel educational tool to improve the clinical relevance of the cardiac physiology curriculum within UGME.

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### **Implementation of a Case-Based, Remote Learning Session to Teach Ultrasonography**

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**Idea:** With social distancing guidelines precluding in-person classes, we propose a method for teaching ultrasound remotely.

**Rationale:** In response to the COVID epidemic, many medical schools have transitioned to fully online curricula, especially for pre-clerkship students. Some modalities, such as lectures and team-based learning, have been easily adapted to remote learning. However, significant challenges have been faced in adapting traditionally interactive, in-person and hands-on sessions to online formats. Many schools have deferred these classes entirely, but with the pandemic raging on, short-term changes have become semi-permanent, raising questions about learner equity and performance standards. We proposed that using a live, case-based approach for online US instruction for medical students would: 1) allow for continuation of live, interactive, US teaching to pre-clerkship students in an online curriculum, 2) increase the faculty to student ratio and reduce the probe to student ratio needed to facilitate the sessions and 3) improve students' application of US skills to clinical diagnosis.

**Methods:** In groups of 100 students at a time, MS2s joined an online session using the Zoom platform. The session leader (typically a faculty member) began by introducing the session, timing, expectations and learning objectives. Students were then moved into breakout groups. In the first breakout group, the session leader demonstrated the use of US to visualize the heart, lungs and kidneys to a group of 50 students, using a near peer educator (MS3 or MS4 student) as a model of normal anatomy. This was accomplished by using a webcam to show the session leader demonstrating probe placement, in addition to using a handheld US probe connected to an iPad to screenshare the US images being acquired in real-time. As this was done live, students were encouraged to ask for clarification and repetition. In the second breakout group, groups of 10 students were presented with clinical vignettes of suspected hydronephrosis, pulmonary edema, and aortic dissection. These vignettes included examples of expected US images for each case, with examples of normal US images provided in order to facilitate the identification of pathological findings. Students were guided through a series of relevant questions by a near peer educator. The breakout groups were then brought together and the Kahoot platform was used to administer a quiz covering topics taught during the session. Finally, the session leader led a debriefing discussion to conclude the session.

**Evaluation Plan:** A 10-question multiple choice quiz comprised of questions relevant to the session learning objectives will be administered at the end of every session using the Kahoot platform. Analysis of reports generated via this platform will allow for determination student performance on questions testing the understanding of learning objectives. In addition, quantitative and qualitative feedback will be solicited from the students via Google Forms. This feedback will encompass questions regarding self-reported perception of the module, including a comparison to similar in-person US sessions conducted in the first year. Students will also be asked to self-report their comfort with using US to aid in clinical diagnosis. Any qualitative feedback will be reviewed for common themes. Students will also have multiple choice questions pertaining to the session included on their end-of-unit summative examinations, which will allow for comparison to performance on similar questions included on exams in past years.

**Potential Impact:** This innovation provides a model for a remote US session for pre-clerkship medical students that decreases the necessary resources while remaining interactive. It is our hope that it will be replicated by educators who are seeking engaging, low-cost solutions to provide continuity to their US curricula during a period of online learning.

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### **The Importance of Deliberate Practice: A Virtual Clinical Reasoning Elective**

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**Idea:** Bring case-based clinical reasoning education to third- and fourth-year medical students through four-week, virtual part-time elective.

**Need/Rationale:** As students transition from the preclinical to clinical years of medical school, it becomes imperative not just to arrive at a correct answer on a multiple-choice test, but to be able to employ clinical reasoning skills for diagnostic assessments in real-world scenarios. These skills are often left to the “hidden curriculum,” obtained by observing attendings and residents discuss their diagnostic reasoning on rounds and during morning report case conferences. As such, there is a need for opportunities for students to both learn the terminology and theory of clinical reasoning, and to have structured practice and coaching working through cases. Previous work on teaching clinical reasoning and adult learning theory suggest that deliberate, repeated practice is required to accomplish improvement in a new skill, such as diagnostic reasoning (1). The need for this type of formal curriculum is supported by a nationwide survey of internal medicine clerkship directors that showed most institutions lack sessions dedicated to topics of clinical reasoning, despite the belief of the majority of clerkship directors that clinical reasoning should be taught during medical school, with the greatest emphasis during the clinical years (2).

**Methods:** This four-week part-time elective provides a small group of MS3 and MS4 students with three curricular elements aimed at strengthening skills in clinical reasoning – (1) Didactic material on theories of clinical reasoning, (2) Active participation in case discussions, and (3) Guided production of educational content to be shared with peers. The elective takes place virtually, with all sessions held via the Zoom platform, but can be easily adapted to in-person sessions. Didactic material is introduced over the first three weeks of the elective, with a different theme each week. Students engage with curricula published on online platforms and answer discussion questions. Active participation in case discussions takes two forms: weeklong cases released and analyzed in daily aliquots, as well as live morning report style case discussions. As students work through weeklong cases, they submit their clinical reasoning and problem representations for review by a faculty facilitator, encouraging the deliberate and repeated practice described above. Live morning report style cases occur twice during the elective. Students are divided into two groups, with each group responsible for presenting a case one week, and discussing a case one week with the guidance of an expert faculty discussant. Finally, production of educational content involves students preparing two diagnostic schema and two illness scripts to be shared with the rest of the students in the elective.

**Evaluation Plan:** To maintain accountability, we track student completion of didactic training, weeklong cases, and produced educational material through student submission of completed work in each respective component. To assess student and faculty reaction to the elective, we seek feedback in the form of end of elective reflection essays. Results of a pilot cohort of this elective revealed one student’s thoughtful reflection – “this deliberate approach to how we build these mental shortcuts (schemas/scripts) will not only help us build them more efficiently but also will allow us to constantly be aware of how they may fail us.” Evaluation of the elective’s effect on student outcomes will take place through review of daily submitted problem representations according to grading rubric. Student competency in forming problem representations will be assessed longitudinally as they progress through the elective as a way of qualitatively measuring improvement. Additionally, students will undergo pre- and post-assessments to measure changes in knowledge of clinical reasoning topics and self-perceived competency in components of diagnostic reasoning.

**Potential Impact:** To become successful clinicians, it is imperative that medical students build skills in clinical reasoning. This elective provides a platform for active and deliberate practice that can lead trainees become stronger and more confident in their clinical reasoning skills.

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## Inter-Professionally Achieving Change: Implementing Evidence

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**Problem Statement:** Infant lumbar punctures are often difficult and latest positioning techniques are not commonly used. This gap in knowledge may cause potential harm.

**Rationale:** With rapidly evolving evidence, it is often difficult to keep up with latest techniques and advances. It is good practice to check oxygen saturation during infant lumbar punctures and also to use the soto-ramp technique. It is also important not to flex the neck of infants during lumbar punctures. Anecdotal evidence suggested very few clinicians and nurses new about these two measures. It could be argued that such lack of awareness about a fairly common procedure in paediatrics was of concern. Keeping in line with incremental change principle of quality improvement we worked with nursing colleagues as the first intervention to implement evidence based practices for infant lumbar punctures. The rationale for doing it with nursing colleagues in the first instance was keeping in view of long term learning application as junior doctors rotate frequently between departments.

**Methods:** A initial scoping survey was undertaken followed by an educational package that incorporated principles of retrieval practice. The survey was repeated following the successful delivery of the educational package to check retention of facts. Education was delivered both via face to face methods and power-point slides. The key learning objectives were the role of pulse oximetry in infant lumbar punctures, why neck flexion should be avoided in the lateral decubitus position and the Soto ramp technique for infant lumbar punctures. An info graphic was created to help in further consolidation of learning and for future use. Quizzes were undertaken to check retention of knowledge and thus using principles of retrieval and interleaving. We also wanted learning to be encouraged even in busy work settings. We emphasised on retrieving knowledge and applying it to current practice. The retrieval practice technique was used as no pass/fail approach.

**Results:** The initial survey was completed by 15 nursing colleagues. The survey respondents were voluntary and random. None of the participants were using pulse oximetry during infant lumbar punctures. 11 of the respondents felt neck flexion was important during the procedure. Only one respondent knew any alternative positions to hold infants during lumbar punctures. Following this the same cohort were invited to undertake the learning package. The learning package was undertaken over the next four weeks. Through word of mouth another twelve participants were enrolled. This meant 27 colleagues completed the learning package. A retention quiz was undertaken to see retention of knowledge. This was completed by 22 participants who undertook the learning package. The median score achieved by the group was four out of five.

**Potential Impact:** This simple but effective quality improvement project demonstrates to achieve long term changes it is important to engage learners and focus on behaviour change. This change can only be achieved when learners have the knowledge, skills and attitude. We used retrieval practice methods to aid retention of knowledge and thereby impacting change.

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## **Bringing Osteopathic Manipulative Treatment to the Emanate Health Family Medicine Residency Program**

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*Emanate Health Family Medicine Residency Program*

**Idea:** To develop an osteopathic manipulative medicine (OMM) curriculum and offer this at our FQHC clinic as an additional treatment modality for patients.

**Need/Rationale:** As defined by the American Osteopathic Association, Osteopathic Manipulative Treatment (OMT) is a set of hands-on techniques used by osteopathic physicians (DOs) to diagnose, treat, and prevent illness or injury (1). Benefits of OMT include restoring the body's innate ability to heal itself, speeding up recovery time, providing quick relief for patients who have been suffering from muscle aches and pain, and relieving joint restriction and bone misalignment. DO residents are required to have supervision from a DO attending in order to perform OMT on patients. Currently, there are no guidelines or curriculum in place at our residency program in order to allow residents to practice OMT. East Valley Community Health Center, where our residents see continuity patients, is an FQHC. Many of our patients are uninsured and/or underinsured and are unable to afford physical therapy or alternative treatment modalities. Providing OMT in our clinic would offer them an additional treatment option.

**Methods:** Patients would be offered the following OMT techniques: articulatory, soft tissue, myofascial release, counterstrain, balanced ligamentous tension, muscle energy, and lymphatic drainage. OMT may be deferred on patients with contraindications, such as those with malignancy, osteoporosis, current deep venous thrombosis, bony joint instability, and myelopathy. OMT is ideally performed on a flat, cushioned massage table. Patients are recommended to be dressed ideally in sporting wear to provide an improved experience, and offered a light sheet and pillow. There is an initial intake appointment to evaluate whether the internal referral for OMT is reasonable. Subsequent appointments will be devoted to OMT on the proposed medical issue and will be 30 minutes in length. Patients may be asked to fill out a questionnaire before and after OMT is offered to evaluate the efficacy of this treatment modality for them. A curriculum for expanding and reinforcing our knowledge of OMT will be further developed with Dr. Chen-Joea for DO residents in the Emanate Health Family Medicine Residency Program. DO residents may be signed off by our DO preceptor Dr. Chen-Joea after passing a competency evaluation to perform OMT in clinic. All encounters in which OMT is performed may be supervised, and/or signed off by a DO preceptor.

**Evaluation Plan:** There are three components to this project that must be evaluated: residents' ability to perform OMT, the OMT curriculum to be developed, and the efficacy of OMT in our clinic. In order to deem a resident competent in performing OMT, s/he will be evaluated by our DO preceptor Dr. Chen-Joea following a rubric with criteria to gauge performance of each technique, ability to explain the technique, and confidence level. Residents must pass the competency exam to perform the technique in clinic on patients. The OMT curriculum may include, although not limited to, didactic lectures, hands on learning during workshops, virtual video procedure review of OMT techniques, assigned readings and journal articles, osteopathic medical education conference, and OMT case presentation. The curriculum will further DO resident existing osteopathic principles and philosophy and techniques, as well as introduce the concept to MD residents. The curriculum's efficacy will be assessed through pre- and post-tests with residents. In the long term, we can assess patient improvement in pain and function after OMT through serial patient surveys and by reviewing physician documentation.

**Potential Impact:** By incorporating OMT into ACGME accredited residencies, the Emanate Health Family Medicine Residency is modeling a way to keep the osteopathic tradition alive amidst a predominantly allopathic program. Additionally, offering OMT at our partner FQHC provides additional treatment options to patients with limited resources.

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<https://osteopathic.org/what-is-osteopathic-medicine/osteopathic-manipulative-treatment/>. Accessed September 23, 2020.

### **Procedural Skills Training for Non-US Medical Graduates Entering a Transitional Year Residency**

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**Idea:** Interprofessional collaborative workshops and longitudinal precepting for transitional year residents to build basic procedural competency.

**Need/Rationale:** There is growing concern that medical school graduates are inadequately prepared for basic procedural skills when entering into residency (1,2). In a study by Bruce (2017) graduating medical students note that while some skills (e.g., basic CPR, bag/mask ventilation) were well taught, other skills like venipuncture, IV-line placement were given less importance (1). For International Medical Graduates (IMGs) a significant gap exists between the actual and expected standards of procedural skills proficiency at the time of internship (2). At our center, we identified this gap and began formulating a one-year curriculum for basic procedural skills training. Due to diverse skills sets, an innovative skills building simulation workshop is being created to be led by a multidisciplinary team of phlebotomists, nurses, physicians utilizing the concepts of Interprofessional collaboration that engages, “diverse professionals to complement own professional expertise and utilizes full scope of knowledge and skills to provide safe, efficient care” (3). To accomplish the goal of resident procedural competency we propose a multi-station workshop combined with longitudinal precepting of skills at the bedside.

**Methods:** The learners are 10 Transitional Year residents. The four skills are phlebotomy, IV-line insertion, nasogastric tube and urinary catheter placement. Step One: 5-hour workshop to include 1) review of the four procedures using video illustrations of each; and 4 hours of skill training, one hour per station, with residents rotating in pairs or trios. The workshop will be led by the program director and executed by our multidisciplinary team. All stations utilize a mannequin so that each learner could practice the skills multiple times. Step Two: Learners will then proceed through their clinical rotations with bedside preceptors who will train and directly observe learners performing the procedures across various inpatient clinical areas. The preceptors will be phlebotomists, nurses and physicians who will utilize the principles of collaborative clinical education (Westberg & Jason, 1993) and deliberate practice (Ambrose, 2011) with each learner. Step Three: A mid-year, 4-hour Simulation Training Workshop will be conducted to continue skill building and measure current competency. Step Four: End of year bedside skill evaluation by faculty. It is expected that simulation and bedside training by multidisciplinary preceptors will lead to better learning outcomes. Our team build this project using principles of adult learning (deliberate practice with feedback, motivation, active learning) and interprofessional teaching in creating the procedural curriculum.

**Evaluation Plan:** The project evaluation includes four elements: 1) Accountability: A checklist will be provided to track all workshop, precepting, and assessment activities and midyear feedback survey of instructors will gather data on their precepting activities. 2) Reaction: Standard session and preceptor evaluation forms will be used to gather student opinions on project elements. 3) Learning: A pre-post quiz will be administered assess knowledge. conducted to identify baseline knowledge. Procedural Logs will be maintained by each learner and reviewed. The midyear workshop will have added measures of competency. Post workshop debriefings will allow for self-reflection, and areas for improvement. Behavior: As learners go through their clinical rotations, they will maintain documentation that capture competency milestones and targeted feedback comments from preceptors. End of rotation forms and face-to-face feedback forms will track learner behavior over time.

**Potential Impact:** If our interprofessional collaborative project demonstrate effectiveness it could be used as 1) a model for procedural skill training in GME programs where Incoming learners lack required procedural skills, or 2) expanded to other skills related to systems-based practice and communication that are perhaps best taught by an interprofessional team.

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## Enhancing Emergency Medicine (EM) Residents' Procedure Sedation Knowledge and Skills

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**Idea:** Enhance emergency medicine residents' procedure sedation knowledge and skills using rapid cycle deliberate practice (RCDP).

**Need/Rationale:** Procedural sedation is considered a core competency in emergency medicine (EM) residency training. The Review Committee for Emergency Medicine expects EM residents to performed at least 15 supervised procedure sedation encounters by graduation (1). It is challenging to ensure that current trainees have sufficient experience in sedation with limitations on training hours, demands for more extensive supervision, and an increasing focus on patient safety (2). In our community-based program teaching, the skills with actual patients are particularly challenging. Simulation (with structured debriefing) is a well-established method used to educate sedation providers to demonstrate their knowledge and practice their techniques without placing patients at risk. (2) Simulation exercises enable participants to develop their competency in a safe learning environment; it has improved provider proficiency in performing procedural sedation and analgesia, independent of provider profession and clinical experience (3). This project is the first simulation project in our department with the emergency department chair's support and the oversight of a fellowship-trained simulation EM physician.

**Methods:** The learners will be 12 emergency medicine first and second residents at the beginning of their academic year. It will be conducted in the hospital's simulation center. The sessions will be on Thursdays for two hours, with four sessions in total. A board-certified emergency medicine physician will lead the simulation-based education cases. The simulation project's primary goal is to enhance residents' knowledge and skills in relation to procedure sedation. It will include helping residents build knowledge related to the wide range of pharmacology utilized for sedation, assisting them in skills for difficult airway management, and monitoring patients during and after the sedation. The four sessions will be: 1) selecting and administering the correct drug; 2) airway management; 3) anticipating and handling complications, and 4) monitoring patients during and after sedation. Each session will start with a ten-minute introduction and needs assessment, followed by twenty minutes of an interactive case presentation focus on the topic of the week. After that, the resident will participate in a sixty-minute simulation using rapid cycle deliberate practice (RCDP) with relevant procedure sedation cases. The simulation portion includes targeted feedback to enhance procedural skill and analgesia knowledge. The final 30 minutes of each session will include a debriefing of the simulation with 5 minutes for a knowledge post-test and session evaluation survey.

**Evaluation Plan:** Accountability: The instructors will use a checklist for observation of program elements to track all planned activities and ensure that all learners participated and were supervised in the simulations as planned. Reaction: Learners will complete standard session evaluation surveys at the end of each session and a follow-up survey one month after completion of the curriculum. Learning: Learning will be assessed using direct observation (with a checklist) during the simulation scenarios. Targeted feedback will be provided during each simulation scenario. Session posttests will be utilized to assess relevant learner knowledge. Behavior: Direct observation with a checklist for each resident will be conducted at least once during a shift in the emergency room, post-participation.

**Potential Impact:** This model for enhancing procedure sedation knowledge and skill for emergency medicine residents (EM) can be shared with anesthesia, pediatric residents, or pediatric EM fellows as it is a core competency in their training. If successful, we can share our process and our cases with other programs nationally and internationally.

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## **Gel-ling Together an Inpatient and Outpatient Ultrasound Curriculum in a 10 Day Course**

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**Idea:** Incorporating a 2 week ultrasound curriculum with both inpatient and outpatient components will better prepare residents for their future practice.

**Need/Rationale:** With the advent of cheaper, portable ultrasound technology, the standard of care for practicing medicine is changing to incorporate bedside ultrasound in the patient evaluation. Emergency medicine is amongst the first fields to incorporate point of care ultrasound (POCUS) into their residency curricula. Internal medicine (IM) is now in its transition phase and prototype curricula should be trialed to discern where ultrasound could be most helpful. In addition to providing real time clinical information to guide decision making, bedside ultrasound is cost-effective when answering simple yes or no questions. This allocates hospital resources more effectively while expediting the care of patients. This paradigm not only applies to the inpatient setting but also the outpatient setting. Designing a 2-week prototype ultrasound course (with both inpatient & outpatient opportunities) will allow programs to provide training for their trainees in whichever career pathway they choose.

**Methods:** The proposed curriculum would have 10 days, split up into morning and afternoon parts. Every afternoon, residents would go to procedure clinic in the outpatient setting, performing paracenteses and thoracenteses with ultrasound assistance. For the morning schedule: Day 1 AM- Orientation to knobology, indicator, and image optimization with experienced ultrasound clinician. A pre-test will be given on image recognition of common pathologies. A google doc with collected youtube instructional videos on image acquisition and pathology cases will be given for independent study. Days 2, 5, 6, 7 AM- Inpatient experience with ultrasound clinician where the resident and preceptor would ultrasound patients on ward teams to answer a specific question or to observe a known pathology after obtaining permission from the patient. Days 3, 4, 8, 9 AM- Resident outpatient clinic where residents are given the opportunity to use ultrasound to address urgent care questions that their patients may have. This would entail analyzing for shortness of breath, tachycardia, fracture, leg swelling, abdominal pain, blurry vision/headache, lumps/bumps, and kidney injury. Day 10 AM - Final day where residents are assessed on their progress and surveyed on the effectiveness of the curriculum for further growth.

**Evaluation Plan:** Residents will be given a pre- and post-test at the end of their rotation on image acquisition and image recognition of common pathologies. They will then be surveyed on their thoughts on the curriculum and how to further tailor it to their needs.

**Potential Impact:** This course could serve as a framework for IM residencies to structure their own ultrasound curriculum. In time, POCUS will become a cost-effective reality as simple questions would be answered in-office or in the patient's hospital room, foregoing a trip to radiology and allowing for expedited care.

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## **Funding and Developing a POCUS Curriculum for the Emanate Health Family Medicine Residency Program**

Bui, Phoebe; Cummings, Felicia; Haidary, Habib; Velásquez, José; Shalika, Hamed  
*Emanate Health Family Medicine Residency Program*

**Idea:** To develop a low cost one-year longitudinal POCUS curriculum at a community-based family medicine residency program (FMRP).

**Need/Rationale:** Point of care ultrasound (POCUS) is a readily available tool that can improve patient care by cutting down costs and guiding physicians in their medical decision making. POCUS in primary care has proven crucial for screening and diagnostic purposes, including but not limited to aortic dissections, DVT, cysts, thyroid lesions, cardiac abnormalities, and more. (2). Growing evidence has demonstrated ultrasonography as a tool superior to auscultation and radiography in the assessment of acute respiratory failure (3). Currently, the Emanate Health FMRP does not have a POCUS curriculum. Our objective is to develop an innovative and engaging POCUS curriculum that takes place through live, interactive workshops rather than through didactic-style or computer-based learning in order to maximize engagement and practical application. Importantly from a budgeting standpoint, our set-up is designed to be more cost effective than alternatives, estimated to be approximately \$14,000.

**Methods:** Using grant funds previously awarded to our residency program, we plan to purchase five Butterfly ultrasound machines to start a POCUS curriculum for our residency program. POCUS lessons will be live, occurring 1-2 times per month in the evening after residents have finished their shifts in order to facilitate attendance. Of the 28 residents in our program, 10 are currently part of the interest group who will attend these evening sessions. In order to accommodate for the COVID-19 pandemic, meetings will take place in a large room with space for social distancing, while instructors may be streamed virtually. Residents will pair up to share the five available ultrasound machines and practice on each other throughout the workshop. Workshops will take the form of short lectures to teach the fundamentals of ultrasound technology and anatomy, interspersed with 10-minute increments for residents to practice on each other. Each workshop would focus on a different system, including OBGYN, cardiovascular, trauma, biliary, urinary, MSK/soft tissues, thoracic/pulmonary, and ocular, as recommended by the AAFP POCUS curriculum (1). After being evaluated for competency, trained residents will teach the material to the remaining residents in small groups during continuity clinic or inpatient rotation, as residents are readily present in teams at these times. Over time, we will establish a longitudinal design where trained residents will continually train subsequent generations.

**Evaluation Plan:** In order to assess the efficacy of our program's POCUS curriculum, we will evaluate residents in the following three groups: residents participating in POCUS training sessions (AY 2020-2021), residents NOT participating in training sessions (AY 2020-2021), and residents trained by resident champions (AY 2021-2022). Evaluations will take the form of pre- and post-tests covering the topics of physics of ultrasonography; transducer types; ultrasound imaging orientation, optimization, interpretation, and terminology; anatomy; scanning techniques and modes; applications; and safety. Under statistical analysis, we would expect residents in POCUS training sessions to score significantly higher than residents who have not been trained, and we would also expect significantly higher post-test than pre-test scores. Residents trained by resident champions should score similarly to those who participated in the training sessions held the first year. OSCEs will also be implemented to test our ability to successfully carry out a POCUS exam. OSCEs are an excellent opportunity to give feedback on performance in order to help guide improvement, as well as to gauge how confident the resident is in performing the POCUS exam. An additional pre- and post-questionnaire will be administered to measure comfort level on a 5-point scale. Furthermore, residents will log each ultrasound procedure they perform in the clinic and hospital, to be signed off by a preceptor who will evaluate their competence.

**Potential Impact:** A survey in 2014 showed only 2% of FMRPs implemented a POCUS curriculum (2). With the development of our POCUS curriculum, we are not only modernizing the field and keeping it up to date with the latest innovations in technology; we are modeling a cheap, champion-led longitudinal curriculum that can be replicated by other residents.

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**Pediatric Parenteral Nutrition Simulator: Improving Trainee Competence and Confidence**

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**Idea:** An interactive online case-based learning module that can teach pediatric trainees and promote safe practice of parenteral nutrition ordering.

**Need/Rationale:** Learning to safely prescribe pediatric parenteral nutrition (PN) is daunting, as there is minimal nutrition education during medical school (1), residency, and fellowship training (2). PN is complex, individualized, and requires numerous calculations; it is thereby prone to error (3). The initial learning curve is steep, and residents may periodically need to relearn the details of managing fluid volume, macronutrients, and micronutrients. However, teaching in the clinical setting may lead to incongruent experiences between learners, and is limited by time; placing PN ordering is time-sensitive, as pharmacists need adequate time to prepare solutions. An online, interactive simulator where trainees can practice PN ordering and administration prior to clinical rotations where patients will likely require PN (i.e. intensive care units) would allow for active learning outside the clinical setting. We hypothesize this tool would increase trainees' knowledge and confidence in PN ordering.

**Methods:** Our interactive PN simulator learning tool will be designed by a multidisciplinary clinical team including registered dietitians, pharmacists, physicians, nurses, and nurse practitioners, and will have two components. First, an Articulate interactive learning module will present foundational knowledge about PN indications, components, requirements, and management. Second, interactive cases will be built using an interactive medical education platform (Med2Lab). Trainees will care for simulated pediatric patients across multiple time points to mimic the continuity of real patient care. Trainees will be able to review patient charts, check vital signs, perform physical exams, and place orders for labs, imaging, studies, and interventions. Trainees will be responsible for prescribing initial PN orders and, using a structured framework, evaluating the progress of the patient, making any necessary clinical management decisions, and adjusting the PN prescription as needed. Trainees will receive individualized, real-time feedback, with each action categorized into a competency domain, so trainees will be able to review their strengths and areas for improvement.

**Evaluation Plan:** We aim to conduct a prospective observational pilot study with a convenience sample of learners that voluntarily access the learning modules published on [www.OPENPediatrics.org](http://www.OPENPediatrics.org), a free, online learning platform for healthcare professionals. This pilot evaluation of this curriculum will help provide validity evidence for the learning activity. The module will be integrated into a curriculum that will include pre- and post-module testing. By comparing pre- and post-tests using paired t-tests, we will assess changes in knowledge after using the interactive PN module. Additionally, we will assess demographic information, including questions about users' clinical experience and past experience with PN; user confidence in prescribing and modifying PN orders; and basic knowledge of PN management. Confidence scores will be compared before and after using the modules. We will also collect qualitative feedback and satisfaction on user experience in order to identify potential areas of improvement for the learning activity. We plan to report descriptive statistics obtained from learning analytics including the number of users who accessed the module, geolocation, and how long they spent using the modules.

**Potential Impact:** Errors in PN initiation, dosing, and daily adjustments to individual components can lead to significant adverse events. This risk of error is compounded by the lack of comprehensive nutritional education in medical training. Utilizing an educational simulation tool may improve trainee knowledge, confidence, and independence in PN prescribing.

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### **Pediatric Primary Care Case-Based Musculoskeletal Workshop**

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**Idea:** A case-based workshop for pediatric residents to build skills required to diagnose and provide guidance for common orthopaedic issues.

**Need/Rationale:** Musculoskeletal complaints make up 20% of pediatric primary care practice (1). However, there is limited training in orthopedic skills. A 2011 survey of training gaps in graduating pediatric residents identified orthopedics as one of the three main curriculum needs (2). This study highlighted an educational gap in pediatric residency training and the need for an innovative curriculum to address these needs. There has been a paucity in literature focused on addressing how best to attain these skills. A 2001 study implemented a robust teaching intervention which improved pediatric ankle and knee examinations in trainees, however that study has not been replicated or expanded to include other clinical orthopedic skills (3). To solve the need to build orthopedic skills, we have developed an educational intervention: a workshop with four interactive case-based stations that will allow for pediatric residents to build on needed musculoskeletal physical exam skills by providing a systematic approach to assessing common orthopedic concerns at well child visits.

**Methods:** The USC Pediatric Residency program has 17 residents (11 pediatric residents, 6 med/peds residents) per year. Since pediatric orthopedics is an elective, there is no formal training on these skills. This workshop will meet that need. Sixteen interns will participate. The following common orthopedic issues will be addressed at the 4 stations: in-toeing, scoliosis, developmental dysplasia of the hip, and flat feet. In addition to targeted physical exam, we will incorporate videos, 3D printed models, and review of relevant imaging. Learners will also build skills in providing anticipatory guidance to parents and review the indications for referral. Each 40-minute station will provide the opportunity for deliberate practice with focused feedback from an experienced clinician. The timing will allow for multiple practice opportunities at each station. This will be followed by board style question and answer review in a large group to cover important elements from the four cases. This will be done in a rapid-fire method with 20 questions – team-based competition (question, team discussion, answer with visual image and explanation); At the end, a 5-minute ARS quiz (10 seconds per question) we will determine group knowledge.

**Evaluation Plan:** 1) Accountability: a) track the timing of session to ensure that the plan can be completed in the time allotted, b) note any challenges with the models or volunteers at the station, and 3) track the timing of the knowledge portion. 2) Reaction: a standardized resident survey will be administered immediately after the workshop to evaluate resident perceptions about the usefulness of the session in their general pediatrics continuity clinic. 3) Learning: a) the ARS-delivered quiz at end of session focused on reinforcing the four topics will be used to measure learning. b) a retrospective pre-post questionnaire will be used assessing perceive confidence, skills, and of including the screen in their outpatient practice to measure learner perception 4) We will conduct a follow-up survey after 3 months to query learners about any changes in relevant outpatient care or parent education practices.

**Potential Impact:** By creating a standardized musculoskeletal workshop for pediatric orthopedics, this can be shared nationally to be used at other training programs for not only pediatrics residents, but for family medicine residents and emergency medicine fellows, general pediatricians and nurse practitioners to incorporate in their practice.

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### **In.vision: A Student Initiative Addressing the Need For Medical Technology & Innovation Education**

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**Idea:** In.vision is an elective that equips students with a functional understanding of technology, product development, and entrepreneurship in medicine.

**Need/Rationale:** As technology continues to transform medicine and healthcare delivery, physicians must not only understand upcoming tools to provide better care, but also ideate within new clinical contexts to bring future medical innovations to market. While physicians are often confined to evaluating safety and efficacy downstream of product ideation, their insights can prove crucial throughout the development process [1]. They can better assess clinical needs in the context of realities that may otherwise lead to late stage failures or poor product design [1, 3]. Thus, there is a call for physicians to understand 1) the scientific and engineering foundations of biotechnology and 2) the process of product development, from needs finding and design thinking to market strategy. This enables physicians to communicate their ideas effectively to interdisciplinary teams and bridges perspectives in biotechnology, entrepreneurship, and clinical medicine. While current medical education is slowly integrating these concepts into formal curricula, it may take years for structured integrations to become widespread. With in.vision, we demonstrate that students can also initiate extracurricular opportunities to begin meeting this need.

**Methods:** Four core objectives have been identified for this course: 1) recognize upcoming applications of technology in medicine, 2) identify clinical opportunities and challenges associated with each advancement, 3) conceive of novel ideas based on clinical needs finding and screening strategies and 4) understand the pipeline of concept generation to market implementation based on modern MedTech innovation education models [2,3]. The series consists of seven sessions, including 6 didactics, and a final presentation “pitch day”. Didactics will have either a tech-focus or an innovation-focus. Each session will consist of a 45-minute lecture aimed at covering the foundations of an upcoming sphere of technology (ex. machine learning, tissue engineering, robotics), and a 30-minute hands-on workshop component aimed at helping students develop the basic technical skills, like 3D printing and simple coding, to prototype their future ideas. The course will culminate in a final “pitch day”, where students will form teams to address and present an identified clinical need as well as a proposed solution. In a future context where in-person events & collaborations are appropriate, a longitudinal project experience will facilitate the development of proposed solutions, based on a timeline proposed by prior programs. Students may further advance their ideas to market using any takeaways and resources from the course.

**Evaluation Plan:** Learner experience will be consistently gauged by: 1) tracking participant attendance at each event, 2) administering a feedback survey after every session, and 3) analyzing pitch day presentations to determine what additional experiences may benefit students. The survey will assess a quantitative evaluation of the quality of each session alongside open-ended feedback. Pitch day presentations will be analyzed for clinical feasibility by physician stakeholders. Exceptional projects will receive further support from healthcare systems at Boston Medical Center to pursue product development. Results will be examined longitudinally over the duration of the series to assess efficacy. Areas of improvement will be noted in further developing and enhancing the series for future years. As another platform of assessing the efficacy of in.vision, we will follow each year’s cohort of participants in a longitudinal prospective study to identify how our didactics and practical workshops have influenced their own innovations and medical product development.

**Potential Impact:** This student-led initiative can offer a model for medical educators to build deeper curricular integrations of innovation education. The two-pronged approach of covering both technology education and product development/entrepreneurship may enable physicians to better leverage technology and structure their innovations.

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### **The Development and Implementation of a Business of Medicine Elective to Deepen Medical Student Knowledge**

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**Idea:** A four-week elective course was created in partnership with Medscape to address the lack of medical student education in the business of medicine.

**Need/Rationale:** The need for Business of Medicine (BoM) education for future physicians has been documented and recommended. Despite this well-documented need, many residents and fellows are ill-equipped to handle the BoM topics they face daily. One study interviewed surgical program directors and found that 87% of the participants agreed that residents should be trained in practice management, yet over 70% of the program directors reported that their residents were inadequately trained in this topic. Unfortunately, this gap in BoM education seems to extend beyond the work-life of physicians into their personal finances. Despite the majority of medical students needing to manage a large amount of debt, only 5% consider themselves knowledgeable in loan repayment options. Upon identifying this gap in medical education, the University of Louisville School of Medicine designed and implemented a four-week BoM elective course for fourth-year medical students.

**Methods:** A four-week elective course was created utilizing select modules from the Physician Business Academy by Medscape, Ted Talks, podcasts, and Harvard Business Review Articles to provide fourth-year medical students with an education in the BoM. The University of Louisville School of Medicine partnered with Medscape to create a unique website for students to access, allowing them to complete selected Physician Business Academy modules. Student performance on these modules are to be reported to the school. Each week of the course focuses on a unique overarching theme, ending on Friday with a group discussion. For students wishing to complete the course with honors, additional Ted Talks, articles, and online modules will be provided for completion. An IRB approved survey will be provided to the students prior to and after the course to assess student knowledge, confidence, and interest in the topics covered by the course, with the goal of determining the efficacy of the education program. If this elective is determined to be an effective means of educating medical students, the course creators and Medscape hope to expand this curriculum to medical schools across the country, allowing many medical students to receive an education in important business topics.

**Evaluation Plan:** To evaluate this course, students will be asked to participate in a voluntary, IRB-approved survey. Prior to the start date of the elective, the students enrolled will be emailed a link to the Google Forms pre-course survey with a description of this study and a preamble of consent. Upon completion of the course, the students enrolled will be emailed a link to the Google Forms post-course survey, along with the description of this study and a preamble of consent. The purpose of these surveys is to assess the students' baseline level of knowledge, interest, and confidence in their understanding of the business of medicine. The surveys will contain multiple-choice questions reviewing the material presented in the elective course to evaluate the participants' knowledge of the business of medicine. Both surveys will utilize a Likert Scale to assess the participants' interest and confidence in their understanding of the topics covered by the course. Additionally, demographic information will be assessed by the surveys. The pre-course and post-course surveys are identical with one exception, in which the post-course survey will also contain a section where the students can leave feedback of the course. The results of the pre and post-course surveys will be compared to determine if the students gain confidence, knowledge, and interest in the business of medicine after completing the elective course.

**Potential Impact:** Providing medical students with an education in the business of medicine can allow students to develop an interest in this field and possess more confidence to tackle the business side of medicine.

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## **Clerkship Curricular Revision: Developing a Targeted Needs Assessment**

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**Problem Statement:** To update our emergency medicine (EM) clerkship curriculum, we developed a targeted needs assessment as previously described by Kern and colleagues [1].

**Rationale:** Prior minor revisions and updates of our EM clerkship curriculum have been informal and largely based on perceived need. In addition, the prior clerkship curriculum has been loosely defined and at times modified on the fly. Embarking on a more formal process of curriculum renewal was well-timed with the recently published national 4th-year curriculum as well as the development of the National Board of Medical Examiners Advanced Clinical Examination in EM in 2014 [2]. A review of the published national curriculum helped set the groundwork for a formal approach to curriculum renewal which we started with the development and implementation of a targeted needs assessment. This was also important as the time constraints associated with a 4-week rotation would also prevent us from covering all topics outlined in the national curriculum. We felt a targeted needs assessment would provide us with valuable information as we moved forward with this process of curriculum renewal.

**Methods:** A two-part targeted needs assessment was developed. The initial survey was distributed to a small group of educators (n-14). The participants included clerkship and residency leadership, senior educators and chief residents. The survey focused on; Clinical Concepts, Chief Complaints, Clinical Conditions/Diseases, Procedures/Clinical Tasks, Clinical decision rules and Topics specific to EM. This survey used open-ended questions to allow the participants to self-identify concepts, chief complaints, etc. that they perceived as important for all students to be exposed to during their rotation. All responses from this pilot were reviewed to identify patterns, duplicates, etc. allowing the response options for the larger follow up survey to be populated. The second part of the targeted needs assessment was a "follow up" survey of a larger group of faculty, residents and students (n-61) to help prioritize data obtained from the first survey, this included the original 14 participants along with key teaching faculty at affiliate hospitals, medical students and interns in our residency program. The follow-up survey was arranged similarly in regards to format; however, the follow-up survey used closed-ended questions. Participants were asked to prioritize the response options as: Very Important, Somewhat Important or Less Important. The goal for the follow-up survey was to prioritize the response options based on the perceived level of importance.

**Results:** All 14 participants (100%) responded to the initial survey, data from this survey was used to populate responses for the follow-up survey. Fifty-three of 61 (87%) participants surveyed for the 2nd part of the targeted needs assessment responded. From the responses, we were able to identify 4 key clinical concepts that were felt to be "Very Important" to emphasize during the EM clerkship. These are: Approach to the undifferentiated patient, performing a focused H&P, recognizing "Red Flag" symptoms, sick vs. not sick. These concepts have since been incorporated into the curriculum and are a focal point of discussion during the rotation orientation. In addition, 4 key chief complaints were identified to be "Very Important" in emphasizing during the EM clerkship. These are; Abdominal pain, altered mental status, chest pain and shortness of breath. These chief complaints have served as the basis for didactic cases used during the clerkship in our institution's simulation center. Additional didactic cases have been developed or updated to reflect the importance of various clinical conditions and topics specific to EM as identified through the targeted needs assessment. Key clinical decision rules identified as important have also been incorporated into our mandatory evidence-based medicine assignment. Pre and post curricular intervention evaluations have demonstrated a positive trend as noted by the students regarding these curricular changes.

**Potential Impact:** Lessons Learned: Our curriculum renewal was approached systematically and incorporated data gathered from stakeholders; students, residents and faculty through a targeted needs assessment. The approach was organized and based on a best practice approach and was viewed positively by the students.

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- 1) Kern DE, Thomas PA, Hughes MT. Curriculum development for curricular innovation 2nd ed. Johns Hopkins University Press. 2009.
- 2) Manthey DE, Ander DS, Gordon DC, et al. Emergency medicine clerkship revision: An update and revision. Acad Emerg Med. 2010;17:638-643.

## Addressing the Need for an End of Life Care Curriculum for Pediatric Residents

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**Idea:** Provide a curriculum dedicated to pediatric residents in providing end-of-life care to the pediatric population and families.

**Rationale:** Curricula addressing end-of-life care for pediatric patients with terminal cancer, terminal neonates, cystic fibrosis and medically complex children can be found in MedEdPORTAL and PubMed. However, these curricula are specific to the needs of fellows/specialists and other hospital staff (Nurses/NPs/Techs). No basic end-of-life curriculum is currently available for pediatric residents. However, as the ACGME requires pediatric trainees to have training in all stages of health and illness. Residents will undoubtedly care for patients in critical care settings who will unfortunately succumb to their illness. Most residents did not receive prior training on end-of-life care in medical school and therefore training is largely based on any clinical exposure. 1 Thus, the goal of this project is to provide a curriculum dedicated to pediatric residents in providing end-of-life care.

**Methods:** We plan to follow Kern's 6-step model for curriculum development. For our targeted needs assessment, we plan on surveying current University of Arizona Pediatric and combined Pediatric and Emergency Medicine residents using a Likert scale questionnaire. The survey will evaluate residents on their comfort level in end-of-life symptomatic management, delivering bad news and difficult conversations. The results of the needs assessment will guide the development of our educational interventions. Various educational strategies (lecture/small group/ role play/skill building) 2 will be used to deliver the content. The curriculum will be presented during one of the academic half days.

**Evaluation Plan:** Residents will complete the same Likert scale questionnaire at the end of the curriculum to determine effectiveness of the curriculum. Further evaluation could include end of academic year follow up as well as informal focus groups/discussions with residents after the completion of their Hematology/Oncology and PICU rotations.

**Potential Impact:** Our new curricula will address the needs of residents and pull from existing research to create a broad curriculum that can be used by pediatric residents in caring for pediatric patients at the end of their lives. This will improve patient care and increase residents' confidence in providing end of life care.

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### **From Learning Psychiatry to Becoming Psychiatrists: Introducing Co-Constructive Patient Simulation**

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**Problem Statement:** Models of patient simulation, which remain primarily instructor-driven, risk not attending to the clinical vicissitudes of its trainees.

**Rationale:** Simulation-based education with standardized patients has become widespread in health care. Despite its broad uptake, existing models of patient-based simulation remain primarily instructor-driven. Few studies in the simulation literature have designed trainings that explicitly support trainees' role in self-regulating their own learning. Co-constructive patient simulation (CCPS) is a novel approach that provides an individually tailored and supportive alternative to traditional supervision and training. The framing of CCPS seeks to expand notions of narrative co-construction to include trainees and instructors as well as physicians and their patients. With the exception of MacKenzie (2018), no instructional design (ID) in medical education has explored the potential to utilize co-construction in patient simulation between a learner and an instructor to complicate power dynamics and foster mutual collaboration and learning. We describe the first implementation of CCPS in psychiatry.

**Methods:** We conducted six CCPS sessions with senior trainees in child and adolescent psychiatry. Clinical scripts were co-developed with trainees and professional actors with experience performing as simulated patients (SPs). We conducted the simulation sessions with interviewers blind to the content of case scenarios enacted by the SPs. Each hour-long simulation was followed by an hour-long debriefing session with all participants. We recorded and transcribed case preparation, simulation interactions, and debriefing sessions, and analyzed anonymized transcripts by applying inductive thematic analysis within a constructivist framework, aided by NVivo software.

**Results:** Each of the six CCPS sessions was attended by a median of 13 participants (range, 11–14). The first three sessions were conducted in person; the last three, which took place during the COVID-19 pandemic, via synchronized videoconferencing. Each of the sessions centered on clinically challenging and affectively charged situations informed by trainees' prior experiences. Through iterative thematic analysis we derived an alliterating '9R' model centered on three types of Reflection: a) in action / 'while doing' (Regulate, Relate and Reason); b) on action / 'having done' (Realities, Restraints and Relationships); and c) for action / 'will be doing' (with opportunities for Repair and Reaffirmation). Topics that are difficult to openly talk about may be especially appropriate for the CCPS model: without overt guidance or solicitation, the scripts developed by learners for this series involved medical errors and error disclosure; racial tensions, including overt racism; inter-professional conflict; transphobia; patient-on-provider violence; sexual health; and the sharing of vulnerability and personal imperfections in the clinical setting.

**Potential Impact:** CCPS and the 9R model can be effectively applied to psychiatry and have the potential to contribute uniquely to the educational needs of its trainees and practitioners. The 9R model, when combined with the co-construction of the case, can augment existing medical humanities and narrative medicine curriculums.

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## **Sleepy Kids: Helping Kids Get to Sleep with Digital CBT**

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**Idea:** Developing pediatric specialists' knowledge of technology-based Cognitive Behavioral Therapies (CBTs) to help parents of children with sleep disorders.

**Need/Rationale:** Insomnia and sleep disorders affect 40-80% of children with neurodevelopmental disorders [1]. The gold standard for treating pediatric insomnia is cognitive behavioral therapy (CBT), a technique which aims to change cognitive distortions and maladaptive behaviors that contribute to insomnia via coping mechanisms and emotion regulation [1]. Unfortunately, many parents do not seek out CBT for their children due to its high cost and a lack of access to trained professionals [2]. These issues are being addressed in the adult population with digital CBT solutions such as Sleepio, an app proven to be as effective as live CBT at a lower cost and increased convenience [3]. In the pediatric population, however, no such product exists, and pediatric specialists do not uniformly receive training on digitally-provided CBT. This module will help to educate healthcare professionals on the role of these technologies in supporting parents of children who struggle to sleep.

**Methods:** This online, self-paced curriculum will educate residents and providers in pediatrics and psychiatry on the benefits of using technology-enabled CBT tools with parents to ameliorate these conditions. Designed using the Challenge-based Learning Cycle (CBLC) learning framework, residents and physicians will encounter open-ended questions that will challenge their thinking. The learners will be asked to think about what they know about the use of technology-enabled CBT, review multiple perspectives, then reflect on how these resources can support changes in their work with patients. The curriculum introduces providers to key tools that they can use to support parents, include validated measures such as the Children's Sleep Habits Questionnaire [5]. This thirty-minute module provides healthcare professionals with insight into three key questions that will orient the CBLC: 1) What does the current research indicate about the capacity of digital technologies to support parents and children in managing sleep disorders that stem from developmental disabilities?; 2) What role can technology-enabled CBT play in helping parents to manage and track their child's sleep disorder?; and 3) How can technology-enabled CBT help physicians to more effectively support parents? In learning about the latest developments and clinical applications of technology-enabled CBT, healthcare professionals will be better able to advise parents on the use of evidence-based tools and technologies.

**Evaluation Plan:** This program will be evaluated using a mixed-methods approach. First, we will include an end-of-session satisfaction questionnaire to ensure that our module has provided the learner with a satisfactory learning experience and engaged them in the learning process. Second, we will include an end-of-session quiz that will test the basic factual information from the module. Third, we will analyze the learners' responses to their initial thoughts and reflections questionnaires to determine if they have metacognitively identified changes in their thinking. Finally, in an automated follow-up email two weeks later, we will ask learners to identify how they have (or have not) changed their practice based on what they have learned in the module, or if they need different or additional information. By evaluating the online module using these four strategies (satisfaction questionnaire, factual quiz, metacognitive reflection, and follow-up email), we will be able to determine whether our instructional materials are effective or need additional development in order to meet our instructional objectives.

**Potential Impact:** Providing healthcare professionals with a better understanding of digital CBT for pediatric insomnia could increase access, decrease costs for patients and their families, and promote increased efficiency within the clinic.

**References:**

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## Supporting Terminal Patients On Their Journey: A Longitudinal Residency Curriculum On End of Life

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**Idea:** A longitudinal end of life curriculum for residents to increase knowledge, skills and confidence when working with terminally ill patients.

**Need/Rationale:** Education on End of Life care is important and relevant as it is an experience that every physician will have to address at some point in their career. Patients may suffer unnecessary pain and families suffer as they see their loved ones suffer. Physicians suffer as they may have their own experiences with death and dying that are relived with each patient that passes. Meeting the needs of patients with terminal illness requires effectively trained clinicians to provide skillful and compassionate care. Despite mandates for End of Life (EoL) Care education, graduating residents do not consistently feel prepared to provide this care [2,3]. Without formal training in end-of-life care, “physicians in the United States are less equipped to competently address seriously ill and dying patients’ medical, emotional, and spiritual needs” [2]. The education of health professionals who provide care to people nearing the end of life has improved in the past two decades. However, “the number of hospice and palliative care specialists is small, which means the need for palliative care also must be met through primary care and through the other clinical specialties that entail care for significant numbers of people nearing the end of life”[1].

**Methods:** The course will be a one-hour session that will be offered every month, longitudinally over three years. The topics that will be discussed include: The Purpose of End of Life Care, Prognostication, Pain Control, Causes and Non-Pain, Nutrition and Hydration, Care Location, Bereavement, Medical Legal Issues, and Ethical and Cultural Concerns. A variety of active learning methods will be utilized including (1) icebreakers, (2) interactive minilectures, (3) brainstorm exercises, (4) small group discussion (e.g., case discussions, review of videotapes of simulated patient care encounters, (5) reflections on their prior experiences with end of life care and feelings toward death and dying and (6) role play exercises reproducing challenging teaching and practice situations, and (6) opportunities for participants to identify both personal goals for improving their skills and comfort level with end of life care.

**Evaluation Plan:** The curriculum will be evaluated using multiple methods. 1) Tracking of learner participation in sessions and in; 2) Review of learner reflections using rubrics to guide feedback and assess the overall quality of reflections; 3) Assessment of learner knowledge using brief pre- and post-quizzes; and 4) Final course evaluation questionnaire to gather data on the quality of the overall course (organization, teaching, individual sessions, reflections, assignments/feedback). A follow-up survey will be sent out to graduating Senior residents six months after graduation via email to evaluate ways each learner is utilizing the knowledge, skills and perspectives gained.

**Potential Impact:** If this longitudinal curriculum is successful, it can be shared with other residencies. It can also expand to include other specialties, medical students and other Allied Health students who are interested in improving the quality of care they provide to patients at the End of Life. Furthermore, the curriculum can also be converted into a workshop.

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- 1) Institute of Medicine. 2015. Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life. Washington, DC: The National Academies Press.
- 2) Schmit JM, Meyer LE, Duff JM, Dai Y, Zou F, Close JL. Perspectives on death and dying: a study of resident comfort with End-of-life care. BMC Med Educ. 2016 Nov 21;16(1):297.
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## **Psychiatry Residents Deliver Culturally Inclusive Care with Diversity, Equity, Inclusion Curriculum**

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**Idea:** After participating in a competency-based Diversity, Equity, and Inclusion curriculum, psychiatry residents will deliver culturally inclusive care.

**Need/Rationale:** The increasing diversity in the U.S. requires a psychiatric workforce that can address the mental health needs of individuals from diverse backgrounds, with a culturally proficient, inclusive, and affirming approach (1). Psychiatric residents who engage in discussions about privilege and identity can be better prepared for culturally inclusive patient interactions (2). Residents' preparedness to provide cross-cultural care has been shown to be directly associated with their attitude toward cross-cultural care and their level of exposure to patients from diverse sociocultural backgrounds (3). A Diversity, Equity, and Inclusion (DEI) curriculum can help psychiatry training programs meet the physician competencies as developed by the Accreditation Council for Graduate Medical Education and American Board of Psychiatry and Neurology. We plan to develop a DEI curriculum to better prepare residents to provide culturally inclusive care in order to meet the needs of a growing diverse population.

**Methods:** A DEI curriculum is being developed for the 64 (PGY1-4) residents in the psychiatry training program at UCSF. The 21-hour DEI curriculum will focus on professional development, gaining relevant knowledge and build skills to enhance interaction with peers, faculty, staff and patients. The curriculum will explore professional identity formation and how residents' own background impacts their values, beliefs and biases using stories and reflective exercises; connecting with patients across differences; power, privilege, and allyship; and race and racism in healthcare. As the curriculum continues, additional topics and challenges will be addressed including: social and personal identity and intersectionality; implicit bias and microaggressions; structural and social determinants of health and health disparities; stereotype threat, and communication across differences. The teaching methods were selected to 1) be interactive and inclusive; 2) ensure that residents interact with the content and with each other to enhance learning, and 3) encourage the learners to reflect and commit to incorporating the skills gained into their practice. Methods include use of stories, video clips, brief didactic presentations, resident-led small and large group discussions, and reflective writing. Skill-building sessions will use role-play and standardized patients. Reflective writings exercise will be used to assess learner "knowledge" and commit to act with follow-up will be used to assess behaviors.

**Evaluation Plan:** Accountability: We will track attendance, level of participation in each activity, and completion of reflective writings so that we can modify the plan for next year as needed. Reaction: All sessions will be assessed via session evaluation forms completed by learners and presenters. The goal of these evaluations will be to assess the quality, organization, and usefulness of the content. Learning: A written reflection about ones' own personal identities and pre-and post-surveys of residents' implicit bias using a validated scale will be assessed. Behavior: Residents' patients will also be surveyed to assess their providers' cultural sensitivity and ability to provide cross-cultural care.

**Potential Impact:** Programs in all specialties are developing social justice-related curricula; if our DEI curriculum is successful, we plan to share it with other programs so they can adapt it to their needs.

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<http://www.acgme.org/Portals/0/PDFs/Milestones/PsychiatryMilestones.pdf>
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### **Partnering in Pain Education (PPE): Equipping Our Residents to Battle the “Other” Epidemic**

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**Idea:** To create a Grand Rounds series to provide equal access to the resources and training residents need to effectively treat Opioid Use Disorder (OUD).

**Need/Rationale:** The importance of resident and fellow physicians to effectively evaluate and manage substance use disorders (SUDs) has become increasingly recognized. Graduate Medical Education (GME) programs need to enhance curricula which incorporates interactive teaching along with didactic components. The Accreditation Council for Graduate Medical Education (ACGME) requires each program to provide instruction and experience in pain management including recognition of the signs of addiction. The University of Texas Rio Grande Valley (UTRGV) School of Medicine (SOM) GME Office created a Grand Rounds series to provide equal access to all of the resources and training residents need to effectively treat Opioid Use Disorder (OUD). By collaborating with the Opioid Response Network (ORN) and the Providers Clinical Support System (PCSS), the GME office addressed the need to educate residents on the treatment of addiction by providing instruction through monthly virtual Grand Rounds. This collaboration is one way in which the GME office is able to provide resources to all its programs to enable meeting this and other common program requirements, allowing each program to focus on other requirements specific to their specialties.

**Methods:** Our mission is to increase resident knowledge and skills in the prevention, identification, and treatment of substance use disorders with a focus on OUDs. A workgroup was created including the UTRGV GME office, UTRGV SOM faculty, ORN, and PCSS who met over 2 months to put together a 3-year curriculum from August 2020 to June 2023 named “GME Opioid Grand Rounds”. Topics were adopted from the PCSS online modules available to the public created in response to the opioid overdose epidemic to train primary care providers in the evidence-based prevention and treatment of OUD and treatment of chronic pain. Attendees are encouraged to complete PCSS online modules in preparation for the conference in a “flipped classroom” format. The monthly grand round series is a two-part event consisting of an expert “presenter” from ORN who summarizes the web module in a 30-minute educational session followed by a UTRGV faculty member who acts as a “facilitator,” creating a conversation for the remainder of the hour with the speaker and attendees based on primary care perspectives and our patient population in the South Texas Rio Grande Valley, an area which is predominantly Hispanic and medically underserved. Attendance is taken at each event, and technical support is available for both presenter and facilitator. Flyers are created one month prior to each session and distributed throughout the medical school to students, residents, and faculty.

#### **Evaluation Plan:**

Outcomes data include:

- Number of GME programs with previous opioid prescribing/pain management curriculum last academic year
- Content and nature of previously existing curricula
- Number of participants in new GME Opioid Grand Rounds sessions
- Number of GME programs participating in this series

With our initial 2 sessions (August & September 2020), we have engaged more than 100 participants per conference, including learners from 13 of our 16 GME programs. A survey will be distributed to all program directors in which we will assess their pre-existing curriculum (if any) and how it is implemented in their program including frequency and delivery. A pre and post-survey to attendees evaluating the knowledge, attitudes, and skills they possess before and after participating in the grand rounds series will also be implemented. Questions will include data on physician comfort and knowledge in addressing, identifying, and discussing SUD diagnosis and treatment.

**Potential Impact:** Implementation of a SUD curriculum will improve resident knowledge and attitudes as well as their approach to managing addiction. We will enable our learners to battle the opioid epidemic, which is a problem of staggering magnitude in our nation, and improve the quality of the resources we provide through the continuum of medical education.

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- 2) Providers Clinical Support System (PCSS); [pcssnow.org](http://pcssnow.org)
- 3) Association of American Medical Colleges (AAMC) National Workshop to Advance Medical Education to Combat Opioid Misuse – Working together Across the Continuum; [http://www.cvent.com/events/aamc-national-workshop-to-advance-medical-education-to-combat-opioid-misuse-working-together-across-/event-summary-c8fac66e6a8341c89cfdc8d69cad5be.aspx?\\_ga=2.99966814.1178685485.1556647369-2036489871.1556647369](http://www.cvent.com/events/aamc-national-workshop-to-advance-medical-education-to-combat-opioid-misuse-working-together-across-/event-summary-c8fac66e6a8341c89cfdc8d69cad5be.aspx?_ga=2.99966814.1178685485.1556647369-2036489871.1556647369)

## **A Collaborative Common Curriculum for Dental Residents and Fellows in an Academic Medical Center**

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**Idea:** Use of a single-cohort collaborative curriculum to enable individual dental residents to thrive as interprofessional clinicians.

**Need/Rationale:** 32% of dentistry's 470 specialty training programs are sponsored by non-dental school institutions such as hospitals and medical schools, military medical centers, and stand-alone programs. Mayo Clinic's Dental Specialties sponsors one fellowship and three residencies who have been created, maintained, and have educated their trainees independent of each other. Interprofessional education (IPE) programs have been shown to improve culture, collaborative behavior, and mental health in trainees of graduate medical education programs,[1] however Wilder et al. (2008) raised a concern that IPE in dentistry is lagging behind their peers in medicine. A common collaborative curriculum [2] used by all of Mayo Clinic's dental education programs is proposed to facilitate collaborative clinical care amongst residents and fellows during their time as trainees and into their future careers. Learner coaching [3] will engage students through interactive social relationship building between dental and medical colleagues to build a sense of camaraderie, accountability to each other, and commitment to a positive learning environment.

**Methods:** The proposed collaborative curriculum aims to replace a portion of trainee's individual learning by creating larger groups of peer learners, thereby enhancing interprofessional working relationships and increasing resident satisfaction. Participants include two fellows in Maxillofacial Prosthetics and Dental Oncology, three residents in Orthodontics, two residents in Periodontics, and two residents in Prosthodontics. The fellowship is a 12-month program, while each residency is 36-months in length and each resident is the sole learner in their specialty's post-graduate year. Evaluation of CODA requirements identified 20 topics in Basic Sciences, Dental Knowledge, Medical Knowledge, Social Sciences, and Surgical Knowledge common to each program. The curriculum will be presented over a 36-month rotation using a variety of educational interventions including online modules, classroom and case-based presentations led by experts, grand rounds presentations with audience response systems, peer-guided sessions, team-based competitions, and simulations. To foster faculty-learner relationship building and provide career goal and objective coaching, learners will participate in group and individual lunches with the Vice-Chair of Education. During these sessions, learners will have the opportunity to discuss what aspects of their education are important to them and receive guidance on steps to succeed in their goals.

**Evaluation Plan:** Monitoring of the curriculum will be conducted to ensure all components are delivered to the learners with any deviations noted. Resident and fellow reactions will be collected by the completion of a standardized evaluation form at the end of each didactic component. A retrospective pre- and post-assessment will be used to examine changes in learner behavior with respect to well-being, social interactions, knowledge of other dental and medical specialties, referral patterns and habits, and career plans. Comparison of learning between topics that are specific to each specialty against those included in the common collaborative curriculum will be made by evaluation of specialty-specific versus interdisciplinary questions on yearly in-training examinations and written portions of specialty board examinations.

**Potential Impact:** Investigation into common collaborative curriculum implementation in a small academic medical center dental department will provide proof of concept to similar training programs in nursing and pharmacy, as well as to large medical departments who provide multiple small fellowships such as pediatrics or internal medicine.

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## Implementation of a Virtual Emergency Medicine Didactic Curriculum Targeting Resident Engagement

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**Idea:** To capitalize on the unique advantages of virtual learning in order to promote resident engagement during a weekly didactic conference.

**Need/Rationale:** The Accreditation Council for Graduate Medical Education (ACGME) requires that emergency medicine (EM) residency programs provide 5 hours of weekly didactic content. Prior to COVID-19, didactics for EM residencies included a combination of traditional lectures, small group discussions, in-person simulations, hands-on ultrasound education, as well as procedural learning sessions. Significant work has been devoted to increasing the educational impact of these in-person endeavors [1]. However, to meet recommendations for social distancing during a pandemic, didactic conferences have shifted to virtual platforms. For many programs, the transition to online learning has presented significant obstacles, as large portions of curricular content are not directly suitable for digital dissemination. Here we describe the creation and dissemination of didactic content utilizing online live-streaming techniques to maintain resident engagement, foster a sense of community, and promote hands-on learning opportunities [2,3].

**Methods:** A total of 14 virtual conferences over 3 months were live streamed via the Zoom platform within a single emergency medicine residency program. We created a small broadcasting studio, complete with professional cameras, lighting, and microphones, to live-stream each conference. To control and improve broadcast quality, lecturers were invited to present in-studio. Additionally, multi-camera and point-of-view techniques were employed to improve the quality of traditionally in-person didactics such as ultrasound lectures, procedural demonstrations, and simulation sessions. We also reduced the number of traditional lectures and most presentations were limited to 30 minutes or less. We included alternative lecture formats such as game shows and faculty interviews. Attendees were encouraged to ask questions and engage with speakers using the real-time Zoom chat function. A chief resident moderated this chat function and supplemented the discussion with relevant articles and multimedia. Polls, quizzes, and hyperlinks to Google Forms were also distributed in real-time to provide interactive elements for these educational sessions. Lastly, we frequently utilized the “Break Out Room” feature of Zoom. Residents and attendings were divided into smaller groups where they discussed medical cases, ethical dilemmas, or interpret diagnostic studies such as EKGs or plain films. The smaller groups would return as a larger audience to share their findings.

**Evaluation Plan:** We plan on analyzing attendance as one marker for resident engagement. Attendance will be tracked via a report generated by Zoom and compared to pre-virtual conference attendance. Additionally, resident surveys will be conducted to assess the effectiveness of our interventions and to seek opportunities for improvement within the virtual didactic curriculum. Each intervention (small broadcasting studio, the Zoom “Break Out Room” feature, alternative lecture formats, chief resident moderated chat function etc.) will be assessed both quantitatively and qualitatively. Survey questions will include Likert-scales, multiple-choice questions, and free responses. Residents will be asked to evaluate their level of engagement, sense of community, and learning during virtual conference.

**Potential Impact:** Residency programs must be prepared to provide high quality virtual educational content when in-person conference is not available. Learning to properly manage a virtual conference and creating innovative lecture content that engages participants is a novel but vital skill set for conference curriculum curators.

**References:**

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### **Using TeleHealth to Foster Medical Education and Enhance Patient Care**

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**Idea:** Residents and faculty will incorporate the use of telehealth into the care of COVID-19 patients to improve academic exposure to patients on precautions.

**Need/Rationale:** The AMA (American Medical Association) has encouraged medical schools and residency programs to integrate telehealth in order to prepare for future demands. During the COVID19 pandemic, medical students around the country were removed from clinical experience due to safety and risk of infection. 3rd and 4th-year medical students as well as PAs will inevitably be required to care for these types of patients in their later years of training and in practice. By limiting exposure to these high-risk infectious etiologies, there is both a loss of potential educational exposure as well as a loss to patient care. Medical students have limited access to infectious patients due to unnecessary risk and exposure. Patients placed on contact or enhanced precautions often have limited contact with providers and are at higher risk of poorer outcomes due to lapses in history taking or frequent follow-up. By including telehealth in the care of patients on precautions, medical students can develop relevant history taking, understand socioeconomic limitations of this patient cohort and medical management of these patients, meanwhile also improving quality of care for the patients and increasing proficiency in using telehealth.

**Methods:** The intervention will focus on 3rd and 4th-year medical students, MD and DO, as well as PA students and will take place over 12 months. The intervention will include 1) A census survey to evaluate for use of telehealth in medical education currently and a questionnaire designed to gauge interest in incorporating a patient-centred tele-curriculum. 2) Introduction to telehealth seminar; Zoom, tele-intensivist platform, and video translation services. 3) Learners will participate in video encounters in a telehealth capacity for in-patient care. This process will be supervised by residents and/or faculty. 3a) Review of proper consent and limitations 3b) History taking via telehealth 3c) Incorporate physical exam skills through coaching of patient-directed actions in order to obtain physical exam findings.

**Evaluation Plan:** 1) Accountability: We will track proficiency and performance on telehealth encounters using weekly standardized evaluations. 2) Reaction: Weekly evaluations and feedback sessions from resident and faculty supervisors. 3) Learning: Medical students will complete biweekly questionnaires and assessments on comfort level and proficiency in telehealth communication. This will be based on relevant ACGME milestones adjusted for each level of training in anticipation of continuing to have to meet similar milestones in residency. 4) Behavior: Interviews will be conducted by faculty with learners monthly in order to individualize action plans. At least 33% of these interviews will be with a behaviorist or psychologist on staff in order to improve patient care and communication.

**Potential Impact:** In order for medical students to be adequately trained to be physicians of the future, we must prepare them to integrate and use the advances in technology to improve patient care and develop communication skills specific to this new medium. If able, they enhance patient care in all settings and increase access to medical care for more people.

**References:**

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## The Case Cover Sheet – A Tool Used for Integration During PBL Tutorial at UNLV SOM.

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**Problem Statement:** Using a tool (case cover sheet) can help PBL Facilitators guide their students in deliberate discussion of weekly course topics during a tutorial.

**Rationale:** Problem based learning (PBL) cases utilize several features of adult learning theory; and thus, are best suited for residency training when a learner is developing from pedagogy to andragogy. It helps to retain information and provides an opportunity to apply system-based practice, teamwork and critical thinking (3). In our experience, it also allowed for interaction with other disciplines of medicine. PBL has been extensively used in medical schools and literature shows that it is an effective method of learning; it has been used for family medicine clerkship. However, I didn't find much literature on its use for Family Medicine residents. We believe that it is an engaging and versatile tool best used in combination with other learning methods (2). Thus, based on evidence in literature and prior faculty experience with PBL, we built a didactic curriculum for Family medicine residents which involves immersion in family medicine topics using various learning methods including PBL and case-based learning (CBL) along with other methods discussed below.

**Methods:** The preclinical curriculum at University of Nevada Las Vegas School of Medicine (UNLV SOM) includes various disciplines of medicine – Emergency response, Population health, Organ system-based basic-science, PBL, Doctoring skills, Integrated medicine, Community outreach, Bioethics, Biostatistics, Epidemiology, and Research. PBL comprises ~20% of the curriculum, and it's cases are written to reference material presented in all courses - thus, the tutorial session serves as an ideal forum for interweaving. PBL Facilitators, who are clinicians in practice, need notification of the students' curricular activities in order to prompt and emphasize discussion that would allow for synthesis and application of concepts learned from the various courses. Thus, a concise graphic case cover sheet was created to summarize the students' weekly course topics. The PBL Facilitators are encouraged to review the case cover sheet with the students at the start of the tutorial. A 9-item questionnaire using a 5-point Likert scale was devised to evaluate the case cover sheet utility.

**Results:** Most PBL Facilitators look at every weekly case cover sheet (4.5), agree that presenting students with opportunities to discuss concepts from various courses allows for application of knowledge that is relevant and meaningful to clinical practice (4.4), agree that being able to prompt discussion that incorporates various course concepts makes them better at their role as Facilitators (4.0), and agree that having a case cover sheet is valuable (3.9).

**Potential Impact:** The case cover sheet is easy to produce and the template could be used in other disciplines where integration is desired. There are inconsistencies in the faculty Facilitators' use of the content provided, so faculty development on why and how to emphasize certain discussion would be beneficial.

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**Medical Student to Pediatrician: A Focus on Telemedicine and Primary Care**

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**Idea:** Combined primary care and telemedicine curriculum for a transition to residency capstone course for fourth year medical students.

**Need/Rationale:** In response to the COVID-19 pandemic, most medical schools abruptly suspended students from in-person clinical interactions to protect students from possible exposure. Simultaneously, clinicians were forced to create and implement new systems for remote patient care to protect both patients and providers from possible exposure. Interestingly, the American Association of Medical Colleges (AAMC) found that 42% of U.S. medical schools did not cover telemedicine in their curricula in 2017-2018. <sup>1</sup> Thus, it is crucial that graduating medical students attain competency and adequate training in this new arena of healthcare. At the same time, the nation is facing a shortage of primary care physicians. <sup>2</sup> Many medical schools, including UT-Southwestern, have a capstone course focused on competencies related to the transition to residency, which is a prime opportunity to introduce primary care attitudes and behaviors as well as telemedicine skills. Also, many pediatricians report they lack the confidence to treat adolescent psychosocial and reproductive-related problems <sup>3</sup>, so incorporating material covering the primary care approach to adolescent care would also be beneficial.

**Methods:** This year's transition to residency course, Residency Essentials, is expected to be delivered in a virtual format, which is optimal for learning and practicing telemedicine clinical skills. For asynchronous learning, students will have access to an online forum where resources related to primary care visits, interviewing adolescents, and telemedicine can be shared by both facilitators and students. Content will include how to set up a telemedicine encounter, virtual communication tips, virtual physical exam skills, tips for primary care visits by age. Synchronous learning will include a simulated adolescent sick visit. Students will complete the simulated visit as a team by dividing up tasks such as setting up a telemedicine encounter, create an appropriate virtual visit setting, collect information including history of present illness, review of systems, conduct a pertinent virtual physical exam, and provide counseling. In addition to a simulated patient, a resident or faculty facilitator will also be present for a start/stop-style real-time feedback approach to the simulated visit.

**Evaluation Plan:** We plan to create checklists for the tele-OSCE encounters that include objectives for both the primary care aspect and telemedicine aspect of the encounter. We also plan to validate the checklist through a modified Delphi approach using local experts in primary care and telemedicine best practices. During the tele-OSCE described above, the facilitator will grade the encounter using these checklists. Students will be awarded a pass/fail based on a minimum passing number of checklist requirements for each category (primary care and telemedicine skills). This checklist will then be used as a framework for immediate feedback from both the standardized patient and facilitator. We will gather student perceptions of their abilities to perform primary care visits – specifically sensitive adolescent sick visits - in a virtual setting through pre- and post- course surveys. Additional questions will allow for future program improvements.

**Potential Impact:** The current percentage of students selecting careers in primary care will not fulfill the projected demand. This innovative curriculum will allow students interested in pediatrics to begin to build skills needed for both primary care and telemedicine, building the foundation for competency prior to starting their residency in pediatrics. Providing opportunities for students to participate in primary care and increasing telemedicine options are potential solutions to increase access to care.

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## **Collaborative Learning in Online Tutorials - Regaining the Interaction of Face-to-Face Learning**

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**Idea:** We encouraged small group discussion during online Year 4 medical student Anaesthetic tutorials to improve engagement and collaborative learning.

**Need/Rationale:** The move to online learning made necessary by COVID-19 comes with the loss of collaborative learning that face-to-face offers. There is a need to deliver engaging tutorials that encourage discussion and are efficient in meeting learning outcomes. The flipped classroom allows facilitation of discussion amongst students who, having viewed the pre-tutorial videos and case problems, understand the fundamentals of the topic. There is evidence that this model results in greater student engagement and significantly improved learning<sup>1</sup> but online tutorials are a difficult environment in which to foster discussion. An online learning environment has the potential to be isolating but is enhanced when there are opportunities to collaborate with fellow students [2]. Tutorials can be held on many platforms but we have found Blackboard Collaborate™, and particularly the Breakout Room feature, valuable in promoting discussion and improving students understanding of the topic. In our institution, 90% of online tutorials involve a PowerPoint presentation and attempts at questioning the group are largely met with silence. This didactic model fails to compensate for the loss of clinical time faced by many institutions or encourage collaborative learning.

**Methods:** We will focus on 4th-year medical students who will complete a 6-week rotation in Surgery and Critical Care. During this time, they will have 31 tutorials covering topics in Anaesthesia and different surgical specialities. Of these, only the four Anaesthetic tutorials follow the flipped classroom format. The students are provided with the pre-tutorial materials. These take the form of 10-20 minute YouTube videos covering the fundamentals of each topic and case problems to work through in advance. The tutorials are held online on the Blackboard Collaborate™ platform. We expect between 20-25 students to attend and, using the Breakout Room feature, they are randomly assigned to groups of approximately 5 students. They are allocated time to discuss each case problem in small groups before returning to the 'main room' to partake in a larger group discussion that is facilitated by the tutor. We have observed greater participation from the students when they are in the Breakout Rooms with more microphones and cameras being turned on. We promote flexible learning by recording the tutorials to allow students who are unable to attend or those who wish to reinforce their knowledge to view it in their own time.

**Evaluation Plan:** Accountability: Four tutorials have been delivered using the online platform to the first group of students rotating through Surgery and Critical Care. The tutorials for the second group are underway. Reaction: Our Anaesthetic Department has an established flipped classroom method of teaching and we are the only speciality in this rotation to use this model. By means of a questionnaire, we will examine student satisfaction and aim to use the results to encourage surgical specialities to make use of the flipped classroom model. Learning: The questionnaire will examine student satisfaction with the Anaesthetic tutorials and their impression as to their overall improvement in knowledge after a flipped classroom tutorial compared with a tutorial of a didactic nature. Behaviour: By encouraging learning prior to a tutorial, the students can reinforce their knowledge during the tutorial and this will ultimately improve the efficiency of their revision prior to an exam.

**Potential Impact:** In the new normal of online learning we must deliver effective and efficient tutorials to our students. Collaboration enhances learning and platforms with features that encourage this, such as Blackboard Collaborate, are tools that are valuable to promoting effective online learning.

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## **Learning to Partner: Medical Facilitation as an Educational Tool**

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**Idea:** Accompanying and supporting patients as they seek care will help early clinical trainees develop relational skills and an affinity for partnership.

**Need/Rationale:** A major aim of healthcare education is the development of compassionate providers who are adept at communicating, responsive to the personal and societal contexts of illness, and reflective about their professional role. The ongoing challenge of fostering empathy in students [1] and the difficulty of engaging students in curricula addressing the impact of systems on health [2] are two indicators that this goal remains unfulfilled. Providing students with clinical exposure early in their training can help by bolstering communication skills, sensitivity to patients' circumstances, and the impetus to learn [3]. Such early clinical experience (ECE) typically familiarizes the trainee with the work of the healthcare team. We propose to amplify the benefits of ECE by offering a new type of program that pairs students with seriously ill patients alongside whom they can experience healthcare over an extended period of time. These students will concurrently attend class sessions designed to help them process and participate effectively in this clinical opportunity. We expect that they will leave with a deepened desire and improved capacity to understand what it means to be on the other side of the medical encounter.

**Methods:** Patients who are adjusting to a serious medical condition can become overwhelmed by the new expectations, unfamiliar routines, vast amounts of information, and unanticipated decisions that they face. Medical facilitation is a service that provides such patients with support related to communication, information processing, and decision making in order to help them make sense of their circumstances and engage confidently and effectively in their care. The medical facilitation elective is an 8-week course designed for a cohort of students from medicine, nursing, and the physician assistant program. Students in the elective will provide medical facilitation services to patients, under faculty supervision. The cornerstone of the work will be to accompany the patients to their medical appointments. Doing so will give students the chance to talk with patients and their loved ones about what it is like to be ill or to care for someone who is ill, to observe the medical encounter from the patient's point of view, and to explore how to provide meaningful support. Additionally, students will attend a two-hour class session each week. The first half of each meeting will be devoted to activities related to one or more of the following themes: effective communication, contexts of illness, self-awareness and self-care, compassion and partnering, and professional identity. The second half of each session will be dedicated to discussion of the patient cases that the students are involved in.

**Evaluation Plan:** Our evaluation will have two components, a research study looking at the impact of the course on how students approach patient care and an analysis for program improvement. Students will submit weekly writing assignments in which they reflect on their time with their patients and on the classroom activities. At the end of the course, they will also write about the elective as a whole. These writings will serve as data for an IRB-approved, qualitative investigation designed to identify and describe the ways in which the course has affected how participants think about the dynamics and goals of provider-patient interactions and about their own professional role. Program review will focus on eight domains: organization, logistics, clinical experiences, class sessions, assignments, workload, coordination with affiliated programs, and missed opportunities. Information about these areas will come from the students' writings, a post-course student survey, feedback that will be provided by students at two group meetings, and written comments supplied by course instructors. A team consisting of faculty, a student collaborator, and a consulting clinician, will examine these materials and determine what modifications should be adopted.

**Potential Impact:** We expect our elective to show that medical facilitation can be used to foster personal, interpersonal, and professional growth in students. Trainees who take the course will have a deeper understanding of their patients' experiences and be better positioned to care for their patients, and themselves, with compassion and clarity of purpose.

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## Communication Simulations: Preparing Students for the Difficult Conversations of Pediatric Residency

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**Problem Statement:** Current methods of communication training do not prepare pediatric medical students for the day-to-day difficult conversations of intern year.

**Rationale:** As a pediatrician in training, I saw a disparity between the difficult social situations I was prepared for in medical school and those I faced in residency. There was a focus on delivering bad news, an integral skill for all doctors, but not one frequently applicable to a pediatric intern. Instead, as an intern, I was tasked with calming frustrated parents, building trust with families against vaccination, balancing teenage privacy against parental conviction, and a host of other difficult conversations that come with the unique interplay between doctor, patient, and parent. I believe many pediatric residents share my experience. On review of curricula on Mededportal, with search terms “communication” and “medical student”, of the 300 most relevant results only 6.3% involved doctor-patient communication and none had a pediatric focus. The goal of this project is to give students experience with difficult conversations that are directly applicable to the intern year of pediatric residency.

**Methods:** This is a cohort study of fourth-year medical students at the University of Texas Southwestern (UTSW) who participated in simulation-based communication training. The training used the group objective structured clinical encounter (GOSCE) model. In this model, a group of medical students, together in the same room, take turns interacting with a standardized actor under the supervision of a facilitator. In this case, the actor played the role of a patient’s parent in four scenarios: vaccine hesitancy, lumbar puncture refusal, bronchiolitis worsening overnight, and functional abdominal pain in a teenager. The sessions culminated in dedicated time for peer-to-peer observation, discussion, and feedback. The effectiveness of the intervention was assessed via an anonymous five-point Likert scale questionnaire administered immediately before and after the training session. The questionnaire asked students to rate their confidence in the use of non-verbal cues, identifying areas of conflict, defusing conflict, communicating with a distressed parent, communicating with an angry parent, managing expectations, identifying emotions, articulating empathy, and tailoring communication to the emotional state of the caregiver.

**Results:** Fifteen pediatric-focused fourth-year medical students have been included in the study thus far, representing the 2020 UTSW graduating class. After the intervention, there was a statistically significant improvement in self-reported confidence across all areas of the five-point Likert scale questionnaire. Statistical significance was assessed via two-tailed, paired sample t-tests, and the degree of improvement was demonstrated via 95% confidence intervals. The results by section include: use of non-verbal cues (95% CI [0.23, 0.97],  $p = 0.007$ ), identifying areas of conflict (95% CI [0.42, 0.91],  $p = 0.0001$ ), defusing conflict (95% CI [0.91, 1.62],  $p < 0.0001$ ), communicating with a distressed parent (95% CI [0.75, 1.51],  $p < 0.0001$ ), communicating with an angry parent (95% CI [0.76, 1.63],  $p < 0.0001$ ), managing expectations (95% CI [0.67, 1.60],  $p = 0.0002$ ), identifying emotions (95% CI [0.37, 1.09],  $p = 0.001$ ), articulating empathy (95% CI [0.32, 1.14],  $p = 0.003$ ), and tailoring communication to the emotional state of the caregiver (95% CI [0.41, 1.19],  $p = 0.001$ ). Additionally included on the post-intervention questionnaire was a comments section and the true/false statement: I have gained novel strategies for difficult conversations. All participants answered “True”. Comments were overwhelmingly positive with one student writing: “This was the first standardized patient exercise in all of medical school that genuinely made an impact on the way I’ll practice medicine”.

**Potential Impact:** This study centers on the idea that communication needs vary across specialty and level of training. It demonstrates the effectiveness of a curriculum specific to the pediatric intern year. We hope this curriculum will prepare students for difficult conversations and model the value of applicability in the design of future communication training.

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## Using Dale Carnegie's Principles in Online Teaching During Pandemic

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**Idea:** To apply Carnegie's (1981) principles when grading in the text-based online asynchronous courses—especially text-based assignments.

**Need/Rationale:** Online learning students face many difficulties during Covid-19, including uncertainty, environmental distractions, and anxiety (Irawan et al., 2020). Teachers must try to decrease students' anxiety levels while still keeping them engaged. Simply removing scheduled assignments may temporarily reduce students' anxiety; however, it may also jeopardize students' learning opportunities. In the online asynchronous learning environment, teachers' feedback when grading is the best opportunity for students to learn (Luo & Kalman, 2018). The most common method for grading students' work is identifying their mistakes and how they affect their grades. Without the teacher's tone and body language in a text-based setting, the message behind the feedback may sound more like a punishment than a reward; criticism may put students into a defensive mode and hurt their feelings and self-esteem. Teacher's written comments in isolation are neither effective nor motivational.

**Methods:** Carnegie's fundamental principles include avoiding criticizing, condemning, or complaining about others—and never saying to a student, "you are wrong." He suggests not treating people as creatures of logic, but as creatures of emotion and pride. Teachers should treat students the same way—showing them respect no matter the quality of their submitted assignments. Teachers need to focus on encouraging students and praising even small improvements. Showing respect does not mean the teacher will ignore or misjudge students' problems. For students to happily make changes based on the teacher's suggestions, teacher feedback needs to make students' faults seem easy to correct. Teachers also need to help students save face while pointing out their mistakes; for example, teachers could talk about their challenges with the subject before criticizing students' mistakes. Instead of directly telling students what is wrong, teachers should indirectly call attention to students' mistakes, such as by asking questions to help them reach the answers themselves. Following Carnegie's principles, teachers' comments should always begin positively with praise and honest appreciation. Carnegie suggests people use smiles. In the feedback for text-based online asynchronous courses, teachers could use a smiley emoji.

**Evaluation Plan:** Students taking a text-based online asynchronous course will be randomly divided into two groups taught by two different teachers. The experimental group implements Carnegie's principles, while the control group receives more blunt and direct feedback from the teacher. Both quantitative and qualitative data will be collected. Quantitative data includes students' final grades as retrieved from the students' learning platform and end-of-course evaluation scores collected from a standard survey (with a 5-point Likert scale). The mean scores from the two groups will be compared. Qualitative data include students' evaluation narratives. The central themes of students' experiences from their narrated feedback will be generated and compared between the two groups.

**Potential Impact:** When teachers implement Carnegie's principles into text-based online asynchronous courses, students may have better learning outcomes, become more engaged, improve relationships with their teachers, have higher motivation toward learning, and develop a more positive emotional outlook overall.

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## Implementing Problem-Based Learning Cases in Family Medicine Residency Program

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**Idea:** Implementation of problem-based learning in Family Medicine residency didactic curriculum.

**Rationale:** Problem based learning (PBL) cases utilize several features of adult learning theory (1). and thus, are best suited for residency training when a learner is developing from pedagogy to andragogy. It helps to retain information and provides opportunity to apply system-based practice, teamwork and critical thinking (3). PBL has been extensively used in medical schools and literature shows that it is an effective method of learning, but it has not been used much in Family Medicine residency program. We believe that it is best used in combination with other learning methods (2).

**Methods:** Our didactic curriculum aims at high board exam scores and covering low yield topics not covered enough during clinical work, thus preparing our residents to be well rounded family physicians. For academic sessions, we decided to focus on one Family Medicine subject at a time (like community medicine, cardiovascular diseases etc.), during a 4-week period called a 'section'. The sub-topics are covered using different learning methods to encourage engagement and effective learning with reinforcement of concepts among our residents. We use didactics, PBL, CBL, workshops, games, flip class and jigsaw discussions. PBL, CBL and didactics are more commonly used than other methods. We have 17 PBL cases designed by our faculty covering these different subjects. The PBL case is done over 3 one-hour sessions separated by 1-2 days gap which provides opportunity for learners to work on some sub-topics on their own and teach their peers when they return. We have nursing and pharmacy colleagues who help with some of the pieces of the case. We add nuances of patient care like psychosocial barriers in these cases as well, which replicates real life patient care experience. Various methods allow for immersion in the topic, engagement and reinforcements of concepts and covering patient care aspects in addition to medical knowledge. Since we modified PBL structure and created cases for our purpose and we use it extensively, we wanted to study its effectiveness.

**Evaluation Plan:** For the initial evaluation of the curriculum, an 8-item survey comparing PBL, CBL and traditional didactics was sent to faculty (n=11) and residents (n=18). The survey was anonymous, but participants identified themselves as faculty, PGY1, PGY2 or PGY3. Five teaching faculty (45%) and 17 residents (94%) responded to the survey. CBL was preferred over PBL for how resident learn best and it being good use of their time (14 versus 6). PBL scored highest for exploration of case related other topics, promoting self-learning and encouraging strong skills in finding and using resources for patient care. Both CBL and PBL scored equal on active participation. CBL was preferred for applying learning to different cases in practice. Traditional didactic didn't score high on any. Comments section mentioned advantages of PBL as ability to learn how others think of same case, learning broader differential diagnosis, encouraging critical thinking, understanding guidelines and workflows about cases better, and interaction with team. Disadvantages were that it can be slow and it requires self-motivation from participants. We will continue to do timely surveys and monitor attendance and board scores to further evaluate the curriculum.

**Potential Impact:** PBL is best used in conjunction with other methods to cover the vast set of topics in Family medicine. It is an active, effective method which promotes self-learning and improving skills on using resources and guidelines. However, CBL is good alternative method that is fast paced and has better application of learning in different cases.

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## **Empowering the Learning and Reflective Process in Clinical Supervision of Family Medicine Residents**

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**Idea:** Empowering the learning and reflective process in clinical supervision of family medicine residents who are of multicultural backgrounds.

**Need/Rationale:** According to Cooper, et. al. (2017), reflective practice in supervision is instrumental in assisting the process of those who are providing health care to others to practice self-awareness, critical thinking, a greater understanding of how to bring theory and practice to greater conceptualization to enhance patient care and recognize their limitations. Literature on diversity identifies that as the United States continues to have greater representation of cultural backgrounds, that sociocultural factors will have a great impact in the delivery of health care (Weissman, et. al., 2005). In an effort to assist physicians to provide humanistic care which focuses on exercising respect, awareness, sensitivity, and humility it will be important that the appropriate care, time, and focus be dedicated to seeking to understand the experience of diverse others. Understanding that healthcare environments have continual moving pieces with many responsibilities involved within systems, such as medical residency programs, it is critical that medical environments pause to think about how to more effectively engage learners in important conversations related to the experiences of others and themselves.

**Methods:** Reflective practice in clinical supervision of multicultural medical residents is an experience that occurs longitudinally throughout the three-year experience of the family medicine residents academic journey. Qualitative measures are utilized to obtain live and written feedback of the medical residents' experiences. The Behavioral Science Community Medicine Rotation is composed of six full training days in which they meet with Behavioral Health faculty and includes opportunities to engage learnings in exploring their approach to patient care, health care systems, learning/discussing/addressing health disparities, learn about and discuss issues of diversity, implicit/explicit bias, transference and countertransference, and how to manage crisis in primary care. The Behavioral Science Intensive is a comprehensive review of their residency experience to assist in the transition process from residency to graduating for formal academia and into their practice in primary care. This rotation is scheduled for three full days during their third and final year in residency. Academic Support is present to provide support for residents in all three cohorts. Reflective practice in academic support also has been presented with many experiences related to patient care, teamwork, group dynamics, managing conflict, exploration of professional and cultural identity in a work environment.

**Evaluation Plan:** The evaluation process includes a process of scheduled feedback meetings during the Behavioral Science Community Medicine Rotation, the Behavioral Science Intensive Rotation, and ongoing Academic Support meetings provided by Behavioral Medicine Faculty. Additional methods of evaluation include reflection papers which have briefings and debriefings on their thought process, approach, exercise of critical thinking skills and insight. Other activities of learning include videos, journal article readings, training modules, role play, and co-consultation experience with a patient. The Behavioral Science Community Medicine and Behavior Science Intensive Rotations are composed of assigned days of training in which they meet with Behavioral Health faculty and includes opportunities to engage learners in exploring their approach to patient care, health care systems, learning/discussing/addressing health disparities, communication, self-awareness, learn about and discuss issues of diversity, implicit/explicit bias, transference and countertransference, and how to manage crisis in primary care. Academic Support experiences are continual and can include any of the above-mentioned rotation topics/experiences.

**Potential Impact:** The development of a collaborative working relationship with an approach that seeks to explore the learners own understanding of their learning process can serve to motivate the learners to actively participate in their training, promote awareness of self and others, develop a positive attitude towards learning, and improve communication skills.

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**“Code Learn”: Incorporating Protected Time for On-Shift Learning for Residents at a Busy ED**

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**Idea:** Increase on-shift learning for emergency medicine (EM) residents using resident-led small group, case-based, educational sessions during shift change.

**Need/Rationale:** In an age of increasing emphasis on operational metrics and efficiency, medical trainees are faced with service demands that encroach upon their opportunities for on-shift learning (1). In the emergency department, in particular, documentation and administrative burden has negatively impacted the quality and quantity of education in the clinical environment. Despite the ACGME requirement that residency programs prioritize education over service, existing studies suggest that protected opportunities for on-shift learning have declined in frequency (2). On a local level, EM resident responses to multiple annual program evaluations corroborate this widespread belief that service obligations compromise education and reflect a desire for more dedicated teaching in the clinical environment. In an effort to incorporate protected time for formal on-shift learning in our training environment, we plan to implement small group, case-based, and interactive teaching sessions led by senior EM residents during shift change. We hope that regular integration of these sessions will not only promote a culture that prioritizes education over service, but will enhance camaraderie and a sense of community between senior and junior residents.

**Methods:** All 76 PGY1-PGY4 emergency medicine residents will participate in this year-long educational intervention. The intervention will include the following:

1. Twice-weekly small group learning sessions: These ten-minute sessions will be led by an EM senior resident and will be held in the emergency department on Tuesday and Friday mornings at 6:50 AM (just prior to patient sign-out at 7:00 AM). All EM residents working in the five separate emergency department pods will be invited to attend the sessions. During this ten-minute period, the clinical areas will be staffed by attendings only to allow for fully protected educational time. Sessions will consist of a five-minute presentation on an interesting case, ECG, image or relevant clinical pearl from the overnight shift. This will be followed by a five-minute period reserved for questions and discussion. We have chosen the format of short, case-based teaching sessions to maximize learner attention and improve retention of the material. Additionally, we will utilize the teaching techniques of small group discussion and progressive disclosure cases to increase learner engagement and interaction.
2. Faculty facilitation and feedback: One assigned faculty member will attend the session to facilitate and enhance the case discussion and provide feedback to the resident “teacher” after direct observation. Faculty members will also ensure accountability in session timing and content.

**Evaluation Plan:** 1. Accountability: We will track attendance and participation in these teaching sessions through the use of online surveys via a QR code. QR codes will also be used to keep a log of educational topics that have been previously discussed. Faculty members in attendance will ensure that sessions adhere to the proposed time frame and that educational content is evidence-based. 2. Reaction: Resident and faculty surveys will be performed one month and three months post-implementation of the intervention, and will assess perceptions about, and feedback on, the utility, format, and structure of the teaching sessions. The content of these surveys will be used to guide future iterations or expansion of Code Learn. 3. Learning: Faculty will provide verbal, real-time feedback to resident presenters on the structure and content of their presentations. Perceived changes in resident learning as a result of this intervention will be gauged through the surveys referenced above. 4. Behavior: A focus group composed of mixed PGY levels will be held 6 months post-intervention to gauge perceived changes in learner behavior and attitudes as a result of the initiative.

**Potential Impact:** In the face of increasing operational demands, Code Learn offers a simple strategy to allocate protected time for on-shift resident education. If this intervention is effective, it could serve as a model for future interdepartmental or multidisciplinary shift change-based educational innovations.

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### **Clinical Huddle: A 10 Minute Ambulatory Teaching Moment**

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**Problem Statement:** In a busy resident clinic, the schedule is complex and unpredictable. There is little structured time for formal education for residents or faculty.

**Rationale:** Outpatient teaching clinics provide a unique environment for learning about chronic disease management. Despite these opportunities, the clinician-educator faces significant challenges in creating meaningful educational experiences. One such barrier for us was the lack of structured time for our residents and preceptors to have interactive discussions and review core ambulatory topics. Most clinic educational moments occur with the case presentation. However, so much depends upon the case-mix of the clinic and resident proficiency in the presentation. There is no structured time for peer-to-peer or group formal education. In 2017, I developed the “clinical huddle” - a 10 minute resident-led educational medical discussion. One resident from the scheduled clinic session was assigned a focused core ambulatory topic or physical exam skill to discuss or demonstrate with the clinical group.

**Methods:** Our internal medicine primary care clinics are located in three affiliated Federally Qualified Health Care facilities. The nature of these clinic sessions become very hectic given the complexity of our patient panel. Our residency program uses a 6+2 rotation schedule with residents rotating through their ambulatory clinic every 4 blocks. As the site director for the largest of these clinics, I developed a structured didactic session that could be done at the start of each clinic day. At the start of each ambulatory block, residents were sent clinic updates with assignments for the clinical huddle topics. These ambulatory topics included review of guidelines, medication management, demonstrations of key physical exam components, physician communication skills, clinical pearls, and practice changing trials. When possible the topics were chosen to reflect and compliment the topics presented in the formal ambulatory didactic lectures in each respective block. This project was successfully implemented with great acceptance by the residents and subsequently incorporated into the second clinic site in 2019. After three years at the first site and one complete year at the second site, we surveyed the current residents for their perceptions of this didactic innovation.

**Results:** Of 65 residents between the two participating clinic sites, 23 completed the survey. Residents were asked to specify their primary clinic site, their post-graduate year level this past year, and their general impressions of the project. Of the 23 respondents, 21 (91.3%) learned something new at the clinical huddle, 19 (82.6%) felt this was an important part of their clinic day, 20 (86.9%) felt the activity generated discussion, and 18 (78.2%) felt the activity was high yield. Eight out of 23 residents presented on guidelines and 6 out of 23 demonstrated physical exam skills with the rest divided between the other categories. Eleven (47.8%) of 23 spend less than 20 minutes preparing for the activity and 11 reported spending more than 20 minutes for the activity but less than 30 minutes, and one skipped this question. Twenty (86.9%) out of 23 reported learning from the preparation for the clinical huddle. Residents were also given an opportunity to free text comments and overwhelmingly looked forward to clinical huddle.

**Potential Impact:** The “clinical huddle,” a structured peer-to-peer teaching moment, is a successful didactic method added to a busy academic clinic day. This informal activity is high yield, generates meaningful dialogue and is easily translatable to any academic clinic setting.

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### **A Day in the Life: Simulated Patient Experience to Enhance Provider Knowledge and Empathy**

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**Idea:** Develop a simulated experience from the perspective of a patient's family with a new cancer diagnosis for pediatric hematology-oncology fellows.

**Need/Rationale:** Research supports the idea that increased Clinical Empathy – the ability of physicians to understand and relate to the experience of their patients – is a critical cornerstone of effective patient care [1]. However, many physicians lack specific exposure to the experiences of their patients, even within the walls of the hospital, damaging the patient-doctor relationship [2]. Further threatening the therapeutic relationship, healthcare providers may be unaware of the education patients have received, and directly contradict it [3]. At Children's Hospital Los Angeles (CHLA), families of children with new diagnoses of cancer undergo a life-altering experience, defined by standardized processes and education provided by ancillary team members. However, the CHLA Hematology-Oncology Fellows have poor awareness of this process and its components. Fellows have noted that their lack of direct experience in these logistical elements of patient care (including nuances of medication administration, insurance application, and even admission process) impedes their ability to consistently deliver the best possible care. This research study will aim to 1) increase this knowledge in Fellows and 2) improve augment Fellows' self-report of Clinical Empathy.

**Methods:** The intervention will comprise of a full day of programming and experiential education for Hematology-Oncology Fellows. Each participant will have a description of a patient (considered "their child") which will lead them to a telehealth visit with a local pediatrician, who will direct the participant to the Emergency Department (ED) for lab testing. The participant will go through patient intake in the CHLA ED, where the resident on duty will deliver the news that labs are concerning for leukemia. The participant will be taken to the Oncology inpatient floor, where nursing will orient them to the unit. A pediatric resident will take an abbreviated history and offer counseling regarding reasons for admission. A senior Hematology-Oncology Fellow will obtain consent for necessary procedures, after which the participant will be taken to the different waiting areas, procedure rooms, and recovery areas for such procedures. This will be followed by a conference with an attending and fellow discussing a new diagnosis of leukemia. Several services will then visit the patient room: venous access team to discuss central lines, nursing to give standard new diagnosis teaching, pharmacy to show commonly prescribed medications, care managers to explain the process of obtaining specialized insurance coverage. Participants will go through the process of hospital discharge and have a similar standardized experience in the outpatient care centers.

**Evaluation Plan:** Participants will receive a pre-test evaluating their knowledge of what processes are involved with a patient admission, the content of new patient teaching, the process for diagnosis from the patient perspective, and basics of patient care as administered by the parent, including line care and strategies for medication administration in a young child. This will be followed by a self-assessment on measures of empathy using the Jefferson Scale of Empathy. Following intervention, the pretest and self-assessment will be repeated immediately, and then at 6 months. Additionally, this intervention will be done during the following year's orientation for new Hematology-Oncology Fellows. These trainees will receive a pre-and post-test, which will be repeated 6 months into the year. This will allow for a more balanced comparison of measures of empathy, which may be impacted by factors related to the duration of the training program. Feedback will also be solicited, and the intervention may be adjusted based on participant reviews.

**Potential Impact:** This intervention offers physicians a novel perspective on routine care that represents a monumental day for patients and their families. Similar programs could easily be implemented in other training programs and institutions. This has the potential to improve patient care, enhance the patient-reported experience, and increase physician empathy.

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### Stretching the Limits of an Analytical Model from the US MCAT to the Medical Resident Step 3 Exam

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**Problem Statement:** A six-year analytical model of biomedical knowledge provided early notification of medical resident performance for medical school applicants.

**Rationale:** Standardized academic metrics for US medical students begins one year prior to medical school with the Medical College Admissions Test (MCAT) to test problem solving, critical thinking, written analysis and knowledge of scientific concepts and principles,<sup>1</sup> and concludes one year after graduation with the United States Medical Licensure Examination (USMLE) Step 3 exam which assesses clinical skills, diagnostic acuity, decision-making, guidelines for treatment and follow-up care.<sup>2</sup> Significant relational measures anchored across the timeline of medical school will provide the internal structure of the MCAT/Step 3 analytical model.<sup>3</sup> The purpose of this study is to analyze the relationships of the MCAT and USMLE Step examinations across a six-year period for ten graduating classes.

**Methods:** 1,978 medical school graduates completed the MCAT and USMLE Step 1, Step 2 Clinical Knowledge (CK), and Step 3 examinations over ten graduating classes (2010-2019). Univariate analysis of variance and Cohen's d effect sizes compared mean scores. Pearson correlations and stepwise multivariate linear regressions were used to predict Step 3 scores from the MCAT, Step 1 and Step 2 CK scores. IBM® SPSS® 24.0 was used for statistical analysis. The study is IRB approved.

**Results:** All normality tests were statistically significant ( $p < 0.001$ ). Skewness/Kurtosis measures are as follows: MCAT (-3.5/4.9); Step 1 (-5.9/1.1); Step 2 CK (-7.7/4.1); Step 3 (-0.4/-0.3). There were statistically significant (all  $p < 0.001$ ) increases in mean scores across the ten-year period for each exam: MCAT ( $d = 0.45$ ), Step 1 ( $d = 0.44$ ), Step 2 CK ( $d = 0.75$ ), and Step 3 ( $d = 0.58$ ). Across all ten years, statistically significant ( $p < 0.001$ ) correlations were reported between the MCAT score with: Step 1 ( $r = 0.4$ ), Step 2 CK ( $r = 0.3$ ), and Step 3 ( $r = 0.2$ ). Step 1 was significantly correlated to Step 2 CK ( $r = 0.5$ ), and Step 3 ( $r = 0.3$ ). Step 2 CK and Step 3 were significantly correlated ( $r = 0.4$ ). Linear regression of Step 3 scores (outcome) on Step 1 ( $\beta = 0.2$ ), Step 2 CK ( $\beta = 0.4$ ), MCAT ( $\beta = 0.0$ ) scores was statistically significant ( $R^2 = 0.3$ ,  $p < .001$ ). Removing Step 1 from the model, the MCAT ( $\beta = 0.1$ ) became a significant predictor of Step 3 with Step 2K ( $\beta = 0.4$ ) present ( $R^2 = 0.2$ ,  $p < .001$ ) or not present ( $R^2 = 0.1$ ,  $p < .001$ ).

**Potential Impact:** The MCAT exam is a singular predictor of the Step 3 exam until replacement three years later by the Step 1 exam. One year later, Step 2 CK serves as the primary predictor of Step 3, but the analytical model improves with the addition of the MCAT or Step 1 exam. The MCAT, Step 1, and Step 2 CK cannot all simultaneously act as predictors of Step 3.

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## **Reinventing a Traditional Resource as a Novel Space Repetition Program to Master Head and Neck Anatomy**

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**Problem Statement:** Mastering anatomy is a challenging task for most medical students. No prior study has investigated spaced repetition's utility for teaching anatomy.

**Rationale:** Medical students have previously established study habits that may need to be enhanced to meet the demands of medical education. Medical knowledge learned by preclinical students is often quickly forgotten, and spaced education has been shown to improve retention (Kerfoot et al, 2007). Spaced repetition flashcards are an increasingly popular study method. A limited amount of evidence suggesting that spaced repetition studying is associated with superior medical licensing exam performance suggests it warrants further exploration by educators (Deng, 2015). We created a natural experiment by providing a spaced repetition resource alongside the equivalent schematic material for students learning regional gross anatomy. Self-reported study habits triangulated with performance on unit assessments and longer-term retention of information will shed insight into potential differences in study materials influence on learning outcomes.

**Methods:** A retrospective analysis was undertaken to examine differences in study methods and learning outcomes for a first-year medical school cohort. 207 students were provided with opportunities to access different study aids during a six-week head and neck anatomy curriculum: flashcards and schematic material. A set of flashcards were available for download from a school resource link alongside "Mastering Cranial Nerve Anatomy: A Schematic Approach," the MedEdPortal published schematic material on which they are based (Paskin-Flerlage and Eisner, 2015). These flashcards were made with the Image Occlusion Enhanced Anki program add-on, then organized by each cranial nerve and pathway components including detailed somatic and autonomic functions, nerve communications, and skull context with foramina. No specific recommendation for either resource was made to the students. Assessments included a content knowledge pre-test one week prior to the Head Eyes Ear Nose and Throat (HEENT) physical exam lab, a post-test following the lab, a survey on preference for study method, and summative examination performance using questions related cranial nerve clinical skills and gross anatomy questions that were abstracted from two exams. The independent variables of study aid (flashcards, schematic), self-reported study habits (frequency of use of either or both resources) will be analyzed in relation to dependent variables (performance on physical exam lab assessment, relevant exam questions).

**Results:** This study is currently in progress. Data were collected from 207 first-year medical students. Preliminary information is provided. Preliminary results of available data found that both study aids were widely used by most of the students. Overall, 81.8% of students utilized the schematic and 64.8% utilized the flashcards prior to exams. 56.6% utilized both resources while studying. A relatively small percentage of students indicated a preference for a single study aid: 25.0% used only the schematic, 8.2% used only the flashcards, and 10.2% did not use either resource. 9.7% of students utilized the flashcards daily, 15.8% every other day, and 39.3% once per week. Students that utilized flashcards studied on varying platforms; 75.7% on a computer application, 19% on a tablet, 18.4% on a mobile device, 8.1% on a web version, and 17.6% on multiple platforms. Initial analysis did not indicate significant differences in scores on assessments were associated with the use of either or both resources. More exploration of the data will be undertaken. Further analysis is planned to examine the potential impact of the frequency of study to reveal possible patterns. Long-term data will be available from an assessment given 9 months after the initial start of the gross anatomy unit, as the students begin neuroanatomy. Those data will be used to examine potential relationships between study habits and knowledge retention.

**Potential Impact:** Conference attendees will learn how to adapt teaching material into a spaced repetition program. Medical students seek interactive learning resources, widely utilizing this spaced repetition anatomy material for self-directed study. Different study aid formats may be associated with patterns of study habits and influence student learning outcomes.

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## **An Educational Card Game Augmented With Quick Response (QR) Codes**

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**Idea:** Tabletop games are promising for education but space on physical materials is limited, QR codes could deliver more content.

**Rationale:** Use of a game format for teaching is supported by self-determination theory. For example, games can support the learner's sense of competence as they accomplish goals that are accessible to their level of knowledge. Games also foster learner-learner and learner-teacher interactions. This interaction improves motivation to learn and facilitates teaching and near-peer teaching. Tabletop games are likely superior to digital games in promoting interactions between learners. Guidelines are available for many infectious conditions in pediatrics however adherence to guidelines in practice is variable. A card game, Empiric Pediatric, was developed and used to teach guideline based antibiotic use to medical students and pediatric residents. After successful use locally the goal was to distribute the game widely. Some important information taught in these sessions was not included on the physical cards but was from the facilitators experience. To overcome this limitation QR codes were added to the cards with links to teaching points and references online. This abstract describes the real-world use of the QR codes on the copies of the game that have been distributed thus far and plans for further evaluation.

**Methods:** In the game learners manage a hand of antibiotic cards and compete to treat infections that score variable points based on difficulty. The rules of the game reward the use of observation for infections for which antibiotics can be avoided and reward the use of more narrow antibiotic choices. The content of the game was developed using IDSA, CDC and AAP guidelines with a focus on bacterial infections for which observation without antibiotics is an option. The game is paired with a pre-game podcast episode for medical students and the game is used alone for pediatric residents. Each infection card has a case on the front. The correct treatment is listed on the back along with a brief learning point (15-25 words) and a QR code that links to references, further teaching points and the option to give feedback on the case. QR codes are present on 40 of the cards and use of these codes is tracked with Bitly (New York, USA). The expected frequency of use of QR codes was unknown but intent was to look both at the overall frequency of use and patterns (e.g. more difficult cases would get more use). The game was made available online for purchase through a print on demand company DriveThru Cards (USA) and also made available to print for free online. The game was promoted as an educational tool on Twitter (@EmpiricGame). This study was submitted to the IRB (CHLA-20-00049) and did not meet criteria for human subject's research requiring approval.

**Evaluation Plan:** The game was made available for purchase January 7th of 2020. 155 copies have been purchased as of November 15, 2020 and another 10 copies have been distributed to physicians that assisted in the development of the game. The number of downloaded and printed copies from the webpage is not tracked. From January 2020 through November 15th, 2020 QR code use has been limited. QR codes have been used 67 times (0.4 times per copy of the game). Many (12/40) QR codes were not used at all. The most frequently accessed codes were Neisseria meningitidis post-exposure prophylaxis (7), Lyme disease (7), pelvic inflammatory disease (5), and dog bite (5). Further evaluation of this feature will be done with a survey of users of the initial release of the game. Possible reasons for limited utilization that will be explored include: Games are being purchased but not played. Lack of awareness of the role of the QR codes in this game. Technical challenges or knowledge of how to use QR codes. Integration of smartphone use with a tabletop game is not desired. Further learning points and references not desired.

**Potential Impact:** QR codes may not be a good tool to integrate in an educational game. Generally digital integration into tabletop games is rare and it may not be natural for players to use without significant prompting. I hope to explore in more detail if the low utilization is specific to this implementation or if this is generally a method to be avoided.

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**In Line of Service: Current Didactics in Clinical Education**

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**Idea:** Building resident-led, self-paced, focused curriculum targeting the in-training exam for internal medicine residents utilizing an online platform.

**Need/Rationale:** Resident satisfaction with the curriculum is an effective surrogate for quality of education. Structured didactics in the form of formal lectures remains the most common teaching style in most residency programs. However, the impact of time-based curriculum delivery is questionable, given unpredictable schedules and a decline in resident participation due to interruption of live lectures because of COVID-19 pandemic [1]. In addition, a steady decline in the ITE performance is observed across different training levels nationally with statistics showing a decline in residency programs achieving an 80% 3-year ABIM program pass rate from 96% in 2008 to 75% in 2013 [2]. According to program directors' survey regarding factors affecting the decline, 72.5% and 68.7% cited low ITE scores as a PGY3 and PGY2 respectively as important contributors [3]. In addition, 21% cited low attendance of residents at teaching conferences [3]. ITE is an annual assessment by the American Board of Internal Medicine that serves as a measure to assess residents' academic progress during the three-year internal medicine residency training. With these statistics, our goal is to improve the ITE performance by starting an online, asynchronous, targeted curriculum.

**Methods:** Our intervention focuses on all 86 categorical internal medicine residents currently enrolled at our institution. The intervention consists of the following: 1) An initial pre-intervention anonymous survey was conducted to identify residents' scores on the last ITE and their personal formal mode of learning. 2) After noticing that the majority of our residents preferred a structured, self-paced mode of training, we have designed and created our own website at [www.med-mentor.com](http://www.med-mentor.com) as a platform to provide our educational intervention. 3) Firstly, we identified the high-yield topics tested on 2019-2020 ITE that our residents have performed poorly defined as less than 10 percent correct answer in respective sub-topics of medicine; i.e scored below 40% of the national percentile. 4) Next, we created an 8-week online curriculum focusing on each subspecialty topic every week. 5) We designed brief, 30-minutes lectures every week, presenting them in various formats identified through resident preferences on the pre-intervention survey such as video lecture, audio podcast, PowerPoint presentation, image challenges, etc. The curriculum was faculty-supervised and taught by educators on the clinical educator track 6) At the end of each week, we released a set of questions to test the residents' knowledge and to further consolidate their memory. 7) Lastly, once ITE scores of 2020-2021 will be released, we will be able to compare and contrast the effectiveness of our intervention.

**Evaluation Plan:** Accountability: We have online plug-ins integrated on the website designed to show us the number of visitors utilizing our website and resources. The website thus-far has been shared with only internal medicine residents at our institution. Reaction: A post-intervention anonymous resident survey will be sent out to our residents to assess reflection of their medical knowledge and confidence and their feedback regarding this mode of an online learning platform will be conducted. Learning: Every week, after our weekly curriculum is launched, we released a set of questions towards the end of that week to test the residents' knowledge and to further consolidate their memory. Overall improvement in medical knowledge and confidence will be assessed by a post-interventional survey. Lastly, ITE scores of 2020-2021 will be compared with the ITE scores of 2019-2020 to assess improvement. Behavior: Residents methodology of learning and ITE performance will be tracked by program leadership in 6-month evaluations.

**Potential Impact:** In the era of COVID-19 pandemic and promotion of e-learning, we aim to create an accessible platform of learning using innovative modes of teaching to help residents master their clinical skills and board prep. Though it is not entirely possible to replicate traditional classroom teaching, we hope to facilitate off-site learning with reliability.

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### **Art in Anatomy: Templates to Facilitate Interactive and Visual Learning With New Technologies**

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**Idea:** Students wish to study anatomy in a visual manner, but it is challenging to illustrate parts of the body accurately to study.

**Need/Rationale:** Art and medicine have been intertwined with anatomy for the majority of its history. Inherently, learning anatomy is a visual task—understanding the relationship between structures gives insight into their function and facilitates mastery of the subject. Although students may wish to study anatomy visually, it is difficult to illustrate the entire body accurately. Thus, anatomy templates were created using the illustrations in current UC San Diego School of Medicine anatomy lab manuals such that students can draw structures on top of them, annotate, and share with peers. These templates bridge the gap between passive study of anatomy and creation of study aids from scratch, ultimately fostering accessibility, sharing, and communication during the learning process and beyond. In the future, students may incorporate visual materials into their practice, which has been shown to help patients understand their doctors.

**Methods:** Using the current anatomy lab manuals as a guide, images were generated in the Procreate app. Images are unlabeled and often omit key structures that are investigated in each lab. These images were then exported as .png files and imported into separate Notability notes for each lab manual. Next, the missing structures were drawn and labeled as an example for students. Lastly, a duplicate of the Notability note was created, and the annotations were removed. This blank version represented the templates for students. iPads and the Notability application were provided to each first-year medical student, all of whom took the Anatomy course. These templates were distributed to students through the Anatomy course webpages for download and use. The data obtained for this study will combine objective and subjective measures of value of the proposed template tool. Students will be surveyed after each of the five anatomy exams to ask about their use of the tool on a scale from 1(never) to 5 (frequently). The students will also be asked about how useful the tool was, how it prepared students for anatomy, and whether the tool was used in other classes and applications. Data will be stratified based on the frequency of use of the tool and exam scores will be compared. To measure the implementation of the tool, the percent of students in each category will be compared longitudinally over five-time points.

**Evaluation Plan:** To evaluate the benefits of the anatomy templates, students will be surveyed after the five anatomy exams. By stratifying based on the frequency of use of the tool, we will assess whether using the anatomy templates is associated with higher test scores, greater satisfaction with the course, or less stress with regards to studying. In addition to evaluating test scores, the surveys will include free-response sections for students to discuss whether they used the tool in other classes or applications. The templates have been designed to be versatile; although they are being designed specifically for the anatomy course, it is anticipated that the templates will be repurposed for learning in other classes and small group sessions. All surveys will be administered using Qualtrics software and analyzed in their platform. We will include open-ended questions to allow students to elaborate on their experiences with the tool, which will be informative not only for anatomy education, but also for potential developers of electronics-based learning tools.

**Potential Impact:** Incorporating an artistic learning tool into the anatomy curriculum will introduce a novel learning modality. It introduces visual learning in a digital, accessible format for all incoming students. Feedback and student evaluation will inform future innovative learning tools that take advantage of iPad technology.

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### **Standardized Inpatient Intern Didactic Curriculum in Internal Medicine**

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**Problem Statement:** Individual experiences among first-year residents vary and no formal curriculum exists to ensure exposure to all core internal medicine topics.

**Rationale:** The rigor of intern year is designed with the goal that new doctors are exposed to a breadth of conditions before beginning to lead a team of their own. However, internal medicine is by its nature a broad field wherein the ideal depth of knowledge that may be expected of an intern is hard to define and harder still to evaluate. The intern educational experience is largely derived from clinical exposure, which can vary significantly. The purpose of this curriculum was to design an intern-directed curriculum with core learning objectives defined for educators to help delineate expectations for intern learning. Furthermore, these objectives were used to develop delayed-learning activities to help assess knowledge retention. The structure, location, and procedural execution of these lectures were standardized to further allow for a sustainable and reliable forum for learning which interns would expect as part of their educational experience to supplement their clinical work.

**Methods:** A dedicated intern curriculum was developed by creating a series of lectures determined by core internal medicine faculty. Topics were designed to represent essential inpatient internal medicine concepts as well as frequently encountered interdisciplinary and team-based issues. Topics were then sorted into four “seasons” to allow content to be cumulative, progressive, and relevant to an intern’s level of experience throughout the year. The structure, location, and procedural execution were standardized across clinical sites to create a reliable forum for learning. To be of high value, each topic included instructor and learner objectives, “threads” for longitudinal concepts, and additional material for presenters. To improve accessibility and facilitate learning retention, intern pagers were covered during didactics and weekly “learning pearls” were provided in the form of short weekly assessments with answer explanations and links to key articles and evidence. To be sustainable, the curriculum included instructions to allow for straightforward reproduction of the curriculum each week and in subsequent years. Furthermore, a leadership team was identified consisting of two senior residents, a chief resident, and a faculty member. To maintain flexibility and independence, lectures were designed and delivered at the discretion of senior resident presenters. The curriculum was assessed in the form of weekly participation, resident competency surveys, and weekly assessments.

**Results:** The 50-week curriculum consisted of 46 core topics that were vetted by faculty and 4 topics selected by residents. The curriculum was assessed over a 36-week span which consisted of 66 separate conferences covering a total of 41 core topics. The average percent of interns who attended a conference and had their pagers covered was 60%. The majority of interns described the curriculum as “excellent” or “outstanding” (78.6%). Similarly, the majority indicated the curriculum was “helpful” or “very helpful” in preparing them for intern year (85.7%) and second-year (64.3%). There were weekly assessments for 15 of the 36 weeks, covering 15 core topics, which were sent to learners 2 to 4 days after each conference. The average number of weekly assessments completed was 16.2 (4.5 who attended, 11.7 who did not attend a conference that week). The overall average weekly assessment performance of questions answered correctly was 49%. Comparison of those who attended a conference to those who did not revealed average weekly assessment performances of 61% vs. 45%, respectively. Interns who attended conference scored on average 16% higher each week (95% CI 0.06 to 0.28,  $p=0.006$ ). The odds ratio for answering a question correctly for those who attended conference compared to those who did not was 2.20 (95% CI 1.50 to 3.23,  $p<0.001$ ).

**Potential Impact:** A dedicated intern didactic curriculum can ensure all interns are exposed to and learn the basic skills required in their training. This paper describes a method to design, implement, and sustain a standardized curriculum of resident-led didactics targeting core topics in inpatient internal medicine for intern-level learners.

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**When Medical Students Become the Teachers on Social Media**

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**Problem Statement:** For medical students to teach non-adult trained clinicians about common adult diagnoses using educational material on social media.

**Rationale:** The Pediatric Overflow Planning Contingency Response Network (POPCoRN) was founded to address concerns as pediatric institutions prepared for assuming adult patient care in the COVID-19 pandemic. One primary focus was to develop and disseminate free open access medical educational materials on the care of adults for pediatricians and other non-adult trained providers; content was generated by healthcare professionals at various levels of training, including medical students. In line with the goals of POPCoRN to distribute educational materials equitably to a large audience, we leveraged three social media (SoMe) platforms -- Facebook, Instagram and Twitter -- to translate these materials into digestible content given the increasing use of SoMe in education. A team of medical students worked in collaboration with a diverse physician team to distill clinically relevant content both for their own continued education and for the benefit of pediatricians caring for adults.

**Methods:** The SoMe team identified high-yield topics based on peer-reviewed "one-pagers" published on POPCoRNnetwork.org. Using this content, the students developed educational tutorials for each topic, tailored to each SoMe platform. On Twitter, "tweetorials" contained a linked series of 280-character tweets. Facebook posts highlighted clinical pearls through text and summative graphics. Instagram "Insta-torials" featured a series of infographics compiled into "stories". The tutorials drafted by students were reviewed by physicians, and they were released according to a predetermined schedule. On a specific date, we collected metrics for nine tutorials that had been released for at least five days: admission, discharge, chest pain, syncope, deep vein thrombosis/pulmonary embolism, anticoagulation, gastrointestinal bleed, stroke, and delirium. Selected metrics demonstrated the number of followers that viewed the content: number of impressions (Twitter) and reach (Facebook and Instagram).

**Results:** Impressions on Twitter described the number of times the first tweet of each "tweetorial" appeared on follower timelines, gaining an average of 3215 impressions per tweet. Facebook reach described the number of individuals who viewed the given post, averaging 392 reaches per post. On Instagram, reach was defined as the number of individuals who viewed the first story of each "Insta-torial" with an average of 60 reaches per "Insta-torial".

**Potential Impact:** These tutorials serve as a valuable means by which learners can ascend to teacher as they approach the highest tier of the Modified Bloom's Taxonomy for SoMe. Through these efforts, medical students will continue to serve as the instructor for not just pediatricians, but hundreds of non-adult trained clinicians across the country.

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### **Improving Medical Student Support Initiatives- Pitfalls, Successes, Discoveries and the Road Ahead**

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**Idea:** Using a coordinated care network which aims to give students a sense of belonging and strong support from leadership.

**Need/Rationale:** UNC School of Medicine students have excellent academic records, integrity, and potential to be successful clinicians. Unfortunately, these qualifications do not preclude students from experiencing academic and personal stressors during medical school. We work with students to improve their chances of success, but the ability to track and communicate across support units is difficult. Data scattered among multiple systems along with inconsistent communication and workflows represented a barrier to student support. As the student body and advising and support services have grown at UNC SOM across multiple campuses throughout the state of North Carolina, the need for coordinating support of students has intensified. We recognized a need to provide comprehensive support to students from matriculation to graduation, akin to an electronic medical record system. This meant we needed to improve data processes, integrate our student systems, and simplify communication between support units.

**Methods:** At the outset, focus groups were conducted with key stakeholders and future users to gather business requirements and identify pain points that would ultimately be addressed by the implementation of the system. Peer institutions were approached as references to discuss their lessons learned from implementing similar systems. Once the implementation began, the initial focus was on establishing access to the requisite data and applying standardization and validation standards as the ETLs were established. The data review and standardization process was a collaborative effort with the vendor to meet their standards while targeted improvements were made to the salient internal data flows and workflows. The implementation was phased according to the vendor's established approach and recommendations, with frequent weekly meetings serving as the forum for collective collaboration and resolution of impediments. The project identified the need for future initiatives related to workflow augmentation and further data automation and centralization that were not considered in scope. There was consistent strong executive and leadership stakeholder support for the project, which helped maintain accountability and engagement from all project team members.

**Evaluation Plan:** Evaluating our student success platform is multifaceted, therefore multiple KPIs were developed. We divided goals between data integrity and student success initiatives. Baseline surveys were conducted to capture user sentiment before implementing the new application. We will utilize various forms of tracking, including application analytics, scripted failure reports, and surveys. Data integrity is integral to acceptance and usage rates of staff, faculty, and advisors, who use the platform to follow student performance and communicate between support offices. One aspect of ensuring data integrity is to evaluate the extent to which data is accurately entered into our student information systems. Inaccurate data entry decreases our performance. Therefore, data standardization measures have been developed. Relevant student data is pulled daily, formatted for upload and tracked through failure reports. We are evaluating the extent to which we can improve communication of actionable items, regarding student performance, to support staff, including the extent that appointments, appointment summaries, and student cases are utilized, accessed and managed. We will track improvement measures in data integration, communication and reporting.

**Potential Impact:** The student success platform will impact student support, by improving access by staff and faculty to more accurate data, coordinating the support of students by different divisions, and allowing students to see the leadership's emphasis on care. Students will then take this experience, emulating it when they become clinicians.

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### **Using Your Character Strengths to Enhance Your Effectiveness and Wellbeing**

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**Workshop Description:** The VIA (Values in Action) Character Strengths tool was developed in 2004 and has been taken by more than 8 million people. It is a scientifically validated instrument, that assesses 24 character-strengths aligned with six virtues (wisdom/knowledge, courage, humanity, justice, and transcendence). Extensive research has shown that intentional, appropriate usage of our strengths can promote wellbeing. During this workshop, participants will complete the tool to learn their own signature strengths. Appropriate usage and overuse of each strength will be discussed as each person completes three exercises to explore their own lead strengths. Participants, meeting in small groups will also discuss potential usage of the tool with medical students, within transition courses/bootcamps, and with residents.

#### **Detailed Plan:**

##### **RATIONALE:**

The VIA (Values in Action) Character Strengths tool has been taken by more than 8 million people. It is a scientifically validated instrument, that assesses 24 character-strengths aligned with six virtues (wisdom/knowledge, courage, humanity, justice, and transcendence). Niemiec (2018) defined character strengths as positive personality qualities that reflect personal identity, produce positive outcomes, and contribute to the greater good. Research on the VIA character strengths has demonstrated that intentional and appropriate usage can: promote resilience, positive emotion, meaning and purpose, and positive social relationships. The tool and concepts are integrated into the psychology of wellbeing that has evolved out of Seligman's initial idea in 2000 of positive psychology.

##### **LEARNER OUTCOME OBJECTIVES:**

By the end of the workshop participants will be better able to:

- Utilize own character strengths
- Analyze own use and overuse of top VIA character strengths
- Guide learners in utilizing their own character strengths to enhance performance

##### **INTENDED PARTICIPANTS:**

Health professions' faculty at all levels, as well as senior health professions' students.

##### **METHODS:**

This session will utilize a variety of techniques: 1) completing a tool, VIA Character Strengths Survey; 2) presentation to provide background information and survey results; 3) small group work to complete an exercise to help build skills in examine own use of strengths; 4) storytelling and 5) large group discussion to consider how to use the tools with learners, particularly those in transition (into school, into clinical years, into advanced training or into the workplace).

##### **ACTIVITY TIMELINE:**

The session will be divided into three segments

Learning about own strengths and exploring usage and underuse (40 minutes) participants will take the tool, learn about most common and least common strengths, share in small group a deepening exercise that can be used with learners to explore use and overuse of strengths

Exploring usage with learners (30 minutes) – using Phil Collins from Groundhog day learners will explore how appropriate usage of strengths can help any learner grow to meet their learning and achievement goals. In small groups learners will discuss a struggling learner, and how he/she can use their own strengths to enhance success.

Discuss use of the tool with learners in transition (15 minutes) as the group discusses how character strengths can be utilized by learners to help them thrive during the particularly stressful times of transition.

**TAKE HOME TOOLS:**

Take home tools will include: Website to take the VIA Character Strengths Survey, handout with references, and a deepening exercise they can use with learners.

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## **Utilizing Online, Interactive, Adaptive Technology in Healthcare Education**

Zilola Khashimova, MD  
*Dominican University of California*

**Workshop Description:** This workshop will show how interactive online resources can be used by healthcare educators to enhance a classroom course or for distance learning, including self-directed modules and learning activities that could be converted to virtual interactions. It will showcase the technology that is available and how to incorporate it into existing courses to utilize what research has shown increases student acceptance and learning outcomes.

### **Detailed Plan:**

#### **RATIONALE:**

The COVID-19 pandemic is affecting health care institutions and is disrupting the training of future healthcare practitioners. It is more important than ever to ensure that the educators and students have access to high-quality educational materials and technologies to ensure trainee preparedness for clinical and global health challenges. To help meet this challenge, online tools have become a viable option with the recent development of information technology. E-learning can be used to enhance a classroom course, or as a stand-alone course. These online tools include online labs, videos, high resolution images (X-ray, CT-scan, histology), cadaver labs and adaptive, interactive technology such as practice exams, virtual patients, and learning games. The problem is that these technologies and tools are available from many different sources (textbook publishers, teachers' associations, non-profit organizations, government agencies, individual universities, etc.) and many different prices. Locating, identifying, determining which ones fit into the course, and budgeting for them and is an over-whelming, time consuming task for educators not familiar with the most current technologies.

#### **LEARNER OUTCOME OBJECTIVES:**

The participant in this workshop will learn the latest technologies available for online learning. Tools available, how to choose the most effective ones, how to use them, resources to find them, and how to effectively incorporate them into a course.

#### **Intended participants:**

This workshop is aimed at healthcare educators, education program coordinators and managers who must develop, teach, or manage others who teach online courses for healthcare practitioners.

#### **METHODS:**

Online lecture with interactive activities to reinforce learning in each section.

#### **ACTIVITY TIMELINE:**

Introduction: what are online tools, how they are evolving with advances in technology, what makes them interactive, what makes them adaptive.

Sources: discuss list of sources for online teaching tools

Interactive activity – participants will access websites with sources

Technology: discuss internet, social media, hardware needed for various online teaching tools

Interactive activity – participants will interact with a sample technology online

Tools (programs, software): discuss tools available online such as Anomatage table, LearnSmart, A&P Reveal, etc.

Interactive activity – participants will login an example site to explore what is available in that tool

Online resources Library: show and discuss how to accesses online library and available tools: Q-banks, PowerPoints, Cases Studies, Games, Imaging, Dissection tools, Interactive Labs, E-Books, Self-Preparation Tools.

Interactive activity – participants will be able to see examples and to explore what is available in the respective tools.

Application of knowledge: Show how to build online course from scratch easily without stress. How to choose the most effective tools for your course: discuss results of literature review as to which aspects of online teaching tools are most effective.

Interactive activity – participants will be able to build the online course and will be able to use interactive online tools.

Summary: Summarize all information that has been presented.

Interactive activity- participants answer the pool questions.

Questions and Answers: Presenter will answer participant's questions.

#### TAKE HOME TOOLS:

List of resources and where to find them. Provide participants with consultation time and information as needed.

### **Developing a 21st Century Mindset in Medical Education – Lessons from Dr. Seuss**

Caroline Tougas, MD (1,2); Adria Boucharel, MD (3); Palak Patel, MD (4,5); Nida S. Awadallah, MD (6)  
(1) Children's Mercy Hospital; (2) UMKC School of Medicine; (3) Children's Hospital Colorado; (4) Valleywise Health Care; (5) University of Arizona College of Medicine; (6) University of Colorado School of Medicine

**Workshop Description:** This workshop will engage participants in an exploration of the concept of 'growth mindset' with a goal of fostering a 21st century mindset. Facilitators will encourage participants to examine their internalized beliefs about learning, while providing opportunities to reframe failures and challenges as learning opportunities. The session will conclude with the creation of individual action plans aimed at contributing to a 'culture of perseverance' in medical education.

#### **Detailed Plan:**

##### **RATIONALE:**

In medical culture there is low self-compassion rates, high imposter syndrome, difficulty with medical errors, and difficulty receiving feedback. There is a lack of awareness of mindset in medicine and medical leadership. Faculty report high levels of stress and burnout in early career, especially when discussing errors and receiving feedback. Few medical school curricula and faculty development initiatives include concepts of mindset. Fostering a growth mindset early in a medical career may help lessen the burden of stress and rates of burnout.

##### **LEARNER OUTCOME OBJECTIVES:**

By the end of this workshop, participants will be better able to:

- 1) Differentiate a fixed versus growth mindset in the professional and personal setting.
- 2) Evaluate challenges and/or triggers in situations in which they manifest a fixed mindset.
- 3) Develop a strategy in order to reframe situations of fixed mindset into growth mindset.

##### **INTENDED PARTICIPANTS:**

All participants at the IME conference who are interested in developing a growth mindset (faculty, staff or learners).

##### **METHODS:**

Classroom based interactive workshop utilizing a variety of teaching techniques including a brief formal introduction of concepts, a self-assessment tool, reflection, brainstorming, small and large group discussions with the ultimate goal of reframing our fixed mindsets into growth mindsets.

##### **ACTIVITY TIMELINE:**

0-5 minutes - Ice Breaker - VIDEO: Watch 5 minute clip from Carol Dweck's to introduce the concept of growth mindset and the power of "not yet"

6-10 minutes - Introduction - Introduce instructors and participants; Review objectives and outline for the session

11-19 minutes - Didactic - Introduce 21st century mindset concepts (build context); Expand on growth mindset

20-30 minutes - Quiz in class - Mindset quiz/inventory (20 questions; paper copy, self-graded)

31-44 minutes - Growth/Fixed Mindset continuum activity - Ask participants to gather along a "continuum line" in class (a line of tape stuck to floor along entire length of class) based on their answers to a series of questions on the malleability of learning; Can use quiz questions learners want to expand upon or learner suggestions or other from list); Explore and discuss individuals stances; give opportunity to change positions

45-65 minutes - Think-Pair-Share (Re-framing activity) - Participants will reflect on 1 personal and 1 professional scenario/situation in which they exhibited or witnessed a fixed mindset (5 minutes); Participants will share these scenarios with a partner (5 minutes); In small group, participants will compare scenarios and discuss possible reframing strategies (10 minutes)

As an example: Fixed mindset case --- discuss how to approach in growth mindset manner (can't open pickle jar)—more than one way to handle any situations

66-80 minutes - Debrief Large group - As large group, each group will present at least 1 strategy they discussed to reframe into a growth mindset; Review (and summarize from think-pair-share) reframing strategies for fixed → growth mindset; Write down on whiteboard

81-90 minutes - Wrapup/Conclusion, Session eval with commitment-to-Act - Learners will write one "SMART" commitment for how they will use one or more concepts from this session

TOTAL: 90 minutes

#### TAKE HOME TOOLS:

Didactic presentation slides on paper - Handout with references

Growth mindset quiz and answer key

Commitment to Act (these will be collected and mailed to participants in an envelope at a later date as a reminder and "check in")

## **Guided Discovery Learning: Utilizing Large Group Case-Based Health Professions Education Virtually**

Kendra Nordgren, MD; Amy Greminger, MD  
*University of Minnesota Medical School, Duluth Campus*

**Workshop Description:** We developed a Guided Discovery Learning (GDL) case format using the framework of Bruner's discovery learning theory to combine the value of Problem-Based Learning and Simulation-Based methods into a single format that is used in large group settings, through a virtual format, with just a few facilitators. Participants will engage in a mock GDL case, utilizing small group work and large group simulation activities to explore and engage in discovery learning theory and the GDL process.

### **Detailed Plan:**

#### **RATIONALE:**

We developed a Guided Discovery Learning (GDL) case format using the framework of Bruner's discovery learning theory in order to combine the value of Problem-Based Learning (PBL) and Simulation-Based (SIM) methods into a single format that can be used in large group settings, through an in-person or virtual format, and with just a few facilitators. PBL and SIM cases are valuable forms of active, experiential learning focused teaching, but are restrictive in their need for an immense amount of faculty time, disconnect between the students who are divided into small groups for these cases, and challenges for scaling to a virtual format. Through GDL, students collectively discover knowledge and create their own scaffolded understanding, with facilitators serving as a secondary support for this scaffolding, all while working as a large group with students periodically distributed to smaller teams for taskwork. Cases are discussed collectively before progressing, students only receive information they request, modeling the mantra of not thought of, not looked for, not found, and information is provided in real time via a simulated patient and an electronic database. Participants in this workshop will engage in a mock GDL case, utilizing small group work and large group simulation activities, in order to explore and engage in discovery learning theory and the virtual GDL process.

#### **LEARNER OUTCOME OBJECTIVES:**

The ultimate goal of this workshop is to enable participants to determine if and where GDL would best compliment their curriculum. To prepare participants, the session will specifically focus on the following objectives:

- Describe the GDL format, including the critical components for delivery.
- Explain the difference in GDL learner objectives as compared to those of Problem-Based Learning; how are these scaffolded differently?
- Describe how an electronic database for case information can be used between the facilitator(s) and learner(s), and the basis for how to build one. What are some educational advantages to this method of data delivery?
- Explain how content expert facilitation can guide learners to develop mini-mechanisms for case objectives. Describe three benefits of this structure for facilitating case review.

#### **INTENDED PARTICIPANTS:**

The target audience for this workshop is all health-professions educators interested in case-based learning for large groups, particularly those who seek a framework founded in discovery learning theory and desire a format that is interchangeable between in-person and virtual classrooms.

#### **METHODS:**

This workshop will engage participants in self-reflective exercises, small group work, and large group simulation activity.

#### ACTIVITY TIMELINE:

- 3 min – Facilitator introductions
- 12 min – Discovery Learning Theory (Bruner, 1961), Guided Discovery Learning format, strengths, and objectives mechanisms.
- 10 min – Patient History Simulation; small group breakout sessions for max 5 min.
- 10 min – Reflect on and discuss different approaches to facilitation
- 20 min – Labs and Procedures Simulation; small group breakout sessions for max 5 min; apply facilitation approaches discussed in previous segment.
- 10 min – Creation of electronic database; explain basics of the Google Sheets coding (handout also provided).
- 10 min – Walk through examples of student mini-mechanisms for objectives; Content Expert facilitation of objectives.
- 15 min – Participant Questions.

#### TAKE HOME TOOLS:

All participants will be provided with a basic template for using simple code in Google Sheets to construct their own electronic case database.

## **Building and Recording a Great 10-Minute Presentation**

Patrick Crispen, EdD; Nigel Lizaranzu  
*Keck School of Medicine of USC*

**Workshop Description:** Since March, we have all become experts (or at least 'experienced novices') in using Zoom live. But how do you build, record, edit, and publish a great ten 10 minute presentation using only the tools you already own and know how to use – your laptop, your cellphone, and (maybe even) your Zoom and Google accounts? In this hands-on workshop, you'll walk you through a template you can use to organize your presentations, learn how to record presentations on both your laptop and cell phone, edit those videos (you'll even learn the magic of zoom cuts), and publish them online.

### **Detailed Plan:**

RATIONALE:

LEARNER OUTCOME OBJECTIVES:

INTENDED PARTICIPANTS:

METHODS:

ACTIVITY TIMELINE:

TAKE HOME TOOLS:

REFERENCES:

## **Feedback in Clinical Practice as Part of Culturally Responsive Teaching**

Marianne Chen, MD; Pedro Tanaka, MD  
*Stanford University*

**Workshop Description:** An important aspect of feedback is creating a positive learning environment where feedback can be communicated more effectively. Given the diversity of our trainees, culturally responsive teaching is integral in allowing educators to develop rapport and respect with their trainees to give targeted feedback about a specified goal/milestone. This session will allow educators to openly discuss creating a positive learning environment and practice new skills in giving culturally responsive feedback.

### **Detailed Plan:**

#### **RATIONALE:**

Despite feedback being introduced into medical education more than 50 years ago, there are still many studies that suggest that trainees report feedback is inadequate. Creating a positive learning environment is essential for feedback to be given effectively. Understanding psychological safety will allow an educator-learner relationship to develop trust that is needed in a positive learning environment. With a diverse group of trainees and educators, we need to incorporate culturally responsive teaching into medical education and understand the role it plays for a learner to be fully engaged in feedback.

#### **LEARNER OUTCOME OBJECTIVES:**

1. Discuss the definition and foundations of feedback in medical education.
2. Describe psychological safety as a construct needed to create a positive learning environment
3. Understand culturally responsive teaching and how our own implicit bias plays a part.
4. Demonstrate and discuss techniques on giving culturally responsive feedback.

#### **INTENDED PARTICIPANTS:**

Faculty, Fellows, and Residents.

#### **METHODS:**

Learners will get a short introduction on the foundations of feedback and culturally responsive teaching and then engage in group discussions and role plays through breakout groups.

#### **ACTIVITY TIMELINE:**

Introductions – 5 minutes

Definition and foundations of feedback within a learning environment – 10 minutes

Group Discussion and role play on creating a positive learning environment and giving feedback – 10 minutes

Introduction of Psychological Safety construct – 10 minutes

Group discussion and role play on encouraging interactive dialogue and psychological safety – 10 minutes

Culturally Responsive Teaching Presentation – 10 minutes

Group discussion and role play on giving culturally responsive feedback – 10 minutes

Discussion on implicit bias and tools to take home – 10 minutes

Summary and Q&A – 5 minutes

#### **TAKE HOME TOOLS:**

R2C2 Feedback Model, Psychological Safety Model Outline, Implicit Bias Tools

### **Three Core Coaching Skills – The Secret Sauce to Enhance Your Teaching, Mentorship, and Leadership**

Karen Souter, MD (1); Rumeena Bhalla, MBChB, MA (2)  
(1) *University of Washington*; (2) *N/A*

**Workshop Description:** We all need a coach these days! Gawande said “coaching done well may be the most effective intervention designed for human performance”. Coaching is successfully used in medical education, faculty development and physician leadership. This interactive workshop will introduce participants to the concept of professional coaching, its relationship to mentoring in academic medicine and equip them with three core coaching skills to add to their mentoring, teaching and leadership toolboxes.

#### **Detailed Plan:**

##### **RATIONALE:**

The medical education and leadership literature increasingly recognize coaching as a powerful modality (1,2,3). However despite extensive literature on the merits of coaching in academic medicine, little information exists on HOW to develop coaching skills other than to employ the services of a professional coach. This workshop aims to close that learning gap by teaching three coaching skills in an interactive way to academic physicians.

##### **GOAL:**

This workshop will introduce the concept of professional coaching and its effectiveness in mentoring, teaching & leadership and provide academic physicians with new skills to use in their professional work.

##### **LEARNER OUTCOME OBJECTIVES:**

By the end of this session participants will be able to: 1-Define coaching and how it relates to academic medicine. 2-Describe how to set up a safe space for coaching and mentoring. 3-Identify three core coaching skills relevant to mentoring, teaching & leadership in academic medicine. (a) Creating a level three conversation (b) Exploring resistance to change (c) Designing next steps & creating accountability. 4-Perform the three core coaching skills.

##### **INTENDED PARTICIPANTS:**

Academic faculty who serve as teachers, mentors and in leadership roles in academic medicine.

##### **METHODS:**

In this 90-minute workshop two physicians who are certified coaches with experience in faculty development and executive leadership coaching will teach three core coaching skills. These skills will enhance participants’ teaching, mentoring and leadership activities and their professional development. Coaching skills will be taught in an interactive manner and participants will work in pairs using structured worksheets to practice with one another.

##### **ACTIVITY TIMELINE (90 mins).**

- **INTRODUCTION (15 mins):** Instructor led discussion (1) Goals & objectives (2) Definitions of Coaching & Mentoring (3) How to create a safe space for coaching and mentoring conversations.
- **PART I - Creating a level 3 Conversation (10 mins):** Instructor led discussion (1) Level 1, 2, & 3 conversation techniques (2) How to create a Level three conversation (3) Level 3 conversation demo.
- **SMALL GROUP ACTIVITY 1-Creating a level 3 conversation (15 mins –7 mins each).** Participants work in pairs alternating as “coach” and “coachee” using a structured worksheet (WS1) to create a level 3 conversation.

- DEBRIEF ACTIVITY 1 (5 mins). PART 2 – Exploring Resistance to Change & Designing Next Steps (10 mins). Instructor led discussion (1) How resistance to change shows up (2) Creating next steps that align with the coachee's goals, values and abilities (3) Exploring accountability.
- SMALL GROUP ACTIVITY 2-Exploring resistance to change & designing next steps (20 mins – 10 mins each). Participants work in pairs alternating as “coach” and “coachee” using a structured worksheet (WS2) to (1) practice exploring resistance to change (2)work with a “coachee” to design concrete next steps and (3) create accountability.
- DEBRIEF ACTIVITY 2 (10 mins).
- WRAP UP (5 mins).

#### TAKE HOME TOOLS:

- 1) Handout summarizing workshop learnings.
- 2) Worksheets 1 & 2 with structured questions to assist participants as they begin to explore Level 3 conversations in their own teaching, mentoring and leadership.

#### REFERENCES:

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## **Teaching Medical Students and Residents How to Write Poems and Make Comics for Insight and Wellbeing**

Tan Nguyen, MD (1); Johanna Shapiro, MA, PhD (1); Juliette McMullin, MD (2); Gabriella Miotto, MD, MPH (3)

*(1) UC Irvine; (2) UC Riverside; (3) The Children's Clinic Family Health*

**Workshop Description:** Research shows that medical students report creating poetry and comics yields personal and professional insights. However, they also perceive these practices as somewhat stressful. This workshop aims to provide medical educators with tools to integrate poetry and comics creation into their teaching in ways that preserve insight while promoting relaxation and wellbeing. We will pay special attention to overcoming learner resistance, avoiding retraumatization, and generating appropriate feedback.

### **Detailed Plan:**

#### **RATIONALE:**

The creation of original artistic and literary work is increasingly used in medical education as a way of promoting insight, enhancing empathy, and augmenting wellness. Yet we still do not have an adequate pedagogical framework for how to systematically introduce these activities to ensure the best possible learner outcomes. Further, while students acknowledge the value of such activities, they sometimes find writing poetry or making comics to be stressful. The purpose of this workshop is to provide medical educators with a specific framework for integrating poetry and comics creation into their teaching in ways that preserve insight while promoting relaxation and wellbeing. We will pay special attention to techniques that focus on overcoming learner resistance, avoiding retraumatization, and generating appropriate feedback for original creative works.

#### **LEARNER OUTCOME OBJECTIVES:**

At the end of this workshop, participants will have acquired the following skills:

- 1) Be able to state the benefits to learners of engaging in original poetry writing and comics creation in terms of clarifying professional identity formation, developing professional and personal insight, and promoting wellness.
- 2) Know how to implement step-by-step progressive strategies for introducing poetry and comics creation activities into the learning environment.
- 3) Know how to address common barriers that may arise in introducing such activities to standard educational settings, including learner resistance and risk of retraumatization.
- 4) Be able to provide constructive feedback tailored to review of a creative art form.

#### **INTENDED PARTICIPANTS:**

This workshop is intended for medical educators interested in learning more about how to integrate poetry writing and comics making into their current teaching practices. While targeting primarily medical educators with little or moderate experience in this area, we hope the workshop will include pedagogical nuggets that can enhance the skills of experienced educators as well.

#### **METHODS:**

The workshop will use a combination of teaching methods to impart its content. Zoom sessions tend to be passive, so we intend to utilize short segments interspersed with participant opportunities for interaction and discussion. Our methods will include mini-powerpoints, demonstration roleplay, large group discussion, and actually writing and sharing a poem and create a cartoon.

#### **ACTIVITY TIME-LINE: 90 minutes**

Introduction of Speakers and Participants: 5 min

Benefits of Writing Poetry for Medical Learners (powerpoint): 5 min

Benefits of Making Comics for Medical Learners (powerpoint): 5 min

Discussion, sharing experiences: 5 min

How to Teach Writing Poetry: 35 min

- Step by step practices: 5 min
- Overcoming barriers (demonstration roleplay): 5 min
- Giving feedback (demonstration roleplay): 5 min
- Writing a poem: 10 min
- Sharing the poem + participant comments: 10 min

How to Teach Making Comics: 30 min

- Step by step practices: 5 min
- Overcoming barriers/Giving feedback: 5 min
- Making a comics: 10 min
- Sharing the comics + participant comments: 10 min

Wrap Up: Final Thoughts and Discussion: 5 min

#### TAKE-HOME TOOLS:

We will provide participants with brief step-by-step guides for how to lead learners through the creation process for poetry and comics; as well as a written summary of issues to consider in working with student resistance to participate in these creative activities; avoiding retraumatization in processing emotionally difficult issues; and delivering feedback on students' original work.

### **Narrative Medicine: An Approach to Support Coaching for Professional Identity Formation**

Pamela Schaff, MD, PhD (1); Deepthiman Gowda, MD, MPH, MS (2); Erika Wright, PhD (1)  
(1) Keck School of Medicine of USC; (2) Kaiser Permanente Bernard J. Tyson School of Medicine

**Workshop Description:** Research indicates that medical students endorse Narrative Medicine's core features—attention, representation, and affiliation—as valuable to professional identity development (1, 2). Through participation in a narrative medicine workshop, medical educators will gain skills to coach learners in their professional development. Close reading/observation and writing activities will offer participants strategies to better support their learners as they integrate their personal and emerging professional identities.

#### **Detailed Plan:**

##### **RATIONALE:**

Professional identity formation (PIF) is one of the four pillars/goals for educating future physicians outlined in the 2010 Carnegie Foundation's *Educating Physicians: A Call for Reform of Medical School and Residency* (3). It has been defined as "the transformative journey through which one integrates the knowledge, skills, values, and behaviors of a competent, humanistic physician with one's own unique identity and core values" (4). Faculty mentors can coach learners during this developmental process through engagement with the arts and humanities, including the use of narrative medicine's methods. As noted in the recently published *Fundamental Role of the Arts and Humanities in Medical Education* monograph, "professional growth and transformation occur when we adopt the perspective of others through acts of sustained attention so we can represent and reflect on what we see, hear, or read, as well as when we develop the ability to think critically and compassionately about human dilemmas" (5). In this interactive workshop, participants will participate in and reflect on a narrative medicine workshop where the capacities of attention, representation, and affiliation are explored. Participants will then consider how narrative medicine methods can be leveraged in professional identity formation coaching programs at their home institutions.

##### **LEARNER OUTCOME OBJECTIVES:**

By the conclusion of this presentation, participants will be able to:

6. Define professional identity formation and describe the rationale for its incorporation into medical training.
7. Describe the core features of narrative medicine and their value to professional identity formation.
8. Experience close reading/observation and writing activities.
9. Discuss the application of narrative medicine methods in coaching learners as they integrate their personal and emerging professional identities.

##### **INTENDED PARTICIPANTS:**

Medical school and residency program faculty, curriculum deans, program directors, medical students, and residents.

##### **METHODS:**

This workshop is designed to be interactive and engaging. The session will reflect a mix of group discussion, mini-didactic presentations and opportunities to learn and practice aspects of curriculum development.

##### **ACTIVITY TIMELINE:**

- 00:00 – 00:05 Introduction of workshop facilitators and participants (PBS)
- 00:05 – 00:10 Introduction of the concept of professional identity formation (PBS)
- 00:10 – 00:15 Narrative medicine's features and methods in context of coaching for PIF (DG)
- 00:15- 0:55 Narrative medicine activity (EW, DG, PBS)
- 00:55 – 01:15 Wrap up and discussion (PBS, EW, DG)

## REFERENCES:

- 1) Miller, E., et al. Sounding Narrative Medicine: Studying Students' Professional Identity Development at Columbia University College of Physicians and Surgeons. *Academic Medicine*, 2014; 89, (2): 2014; 335.
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## A Virtual Internship Preparation Program for Medical Students Entering Pediatric Fields

Cobb, Carmen; Gordon, David.  
*University of California San Francisco*

**Problem Statement:** UME and GME programs must maintain teaching standards despite work hour restrictions, space limitations, and now COVID-19-related disruptions.

**Rationale:** Pre-GME preparation programs may have a role in preparing 4th year students for residency. Immersion experiences, including virtual internship preparation programs, may enhance the 4th year curriculum and better prepare medical students for internships, but little is known about their acceptability to medical students.

**Methods:** We developed a “competency-based immersion experience” (COBIE) for 4th year medical students entering pediatric fields. By design, the course reconciled gaps between the existing medical school pediatrics curriculum and ACGME expectations. Participating faculty were encouraged to present practical content using case-based, interactive, and/or simulation techniques. The curriculum was deployed in May 2020 by teleconference. Student comfort with session content was assessed pre- and post-training using a 4-point Likert scale.

**Results:** Of sixteen sessions, 15 (94%) incorporated interactive teaching methods. Engagement strategies included case discussions (12 sessions), equipment/instrument demonstration (5), simulation (3), small groups/breakout rooms (3), polling software (2), and panel discussion with advice from current interns (1). Significant changes in comfort were observed for resilience (mean Likert 2.6 pre-training v 3.7 post-training,  $p=0.0002$ ), communication (2.6 v 3.4,  $p=0.0069$ ), paging etiquette (2.7 v 3.4, 0.0167), first year of life (2.0 v 2.9,  $<0.0001$ ), respiratory failure (1.7 v 2.8, 0.0001), mental health (2.1 v 2.7, 0.0355), neonatal emergencies (1.6 v 2.7, 0.0003), heart disease (1.4 v 2.7,  $<0.0001$ ), infectious disease (2.1 v 2.6, 0.0467), pediatric shock (1.5 v 2.6, 0.0024), abnormal growth (1.6 v 2.3, 0.0032), gastroenterology (1.4 v 2.1, 0.0003), and hematology/oncology (1.6 v 2.0, 0.0331). Narrative comments were favorable.

**Potential Impact:** Our pre-GME preparation pilot improved comfort with common pediatric skills among 4th year medical students. Additional research is needed to determine the impact of pre GME preparation programs on intern performance.

### References:

- 1) Haber RJ, Bardach NS, Vedanthan R, Gillum LA, Haber LA, Dhaliwal GS. Preparing fourth-year medical students to teach during internship. *J Gen Intern Med.* 2006;21(5):518-520. doi:10.1111/j.1525-1497.2006.00441.x
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### **Student and Faculty Perceptions of Covid-19 Emergency Online Clinical Education**

Weingarten, Michael S. (1); Giordano, Carolyn (1); Howley, Michael (2); Sandhu, Nimerta (1);  
Chen, ShiYuan (2).

(1) Drexel University College of Medicine; (2) LeBow Business School Drexel University

**Problem Statement:** What were successes and obstacles in the emergency conversion to online clinical education and how can this data be used to improve future courses?

**Rationale:** In March 2020, direct patient contact by students was replaced on an emergency basis by an online curriculum for the clinical education of rising third- and fourth-year medical students. This conversion was a strategically important experience for the future of clinical medical education. While this was done in reaction to the COVID pandemic, the insights gained are applicable to other modern situations such as natural disasters and teaching over multiple sites. Many of the lessons learned during this conversion can enhance clinical medical education during the in-person clinical experience in the areas of pedagogy, learning technologies, and clinical consistency.

**Methods:** Three separate retrospective surveys were sent to clinical faculty and rising third- and fourth-year medical students who experienced the COVID lockdown during their clinical experience. Participation was voluntary and no incentives were provided. Students were surveyed on challenges which interfered with their learning and their perceived engagement with their courses compared to the in-person format. Differences between rising third- and fourth-year students were assessed using a Chi Square test of independence. Faculty were asked about the challenges they encountered in developing and delivering the online curriculum, the time required, and the benefits of clinical medical education. A thematic analysis was conducted on the open-ended items on each survey.

**Results:** Response rates included 153/265 (57%) rising third year students, 122/265 (46%) fourth year students, and 9/9 clinical faculty. A majority of both student cohorts experienced challenges in the online format related to connectivity problems (66%) and loss of interaction with their peers and faculty. The majority (60%) of the students felt less engaged by the online curriculum, but it was not clear how much of this was related to halo effects from the COVID lockdown. Students appreciated faculty who used breakout rooms and small groups to enhance interactions. The majority of students felt that the on-line reading of lectures was not effective. Faculty indicated that twice as much time was needed to create the curriculum. The faculty also perceived that there was less student/faculty engagement. Twenty-two percent of the faculty experienced connectivity issues during the course of the curriculum. Sixty-six percent of faculty plan to incorporate an online component in future clinical education. There were benefits. Students appreciated the flexibility and additional time with online learning. Online learning can be effective clinical education, but the results of this study suggest there are challenges with lack of student engagement, faculty overload, and connectivity problems with technology.

**Potential Impact:** Online learning can be effective, but there are challenges when transferring in-person courses to a remote format quickly. Faculty should structure courses to enhance student engagement with small group discussion and avoiding pre-record lectures. Administrators should consider the faculty workload and enhanced technology support to help students.

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### **International Pediatric Virtual Conference for Continuing Medical Education**

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**Problem Statement:** Modern virtual conferencing technology can overcome geographic, linguistic, logistical, and COVID-19 pandemic barriers for international conferences.

**Rationale:** Scientific conferences are an integral part of academic discourse and knowledge dissemination where the latest medical research and innovation are often presented (1). It provides an opportunity for continuing medical education (CME) while also receiving credits (2). Unfortunately, barriers such as location, travel cost, and logistics can deter prospective attendees especially for international events (1). These barriers have been further compounded by the COVID-19 pandemic which require strict social gathering protocols (1). Video conferencing platforms provide a promising solution to these challenges (1). As part of an ongoing partnership, the Armenian Eyecare Project (AECPE) and Children's Hospital Los Angeles (CHLA) have been hosting annual international conferences for 18 years with lectures from pediatric researchers and practitioners around the world. Due to the pandemic, the 2020 conference was hosted virtually through Zoom webinars. Here we present our design and findings from the event.

**Methods:** The AECPE-CHLA 2020 conference was held from September 23-26 and focused on lectures in pediatric health for physicians and healthcare professionals from Armenia and neighboring countries. Participants were provided step-by-step tutorials for creating accounts, registering for the webinars, and navigating through Zoom. All participants initially created an account through the CHLA team's custom website ("<https://www.learnwithopen.org/>") which contained the agenda, Zoom links, and guidelines for participating in the virtual conference. Afterwards, attendees registered for the Zoom webinars and were provided with a link to the conferences. During the webinar, participants watched pre-recorded lecture videos streamed live by the host. Armenian, Russian, and English translations of the lectures were made available through live translators with the option to switch language channels through a Zoom feature. Additionally, participants were able to ask questions, answer polls, and communicate via chat. During registration, demographics, professional experience, contact information, and CME credit questions were collected. After the conclusion of the webinar, data on participant attendance and duration was extracted from the Zoom reports.

**Results:** Preliminary data collected after the conference's conclusion show that (1) 300 webinar participant accounts were created on the OPEN website. (2) 241 participants attended the Zoom webinar on September 23, 217 on the 24th, 218 on the 25th, and 201 on the 26th. (3) Individuals from Armenia, US, Uzbekistan, Georgia, Moldova, Kyrgyz republic, and Tajikistan attended the event. (4) Doctors, researchers, coordinators, and hospital administrators attended the event. (5) 70 individuals were interested in receiving CME credits on the 23rd, 71 on the 24th, 75 on the 25th, and 75 on the 26th. To be eligible for CME credits, the attendee must have spent 90% of the conference duration in the Webinar. This calculation will be done using a mapping of individuals interested in CME credits and the respective duration spent.

**Potential Impact:** Preliminary results from the concluded event show that hosting an international pediatric conference in multiple languages through Zoom is a feasible medium that can overcome geographic, logistical, financial, and pandemic barriers.

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### **Stuck At Home: The Impact of a COVID-19 Registry on Medical Education**

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**Problem Statement:** The COVID-19 global pandemic compelled medical schools to suspend clinical rotations, unmooring medical students from their traditional curriculum.

**Rationale:** As the novel coronavirus (COVID-19) became a global pandemic, medical schools were faced with the challenge of transitioning medical students from the clinical environment to virtual learning. The impetus to integrate students into the COVID-19 response sparked creative educational efforts often relying upon informal learning strategies to supplement virtual learning. Our institution sought to supplement students' education by creating a medical student-run COVID-19 patient registry which would support future research queries and improve quality of care. Rather than utilizing quality improvement nurses or coders, we recruited medical students, whose rotations had been suspended, to review records and extract data. The purpose of this study was to develop a survey instrument to (1) explore the impact of the intervention on student engagement during the suspension of clinical rotations and (2) examine the extent to which the intervention fostered informal learning.

**Methods:** We first developed a 1300-item registry for admitted COVID-19 positive patients at our institution with data fields determined by resident and attending feedback as well as by preliminary U.S. data. Students completed data entry on over 350 patients from April to July 2020. The survey tool created for this study sought to evaluate medical students' experience working on the COVID-19 Registry. The survey was designed to be completed in five minutes on average. The 23-question (including demographic information) survey covered four categories (clinical knowledge and skills; documentation and hospital operations; research process; and altruism) and included one item for each of the four components of the Dynamic Model of Informal Learning (experience/action, feedback, reflection, and intention to learn.) The survey consisted of six demographic questions, 15 closed ended questions using a 5-point Likert scale format, two open-ended questions, and one check-all-that-apply question. Survey writing was informed by principles of informal learning and gleaned from studies analyzing informal learning in the workplace in order to characterize this novel learning experience using a validated survey tool. Quantitative and qualitative data from this survey was analyzed in order to characterize the impact of registry work on medical students' educational experience while they were unable to participate in clinical clerkships.

**Results:** Survey response rate was 62.7% (32/51). 87.5% of respondents affirmed that participation supplemented their medical education. 78% of participants felt they contributed to the COVID-19 response. 68.8% of students endorsed they gained a better understanding of research methodology, and 87.5% intend to pursue independent research from the registry data. Students commonly reported positive experiences with mentorship, improving their clinical knowledge, teamwork, and sense of altruism through work on the registry. The majority of students felt that participation in the registry increased their overall clinical knowledge, as well as their COVID-19 specific knowledge. In the realm of 'Experience/action' and 'Feedback,' 59.4% agreed that they look at how others on the team complete data abstraction in order to improve their own workflow. 68.8% developed their own ideas to improve their work. In the category of 'Intent to Learn,' 62.6% of students stated that they independently looked up information in order to better understand or perform well in their role in the registry. In regard to 'Reflection,' 84.4% agreed that they learned something new through repeating data abstraction on multiple charts. Upon qualitative analysis, four major themes emerged from the open-ended prompt asking students what they enjoyed about working with the registry: mentorship, teamwork, altruism, and education, which encompasses general medical knowledge as well as knowledge about COVID-19 itself.

**Potential Impact:** Despite being unable to participate in direct clinical care during the COVID-19 pandemic, medical students reported positive educational, altruistic, and research experiences through their registry work. This mechanism of informal learning can augment education during future surges when traditional in-person clinical experiences are not feasible.

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### **Designing and Developing a Virtual Statewide Internal Medicine Residency Program Showcase**

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**Problem Statement:** The COVID-19 pandemic has disrupted this year's residency application cycle (1). We created a Texas virtual internal medicine residency program series.

**Rationale:** Medical students and residency programs must contend with an unprecedented 2020-2021 application cycle (2). Students will have had limited interactions with residency programs due to canceled conferences, canceled away rotations, and a national mandate for virtual interviews for the cycle. In order to ease some of the anxiety and uncertainty of this application cycle, members of the Texas American College of Physicians (TXACP) medical student council created a student-led statewide internal medicine (I.M.) virtual series. Our goal was to connect students to program directors and chief residents to provide insight into their program-specific values and mission prior to the virtual interview season. We hypothesize that this showcase would mitigate some of the uncertainty and concerns from the applicant's perspective regarding this year's residency application cycle. To our knowledge, this is the first student-led initiative to virtually showcase internal medicine residency programs.

**Methods:** The showcase was designed to host 1-4 residency programs each week over the course of 3 months to allow each program their own individual webinar on a given day. Each session was designed to be an hour in length via Zoom to allow for efficient programming while providing time for applicant involvement. The sessions were structured as follows: 1) in the first 5 to 10 minutes, the program director gives a brief presentation about their respective program. 2) We then transition to a 25-30 minute question and answer session. 3) The program director then exits the call and we host a similar question and answer format with the chief residents. Questions were sent from participants via private chat to the moderator who then filtered these and asked them to the program. We recruited the twenty-eight I.M. residency programs across the state to gauge interest in participating in the showcases with the help of TXACP staff. Once programs chose their specific days, we began to promote the showcases to medical students throughout the state. Members of the TXACP Medical Student Council from various medical schools volunteered to help moderate the sessions. Volunteer roles included moderator, co-moderator, and an auxiliary role to help facilitate the sessions. The individual sessions were structured in the form of a conversation between the host and the program affiliate. After each showcase, a post-call survey was sent out to all registered attendees to assess the level of satisfaction.

**Results:** TXACP promotional emails for the showcase were sent to 2,276 medical students with registration for sessions ranging from 50-200 students per session. The medical student registration greatly varied between programs likely reflecting size, location, and notoriety of the program. Of the 28 Internal Medicine Residency programs in Texas, 82% participated in the showcase (n=23). Surveys showed that chapter email (45.9%), faculty (24.3%), and medical student interest groups (21.6%) were the primary sources for students learning about the residency showcase. Interestingly, social media was the primary source for only 5.4% of the students. Almost all students were either very satisfied (78%) or somewhat satisfied (19%) with the showcase. 91.8% indicated they felt their questions about the program adequately answered.

**Potential Impact:** It is our hope to be able to educate and inform the medical education community about the process of designing and developing an event such as this and to serve as a template of how to successfully recreate a virtual webinar series. With an expected increase in number of applications (3), we hope to mitigate the stress during this unprecedented cycle.

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## Ensuring Skin of Color Representation of Visual Teaching Images in Pre-Clinical Medical Education

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**Idea:** A review and revision of skin of color representation of visual teaching images in pre-clinical courses to strengthen training among medical students.

**Need/Rationale:** The disproportionate deaths from COVID-19 and recent murders of Black lives have brought national attention to the injustices affecting Black, Indigenous, People of Color (BIPOC), including inequities within medicine. In particular, medical education lacks adequate representation of BIPOC within its teaching materials. Skin of color (SOC) images were recently found to be underrepresented in popular USMLE preparatory resources and major dermatology textbooks (1-2). This lack of diversity contributes to dermatologic health disparities, as physicians are inadequately trained in recognizing skin conditions on BIPOC patients: for instance, melanoma is more common in white patients, yet presents with more advanced disease among BIPOC (3). Considering this educational deficit, we plan to review photographs from pre-clinical courses at the UUSOM, assess their SOC representation, and propose revisions to better prepare future physicians to serve patients of all skin colors and backgrounds.

**Methods:** The project will focus on evaluating and revising pre-clinical foundational sciences, pathophysiology, and clinical skills content at our medical school. We are first assessing the following 2020 spring courses: Host and Defense (H&D); Clinical Methods Curriculum (CMC); Skin, Muscle, Bone, and Joint (SMBJ). We have collected pre-work, guides, lectures, and assessments from these courses, excluding any outside resources, videos, or literature. Content will be assessed for the total number of educational photographs and the percentage of those images depicting SOC. Furthermore, images will be categorized by skin pigmentation types using the Fitzpatrick phototyping scale—both in total and based on the associated diagnosis. Two coders will be assigned to each lecture material. After assessing SOC representation, we will compile SOC photographs and send them to lecturers to provide suggestions for improving the coursework. To better guide our content development, we have sent a survey to current third- and second-year medical students to assess their expectations for appropriate SOC representation. Our suggested lecture revisions will work to compensate for a deficiency in SOC images and ensure the equal presentation of skin pigmentation types for all diagnoses. After completing our work for H&D, CMC, SMBJ, we will apply our methodology to evaluate and revise the remaining pre-clinical coursework.

**Evaluation Plan:** Following the completion of each revised pre-clinical course, medical students will complete a survey assessing their satisfaction with skin color representation within the course, along with their comfort in recognizing cutaneous conditions in patients of color. The responses for H&D, CMC, and SMBJ will also be compared with survey responses collected from medical students who had taken the courses prior to the revision for better skin color representation.

**Potential Impact:** Successfully increasing SOC representation in our pre-clinical content will strengthen our medical students' ability to treat patients of color and provide a model for assessing and developing content to better serve the BIPOC community.

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### **Virtual Reality Simulation to Increase Medical Student Empathy**

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**Idea:** Using virtual reality simulation, pre-clerkship medical students will embody a patient with a chronic illness to increase their empathy for patients.

**Need/Rationale:** As an important trait in physicians, empathy is both sought in potential medical school applicants, as well as, actively taught to medical students throughout their education. Despite this, some literature shows that empathy decreases in medical students as they progress through their medical education (1). Virtual reality (VR) simulation is a growing field in medical education and has been utilized in the training of practical skills and procedures across several medical and surgical specialties (2). While many methods have been used to increase medical student empathy levels, there is little research on using Virtual Reality simulation as the intervention. The few studies that do exist utilizing VR applications are poorly designed but show promising results via satisfaction surveys (3). This study proposes to utilize a validated widely-accepted instrument to assess the impact of VR simulation on medical students' empathy and compare that impact to a control group.

**Methods:** The VR simulation was developed in collaboration with the Kennesaw State University Computer Science Department. The clinical scenario for this simulation centers on a patient with Parkinson's disease. The VR application simulates completing multiple activities of daily living in the setting of hand tremors. Activities of daily living are represented by six in-game tasks that vary between the use of gross motor and fine motor skills. Activities include showering, brushing one's teeth, making and eating a sandwich, sorting pills, and dialing a phone number. In-game tasks are set on a time limit such that if any task is not completed in the appropriate amount of time, participants will be directed to the next task. The maximum time limit for the simulation is set at 10 minutes. Subjects are introduced to the controls of the game via a pre-brief and an in-game tutorial. An in-game tutorial allows participants to learn the controls before starting the simulation. Voice overs are utilized to go over the tutorial and announce the current task objective. The VR simulation will be integrated into the pre-clerkship curriculum geriatrics session.

**Evaluation Plan:** Subjects were recruited from the Medical College of Georgia second-year medical student class. The intervention group for the study used the VR application, whereas the control group watched two video presentations on patient's daily struggles of living with Parkinson's disease. Videos used were from the Parkinson's 360 website developed by the Michael J. Fox Foundation. Total time of the video presentations is approximately 10 minutes. Half of the students were randomly assigned to the intervention group (VR) and another half were assigned to the control group (video). The Jefferson Scale of Empathy (JSE) and the UCLA geriatric attitudes assessment were administered before and after the study. The intervention group also received an additional VR satisfaction survey. Amount of time to complete VR simulation tasks were recorded and subjects were given an overall performance score at the end of the simulation. Data were analyzed with the Wilcoxon signed-rank test and ordinal logistic regression. Changes in pre and post-survey scores of the JSE and UCLA geriatrics attitudes assessment were compared between groups. This study was approved by the Augusta University IRB.

**Potential Impact:** Students were excited to integrate VR into the medical curriculum. Improving medical student empathy through VR simulation could be a cost-effective method to reach the desired result as little to no proctor involvement or expensive simulation equipment is needed. Additionally, the VR equipment can be used for other topics in medical education.

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### **A Novel Remote Team-Based Learning Platform for Medical Students Using Readily Available Technology**

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**Idea:** Building a remote team-based learning platform using existing Microsoft Office 365 technology to facilitate 175 students simultaneously in 36 teams.

**Need/Rationale:** The emergence of COVID-19 in 2020 instantly changed the medical education landscape, mandating a remote learning environment. This presented challenges for facilitating Team-Based Learning (TBL) sessions which we previously delivered as an in-person modality for M1/M2 medical students. To engage learners in a remote TBL environment while maintaining the TBL 4S framework [1], we identified a need to deploy a remote TBL video-based platform that integrated assessments, casework, and facilitation to accommodate 175 students in 36 groups. Platform requirements included integrated remote assessments, effective student interaction with faculty facilitators, video interaction in small breakout groups with seamless transitions to a main classroom, instant feedback features for students, and simultaneous casework report-out options. To avoid additional departmental costs or student technology fees, we developed a platform using existing Microsoft Office 365 and Articulate 360 software and infrastructure available to the University of Toledo College of Medicine & Life Sciences to host remote and/or hybrid TBLs.

**Methods:** We used Microsoft Office 365 to build the TBL delivery platform for M1/M2 medical students. (1) We used the Microsoft Teams delivery platform to create 36 permanent breakout video channels for TBL teams and host 175 students in an accompanying Main Session Room channel for class-wide facilitation. (2) Using Microsoft Sharepoint, remote assessments were secured by specifying file permissions to prevent group readiness assessment test (GRAT) and case downloads. (3) We utilized Microsoft Forms into the Teams platform to incorporate an instantaneous collection of honor code attestations, GRAT score report outs, GRAT discussion point requests, GRAT appeals, and interactive simultaneous casework report out across TBL groups. Metrics are instantly viewable/downloadable from the Microsoft Forms web-based hub for import into our learning management system (LMS). (4) We developed a series of timers and announcements that were built into breakout channels to direct students back to the Main Session Room for discussion. Finally, (5) using Articulate 360 software, we developed and integrated a virtual instant feedback assessment technique (IF-AT) scratch-off card directly into the Teams platform. Our digital IF-AT card is customizable for each assessment, self-archiving, and self-scoring. The final fully integrated platform is suitable for delivering in-person, remote or hybrid TBL and is easily deployed across a curriculum for small group applications with minimal faculty/staff resources.

**Evaluation Plan:** Accountability: The remote TBL platform was deployed in July 2020 for M2 medical students, and in August 2020 for M1 medical students. Reaction: During the initial phase, a group of students were randomly selected, and written feedback was gathered, which allowed us to quickly fine-tune our platform format. Since M2 students have experience with in-person TBL, we are currently qualitatively evaluating student perceptions of value learning in in-person TBL delivery relative to the new remote/hybrid TBL delivery system, as well as the new TBL platform itself. We are currently developing an IRB-approved survey to deploy to M2 students to understand student perceptions, satisfaction and to assess additional opportunities for improvement. The evaluation plan also includes assessing student evaluations from 2019 M2 class for a specific TBL session versus the 2020 M2 remote TBL class session. Quantitative evaluations are planned as the GRAT questions remain unchanged between the 2019 and 2020 session, and will allow us to evaluate whether significant changes in GRAT performance are documented in response to the new remote platform. This latter analysis will be evaluated for both the M1 and M2 classes for 2020.

**Potential Impact:** Students apply foundational knowledge through collaboration and assessment in TBL [1]. Our novel platform is suitable for remote, hybrid or in-person TBL. It is integrated to efficiently facilitate TBL with minimal resources and engages learners in small groups to reduce isolation-induced anxiety [2, 3] in the current virtual learning environment.

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**Clerkship Readiness Bootcamp to Facilitate Transition to Clerkship for Second Year Medical Students (Best of Cool Ideas)**

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**Idea:** A clerkship readiness boot camp to facilitate the transition to clerkship rotations for second-year (MS2) medical students.

**Need/Rationale:** There is currently a gap in the perceived preparedness of medical students for clinical clerkships compared to what is expected by clerkship directors (1). In addition, there is a lack of standardized methodology and assessment across pre-clerkship and clerkship curricula, within and between medical schools (1). Evidence supports that clinical skills refreshers, clarification of roles and expectations, and opportunities to apply knowledge to clinical content is important in perceptions of readiness by students and faculty alike (2). Previous studies have looked at different metrics of clinical readiness across measures of professionalism, practice-based learning, and clinical reasoning, yet few have documented highly predictive measures for outcomes of competency, nor is there standardized agreement as to how clinical readiness or competency is defined across medical schools(2). In their article about transitions, Colbert- Getz hypothesized three elements to successful transitions, character, relevant knowledge/skills and the learning environment. The proposed boot camp will address character (e.g. mindset), current medical knowledge, clinical reasoning skills, and the expectations and goals of students.

**Methods:** The intervention will focus on 34 MS2 in a joint engineering and medicine program. The 2-day boot camp will occur at the end of the students' pre-clerkship curriculum and before clerkship rotations. Prior to boot camp, students will be assessed on readiness and confidence (e.g. metacognitive skills, mindset). To assess medical knowledge and clinical skills, students will complete online modules and participate in multi-station clinical assessment (history, exam, clinical reasoning) augmented with faculty teaching at each station on the first morning. To improve confidence and preparedness, a student will then participate in small group (8-9) and large group (16-17) progressive disclosure cases with paired sharing and use of an audience response system (ARS). These sessions will be facilitated by clerkship faculty. On Day 2 the focus will shift to team skills. Learners will take a set of self-knowledge tools and work in teams to examine their strengths and weaknesses. In the final afternoon, they will participate in mock rounds followed by a concluding session. In Mock rounds, learners will review patient data and prepare a case presentation. In groups of six, they will practice presenting cases (with feedback provided). The final session will discuss the student's expectation and goals and a summary of the boot camp. Students will be surveyed immediately after boot camp and 4 months into clerkships during a brief follow-up session to revisit concepts as requested in the learners.

**Evaluation Plan:** 1) The program will track activities for any modifications; and track learner attendance and completion of all tools and assessments. 2) Learner reaction/satisfaction will be measured using standard session and course evaluation forms. 3) Student learning will be directly assessed in the mock rounds during boot camp, and indirectly through a follow-up repeat of their survey of preparedness and confidence. During boot camp questioning using the ARS during the progressive disclosure cases will provide evidence of group knowledge and clinical reasoning. 4) Behavior will be evaluated in the second follow-up. Students will complete a written reflection about how they have used their learning from the boot camp and any barriers to their usage or their learning. They will also be asked to note any concepts they would like to revisit (covered in the follow-up session). Quantitative and qualitative analysis will be utilized to examine the impact on perceptions and behavior.

**Potential Impact:** Clerkship readiness of medical students is generalizable to other health professions where students transition from preclinical curriculum to clinically oriented curricula. This pre-clerkship boot camp, if effective, could be submitted to MedEd portal for materials to be accessed by health professions' faculty desiring to set up their own boot camp.

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### **Health Equity Focus: Clinical and Mentoring Skills Development for Future Physicians Through a Virtual Platform**

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**Idea:** Creating effective mentoring relationships with underrepresented students in the age of social distancing via a virtual platform.

**Need/Rationale:** Undergraduate and medical students from underrepresented in medicine (URM) backgrounds have identified poor institutional resources and a lack of access to quality mentorship as barriers to moving forward in their path toward medical school, residency, and careers as physicians [1]. The Diversity and Inclusion Mentoring Program was created by CHLA Pediatric residents as a pathway for early exposure to Pediatrics and mentorship in academic medicine with the ultimate goal of creating a physician workforce that better mirrors our growing diverse population of patients. URM students actively seek opportunities for protected time with faculty and coordinated exposure to a career in academic medicine[2]. Our program seeks to work toward the introduction and maintenance of mentoring relationships and consistent opportunities for face-to-face, real-time exposure between URM physicians and URM mentees. We plan to integrate our online mentorship and educational opportunities into a virtual platform, which can be accessed on phones, tablets or computers. This platform would serve as a single consolidated virtual learning platform that is accessible to our mentees and reproducible at additional institutions.

**Methods:** We plan to meet the needs of our URM student mentees by: 1) Forming mentorship “families;” and 2) Providing virtual education and shadowing opportunities. Mentorship families will be composed of URM medical students from USC Keck school of medicine, residents, fellows and attendings. This structure has the added benefit of near-peer mentoring to occur between trainees and medical students. Residents and fellows will also have the opportunity to not only gain mentoring skills but receive mentoring from faculty. Families will be determined based on the indicated preferences from medical students (racial/ethnic demographics, career interests, etc.). The program will have quarterly large group development sessions for members of the program and mentorship families will meet at least four times throughout the year to debrief shadowing experiences, discuss scholarly projects and build a sense of community. An initial survey of the families is designed to identify topics to meet the educational needs of mentees. Virtual shadowing opportunities will offer an opportunity for students to engage in learning a variety of topics in pediatrics, including post-graduate training and pediatric subspecialties. Residents, fellows and attendings will be able to curate patient experiences via interactive experiences via video and teleconferences modalities. Through media platforms such as WebEx, shadowing mentors will offer unique career perspectives with specific learning objectives.

**Evaluation Plan:** We will use the Kirkpatrick evaluation model to measure participant behaviors, learning, and reactions earlier, and give us time to adjust our program to be most effective. The 4 levels the Kirkpatrick Model for our program are the following: Level 1, reaction: What did people think of the program? Did they like it?-pre and post-program surveys; Level 2, learning: Did people obtain new knowledge or beliefs as a result of the program?- pre and post surveys for professional development sessions, attitude surveys, mentorship skills surveys; Level 3, behavior: Interest towards pediatrics and academic medicine. Increased knowledge of the various pediatric subspecialties. Mentees and mentors will have an opportunity to provide written, qualitative feedback and provide quantitative data on each other, the program and their overall experience; Level 4, results: We will compare overall data to the outcomes of other mentorship programs in the literature, including: a. The number of URM applicants to Pediatrics and combined Pediatrics residencies; b. The number of URM students that matriculate into Pediatrics and combined Pediatrics residencies; c. The number of URM applicants to the CHLA Pediatric Residency Program.

**Potential Impact:** Increased exposure for URM medical students to a pediatric post-graduate experience in a large academic institution in a virtual setting. Improved resident trainee exposure with pediatric subspecialties. Improved mentee confidence based on self-reporting measures. Increased number of URM applicants to Pediatric and combined Pediatric residencies.

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## Increasing Skills in Anticipatory Guidance Through a Remote Parenting Elective

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**Idea:** Remote newborn elective for pediatric residents becoming parents, to increase knowledge and skills in anticipatory guidance and child development.

**Need/Rationale:** Becoming a parent during residency can be challenging, as there is no standardized approach to parental leave across GME programs and Family and Medical Leave Act (FMLA) benefits may not cover residents in their first year of training (1). The AAP recommends that residents who become parents should be guaranteed a minimum of 6-8 weeks of parental leave with pay after the infant's birth yet fails to discuss implementation strategies (2). Some residency programs have implemented parenting electives to allow their trainees more time at home. In pediatrics, many office visits are for well child care, where topics like nutrition, development and behavior are discussed, making it essential for pediatricians to be trained to provide appropriate health maintenance and anticipatory guidance (3). The creation of a remote newborn elective for pediatric residents who plan to adopt, foster or birth a child during training delivers an innovative opportunity to strengthen anticipatory guidance skills while providing care for their own child at home. In addition, the growing use of telehealth facilitates options for virtual patient care and distance learning.

**Methods:** The newborn elective will be a 2 or 4-week experience, available to all pediatric residents, for an estimated 5-10 residents per year. It will be divided into two-week units, and three units will be available. Residents can complete one or two units of their choice, based on interests and length of their rotation. The first unit focuses on anticipatory guidance and infant feeding and growth patterns. The second unit will emphasize infant and toddler development. The third unit, useful for second- or third-time parents, will cover family dynamics after the birth of a child, including the impact on older siblings. The rotation can be completed from home and requires learner engagement on average 6 hours per day, 5 days per week. Competencies that will be covered encompass practice-based learning and improvement through independent study, medical knowledge and communication skills. The experience will include: 1) Weekly faculty-led discussions on topics from a syllabus, with experience sharing among participants. 2) Continuity clinic one-half day per week, exclusively for telehealth visits. 3) The creation of an information flyer for parents and a video role-playing giving anticipatory guidance. Study topics in the syllabus will cover breastfeeding, formula familiarity, newborn rashes and emergencies, safe sleep, car seat safety, post-partum depression, developmental milestones, interpersonal communication skills, care of children with medical needs and toilet training.

**Evaluation Plan:** Faculty members organizing the elective will track the number of residents that complete the rotation and the topics that they chose to focus on. They will also precept residents in the continuity clinic and provide direct observation with feedback during telehealth encounters. All hand-outs and videos created by residents will be compiled into a shared file and be available for use by the entire residency program. Anticipatory guidance videos can also be played in the continuity clinic waiting room, where they can be viewed by families before their visit. Residents will complete a self-entry log reflecting on their experience, challenges and knowledge acquired throughout the rotation. They will also complete a pre and post participation survey to assess their level of comfort with giving anticipatory guidance to parents (on select topics like breastfeeding, formulas, post-partum depression) before and after the elective. After the rotation, faculty members in the outpatient setting will continue to track the incorporation of anticipatory guidance into well-child visit when they precept trainees.

**Potential Impact:** Although the creation of a newborn elective does not solve the absence of a standardized parental leave policy in residency programs, it creates a rigorous at-home elective useful to parents, that could be transferable to other specialties or health care professions involved in the care of children.

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**Pandemic Elective: Helping Pediatric Residents Develop Systems-Based Practice Competencies**

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**Idea:** Helping pediatric residents develop systems-based practice competencies through a COVID-19 pandemic elective experience.

**Need/Rationale:** The Accreditation Council of Graduate Medical Education has charged training programs with the task of developing resident competency in systems-based practice (SBP) (ACGME 2020). This competency, particularly the focus on systems of care, has proven to be a challenge for programs to both teach and assess [1]. Some have created multimodal, non-clinical experiences while others have focused on quality-improvement (QI) based activities [2,3]. Similarly, our pediatric residency utilizes didactics and online modules coupled with QI project involvement to address the SBP competency but lacks additional experiential training around systems of care, specifically. With the arrival of the COVID-19 pandemic, it has become even more vital that our trainees understand the health systems in which they work. To address this growing need, we propose a "Pandemic Elective" in which residents develop competency in systems of care and interdisciplinary approaches to patient safety through the lens of the COVID-19 pandemic by attending high-level hospital leadership meetings, debriefing with experts, and collaborating with nonphysician staff members.

**Methods:** The Pandemic Elective is a 2-week experience available to all pediatric residents, maximum 1-2 every 2 weeks, once per month. The elective consists of the following: 1) Reading: residents will develop foundational knowledge of emergency preparedness systems by reading the World Health Organization's Emergency Preparedness Framework and pair this with current information from the Centers for Disease Control and Los Angeles Department of Public Health websites. 2) Meeting attendance: residents will outline how hospital-specific systems fit within local and national systems of care through attendance at our institution's disaster command center meetings where protocols are developed and updated for COVID-19 prevention, screening, testing, treatment and patient cohorting. After meetings, residents have 1-on-1 debriefing sessions with faculty experts. 3) Resource assessments: residents will analyze how hospital resources inform the development of protocols through visits with central supply services, pharmacy and laboratory services. 4) Information dissemination: residents will grow their interdisciplinary communication skills as part of the information dissemination team, visiting departments that require clarification of new protocols. 5) Systems thinking: residents will culminate the experience by reviewing the newest data around COVID-19 prevention, screening, testing, treatment or patient cohorting and proposing a new hospital-based recommendation or affirming a current protocol.

**Evaluation Plan:** Accountability: Participants will complete an elective checklist with the above activities. Reaction: Residents will complete an anonymous post-elective survey assessing satisfaction in the experience and likelihood of recommending the experience to others. Learning: 1) Reflective writing will be used to check for depth of understanding. Specifically, following resource assessment activities, participating residents will provide a written reflection on how hospital resources inform current hospital COVID-19 protocols and how these compare to local or national guidelines. Following interdisciplinary information dissemination, residents will reflect on how nonphysician perspectives contribute to current hospital COVID-19 protocols. 2) Resident skills in systems thinking will be assessed by their completed recommendation/affirmation of hospital protocol activity. 3) Completion of standard written evaluation of resident performance. Behavior: hospital-wide committee involvement and QI participation are tracked for all residents in their semi-annual meetings, which allow us to compare participants to non-participants.

**Potential Impact:** The COVID-19 pandemic has posed many challenges to medical education. It has also created the opportunity to design an experiential learning elective in SBP that can be adapted by other institutions seeking to help their learners develop competency in this domain and ultimately become more active in the systems in which they work.

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## **A Socially Distanced Virtual Platform for Simulation-Based Education**

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**Idea:** Enhancement of remote simulation-based education through the use of a virtual “resuscitation room” and a free patient monitor app.

**Need/Rationale:** Medical simulation is a valuable educational tool that offers learners the opportunity to engage in experiential learning [1]. Unfortunately, social distancing restrictions imposed during the recent pandemic have halted many in-person simulation programs. Educators have begun to explore the world of remote, virtual simulation, particularly given recent studies suggesting that learning and satisfaction in trainees are equivalent in standard and telesimulation sessions [2]. Telesimulation has the added benefit of transcending the time, space, and financial barriers associated with conducting in-person simulation [3]. At a time when clinical learning opportunities are limited, it is increasingly important to continue to offer simulation-based education that will allow learners to hone their clinical skills and prepare for high stakes patient encounters. A recent survey conducted at our emergency medicine residency program corroborated this need, with residents suggesting that their clinical training had been compromised by the pandemic and requesting increased opportunities for simulation. As such, we plan to utilize a virtual simulation platform that will allow for remote continuation and expansion of our current simulation program.

**Methods:** As part of their longitudinal simulation curriculum, 76 PGY1-PGY4 emergency medicine residents will participate in biweekly remote educational modules conducted over a virtual simulation platform. Simulation modules will occur during protected educational conference time and last 90 minutes in duration. During these sessions, case facilitators and learners will contemporaneously engage in a shared virtual simulation space through the use of a video conferencing platform. This virtual “resuscitation room” will consist of a modifiable PowerPoint slide that displays an emergency department patient care room with a case-specific patient lying on a gurney. The PowerPoint slide will also include icons of various medical equipment (i.e. bag-valve-mask, cardiac pacing pads) and medications that are commonly used during emergency room patient encounters. As the case evolves and residents perform interventions or administer medications, these icons will be dragged over to the virtual patient to simulate real-time completion of the interventions. During the case, residents will also be provided with evolving patient vitals through the use of Simpl, a free patient monitor app. Through this app, case facilitators can send real-time changes in vitals to multiple remote learners using a single shared device code. The combination of a virtual “resuscitation room” and a dynamic patient monitor contributes to the creation of an easily modifiable learning space that is interactive and collaborative.

**Evaluation Plan:** For the duration of the virtual simulation curriculum, we will track resident attendance and maintain a log of the clinical topics addressed in each simulation session. In order to assess participant satisfaction with the virtual platform, we will utilize standard session evaluations and end-of-curriculum focus groups conducted by an external evaluator. Session evaluations will elicit learner satisfaction with, and experience using, the virtual simulation platform, and will allow simulation faculty to modify the platform for a second iteration if desired. A subset of survey questions will also assess the perceived educational value of engaging in remote simulation. The end-of-curriculum focus groups will explore a rich understanding of trainees’ lived experience while engaging with the virtual simulation space. Focus group interview questions will also investigate any change in learners’ clinical skills and comfort as a result of the virtual simulation curriculum.

**Potential Impact:** Virtual simulation is a growing field that has the potential to offer a less resource-intensive alternative to standard in-person simulation. If effective, it can not only fill educational gaps created by the current pandemic but can facilitate the use of simulation in low-resource settings.

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### **Use of Live-Stream Surgery Enables Surgery Faculty to Acquire Skills Using New Technology**

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**Idea:** Use of real-time live-stream surgery enables cardiothoracic surgery faculty to acquire skills using new surgical technology.

**Need/Rationale:** The COVID-19 pandemic has dramatically altered the way that medical education and faculty development occur. Previously, practicing physicians who sought to adopt a new technology would visit experienced centers and observe cases to learn best practices. Due to strict visitation and travel limitations, this is no longer possible. The use of video-recorded surgery is an established learning technique<sup>1</sup>. However, the interactive nature of a real-time live-streamed case greatly enhances the participation of the learner. Given the recency of COVID-19, there are few studies on this topic. Similar issues have been described during the pandemic as it applies to medical student education. Medical students on surgical rotations during medical school faced the prospect of having severely curtailed operating room exposure. Live-streamed surgery was proposed as a potential solution<sup>2,3</sup>. Our live-stream capabilities are better equipped to capture the full breadth and nuance of a complex surgical case compared to previous studies. Our live-stream educational model enables learners to engage in a deliberate practice cycle, accelerating adoption and integration of new surgical technology and techniques during and after the COVID-19 pandemic.

**Methods:** The target learners for our intervention are practicing cardiothoracic surgeons who are already experts in their field, but seeking to integrate an electromagnetic navigational lung nodule localization platform into their practice. Using a secure, HIPAA-compliant web-based video-conferencing service (Webex), the learner will remotely tune in to live-streamed surgery cases to participate in case observation. Three learners will observe live-streamed surgery cases every two weeks for 3 months.

**Evaluation Plan:** Live-streamed surgical cases provide an opportunity for physicians to engage in learning opportunities despite travel and visitation restrictions due to COVID-19. Using our live-stream surgery model as an educational platform will allow for future learners to remotely learn new techniques and technologies in an interactive and high fidelity setting. We will evaluate the efficacy of the intervention with follow-up at six weeks to see gauge utility for the learners as well as the evolution of their comfort level with the technology. Reaction will be assessed at 6 and 12 weeks to survey the audio and visual quality as well as the learner's response to the model. The learners will engage in a written reflection of the impact of the live-stream case their decision-making and confidence in the technology to evaluate their learning and changes in behavior.

**Potential Impact:** Our live-stream surgery model can be applied to a wide range of learners, from practicing physicians (surgery, pulmonology and radiology) to trainees (fellows, residents and medical students) in remote locations who otherwise would be unable to experience surgical cases of this type or volume.

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### **A One Year Proactive Coaching Program for General Surgery Interns**

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**Idea:** A proactive 1-year coaching program aimed at improving well-being and performance in general surgery interns.

**Need/Rationale:** Residents suffering from burnout are less likely to excel in training and more likely to experience adverse outcomes. (1) Residents as a whole are more likely to suffer from burnout than age-matched peers, and general surgery residents tend to be affected at a greater rate than other medical specialties. (2,3) These findings have accentuated the need for programs to place resident well-being at a higher priority than ever before. While individualized learning plans (ILPs) are now a requirement for all residency programs, rarely are they used as a way to help incorporate well-being practices into daily resident professional life. (4) We seek to develop, implement, and assess the impact of a well-being coaching program in a general surgery internship. The proposed program has three elements: 1) a set of tools to help learners gain a deeper understand of self; 2) an ILP that includes self-care, support structure, and performance items; and 3) a coaching process utilizing a standardized coaching model. The purpose of this study is to evaluate the effectiveness of the coaching program on residents' well-being and performance.

**Methods:** A one-year coaching program will be incorporated into the curriculum for 32 general surgery interns at University of Colorado School of Medicine. The goal of the program is resident well-being and performance success. The program will include multiple elements. 1) Tools to enhance self-knowledge. First, self-assessment exercises will be offered (VIA Character Strengths Survey, Dweck's Growth Mindset Scale, the Grit Scale, and the Self-compassion Scale). Interns will then participate in a four-hour training session focused on education and self-reflection of 21st century mindset ideas including growth mindset, vulnerability, self-compassion, resiliency and grit. 2) Use of ILPs: ILPs will include reflection on individual support systems, well-being/self-care/flourishing, competing demands, self-disclosure of struggles/accomplishments, and short- and long-term professional goals with a plan of action. 3) Implementation of a coaching program using a standardized coaching model: Residents will develop their ILP with the help of their faculty coach. Interns will have quarterly check-ins with their faculty coaches throughout the academic year. Coaches have all been trained to utilize techniques recommended in the AMA Coaching Booklets (2017) as well as the principles of positive psychology as reflected in the acronym PERMA (positive emotions, engagement, authentic relationships, meaning, and accomplishment) that have been shown to support flourishing/wellbeing.

**Evaluation Plan:** The evaluation of the intervention will incorporate multiple methods. 1) Tracking of participation in all program elements. 2) A standard questionnaire will be used to gain participants' opinions about the organization, instruction, content, and usefulness of the coaching program. 3) Participants will complete validated self-assessment instruments pre-, post- intervention and at the end of their PGY2 year to gather data on burnout and wellbeing. 4) A 90 min focus group of 10 interns will be used to gather qualitative data related to the tools and the elements of flourishing and will include questions on which tools helped, important accomplishments, and the role of coaching in helping them thrive. Together these methods will allow us to enhance the program for future interns as well as to determine its impact on resident well-being.

**Potential Impact:** If proven effective, this program can serve as a model well-being program to equip new residents with a set of skills to be successful and thrive in residency.

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**HIPE RCA2 Simulation: Introduction to Patient Safety Event Analysis and Investigation**

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**Exemplar Description:** This is an interprofessional simulation to teach the concepts of Root Cause Analysis and Action Plan (RCA2) to advanced learners. We used the Zoom platform, Google Jamboard and Docs to increase learner engagement and created polls to assess learning throughout the didactic portion. Materials were provided in advance to maximize time available for learners to work through analysis of a case study, make a cause map, and create an action plan.

**Learners/Subjects of the Curriculum:** Advanced Trainees in a Health Profession (e.g., residency, fellowship level), Interprofessional Education Project: Learners at any level.

**Need/Rationale:** The ACGME Common Program requirements and Milestones state that “residents must participate as team members in real and/or simulated interprofessional clinical patient safety activities such as root cause analyses or other activities that include analysis as well as formulation and implementation of actions.” We previously had no specific formal curriculum to teach these concepts in an interprofessional manner. We determined that nursing students and pharmacy residents had similar requirements to participate in interprofessional learning during their training. The legal climate in Hawaii precludes widespread trainee participation in root cause analyses. For this reason, the University of Hawaii Interprofessional Education (HIPE) team created this curriculum to ensure that all graduating residents would have participated in at least one patient safety simulation event to include cause mapping.

**Methods:** In partnership with the School of Nursing and the College of Pharmacy, members of the Office of the DIO and key hospital leaders met with nursing and simulation educators to develop the curriculum. Originally designed for in-person simulation over the course of four hours, we shortened the course to 2.5 hours when all instruction moved to distance learning. The planning group discussed goals and objectives, mapped out the agenda, created content and conducted rehearsals. The materials were sent to the learners in advance for pre-work. Each of three sessions included senior residents from the various GME programs, senior nursing students, and pharmacy residents. The facilitators provided brief didactics and the simulation consisted of a safety event that took place in a pathology lab. The Google Jamboard was then used to create a cause map by having the learners cite potential causes while a facilitator typed on the sticky notes. A second facilitator prompted the learners with a series of questions to reach the root causes. The Action Plan was created on a pre-templated Google doc, and once complete, a debrief was conducted. The learners completed a survey at the end of the session and the facilitators conducted an after action review to create improvements with each class. After the first session, it was determined that we needed to assess learning during the class to ensure the concepts were clearly understood. Polls were conducted during the second and third sessions.

**Results:** There were a total of 100 learners across the three disciplines. Quantitative results from the polls and surveys revealed very low knowledge scores in two specific areas after the first session. Based on the feedback from the first session, particular points of emphasis were made that resulted in improved scores in subsequent sessions. The survey data from all sessions indicated that the objectives were met based on scores from 4.03-4.47 on a scale of 1-5. The scores improved with each iteration of the event. The overall score increased from 3.83 to 4.46 from the first to third session. Qualitative comments demonstrated that learners acknowledged this curriculum increased their ability to “learn to appreciate everyone’s viewpoint” and “increased knowledge” in this competency. Several learners commented that they would feel confident conducting an RCA in their future practice. Based on the results, the curriculum met the need to conduct an interprofessional simulation of an RCA event. The sessions will be further modified based on learner feedback. The COVID-19 pandemic forced us to change quickly to an

abbreviated, fully virtual session. Colleagues in the other health professions schools were not familiar with the different tools that could be deployed to increase participant engagement. Subsequently, more interprofessional simulations have been conducted virtually and designed for maximal interaction. This is now considered a best practice for virtual simulations.

### Engaging Methods for Teaching Health Policy

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**Description:** The health effects of intimate partner violence (IPV) not only include physical injury, but can also manifest as posttraumatic stress disorder, anxiety, and others. This case-based tutorial for third-year medical students examines: (1) a clinical encounter with a patient experiencing several complex challenges including IPV and homelessness; (2) the implications of existing policy on the delivery of health care services; and (3) the impact of policies on patient choices.

**Learners/Subjects of the Curriculum:** Third year medical students in their mandatory 8-week family medicine clerkship rotation.

**Need/Rationale:** The prevalence of intimate partner violence is significant and has lasting physical and psychological effects on the victims. Health effects not only include immediate physical injuries but also can manifest as posttraumatic stress disorder, anxiety, sleeplessness, gastrointestinal disturbances, and headaches, among others. In addition, children who witness household violence are at risk for poor health outcomes. A growing body of literature and medical school accreditation bodies report medical students receive inadequate training about IPV. Combining this statistic with data in a 2008 AAMC report indicating that health policy content is perceived as boring, irrelevant, presented too theoretically, and having little or no context gave us the idea to address the two in combination. In practice, all specialties will encounter IPV within their patient populations and communities and should therefore receive training on appropriate screening, documentation, and resources.

**Methods:** This session is part of a larger health policy curriculum. The methods described are for the IPV/health policy session only and as it is taught during COVID which necessitated a move to on-line instruction.

1. Students are randomly assigned to groups of two to three. Each group reads one assigned article and submits a written question to the session faculty in advance of the session. Faculty prepare written responses to all questions. All questions and responses are distributed to the students to share information.
2. Students watch a video of the Family Advocacy Center to “tour” the community organization where IPV and Sexual Assault (SA) services are co-located.
3. In a large group setting, students use Meti.com to respond to polling questions asking them to define IPV and SA
4. Students are randomly assigned to one of 5 small groups to work through a clinical case that illustrates a patient who comes to the emergency department for common complaints. The medical issues are relatively simple but with added layers of complexity, including IPV and homelessness. The case weaves in corresponding health policy questions at every step of the patient’s care. The case is facilitated by an interprofessional team of community members and health professionals.
5. The session moves back to a larger group to discuss findings and respond to additional polling questions.
6. Students take an on-line quiz after the session based on CDC IPV concepts.

**Results:** The on-line session has not yet been evaluated. However, prior to on-line, student feedback on the IPV/health policy session has been uniformly positive. Within the course evaluation, students have the opportunity to provide written comments.

1. Praise for the experience: Almost all students providing comments offered some form of praise to describe the experience. Multiple students indicated that the activity was their “favorite experience of the block.”

2. Exposure to interprofessional knowledge: Comments highlighted an appreciation of the inclusion of interprofessional knowledge about IPV. One participant wrote, "Multiple perspectives from different professionals illustrated the issues with great detail."
3. Exposure to nonmedical interventions: Comments captured student feedback about how the experience provided them with exposure to interventions outside of the medical environment. A participant linked exposure to an intervention outside of the medical environment to the effectiveness of the session by commenting, "Very effective session to be able to see the setting in which IPV is investigated and support offered."
4. Expectations for clinical practice improvements: Multiple students wrote that the experience improved their confidence about caring for patients with IPV, with one noting, "I feel far more equipped to refer and screen patients regarding IPV."

**Sci-Clin-ergy: A Framework for Integration Across Disciplines in Health Professions Education**

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**Description:** In health professions, education of the foundational sciences provide the basis for clinical reasoning to improve retention and diagnostic accuracy. However, the success of this approach depends on meaningful integration across disciplines. This session will describe a tested framework for integrated teaching of clinical therapeutics. This integrated course has been delivered to international pharmacy students during a summer immersion in both in-person and virtual formats.

**Learners/Subjects of the Curriculum:** Medical Educators

**Need/Rationale:** Curricular integration, including integration of foundational sciences with clinical application, is an important strategy in health professions education. Evidence shows that integrating scientific knowledge with clinical practice leads to more comprehensive understanding, improved retention, and enhanced diagnostic accuracy. The Liaison Committee on Medical Education (LCME) promotes integration, as does the academic medicine literature. However, despite work towards integration in medical education for over 60 years, transformational change has not occurred. The University of Southern California School of Pharmacy offers an annual summer course for international students which focuses on clinical therapeutics. This application-based course delivers an integrated science and clinical approach for the management of type 2 diabetes. The purpose of this session is to share this tested framework for successful integration of clinical practice and foundational sciences.

**Methods:** For many years, the University of Southern California School of Pharmacy has offered a residential summer course for international undergraduate pharmacy students. For the past two years, the course was redesigned to deliver a fully integrated science and clinical approach to a single disease state. In 2019 the program was delivered in an in-person format, while in 2020 it was adapted to a virtual environment in response to the Covid-19 pandemic. The course coordinators chose to focus the content around type 2 diabetes based on its prevalence worldwide and the expertise of the instructors. In the first part of the course, diabetes pathophysiology, pharmacology, and therapy were discussed. In the second part of the course, the focus shifted towards drug-drug interactions which includes molecular docking, use of drug information resources, and patient case exploration. There were two team-based projects to promote integration of concepts and transnational collaboration. The course was delivered with a focus on active learning with mini-lectures of 10-15 minutes followed by facilitated small group discussions for another 10-15 minutes. This pattern was repeated three times in each clinical or science session. The final hour of each day was spent working on projects in small groups. Response to the program was evaluated with student surveys. Student learning was assessed through performance on the two projects and a final quiz bowl session.

**Results:** The course was well-received by students in both the in-person and virtual formats. Students were surveyed about their overall response, course organization, assignments, project content, and group work and were scored using a 5-point Likert scale. All student respondents in both the in-person (n=15) and virtual (n=15) formats agreed that the program was of value to their education, and 97% of respondents agreed they would recommend the program to a friend. Student responses on working in teams were more mixed with 90.6% of all respondents (n=32) indicating that the group work was fun, enhanced learning, helped with practicing speaking English, and helped students to learn about working in teams. With regards to the integration of content, all participants in the virtual program (n=15) agreed that the science and clinical sessions were well-integrated and organized. Student learning was assessed through performance during the quiz bowl session and on the group presentations. During the quiz bowl session, the average score for the 4 groups was 82% (range 77-91%), indicating a good level of understanding. The groups projects were designed to assess achievement of learning objectives at Bloom's levels evaluate and create. The final products were assessed by faculty to have achieved these

learning objectives. Examples of the group projects can be viewed on the program website at: [https://sites.usc.edu/international summer program](https://sites.usc.edu/international-summer-program).

### **Anti-Racism Training for Medical Education Leaders on a Trip to Alabama**

Ring, Jeffrey (1); Femi, Isoke (2); Lezak, Michael (2)  
(1) *Independent Consultant*; (2) *Glide Memorial Church*

**Description:** The presenters have designed and twice implemented a 5-day trip to Alabama to study the through-line from slavery and racism to mass incarceration, health inequity, and environmental injustice. Participants were health care and medical education leaders who collected intense and powerful stories and were deeply impacted by what they saw and heard and felt. This workshop will describe the journey, the educational and social objectives, and the voices of participants.

**Learners/Subjects of the Curriculum:** Medical educators at all levels.

**Need/Rationale:** It is imperative that medical learners are prepared to provide equitable, patient-centered, and respectful care to all patients. This has not always been the case as is reflected in the shameful health inequity data in the United States. Medical education as a field has great opportunity to grow curricula that teach anti-racism health care practices more effectively and to assist future practitioners in navigating their own biases, stereotypes and comfort zones. The question is to what degree medical school faculty are able to weave these core lessons into their teaching and to facilitate difficult and emotional conversations around race.

**Methods:** GLIDE Memorial Church Center for Social Justice in San Francisco has organized and facilitated five-day journeys to Alabama in coordination with the University of Alabama Birmingham School of Medicine. The itinerary consists of tours, conversations and direct interactions toward an immersive understanding of the links between slavery, racism, health inequities, environmental injustice, and poverty. Participants are continually challenged to consider how the realities they are witnessing are relevant to their medical teaching in San Francisco and how they intend to change how and what they teach.

**Results:** Approximately forty faculty leaders have participated in the last two trips in 2019 and 2020. They report that the journey was life-changing and deeply impactful in both personal and professional ways. They report a variety of specific and intentional ways that participation in this program has changed how they teach and many have elected to continue to participate in ongoing study of racism and their roles in medical education leadership.

## **Qualitative Analysis of the Worldwide Chiropractic Education Response to COVID-19 in Early 2020**

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(1) *National University of Health Sciences*; (2) *Stanford Health Care*; (3) *Journal of Chiropractic Education*

**Problem Statement:** The purpose of this qualitative report is to describe actions by chiropractic programs during the early stages of the COVID-19 pandemic.

**Rationale:** The World Health Organization has recommended public health and disease control measures during the COVID-19 pandemic. Higher education has been challenged to continue while keeping faculty and students safe. Health professions are navigating changes in both education and health care in the context of urgent and changing governmental restrictions and public health responses. Chiropractors are portal of entry practitioners and as part of the healthcare workforce, they collaborate with other providers to deliver the best care possible to their patients and the public. Therefore, during a pandemic situation, the continued training of these health professionals is essential. Currently, it is unknown how chiropractic programs have been responding at this time of physical distancing and stay at home orders. Therefore, the purpose of this qualitative report is to describe actions by chiropractic programs during the early stages of the COVID-19 pandemic.

**Methods:** This is a qualitative, narrative research analysis using chronological, story-oriented reporting to examine chiropractic program response during the COVID-19 pandemic. This was a self-descriptive, retrospective report and not an experimental study. Chiropractic education programs were identified worldwide and email invitations were sent to administrators. Each participant was asked to provide descriptions for February through May 2020 and not to include future plans. Responses were collected and collated into a summary report. Themes were collated and organized into a list. They were asked to answer 3 open-ended questions with word limitations. 1) What public health, governmental, or other regulations have influenced how your education program has responded to the COVID-19 pandemic? 2) Provide a brief synopsis of the problems due to COVID you faced and the actions that your program has taken in response to COVID-19, between February 2020 to May 2020. 3) What 1 lesson, learning moment, or takeaway point would you like to share regarding education and your chiropractic program response during COVID-19?

**Results:** Of 48 programs invited, there was a 77% response rate and representation from 16 countries. Observed themes from the responses included in this study were:

1. Quick response to local public health and governmental regulations
2. Keep students, faculty, staff, patients safe
3. Heightened communication frequency and depth
4. Faculty and administration work extra to provide seamless learning environments
5. Students engaged and supportive
6. Team contributions, including learning center and IT staff
7. Creativity to address clinical learning and developing skills
8. Increased application, value for technology and online learning platforms

There were similarities across the programs. There was quick uptake of online education showing it was viable to deliver content for some subjects. Although technology was important, the human factor was the primary driver in success. Without willing faculty and staff, there would have been no application or uptake of these learning platforms. Students were the champions. It may be that some students have been yearning for this type of education, so they quickly embraced it when it finally arrived. The students were supportive to the shifts in the education environment, which contributed to their success. Faculty and staff were responsive and resilient. Keeping all participants (faculty, staff, students, patients) aware of the frequent changes and restrictions seemed to help establish a calm and reassuring environment.

**Potential Impact:** Throughout the world, chiropractic faculty demonstrated skills of distance teaching and assessment methods. Students demonstrated they could take online courses and learned how to implement telehealth. The campuses learned how to pivot quickly to respond to their internal and external constituents.

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### **Postpartum Contraception Initiative**

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Group, Director of Women's Health Curriculum at AH WMMC FMRP

**Idea:** To identify patients were found to be pregnant in a short period following a pregnancy and aim to educate and plan for postpartum contraception.

**Need/Rationale:** In the United States, nearly half of all pregnancies are unplanned and a third are within 18 months of a prior pregnancy (3). In our clinic, we have noted multiple patients who have become pregnant prior to postpartum visit. Though the exact number is yet to be determined, it is important to educate our patients about short interval pregnancies. The American College of Obstetricians and Gynecologists "Best Practice" care guidelines recommend discussion of family planning and contraception during pregnancy to avoid short interval pregnancies, thereby decreasing their risk of adverse outcomes including maternal morbidity and mortality (ie. ICU admission, need for transfusion), fetal mortality, IUGR, spontaneous and indicated preterm delivery. Additionally, we aim to implement Level 1B recommendation of avoiding intervals <math>\leq 6</math> mos between pregnancies. Aside from the medical complications, there are also emotional, psychological, financial risks and burdens associated with short interval pregnancy.

**Methods:** Inpatient, we will the assess barriers to early implementation of postpartum contraception by making inquiries into feasibility of prescription of OCPs or placement of depo provera at time of discharge from the hospital following delivery. We will also standardize inquiry regarding postpartum contraception in OB triage admission intake and postpartum documentation. To improve our approach outpatient, we intend on educating and advising our clinic patients through multiple stages of pregnancy: In the prenatal period, we will use multiple approaches to improve education on family planning in both providers and patients. Besides providing providers with education on techniques for discussing and prescribing postpartum contraception, we also made changes to the EMR's prenatal visit template to include prompts to discuss contraception with patients earlier in pregnancy. Furthermore, we will host group classes on family planning (following Tuesday OB clinic). Postpartum, many women do not discuss family planning and contraception until their 6 week postpartum check. In this period, many become pregnant again, resulting in short interval pregnancies. To move up the timeframe of this discussion, we are implementing a "contraception checkup" visit for new mothers at the time of their baby's first newborn check. Additionally, we adjusted the EMR templates to include incorporation of mother's birth control as part of the prompts for well child checks up to the 12 month visit.

**Evaluation Plan:** Our first step to evaluate is to assess the rate/number of short interval pregnancies by pooling data from women who have opened OB modules (thus including all pregnancies regardless of whether they had vaginal deliveries by Family Care Specialists providers, as some end in miscarriages, C-sections by other providers, or deliveries in other hospitals). We started collecting this data in 7/2020. Will began implementation of this intervention 9/2020 and plan to reassess data at the end of 3/2021. With implementation of this intervention, our goal is to see an increase of at least 10% in women choosing and obtaining birth control in postpartum period as well as a potential reduction in short interval pregnancy by the time the next data reassessment is completed in 6/2020. To assess the efficacy of these interventions within our clinic even further, we also plan to survey patients before and after delivery. We will collect data on which modes of contraception they were interested in before and after delivery as well as what methods of contraception they were aware of/potentially trying prior to becoming pregnant.

**Potential Impact:** Through this initiative, we hope to empower women in underserved communities with more knowledge and choices regarding their reproductive futures. Many women lack the knowledge or access to navigate this area of healthcare, and short interval pregnancies have deleterious effects on their physical health as well as their emotional wellbeing.

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## **The Relationship of Insurance Copayment on HgbA1c Control in Diabetic Patients.**

Gamez, Jorge; Flores, Hector  
*Adventist Health White Memorial Medical Center*

**Idea:** Create physician awareness of financial barriers by studying the impact insurance copayments may have on Diabetes Mellitus patient's HgbA1c.

**Need/Rationale:** A large Canadian study involving 27,090 patients determined that household income was strongly and independently associated with Type 2 Diabetes Mellitus prevalence (1). Particularly they found that the prevalence of Diabetes increased as income decreased (1). Another study, with U.S. adult patients (18 years and older), demonstrated that as copayment amounts increased the discontinuation rate for oral diabetic medications increased (2). As the debate for universal healthcare and "Medicare For All" is ongoing in the national spotlight, no study to date has looked on the effect that copayments may have on the control of a Diabetic's HgbA1c. By analyzing the effect of copayments in our clinic's Diabetic patients, we will be able to further educate the Family Medicine Residents that practice in our clinic; adding a deeper understanding on another factor diabetic patients may face.

**Methods:** Diabetic patients that were seen in our clinic between January 2019 and December 2019 will be broken into 2 groups: Copayment and No-Copayment. We will define control of Diabetes as HgbA1c of less than 7. Each population will be directly compared to each other with the primary measure to determine the percentage of patient's controlled in each group. A planned secondary measure, the number of times HgbA1c was measured, will also be analyzed. After data analysis has been done, a PowerPoint will be created with the findings and presented to the Family Medicine Residents and Staff during their curriculum time. Prior to the presentation, a small survey will be completed asking the attendees' perception of copayments and diabetic patients.

**Evaluation Plan:** 1) Accountability: Findings of our analysis will be compiled and presented regardless of relationship in our primary and secondary measures. 2) Reaction and Learning: A survey after the presentation will be completed by the Family Medicine Residents/Staff to assess their thoughts on the data presented and what they learned from the data and presentation of our diabetic patients in our Family Medicine clinic. 4) Behavior: The post-presentation survey will also ask attendees what they might do different when talking to and treating our diabetic patients.

**Potential Impact:** Clinicians may better understand how paying for healthcare may affect diabetic patients. Furthermore, the findings can be extrapolated to inform all clinicians, insurance companies, and politicians on how cost affects healthcare.

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### **Standardized Documentation Protocol Within Clinic of Gynecology Oncology**

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*LAC+USC Medical Center*

**Idea:** Standardized documentation protocol for patients in remission from gynecologic cancers in conjunction with a resident-led educational curriculum.

**Need/Rationale:** Resident physicians at LAC+USC participate in the clinic of Gynecology Oncology where one of the main tasks is to learn to perform thorough and complete “no evidence of disease” (NED) exams to assess recurrence status of cancer patients in remission. These exams are complex and entail several aspects of patient care, not limited to cancer surveillance, that can impact overall patient well-being. Assessment of medical problems such as radiation side effects, supplementation of cancer preventing vaccinations, and ensuring satisfactory sexual function and quality of life are only a few examples not directly related to cancer surveillance. It is of paramount importance that these exams be consistently documented to reflect the complexity of the visit, especially given that many patients have multiple complex medical issues and do not have other primary care providers. However, there is often variability between providers both in documentation and components included in the visit.

**Methods:** An initial chart review will take place to assess the completeness of resident documentation based on a standard of care check-list prior to the resident led education intervention. The reviewed notes will be assigned a weighted score based on the number of components of the history and physical exam that are addressed. After the resident education initiative takes place, a random sample of charts will again be assessed and evaluated for a weighted score and compared to the scores obtained prior to the intervention. Additionally, a survey will be administered to the residents before and after the presentation to assess subjective comfort, confidence, and ability/knowledge in performing these exams.

**Evaluation Plan:** The outcome assessed will be the difference between the pre and post-intervention objective documentation scores. The pre and post-intervention documentation scores will be compared using a Student T-test. The resident survey results will be analyzed using the Mann Whitney U test.

**Potential Impact:** This intervention will allow for a standardized surveillance exam with improved consistency of care between providers in the LAC+USC gynecology oncology clinic with increased attention to patient psychosocial needs. This protocol could also be generalized to other gynecology oncology clinics for further standardization of care.

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### **Utilization of Quick Response Codes to Improve Patient Health Literacy in Psychiatry Clinics**

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**Idea:** The utilization of smartphone-activation quick response (QR) codes in outpatient psychiatry clinics in order to improve patient health literacy.

**Need/Rationale:** A patient's level of health literacy is variable and it can be difficult to accurately remember and organize new medical information presented in an appointment or counseling session. (1) Often, paper handouts are common educational resources provided to patients in outpatient psychiatric clinics. However, most resources are in English, which may not be inclusive to all patient demographics. The utilization of QR codes can prove to be a nuanced method to improve patient health literacy. Research indicates that QR codes are generally well-received but are rarely utilized for patient education. (2) Inclusively providing psychiatric patient health educational content for non-English speakers and/or individuals with impaired vision can prove useful in attaining optimal patient health literacy and health outcomes.

**Methods:** Following QIRB approval, study standardized binders with laminated QR coded sheets dedicated to different psychiatric disease states (such as common child psychiatry disorders, adult psychiatry disorders, geriatric psychiatric disorders, and common neurological disorders) will be created and distributed to outpatient psychiatric clinics and their providers. This nuanced resource will be offered to patients during their appointments or therapy sessions. With any smartphone camera, patients will scan these QR codes and retrieve accurate and important health information on several disease states or diagnoses from provider approved resources and websites. Once scanned, the QR codes will open up to internet-based educational materials with the option of either English or Spanish, as well as, large-text options for visually-impaired individuals. Once retrieved, patients will have continued access to any information linked to previously scanned QR codes.

**Evaluation Plan:** Our goal is to improve outpatient psychiatric patient access to and utilization of health information by at least 20% in 6 months. This will be achieved by creating QR codes linked to internet-based educational materials for common psychiatric disease states that patients will be able to have continued access to from any location. Initially, pre-implementation surveys will be administered to current psychiatry providers regarding opinions on current patient access and utilization of educational materials. After 6 months, providers will be surveyed again regarding perceived improvements in patient access to educational information and the overall role of QR codes in the clinic. The pre- and post-implementation study-created survey data will be assessed in order to gather physician and patient feedback. Based on feedback from providers, changes will be implemented in the next cycle of implementation.

**Potential Impact:** This quality improvement project is particularly unique given its goal of increasing access for primarily Spanish-speaking patients and the visually impaired. Furthermore, such innovative and sustainable solutions may also serve to close the health literacy gap and increase patient agency in underserved populations.

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### **Adapting Youth Education Modules in the Age of COVID-19**

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Rescingo, Megan; Conner, Brandon; Weller, Kathrine; Bondi, Matt; McFarland, Amy  
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**Problem Statement:** Due to COVID-19 we aim to adapt a substance abuse module into an effective virtual learning experience for Northern Nevada high schools.

**Rationale:** A Healthier Nevada: Youth Education Modules is a medical student committee at the University of Nevada, Reno School of Medicine that creates and delivers presentations centered around current public health issues affecting Washoe County School District (WCSD). During the 2019-2020 school year we presented an Addiction and Substance Abuse Module to 682 high school students. One of the main goals of the presentation was to discuss the opioid epidemic and educate students on the use of NARCAN®. Prescription drug misuse continues to be a common issue in WCSD given that in 2019 17.6% of high school students reported taking prescription pain medication without a prescription (1). Since schools in WCSD have closed their doors to guest presenters, we aim to adapt our current module for online delivery to be presented in Fall 2020 and Spring 2021 semesters to uphold our commitment to our community. The efficacy of online vs in-person education will be compared to data collected in 2019-2020.

**Methods:** The Addiction and Substance Abuse module was developed after review of public health data collected from the Nevada CDC Youth Risk Behavior Survey (YRBS) assessment (1). This module adhered to the health education objectives outlined in the Nevada Revised Statutes with an additional focus in response to the opioid epidemic. Medical students directly taught in the classroom setting for 1-2 hours. Classes were encouraged to participate with question and answer sessions, interactive activities, and group discussion. Students who participated completed a pre- and post-test survey using the Likert scale scoring system. All materials were approved by the WCSD and the University of Nevada, Reno IRB. Adaptations to this module in the future will include the use of a virtual presentation of the same material with interactive tools such as polls, breakout rooms, anonymous questions, and emoticons for feedback. We will maintain the survey we administered last year, and add additional questions that measure student satisfaction with the online module.

**Results:** During the 2019-2020 school year the Addiction and Substance Abuse module was presented at three separate schools in Washoe County School District (WCSD), and 682 students completed a survey pertaining to the module goals. One of the main goals of this module was to teach students about NARCAN® use for opioid overdose. Prior to the module the average Likert scale response to “How would you rate your current awareness and understanding of Naloxone (“Narcan”)?” was a 2.35 (2 = “poor” and 3 = “average”). After the presentation, the average response was a 4.15 (4 = “good” and 5 = “great”). This resulted in an overall 75.6% increase in knowledge. Other survey questions saw a similar response. When asked “How would you rate your current awareness and understanding of the opioid epidemic currently facing the United States?” the response average went from a 3.02 to a 4.11, which was a 36.1% increase. We aim to maintain the efficacy of our Addiction and Substance Abuse module by adapting interactive aspects of our module for online delivery as outlined above. We will measure the efficacy of the module by presenting the same survey. We will also measure student satisfaction to access if online modules should be considered after the end of the COVID-19 pandemic.

**Potential Impact:** There are limited studies evaluating the efficacy of virtual adolescent education, particularly for health (2). This online module will strive to reach similar or greater efficacy than the in-person module taught prior. Ideally, the design of an online module will also enhance accessibility of the curriculum to other school districts.

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### **Stroll and Roll: A Need for Community Amongst Postpartum Women (Pilot Program)**

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**Idea:** Building community and maintaining interpersonal relationships in postpartum mothers, as a means to decrease social isolation, anxiety and depression.

**Need/Rationale:** In urban areas within the United States, research demonstrates that postpartum women are at a far higher risk for social and environmental isolation than those that live in more affluent regions. In part of this trend is the simple fact that postpartum support groups are not as widely accessible within these densely populated, urban areas. It is during this critical postpartum period in which a sense of community and connection to others is of the utmost importance, as changes and adjustments in social identity challenge the normalization of the motherhood experience (Sawers, 2018). During the postpartum timeline, postpartum visits are routinely guideline-based, and screening for anxiety and mental distress may vary due to the fear of stigma surrounding a difficult transition into motherhood. It has been shown that community support plays an instrumental role into wellness, building relationships and provides a platform for reciprocal learning (Bina, 2008). Given such, we plan to implement a postpartum pilot program, led by medical providers in the East Los Angeles region, providing collaborative discussion and group dynamic exercise, aimed at ameliorating the risks involved with the transition into motherhood.

**Methods:** The intervention will focus on postpartum mothers within our Family Care Specialist outpatient clinic, who have been identified and referred from their primary care providers. After a referral process, confirmation will be obtained and mothers will be directed to participate in weekly, scheduled appointments on-site at the Family Care Specialist clinic. The pilot program will include: 1) weekly didactic and support group meetings, aimed at peer-discussion and inter-collaboration with one another, as well as with a licensed clinical psychologist; 2) an informal outdoor group activity, incorporating a circuit-training “mommy and me” style program, focusing on cardiovascular health and whole-body conditioning, led by a lead resident physician, and incorporating the baby to enhance mother-baby bonding in the process. The groups will meet on a weekly basis for approximately two hours of total time. All mothers are encouraged to engage in discussion and reflect on any social, psychological, medical or personal circumstances, feelings, or ideas during both the weekly didactic meetings, as well as during the informal group dynamic exercise program. Currently, the goal is to implement this pilot program in our outpatient clinic, for our own patients, with hopes of expanding in the future via other avenues to reach a wider postpartum population within the greater Los Angeles region.

**Evaluation Plan:** 1) Accountability: We will track the integration of the Stroll and Roll pilot program in the Family Care Specialist clinic through close monitoring of our referral system from both the residency and attending clinics, attendance at weekly didactic and group therapy sessions, monitoring of serial data collection (i.e., surveys where available). 2) Reaction: Weekly meetings will review key points from the prior week, and continue to build on necessary topics; assessment will continue weekly over the course of a 12-month period in order to gauge initial perceptions, thoughts or topics of interest, and continue throughout the Stroll and Roll program. 3) Learning: paper questionnaires and surveys will assess the overall attitudes, perceptions, thought processes in order to help the medical staff directly engage in collaborative discussion; feedback and responses will also guide and direct the course of treatment and preparation throughout the 12-month period. 4) Behavior: group discussion and surveying will be monitored via in-person review sessions of questionnaires and surveys with the aid of clinical staff to direct areas of social, psychological, clinical or medical need.

**Potential Impact:** In an effort to minimize the social, environmental and psychological risks associated with isolation, anxiety and depression in our postpartum mothers, we must provide a platform that promotes wellness, enhances dialogue, and builds community; which can serve as a model for other programs seeking to support postpartum mothers in all urban areas.

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### **Integrating Drawing Into Patient Education Encounters**

Wood, Elena (1); D'Eon Marcel (1); Holland, Jessica (2); Ennis, Ali (3); Andrews, Bill (4); Brown, Shilpa (5)

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**Idea:** To integrate visuals into patient education encounter conducted by first year medical students.

**Need/Rationale:** Effective patient-physician communication is a key component of clinical encounters and in delivery of healthcare in general [1]. Unfortunately, poor relationship building between the patient and the physician can lead to low patient satisfaction [2] and poor outcomes. Using visual aids is a simple, yet effective, tool to improve patient-physician communication during patient education opportunities [3]. Most physicians and educators do not have expertise or training in drawing yet are often faced with attempting to visually communicate a concept within a short timeframe. Medical illustrators, who are specifically trained to translate complex scientific information into easily understood images, can teach drawing techniques to improve visual confidence and vocabulary. The need is to teach medical students to use drawing during a patient encounter to improve the patient's understanding of topics relevant to their health.

**Methods:** This proposed collaborative project is aimed at integrating patient education into the teaching of pre-clerkship medical students as part of their Patient Centered Learning course. The students will encounter a knee pain case through standardized patients with an integrated patient education component. Two-part workshop will include: A) patient education/teaching and learning, and B) approaches to drawing during a patient education encounter. Four steps in the patient education process are 1. A needs assessment to help determine patients' learning abilities, readiness to learn and health literacy leading to individualized teaching. 2. Prioritizing patient questions. 3. Implementing teaching to include shared agenda and matching teaching aids to patient needs. 4. Evaluation of patient education based on the "teach-back" method. In the second part, we will be teaching the following process when incorporating drawing into the patient education session: A) identifying the key aspects of a concept to communicate; B) recognizing the importance of context for a drawing; and C) applying drawing techniques for additional clarity. We propose using different media based on availability to the students (piece of paper, printed template with outline of relevant anatomical structures, or 3D model).

**Evaluation Plan:** We will collect data from both students and SPs after the SP encounter. The survey was adapted from our medical center outpatient version of the Customer Assessment of Healthcare Providers and Systems (CAHPS). All CAHPS surveys have been approved by the CAHPS Consortium, which is overseen by the Agency for Healthcare Research and Quality. Three questions related to use of visuals during the patient education encounter were added in the end of the study questionnaire. Three separate sessions will be run on consecutive days due to the large class size (near 200 students so about 60-65 students a day). We propose to have different interventions on each day. All students will receive the workshop, but they will receive different materials for practicing teaching their patients. On the first day, students will have a clean sheet of paper and a pen. Students on the second day will receive the printout template of knee anatomy and a pen, and then the students on the third day will receive the workshop and a 3D model and a marker. All sessions will be recorded and transcribed for the analysis. We will analyze and report on differences between groups using different visual aids.

**Potential Impact:** Students can become quickly frustrated with drawing as they feel their creations do not look "right" or that they cannot draw. With some guidance and practice, these barriers can be overcome, and students will be able to communicate successfully with a patient about complex topics using visuals which will lead to improved patient health outcomes.

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## Using Quality Improvement Methodology to Improve Intravenous Cannulation Skills in Medical Students

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**Problem Statement:** IV cannulation is a vital skill that many new junior doctors struggle with which has an impact on their efficiency and patient experience.

**Rationale:** IV cannulation is an important skill for the new doctor and is relevant to many specialities [1]. However, it often presents a significant challenge to several newly-qualified doctors and is an area in which many lack confidence. As a result, extra time is spent on multiple cannulation attempts, which presents a problem both in terms of patient experience and staff efficiency. We will take a quality improvement approach as this enables us to iterate small changes with frequent data collection and assessments of the situation. In this way, we hope to be able to generate a significant benefit to students by repeating the process of small changes with repeated assessments as long as is required. We believe this is a useful approach to take to improving cannulation specifically as it is a multi-factorial issue with both person-factors (e.g. confidence in seeking help with a difficult task) and system-factors (e.g. number of opportunities to practice with direct guidance).

**Methods:** This project will utilise a quality improvement methodology. We aim to improve cannulation competence and confidence in fourth year medical students during their surgical block. Our measurement will be done using a questionnaire that will be sent to students several times during and after their surgical block, and we will use the Plan, Do, Study, Act (PDSA) model of improvement to structure our approach toward achieving our aim.[2] Our planned test is the aforementioned questionnaire which covers the number of cannulation attempts undertaken by a student during a set time period, cannulation success rate, confidence levels, how these levels may have changed during the period and ideas for future improvement. We are currently gathering this data pre-intervention. We will then move onto the "Do" part of the PDSA cycle where we will implement our changes and gather further data. Following this we will move to the "Study" phase and assess our data and any improvement. After this is the "Act" part of the PDSA cycle where we will take action based on our results and our analysis in the "study" phase, deciding whether to adjust our interventions. Following this we will begin planning the next iteration of the cycle. Our changes will be informed by our initial data gathering but we have some ideas of what may be helpful to future students. They include: a video lesson, increased guidance during procedure practice and more hands-on experience.

**Results:** Preliminary pre-intervention data shows that during a two week portion of the student's surgical block, mean IV cannulation success rates increased by approximately 62% and confidence increased by approximately 63%. On average (median), students only attempted to place two IV cannulas each during the two week period and seven students out of the total of 26 did not attempt to place any IV cannulas. The main themes raised when students were asked what would help improve IV cannulation in the future were: more opportunities to practice, opportunities to watch a doctor place IV cannulas before attempting cannulation themselves, more supervision during practice and asking ward doctors to prioritise students when IV cannulas need placing. We will continue to collect pre-intervention data and will then periodically collect data during and after our intervention. We will use this information to ascertain what, if any, improvement has been made. Data will be collected using a questionnaire which will be sent out three times during each six week block. The number of individual participants, as well as the number of questionnaire responses, will be recorded and compared to the number of students completing each block to ascertain response rate. We will then draw conclusions based on the data and plan for future improvements. Student feedback regarding what would be helpful in better teaching cannulation will form part of planning interventions.

**Potential Impact:** Improved IV cannulation skills will lead to more efficient doctors and better patient experiences. Moreover, if successful, this project could exemplify the valuable role the quality improvement methodology has to play in medical education. This methodology can be applied to numerous other areas to drive improvement and create effective change.

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## Utilizing Olsen Growth Curves to Reduce Misclassified Newborns and Prevent Unnecessary Painful Pokes

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**Problem Statement:** The Olsen growth chart is superior at determining risk for hypoglycemia based on size for gestational age than the WHO chart.

**Rationale:** Neonatal hypoglycemia has potentially devastating neurologic consequences. Excessive testing/treatment of hypoglycemia is also not without risk. Using the Olsen growth chart instead of the WHO decreases the amount of hypoglycemia-related intervention. The Olsen chart was created using over 257,000 demographically diverse infants in 33 states. Male and female intrauterine growth curves were created (as opposed to previous growth curves which were unisex). Using the Olsen growth chart to classify infants as small for gestational age (SGA) or large for gestational age (LGA) safely decreases the number of children evaluated for hypoglycemia. The purpose of our study was to decrease misclassification of infants into LGA and SGA categories, and in doing so decrease the number who experienced unnecessary and painful procedures, potentially decreasing anxiety associated with hypoglycemia testing, increase mother and child bonding and breastfeeding rates, and also decrease healthcare costs.

**Methods:** Retrospective analysis from January 2017 to January 2020 at Riverside University Health System (RUHS) newborn nursery of all infants with a diagnosis of SGA, LGA, IDM and/or prematurity 35-36 weeks via the electronic medical record. Inclusion criteria include LGA, SGA, IDM, and/or prematurity 35-36 weeks. Exclusion criteria include diagnosed genetic condition, sepsis or transfer to the NICU for any reason outside of hypoglycemia.

**Results:** Through the utilization of the Olsen Growth curve we found that misclassification of the infants into SGA and LGA categories was reduced. It was also demonstrated that isolated SGA or LGA infants without a concomitant diagnosis of Infant of a diabetic mother (IDM) or Prematurity do not need to be evaluated for hypoglycemia if they do not have any additional comorbidities or clinical symptoms. Out of the total number of infants with abnormal glucose values 25.4% were LGA, 22% were IDM, 20.3% were SGA, 11.9% were premature, 6.8% were both LGA and IDM, 1.7% were both premature and SGA, and 11.9% had abnormal glucose values with unclear etiology. Through the implementation of the Olsen Growth curve, we did not have any children that were treated for hypoglycemia that would have been labeled LGA/SGA on the WHO growth chart. We also found that newborns with isolated SGA or LGA based on the Olsen chart (without any other risk factors for hypoglycemia) did not have hypoglycemia that required intervention. This includes no transfers to the NICU for hypoglycemia in patients with isolated SGA or LGA.

**Potential Impact:** Use of the Olsen chart resulted in the reduction of infants undergoing unnecessary pokes without an increase in missed hypoglycemia. We found that infants with isolated SGA and LGA don't need any glucose checks. Our work adds to the growing body of research aimed at avoiding overtreatment and over testing for hypoglycemia in neonates.

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## **Increasing Adherence to Oseltamivir Prescribing Recommendations in a Pediatric Emergency Department**

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**Problem Statement:** The effectiveness of oseltamivir in treating influenza is controversial, while the clinical side effects and financial burden can be significant.

**Rationale:** During the influenza season, providers in the ED often prescribe oseltamivir when influenza is suspected to any degree, frequently without a positive confirmatory influenza test (tests are usually costly and slow, resulting in delayed throughput). However, it is difficult to label this practice as evidence-based, given that studies on oseltamivir's impact on influenza symptoms and complications have been ambiguous and controversial. Two of the largest studies to date have shown only a modest decrease in symptom duration (by 17 and 29 hours) and no impact in terms of complications or hospitalization rates, other than a decreased rate of otitis media (1,2). In light of this questionable clinical significance of oseltamivir's impact in the outpatient setting, combined with the possibility of significant negative impacts of adverse clinical side effects and financial burden, this project sought to improve adherence to the CDC/AAP guidelines for oseltamivir prescriptions (3,4).

**Methods:** This QI project utilized two interventions during the 2019-2020 study period including educational sessions for target provider groups and an EMR pop-up. Educational sessions for providers included discussion of this project's purpose, the literature on oseltamivir, and the current CDC/AAP guidelines; a questionnaire on current knowledge of prescribing guidelines and personal prescribing habits was administered prior to the session. Also, a pop-up was integrated into the EMR utilized in the ED, set to trigger when prescribing oseltamivir, requiring providers to select the prescribing recommendation criteria or provide additional reasoning. All 2018-2019 data were collected via retrospective chart review; data from 2020 were collected prospectively. Numbers of oseltamivir prescriptions were determined by querying all prescriptions written for patients being discharged from the CHLA ED between January and March of 2018, 2019 and 2020. Diagnosis data were collected by querying all primary ICD diagnosis codes for patients seen in the CHLA ED during the same period. The influenza-related diagnoses (ICD-10 code based) included for analysis of patients that might be expected to qualify for oseltamivir prescriptions were determined by consensus opinion amongst the authors. The data were analyzed using R version 4.0.2 (Taking Off Again). For the manual chart review, encounters were selected by block randomization, with equal distribution across weeks and providers.

**Results:** Total number of ED encounters was consistent year-to-year (2018: 3174; 2019: 2924; 2020: 2886); however, March 2020 demonstrated a significant decrease in total ED encounters (including those with influenza-associated diagnoses). While the total number of oseltamivir prescriptions decreased by 12.3% in Jan-March 2020 compared with the same time period in 2019 and 2018, there was only a slight reduction in the percentage of encounters with an influenza-associated diagnosis where oseltamivir was prescribed (18.1% in 2018-19 vs 16.7% in 2020). Data from the EMR pop-up demonstrated that the most commonly selected criteria for oseltamivir prescribing was symptoms being present for less than 48 hrs: (54.6%), followed by age less than 2 years old (29.7%) and history of severe, complicated and/or progressive disease (14.8%). Only 1 of 446 pop-up responses did not select any criteria for oseltamivir prescribing. On chart review of a randomly generated list of encounters with influenza-associated diagnosis, there was a decrease in percentage of encounters where oseltamivir was prescribed without meeting criteria (2019: 13.4% vs 2020: 3.8%). During March 2020, at the onset of the Covid-19 pandemic, there was not only a dramatic decrease in overall ED encounters and encounters with influenza-associated diagnosis, but oseltamivir was prescribed for only 8.0% of encounters with influenza-associated diagnosis, down from 17.7% during February 2020.

**Potential Impact:** This project highlights that educational or technological interventions can increase adherence to treatment recommendations, allowing for higher quality patient care. However, the changes in prescribing rates correlated with the pandemic onset may indicate that the prescribing environment has the largest impact on provider prescribing habits.

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## **Lack of Psychological Safety and Camaraderie Could Be Critical Factors for Decreased Sense of Joy**

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**Problem Statement:** Burnout and lack of joy at work among medical residents can contribute to decreased individual engagement and compromise patient safety.

**Rationale:** Burnout and lack of joy at work among medical residents can contribute to decreased individual engagement, satisfaction, as well as decreased quality of care and increased rates of medical errors. There is a new trend towards viewing burnout as a systemic rather than an individual issue. The Institute of Healthcare Improvement (IHI) has recently studied determinants of 'joy at work' rather than burn out. We utilized the framework presented by the IHI to assess the potential causes of burn out from the perspective of joy at work in Internal Medicine residents.

**Methods:** We surveyed the residents of an Internal Medicine Residency program at a community-based hospital in 2019 using a questionnaire to study the association between 9 categories of Joy reported by IHI white-paper [1] with criteria for burnout in our residency program. The 9 categories of Joy are real-time measurement, wellness and resilience, daily improvement, camaraderie and teamwork, participative management, recognition and rewards, choice and autonomy, meaning and purpose, and physical and psychological safety. We developed 17 questionnaire items that are related to each of the 9 categories of joy in order to gauge which category affected burn out the most. The prevalence of burnout in our residents was measured by which residents said 'yes' to having any of the three criteria of burn out [2]. The three criteria of burnout in our study are Maslach's three dimensions of burnout: reduced accomplishment, depersonalization, and emotional exhaustion.

**Results:** This residency program consists of 24 categorical and 3 preliminary residents. Twenty-one out of the 24 categorical residents responded to this survey. Ten residents out of 21 (48%) responded yes to at least one of the three criteria for being burnt out. Seven out of nine residents (77%) who were uncomfortable with voicing concerns to supervisors answered 'yes' to one of the burnout criteria questions ( $P=0.01$ ). Five out of six (83%) who did not feel that they are treated with respect were also more potentially burnout ( $P=0.04$ ). Six out of seven (85%) who did not feel that they have colleague support at work were more potentially burntout ( $P=0.01$ ).

**Potential Impact:** This study examines potential factors leading to decreased physician joy at work. We showed that in our resident cohort lack of psychological safety, represented by the freedom to voice concerns and being treated with respect, and camaraderie, represented by having colleague support, were associated with a higher chance of burnout.

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### **Medical Student Didactics in the Era of COVID-19: Adapting and Overcoming**

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**Idea:** Creating a virtual, resident-led, medical student EM curriculum with a focus on resident development in response to COVID-19.

**Need/Rationale:** In addressing the role of EM in the future of the US health model, the Macy Foundation Report in 1994 stated: “every medical student must acquire the appropriate knowledge and skills to care for emergency patients” [1]. The emergence of COVID-19 however has severely disrupted medical education efforts and required an extraordinary need to innovate from educators. The need to adequately prepare students in EM has never been more important as it is currently in the wake of a global pandemic. The Denver Health residency in EM has held a long record of providing outstanding student didactics. However, in order to overcome the limitations of social distancing a novel and comprehensive EM experience needed to be designed. We achieved this through frequent, engaging, and resident-led online sessions. For improved effectiveness, we implemented a “resident-as-teacher” framework. As ‘near-to-peer’ teachers, residents are well tuned-in to the educational needs and deficits of students [2]. Additionally, resident teachers have greater job satisfaction, enthusiasm for teaching, and improved wellness. Importantly, resident teaching opportunities improve resident communication skills, which in turn is associated with improved patient outcomes [3].

**Methods:** The initial cohort of virtual students included 21 fourth-year EM bound medical students. Students were invited to participate in the resident-led didactic program while on their EM sub-internships. During two 4-week blocks, there were 10 didactic lectures, 5 lectures per day, lasting 45 minutes each. Prior to the first session, the clerkship director hosted an orientation for EM resident lecturers. During the orientation, the clerkship director suggested various presentation formats, gave a sample virtual lecture and referenced data from evaluations from past sessions. Virtual lecturers chose from the following 10 core topics in emergency medicine: Abdominal Pain; Altered Mental Status; Cardiac Arrest; Chest Pain; OBGYN; Shock; Shortness of Breath; Thinking EM; Toxicology; Trauma. Creativity in lecture development was encouraged. A case bank was made available to resident volunteers for use in lecture development. While all on Zoom, presentation formats ranged from PowerPoint to screen-sharing individual ECGs or radiography studies pertaining to the hypothetical cases. Some lectures took the same format as EM oral boards; students were encouraged to ask for the patient’s history, vitals, and physical examination. Student participation with independent interpretation was encouraged. The above methods were applied as a pilot; in the future, we plan to expand the curriculum to all rotating medical students, up to 16 students per block for 7 blocks.

**Evaluation Plan:** An online evaluation was disseminated to the virtual didactic students following each of the ten lectures per block. Students were asked to anonymously rate, using a 1-5 Likert scale, the resident’s knowledge of the chosen topic, relevance/applicability of the content and lecture delivery. There were also two free-text boxes for students to comment on what went well during the sessions and ways to improve. The evaluation in its current form limits our ability to gauge the students’ confidence and clinical competence. We will implement a new evaluation process for students for future cohorts that assesses both confidence and knowledge in the ten chosen clinical concepts in a pre and post-assessment. We will then explore the future potential impact of the virtual curriculum on the resident lecturers. Also using pre and post-evaluation forms, we will assess their confidence with educating on a virtual platform, their confidence in the clinical subject matter they have prepared, and their enthusiasm to participate in the program in the future.

**Potential Impact:** During these uncertain times the wide-spread adoption of virtual teaching will certainly give rise to a ‘new-normal’ in education. At the Denver Health residency in EM we look forward to the future and building upon a curriculum which advances the foundational knowledge and skills of our students and supports the development of our residents.

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## **Defeating Unconscious Bias: The Role of a Structured, Reflective, and Interactive Workshop**

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**Problem Statement:** Unconscious or Implicit Bias are universal and have adverse consequences on the workplace, healthcare and the learning environment.

**Rationale:** Implicit bias may contribute to health care disparities by influencing physician behavior resulting in differences in medical treatment along the lines of race, ethnicity, gender or other characteristics. Unconscious bias also adversely affects faculty recruitment and promotion and correlates with the persistent underrepresentation of African Americans and other minorities in medicine (UIM) which further exacerbates racial health care disparities. Unconscious bias has been shown to be malleable and correctable with training. Consequently, strategies to combat unconscious bias are needed in medical education. The objective of this study was to determine if an educational workshop on unconscious bias can increase awareness, perceptions, and knowledge regarding unconscious bias.

**Methods:** From April 2019-June 2020, 90-minute educational workshops attended by students, residents and faculty; included 1) pre-intervention surveys; 2) interactive unconscious bias presentation; 3) were shown images of 5 individuals and recorded first impressions regarding trustworthiness and likely profession; 4) video using vignettes to demonstrate the impact of unconscious bias in the workplace including strategies to counter unconscious biases; 5) reflective group discussions and 6) post-intervention surveys. Statistical analysis was performed as indicated. IRB approval was obtained.

**Results:** The surveys were completed by 103 participants which showed significant increases from the pre to the post-intervention assessments for perception scores ( 28.87 [SEM= 0.585] versus 32.73 [0.576],  $p < 0.001$ ) and knowledge scores (5.68 [0.191] versus 7.22 [0.157],  $p < 0.001$ ). For a white male physician community advocate covered in tattoos; only 2% correctly identified him as a physician, and 60% felt he was untrustworthy. For a smiling African American woman astronaut, only 13% correctly identified her as an astronaut. Of a brooding white male serial killer, 50% found him trustworthy.

**Potential Impact:** An interactive unconscious bias workshop can increase awareness, perceptions, and knowledge in the immediate short term as an initial step in developing an inclusive learning environment. The findings also confirmed inaccurate first impression stereotypical assumptions based on ethnicity; outward appearances, couture, and media influences.

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## Processes to Increase Resident and Faculty Diversity at the UC Irvine School of Medicine

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**Problem Statement:** Recruitment and retention of physicians representing diverse backgrounds is an important strategy for the reduction of health care disparities.

**Rationale:** The ACGME states: “The program, in partnership with its Sponsoring Institution, must engage in practices that focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce of residents, fellows, faculty members, senior administrative staff members, and other relevant members of its academic community.” Recruiting/retaining physicians of diverse backgrounds is an important strategy to reduce health care disparities. Having a workforce with knowledge, attitudes and beliefs which reflect our patients’ backgrounds will enable physicians to respond and deliver care more effectively. Data also shows that underrepresented minority physicians are more likely to practice primary care and work in underserved communities, further decreasing health care disparities by improving the access and quality of care. Other benefits include improved learning experiences and research due to exposure to diverse perspectives and improved cultural proficiency.

**Methods:** In May 2019, the UC Irvine School of Medicine hosted its first annual “Residency Open House,” inviting 3rd-year medical students from AOA- and LCME-accredited institutions. Participants included the Dean, Associate Vice Chancellor of Diversity and Inclusion, Associate Dean for Graduate Medical Education, Residency Program Directors and residents. The full-day in-person event included presentations by school leaders, a tour of the facilities, mock interviews, and two-panel discussions with the program directors and residents. Travel stipends were rewarded to selected applicants. In July 2019, the UC Irvine Resident and Fellow Scholars Academy was established to increase UCI School of Medicine faculty diversity through the retention of underrepresented residents and fellows post-graduation. The academy includes a mentorship program (2 mentors:1 mentee ratio), career guidance, activities to promote a sense of community, small group training sessions and stipends to support quality improvement projects focused on health care disparities.

**Results:** 2019 Residency Open House: In May 2019, 61 3rd-year medical students attended our in-person conference, representing 30 medical schools (60% female, 38% male, 2% non-binary; 25% Asian, 21% Latinx, 18% Black or African-American, 2% American Indian, 2% Native Hawaiian or Pacific Islander). 100% strongly agreed with the statement: “This event has positively affected my interest in applying for residency at UC Irvine.” 85% applied to UC Irvine residency program, 45% were interviewed by a UCI residency program and 5% matched to a UCI residency program. 2020 Residency Open House: In August 2020, we held our 2nd virtual residency open house, reaching a larger audience with 166 4th-year medical students, representing 92 medical schools (69% female, 31% male; 29% Asian, 25% Black or African-American, 23% Latinx, 6% Southwest Asian/North African). 94% strongly agreed with the statement: “This event has positively affected my interest in applying for residency at UC Irvine.” Interview and match results are pending. Residents and Fellows Scholars Academy: 19 trainees participated in 2019-2020. Of the 7 of the trainees who graduated in June 2020 and participated in this program during its inaugural year: 2 were hired as faculty and 1 is staying for a non-ACGME fellowship. 20 trainees will be participating in 2020-2021.

**Potential Impact:** The UCI Residency Open House effectively led to candidates’ sustained or increased interest in UCI and application to UCI residency programs. The UCI Resident and Fellow Scholars Academy successfully retained resident and fellow graduates from diverse backgrounds as UCI faculty.

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## Impact of the Age Friendly Student Senior Connection on Medical Students Geriatric Care Competency

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**Idea:** Developing geriatric care competency and professional skills in medical students participating in a friendly caller program with older adults.

**Need/Rationale:** Recent estimates from the U.S. Census Bureau in 2020 demonstrate that the nation has continued to age, with the 65-and-older population rising by over a third during the past decade. This rapid increase in the older adult population necessitates an increase in health professionals who carry a well-rounded understanding of the multifaceted social and medical challenges that accompany aging. However, recent surveys indicate that medical student attitudes toward older adults, an important predictor of the quality of care and likelihood that students enter geriatrics, decline throughout medical school. Additionally, factors contributing to medical students' lack of geriatric training interests included: chronicity and complexity of disease, fears that patients were non-adherent, and lack of clinical exposure to the field and population. With this in mind, our medical school developed a friendly caller program that linked medical students to older adults through weekly phone calls. This program served as a rare opportunity to examine the role of pre-clinical geriatric educational experience for first-year medical students to increase their professional development and geriatric care exposure and competency.

**Methods:** Participants include first-year medical students who enrolled in the Age-Friendly Student Senior Connection (AFSSC). Students were recruited using an interest form that was emailed to the class listserv. Upon registering for the program, students were required to watch a geriatric training video and complete a pre-survey. This survey included a series of questions surveying student's level of comfort, knowledge, and expertise in working with adults ages 65 years and older, as well as the likelihood they anticipated working with this population in their future career. They were subsequently paired with an older adult aged 65 or older and engaged in weekly phone calls over the course of 6 weeks. Students were instructed to call for approximately 30 minutes, 3-4 times a week, and adjustments were made on an individual basis to best accommodate their older adults' schedules. Students also participated in weekly debrief sessions composed of 5-6 other students, led by a randomly assigned interprofessional health faculty member. Faculty members helped facilitate discussions about students' encounters and provide support and resources for any emergent situations. Students were also provided a resource page with educational resources to provide their seniors, as well as a list of on-call faculty should any emergent concerns arise. After completion of the 6-week program, students were guided on how to bring closure to the relationship and completed a post-survey.

**Evaluation Plan:** Accountability: Students' attendance to weekly debrief sessions with faculty members and interactions with their seniors will be monitored to ensure students are meeting program requirements. Reaction: Students' reflections will be documented by faculty members during debrief sessions, and further recorded in the required pre and post-survey interventions. Learning: Overall changes in students' attitudes, as well as professional and geriatric care competency skills, will be assessed through a mixed-methods design. Comparison of the pre and post-survey data will provide both quantitative and qualitative data. Thematic analysis of notes from weekly debrief sessions will provide further qualitative data. In particular, for the qualitative data, a deductive approach will be utilized to explore themes related to levels of professional skills and geriatric care competency. Behavior: Medical students', whose clinical activities were placed on hold due to COVID-19, were paired with older adults and engaged in weekly, longitudinal conversations.

**Potential Impact:** It is critical for medical students to develop geriatric care competency skills necessary to better address the psychosocial and medical needs of the aging U.S. population. The AFFSC program provides a novel model for other institutions hoping to provide their medical students with core competency geriatric skills through service-learning.

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### **Increasing Accessibility of Medical Education Opportunities on a Regional Level**

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*University of Pittsburgh School of Medicine*

**Idea:** We founded a student-led initiative to provide free, volunteer-based services for underprivileged and underrepresented medical school applicants.

**Need/Rationale:** Applying to medical school is a long and convoluted process. Some applicants choose to utilize expensive third-party application consulting services to obtain one-on-one advice from professionals. However, this practice exacerbates the financial inequities between those who can afford these services and those who are already struggling with the costs incurred from the MCAT, applications, and more (Youngclaus and Roskovensky, 2018). We believe that the medical school admissions process should be based on applicants' merits, character, and passion for medicine, not on their monetary wealth or pre-existing connections. "Giving a Boost" was founded by students in February 2020 at the University of Pittsburgh School of Medicine to address this issue by providing free application consulting services to medical school applicants in Pittsburgh and the surrounding region with a focus on supporting those from socioeconomically disadvantaged backgrounds or underrepresented minorities.

**Methods:** Medical student volunteers for "Giving a Boost" were recruited from all classes at Pitt Med starting in April 2020. Several outlets, such as email and social media, were used to recruit medical students. Applicants from 9 universities in the greater Pittsburgh area were contacted via pre-med offices, department advisors, masters programs, pre-health student organizations, and social media. Applicants were also informed through a partnership with the Minority Association of Pre-Medical Students programs from Pennsylvania, Delaware, and West Virginia. A total of 65 student volunteers were recruited to support 97 applicants for our summer essay program. Background information was gathered from each volunteer and applicant on their academic interests, extracurriculars, research involvement, and unique life circumstances. Our aim was to create pairings of similar backgrounds such that the medical student could provide support through shared experiences (e.g. reapplicants, nontraditional, under-represented, MD/PhD). Throughout the summer, volunteers were asked to document and inform us of their work to ensure that they provided prompt feedback on each essay. Minor incidents (e.g. lack of response, time commitment issues) were handled on a case-by-case basis. After the summer, we asked applicants to rate their experiences. We have also expanded our efforts this fall to support more applicants and to offer mock interviews in preparation of upcoming medical school interviews.

**Evaluation Plan:** At the end of the 2020 summer, all applicants were surveyed about their experience with the program. They were asked to rate the usefulness of "Giving a Boost" and other resources, such as pre-health advising programs, undergraduate student organizations, friends, and faculty members, on a scale of 1 to 10. Across 72 responses, the average rating applicants gave "Giving a Boost" was an 8.68, compared to pre-health advising programs, undergraduate student organizations, faculty members, and friends with ratings of 4.11, 5.25, 6.00, and 7.60, respectively. Our rating was significantly ( $p < .01$ ) higher than all other categories surveyed. This demonstrates the beneficial impact of our program and highlights the need for such a program to exist at other medical schools to support underprivileged medical school applicants. To further demonstrate the effectiveness of our program, we will be sending out an additional survey at the end of the 2020-2021 application cycle to gauge applicant medical school acceptance rates and their specific accepted schools. The aim is to show a higher acceptance rate compared to the national average of approximately 41% (AAMC, 2019); we will further stratify this data with medical school rankings to show whether our applicants are also accepted into schools with lower acceptance rates.

**Potential Impact:** For students who do not have the financial means to utilize an application service or for those who are the first family member to pursue a medical education, this program helps to reduce disparities based solely on socioeconomic status or familiarity with the process. In this way, diversity and inclusivity in the medical field are enhanced.

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**Sample Hope: Social Determinants and Opioid Use Disorder Course for Medical Students**

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**Problem Statement:** This study assesses the impact of a novel course on medical student knowledge in identifying opioid use disorder and social determinants of health.

**Rationale:** The US healthcare system has struggled to address the rising opioid epidemic. A 5-fold increase in heroin-related deaths was seen from 2010-2016 with an increase of 20% from 2015-2016 alone. Education of medical students about opioid use disorder (OUD) is imperative given 80% of heroin users stated their addiction began with the use of prescription opioids and OUD affects patients in all fields of medicine. Greater emphasis has been placed on incorporating ethics, safe prescribing practices of opioids, harm reduction techniques, and pain management into medical school. However, there are few curricula designed to address social determinants of health and their impact on patient outcomes in OUD. A novel elective course was developed for second-year medical students at a Midwestern tertiary care academic medical center. The curriculum focused on real-world identification of OUD and how social determinants of health influence management and outcomes of these individuals.

**Methods:** The course was administered over two half days (4 hours/day) as an elective for second-year medical students. The first day consisted of multidisciplinary guest speaker presentations followed by additional didactics on the second day and student teach-backs. Initial day instruction highlighted real-world identification of opioid use disorder and described how social determinants of health influenced management of these patients. During the teach-back sessions, students selected articles to emphasize the importance of understanding how opioid use disorder may be encountered across a wide array of medical specialties. To characterize the impact of the course for learners, a pre-course and post-course survey was developed and administered. The survey was designed to evaluate students' knowledge and self-reported competency (1=novice; 5=expert) related to OUD and social determinants of health. Institutional Review Board approval was obtained to conduct the study and secondary analysis of the data was performed. A series of paired samples t-tests were conducted to assess differences in student knowledge and self-reported competency before and after the course. Students also provided written feedback about the course content and instruction techniques.

**Results:** A total of 56 students enrolled and successfully completed the two-day elective course in 2019 and 2020 with 30 students completing the course in 2019 and 26 students enrolled in the course for 2020. In 2019, students demonstrated a statistically significant improvement in knowledge from pre- to post-course with regards to both cumulative (pre-course: 69%, post-course: 85%,  $t(21)=5.434$ ,  $p<.05$ ) and OUD based knowledge (pre-course: 65%, post-course: 86%,  $t(21)=6.385$ ,  $p<.05$ ). Students also displayed a statistically significant improvement in their social determinants of health competency following the course (pre-course: 2.95, post-course 3.44,  $t(20)=4.489$ ,  $p<.05$ ). Subjective written responses from students were collectively positive, and the content was well received. Data for the 2020 elective offerings was collected in late September and early October with analysis pending.

**Potential Impact:** Early exposure to curricula addressing opioid use disorder and social determinants of health empowers students to identify and address the clinical needs of patients with substance use disorders and fosters an understanding of the inherent psychosocial challenges these patients face.

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## **Development of a Gender-Affirming Hormone Therapy Clinic Within a Family Medicine Residency Program**

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**Idea:** Create a gender-affirming hormone therapy clinic for transgender patients within a family medicine residency as a part of standard training curriculum.

**Rationale:** The LGBT+ community of people is underserved, especially in healthcare. Trans and gender non-conforming people in particular are at increased risk of lifetime violent treatment, risky sexual behavior, suicide, and substance abuse (ref 1). Sadly, many transgender people experience further victimization through medical care, or the refusal thereof. Due to negative past experiences, patients may be unwilling to seek care altogether. Proper gender-affirming, inclusive medical care can greatly improve quality of life for these patients, and has a notably positive impact on mental health (ref 2.). Therefore we believe LGBT+ inclusive medicine should be incorporated throughout medical education, with a strong emphasis within primary care settings. Ideally all family medicine providers should have access to training to become competent in the principles and practice of the basic treatment of gender dysphoria to properly serve our communities (ref 3). Initiating and monitoring GAHT is well within our scope of practice and makes a huge difference in the lives of transgender patients.

**Methods:** In creating our family medicine residency program's LGBT medicine curriculum, we have developed a weekly gender-affirming hormone therapy (GAHT) clinic in which all residents rotate through. The main goals of this rotation are for residents to: 1. learn proper terminology and interview questions which are sensitive to the diverse identities and needs of patients in a GAHT clinic; 2. learn the basics of the proper initiation, titration and maintenance of gender-affirming hormone therapy, and 3. gain exposure to the process of referring patients who desire gender-affirming surgeries. In this clinic, we learn how to provide culturally-sensitive care to transgender patients. Residents care for patients who identify as male-to-female, female-to-male, and non-binary or otherwise gender non-conforming identities who desire gender-affirming medical care. We see patients in any and all points of the transition process. Our GAHT clinic acts also as a bridge to connect our transgender patients to a safe patient-centered medical home that can address their other primary care and preventative health needs under one roof. Areas of future growth: -Expanding list of providers for gender-affirming surgeries and establishing rotations to provide direct exposure to gender-affirming surgical care -Locating providers specialized in providing fertility treatment for transgender patients -Incorporate gender affirming care for transgender youth and offering puberty-blocking treatment

**Evaluation Plan:** The data we are collecting to evaluate the effectiveness of this project will come from patients and residents. Data collected from clinic patients includes race/ethnicity, age, gender identity, prior experiences seeking care, knowledge of GAHT, feelings regarding the medical system, presence of co-morbid health issues, and satisfaction with care provided at our clinic. We also survey established patients after each visit regarding their care satisfaction and feedback regarding improvements, for the clinic itself and/or the resident physician who cared for them. So far, the narrative feedback from patients is largely supportive, and we have been seeing an increase in weekly clinic attendance. We anticipate that through positive word-of-mouth and continued partnerships with community organizations, this growth will continue. The surveys from residents who rotate through the GAHT clinic are in the early stages of collection. We anticipate residents will see an objective increase in their knowledge, comfort, and interest in transgender care. Our hope is that through integrating GAHT training within our residency program curriculum, our graduates will be more likely to continue to provide this type of care in their future practice.

**Potential Impact:** We hope that our project will help other educators to understand the value and benefits of integrating GAHT services into a primary care residency program. Attendees should be able to adapt strategies to develop a GAHT clinic at the their home institution or integrate transgender care within their residency program's curriculum.

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### **Assessing Medical Student Pre-Clinical Coursework Imagery for Fitzpatrick Type Representation**

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**Idea:** Assessing pre-clinical educational imagery to ensure representation of diverse skin types to improve diagnostic acuity and quality of patient care.

**Need/Rationale:** The underrepresentation of skin of color (SoC) in dermatology and the greater field of medical education is not of novel realization. For decades, it has been known that skin of color is severely lacking in medical literature. In fact, clinical images depicting SoC, defined as Fitzpatrick types III-VI, encompass 4.5 to 25% of the clinical images displayed in major dermatology and other influential medical textbooks, including the predominant USMLE licensing exam preparatory materials (Jones, Adelekun). Thus, medical students must turn to other resources to receive this necessary education. As pre-clinical lectures are the root of early medical education, we should analyze the use of clinical images during these formative years to ensure proper representation of diverse skin types, especially SoC. Implicit biases unbeknownst to the educators themselves may be negatively impacting the representation of SoC, thus evaluating clinical imagery can provide a quantifiable assessment for the cumulative representation of SoC. As we vow to, "do no harm," we must critically evaluate our shortcomings to protect our patients from racial biases and provide diagnostic accuracy to prevent further suffering.

**Methods:** This study will involve collecting medical imagery used in the pre-clinical medical student curriculum. Images will be extracted from provided lecture materials and compiled at random. The images will then be sent to board-certified dermatologists who will qualitatively classify the images based on Fitzpatrick type, I-VI. The totals of each Fitzpatrick type will then be accumulated and assessed for frequency. Light skin includes types I-III, and SoC will be defined as types IV-VI. Additional points of evaluation may expand to include classification of disease, such as venereal vs non-venereal, as it is known that skin of color is disproportionately used to demonstrate sexually transmitted disease (Adelekun). Upon completion, reports will be compiled for each institution, demonstrating their competency in representing diverse skin types. The impact on medical education and consequently patient outcomes, especially for patients with SoC, will be exponentially increased if this intrinsic review can be conducted on a multi-center level.

**Evaluation Plan:** As a multi-center study and reflection, this review will have a significantly larger impact than as a singular center's report. Each report will include information on the percent of each Fitzpatrick type represented by clinical imagery. Additionally, if able to provide an accurate diagnosis of each condition, this project can expand to determine what Fitzpatrick types are used in pre-clinical education to represent each disease type. This can be even more broadly defined to demonstrate what categories of disease, such as infectious, sexually transmitted, autoimmune, or urticarial, lack diverse representation in this educational setting. Ultimately, upon receipt of the final compilation, it will be up to each institution to encourage faculty to assess potential inherent biases in selecting clinical imagery so to represent all Fitzpatrick types, especially SoC, in their pre-clinical education.

**Potential Impact:** This goal of this study is to influence medical educators to assess inherent biases in including skin of color in medical imagery. Better representation of diverse skin types will ensure a comprehensive medical education and positively impact patient care via diagnostic accuracy and cultural competency.

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### Community Medicine in the Time of COVID-19

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*Affiliations: San Jose Family Medicine Residency Fellowship*

**Idea:** To enhance residents' knowledge of health disparities for different groups using the current events related to the Coronavirus Pandemic.

**Need/Rationale:** At Kaiser Permanente San Jose, we were told mid-March that we will be cancelling all in-person appointments and moving to virtual appointments. We had no idea how long this "virtual" care would last. Soon there was a shelter-in-place ordinance and at that time we asked ourselves, "how would we teach community medicine if we can't be in the community safely"? Then we had an "ah ha" moment: COVID-19 was exposing the massive health disparities we have here in the United States. The Johns Hopkins University and American Community Survey indicated that the death rate for counties that are a majority black is 6 times higher than predominantly white [1]. Undocumented immigrants were being excluded from federal aid packages and although they could receive free COVID-19 test through The Family First Coronavirus Response Act passed in March, if they were positive and were hospitalized, they would be responsible for the bill as many are uninsured [2]. We decided by looking at our county, our state, our country and even beyond, we could teach about health disparities which per the ACGME is an important component of healthcare quality and hopefully increase competency and inspire our residents during the pandemic.

**Methods:** This intervention will focus on 18 family medicine residents in our program over the next three years. The intervention will include: 1.) Modify our current small group sessions- topics included Undocumented immigrants, Black/African Americans, Domestic Violence Victims, and the Homeless. 2.) Identify a total of 12 topics, research articles, and videos pertaining to the topics. 3.) Develop learning objectives for each session. 4.) Develop pre-and post-surveys for each session. 5.) Take assigned homework from each section and compile as a reference (Community Medicine Knowledge Bank) for residents to review during community medicine clinic or at any other time.

**Evaluation Plan:** We have had great informal feedback from residents about the small group sessions, but it will be important to develop a formal survey and evaluate knowledge and how it has changed their practice. It is difficult to measure if there is a change in "residency culture", but possible methods might be monitoring how many times residents have referred to the Community Medicine Knowledge Bank. We can also have face-to-face check-ins during community clinic to see if residents had changed how they provided care in the clinic. After 6 months of the sessions, we could schedule an in-depth focus group with all of the residents together to discuss what changes they made to their practice or if they have become more involved in community projects.

**Potential Impact:** In any health care system, it is difficult for residents to have exposure to several types of health disparities. Using the pandemic, we can highlight groups that residents may not interact with at this time but will see when they have graduated and are in their own practice.

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### **Increasing Diversity in Cardiology: A Fellowship Director's Perspective**

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**Idea:** Surveying cardiology program directors to assess how diversity is promoted in their cardiology programs and if they actively recruit URM physicians.

**Need/Rationale:** Under-represented minority (URM) physicians, specifically African American, Asian (Filipino, Hmong, Vietnamese), Native American, Hispanic, and/or Pacific Islander, constitute only about 10% of practicing cardiologists. With the growth of many minority populations across the country, diversity in cardiology is increasingly necessary to ensure that the diverse needs of patients are met in an ever-evolving environment. Although cardiology programs may face challenges recruiting under-represented minority applicants, concerted efforts to increase diversity may increase the likelihood of graduating minority cardiologists. However, there remains uncertainty regarding how best to recruit under-represented minorities and incentivize minority applicants to apply for cardiology fellowship training. The goal of this survey is to ask current cardiology fellowship program directors regarding their views of diversity and recruitment of URMs.

**Methods:** A questionnaire was developed containing items that assess program characteristics, importance of diversity, under-represented minority presence, methods to increase diversity, and responsibility to increase diversity among accredited cardiology fellowship programs in the United States. Cardiology programs were grouped based on region, category (community, university, or hybrid), location (rural, suburban, urban), number of years of fellowship, number of fellow positions, percentage of URM (matriculated this year and across each year). Within the survey, the methods that program directors believe to increase diversity within cardiology programs and the methods currently employed to increase URM presence are highly emphasized by asking program directors to assess whether outreach to URM residents is employed, if fellowship application review of URM applicants is altered, if URM physicians and fellows are connected via a mentoring program to promote diversity if URM physicians conduct fellowship program interviews, and whether active measures are put into place in order to increase program diversity. A list of cardiology program directors was abstracted from the FREIDA AMA Residency & Fellowship Database. IRB study approval has been received through USC iSTAR and submission of the survey to current cardiology program directors is pending. The results will then be analyzed using descriptive statistics and standard statistical methods with IBM SPSS.

**Evaluation Plan:** Program regions, categories, and locations will be analyzed based on URM presence and importance allocated to diversity. We will describe which methods were most endorsed by cardiology program directors to increase diversity and which methods were being actively implemented to increase the number of URMs. We will also compare which methods (direct or indirect URM recruitment, altering selection criteria, promoting institutional diversity, and removing sources of racial or ethnic bias) are supported to the methods that are actively implemented using chi-squared tests. We will also analyze which entities were allocated the most responsibility to increase diversity in cardiology fellowship programs.

**Potential Impact:** This study may identify methods to increase URM diversity in cardiology fellowships that offer insight to medical students and resident physicians considering cardiology fellowships. These findings may also inform cardiology program directors of which methods are most supported by their peers and which additional initiatives may be implemented.

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## **Increasing Resident Preparedness to Address Health Disparities Through Health Equity Concepts**

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*AltaMed Institute for Health Equity*

**Idea:** The AltaMed Family Medicine Residency Program (AMFMRP) created a curriculum, “The Health Equity Series”, for the family medicine resident’s didactics.

**Need/Rationale:** Graduate medical education programs now more than ever need to embed health equity curricula into their programs as it has become increasingly evident that physicians need formal training in addressing social determinants of health. Health disparities continue to characterize our health system. While structural reforms are necessary, individual physicians can contribute significantly to improving health outcomes through their work with each individual patient, as well as through leadership, education and scholarly work. Residencies need to continually add to and improve their curricula in order to advance the professional goals of mission-aligned residents who are passionate about improving care for underserved communities. Health disparities have taken the center stage again as we grapple with the effects of a pandemic, which is characterized by disproportionate morbidity and mortality in communities of color. We propose a re-imagining of graduate medical education, where health equity is not a specific track, but rather, permeates every aspect of our work so that our workforce is better prepared to face the challenges of the future and finally make progress in the quest to eliminate health disparities.

**Methods:** The Health Equity Series consists of 10 lectures with different themes. They take place once a month during the Residents’ protected Friday afternoon didactic sessions. Our program currently has 6 first year Residents. A variety of speakers have been selected for their passion and expertise in the field of health equity. Each is presenting a specific topic with its associated learning objectives. Speakers have been asked to dedicate approximately 45 minutes to sharing content and concepts and to reserve 15 minutes for active participation on the part of the Residents in the form of questions, answers and sharing of thoughts and ideas. Discussion and an opportunity to interact with experienced educators is a crucial component to the development of a cognitive map in the early learner. On the other hand, despite their limited experience, learners can already draw from their own professional or personal experiences to enhance these discussions explore the applicability of the concepts to their daily work in the clinical setting.

**Evaluation Plan:** At the end of the academic year, the program will create a summary of the number of lectures delivered and the number of attendees. Each session will be evaluated by the Residents individually. The Resident will rate the content of the session as well as the speaker. A free text option is included in the evaluation form so that the Resident can comment one take away point that they think they will apply in their practice. We are interested in several outcomes and will be working on how to measure these. For example, we hope to see an increase in the discussions around SDOH when Residents present their cases in clinic. Our evaluation form for the clinic rotation includes a question regarding whether the Resident addresses SDOH in the care of their patient. We will also be looking at Resident performance around SDOH and cultural humility via the Milestones on a quarterly basis. Finally, health equity measures will be integrated into the rubric for assessing Resident performance on the OSCE during every year of training.

**Potential Impact:** Graduates from our program will develop skills to better serve patients in underserved communities and they will be able to model sensitive and respectful care to colleagues and learners, thus increasing the number of activated physicians in our workforce who are equipped to tackle the recalcitrant problem of health disparities in the community.

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### **Redefining Community Pediatrics and Advocacy Training in Pediatric Residency**

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*Children's Hospital Los Angeles*

**Idea:** Pediatric residents deliver improved patient care and advocacy through a competency-based longitudinal community pediatrics curriculum.

**Need/Rationale:** Since 1930 the mission of the American Academy of Pediatrics (AAP) has been to attain optimal physical, mental and social health and well-being for all pediatrics patients. As a founding pillar in the field of pediatrics, the AAP has embedded advocacy as a core value of pediatricians through policy statements detailing society's rapid change and the need to prepare tomorrow's pediatricians for the new challenges they will face (1). There is increasing recognition of the eco-bio-developmental model and the short- and long-term effects of toxic stress on child health (1-2). Pediatric residency training programs recognize the importance of advocacy and community health training. As part of a Federally Qualified Health Center, our residents see patients who face significant barriers to their health and well-being. There is a need for sustainable advocacy curricula that are integrated into the identity and values of the training program (3). Our longitudinal competency-based curriculum progressively builds on the concept that pediatric healthcare goes beyond the clinic walls and will train pediatricians to provide comprehensive care and address social injustices.

**Methods:** The new community pediatrics curriculum integrates our ambulatory, development and advocacy rotations using updated competencies and teaching methods. It is a 12-week experience, 4 weeks per year, for a total of 106 residents in 2021-2022. Residents will become skilled clinicians and advocates, both within and outside the care system. In the first year, residents will understand the basics of ambulatory pediatrics, normal development and community resources. Second-year residents will apply appropriate developmental screens and analyze the impact of special health care needs and community on patients. Third-year residents will create advocacy materials and evaluate ways to positively affect change for patients and communities. The rotations utilize various teaching modalities which include brief didactic presentation, online training modules, site visits to key organizations with reflections on learning, and participation in community-based programs like Reach Out and Read. PGY1s select a topic of interest, develop a patient education handout, create a quality improvement question, and deliver a brief talk to educate their co-residents on their topic. PGY2s will gain expertise in developmental screening and advocacy for those with developmental delays. They conduct home safety visits and community strength assessments. PGY3s focus more on local and national advocacy and write an op-ed to a local newspaper or a letter to a legislator regarding policy affecting child health.

**Evaluation Plan:** All elements of the 3-year curriculum will be tracked using a checklist to ensure all plans are carried out and to identify necessary changes. Learner reaction to the new curriculum will be assessed using standard rotation evaluation forms at rotation completion and reviewed by faculty members. Learning will be assessed through faculty review and grading rubrics of rotation deliverables to ensure goals and objectives are met. In order to assess knowledge and skills, we will perform a chart review of electronic medical records to track referrals to appropriate community resources. We will look at utilization rates of patient hand-outs created by PGY1s, selection and use of developmental screening tools by PGY2s, and submission rates of op-eds by PGY3s. Lastly, residents will complete a questionnaire at the start and end of the curriculum to ensure objectives are met. We will adapt a previously-published survey on advocacy training to assess attitudes and behaviors at the end of residency and five years after graduation. We aim to show enhanced value of advocacy in practice, increased knowledge of health inequity and social determinants of health, and improved knowledge and skills to identify needs in patients and refer to resources.

**Potential Impact:** Our curriculum will train residents to provide more effective care to our patients and communities and instill values for continued advocacy in issues affecting child health that will lead to improved individual and population-level health outcomes. If successful, other specialties can adapt our curriculum to improve their own advocacy training.

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### Trauma Informed Care (TIC) Curriculum and Perceptions Virtually Implemented to Surgical Interns

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**Problem Statement:** TIC curriculum in surgical education has yet to be described. We sought to describe the implementation and perception of TIC in surgical education.

**Rationale:** TIC is the practice of mindfully approaching a patient by consciously considering what traumatic experiences are a part of them and tailoring our behavior as medical professionals to be optimally sensitive to their experiences and outward behavior as molded by life-trauma. Symbiotically, TIC requires providers to look within to explore their own traumas and how this can affect patient interactions. TIC education has garnered traction in non-surgical specialties, however, implementation in surgical education has yet to be described. Trauma-informed care can improve rapport with our patients, improve patient/provider satisfaction, and assist care teams in avoiding burnout. Given the advantages of TIC demonstrated in non-surgical specialties we aimed to illustrate our experience with virtual implementation of TIC with a surgical intern class and describe surgical intern perception of TIC before and after the curriculum.

**Methods:** With advice, review, and support of our faculty, second-year general surgery residents implemented a three-session web-based curriculum about TIC to the incoming intern class. We utilized an anonymous crowd-sourcing strategy to optimize learning prior to each session and to garner insights about intern perception prior to each session. These results were then reviewed for both qualitative and quantitative analysis. Specifically, we asked: 1) Have you ever heard of TIC and what does TIC mean to you? 2) How have you applied TIC during the first month of internship. 3) Give an example from the last month where you felt like a debriefing session could have helped with team dynamics and morale.

**Results:** Out of 48 interns 52.1% answered they do know what TIC is and 47.9% did not. When looking at specific descriptions of what TIC means to them 21 provided an on-track answer while 22 provided an off-track answer. Off-track answers centered around comments about care related to physical trauma patients. During the second data-gathering session 27 interns responded describing one way that they had practiced TIC during the first month of internship; all of these responses were on-par with TIC. During the third session, 13 interns responded. Most of these responses centered around patient deaths or complications while a minority of responses centered around difficult team dynamics.

**Potential Impact:** Surgery is notorious for insensitivity among surgeons towards patients, and team members. Early intervention with TIC curriculum has the potential to create culture change. Here we have demonstrated that baseline understanding and awareness of TIC is about 50%. A majority of responses at the later sessions demonstrate growth in application of TIC.

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## **A Longitudinal Community Medicine Curriculum That Focuses on Social Determinants of Health**

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**Idea:** Family medicine residents develop knowledge and skills around the social determinants of health through a longitudinal Community Medicine curriculum.

**Need/Rationale:** According to the 2018 Agency for Healthcare Research and Quality National Healthcare disparities Report, even though some disparities have shown a small improvement, disparities persist amongst the vulnerable populations (1). It has been found that physicians play a very important role in eliminating health disparities, specifically by engaging at the community and societal levels (2). Our residents and faculty believe that in order to work on eliminating health disparities we should be able to address social determinants of health both in and outside of clinic. Many of them feel overwhelmed in clinic because the needs of our patients are enormous but the training on how to address these disparities is minimal. There is evidence that longitudinal training, community-based for learning and participation in research are important in a curriculum that aims to address health disparities (3). Our specific intervention will be structured to provide training in different community based interactive learning settings to produce a longitudinal focus on social determinants.

**Methods:** This curriculum is designed for 18 family medicine residents (6 PGY1s, 6 PGY2s, 6 PGY3s) and will span their three years of training. The intervention includes: 1) Didactics: Six dedicated lectures per year on social determinants of health topics with ample time for discussion, in addition to integrating social determinants of health concepts throughout all lectures. 2) Direct Observation: Three community medicine rotations per year (4 weeks per rotation). Each rotation consists of the resident participating in community programs and continuity clinic in a Federally Qualified Health Center. Both community partner staff and clinic faculty will be trained to focus on the social determinants of health. 3) Each resident to participate in a pipeline program by mentoring one high student for 2 years (2nd and 3rd year of residency): four mentor-mentee interactions a year. The resident will have training in mentoring and communications skills. 4) Participation in three community/advocacy activities per year. 5) Completion of one scholarly activity that addresses a health disparity or social determinants of health by the end of the 3rd year. 6) Goal setting: Individualized plan for each resident to help set goals towards achieving growth in a focus area around social determinants of health. This will help guide scholarly activity, professional and personal goals. This plan will be re-evaluated every quarter for all three years with an advisor.

**Evaluation Plan:** 1) Accountability: Will track didactic lectures, community program sessions, advocacy activities attended, student mentorship interactions and scholarly activities completed. 2) Reaction: Residents will take a pre and post-survey to assess perception of importance and usefulness of the curriculum. Didactics presentations will be evaluated to assess satisfaction of the presenter and topic. 3) Learning: Residents will fill out pre and post surveys to assess knowledge. Community Programs will also assess resident on knowledge, attitude and skills focused on social determinants of health. Each item on this evaluation of the resident is linked to ACGME Family Medicine Sub-competencies. 4) Behavior: Tracking of individualized plan will be performed quarterly to assess for progression of goals. This will also include post-graduation career choice.

**Potential Impact:** By training our future family medicine physicians to understand and participate in activities that challenge societal and structural forces that create health disparities, we can improve the social determinants of health in our communities. If successful, this can be a model curriculum to improve social accountability of family medicine physicians.

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### **Anti-Racism Through Personal Growth: A Virtual Book Club Series**

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**Problem Statement:** This series addresses the need for continued conversation regarding racism and trauma and community building among the medical workforce.

**Rationale:** Civil unrest following the murders of George Floyd and Breonna Taylor highlighted the need for a more robust institutional response to systemic racism within the medical system, but little exists within the literature on how to do so during the pandemic. Book clubs are a tool for critical examination of beliefs and practices regarding racism and can be used in the professional development of trainees. A virtual book club could accommodate the constraints of the pandemic without compromising the opportunity to engage in urgent discourse about systemic racism. Conversations about racism through a trauma-informed lens can aid in understanding the deeper impacts of the powerful social-political-economic construct of racism, thus, the text *Training for Change: Transforming Systems to be Trauma-Informed, Culturally Responsive, and Neuroscientifically Focused* was chosen. We sought to provide a space to challenge beliefs about racism through a virtual book club using this text.

**Methods:** This voluntary series is open to all learners and staff across the university. It is a biweekly five-part series that includes an introductory session followed by subsequent sessions exploring chapters focusing on neurodevelopment and the intersection of fear, trauma, and structural racism. Each one-hour session is facilitated by a psychiatry resident or faculty, psychologist, or therapist trained in trauma-informed care. Facilitation guides tailored for each session are created using exercises from the text and trauma-informed principles. Facilitators are given the flexibility to pursue topics of interest that arise in real-time within the group. Survey responses are collected after each session asking participants to judge their learning and indicate if they plan to apply what they learned. Participants are specifically asked to respond yes or no regarding whether the session improved their understanding of the following: how trauma affects the developing brain; cultural responsiveness; and the relationship between fear, trauma, and racism. These topics were chosen because they aligned with the objectives of the discussed chapters. The survey also provides participants with space to submit narrative responses for how they may use their learning in their future practice and what they liked and disliked about the session. This feedback is used to plan subsequent session facilitation guides, allowing for an iterative process to best serve the needs of participants.

**Results:** Four of the five sessions have been completed at the time of this abstract. The number of virtual attendees for sessions one through four were 130, 155, 108, and 105, respectively. 58 participants (11%) completed post-session surveys. Of the respondents, 64% felt their understanding of how trauma affects the developing brain improved, 24% did not, and 12% unsure. 64% felt their understanding of cultural responsiveness improved, 22% did not, and 14% unsure. 67% felt their understanding of fear, trauma, and racism improved, 17% did not, and 16% unsure. 88% of respondents felt the sessions had a practical impact on their approach to learning, teaching, and clinical practice. Qualitatively, respondents reported themes of interconnection, community, cultural humility, need for personal reflection and growth, honesty, and transparency. Most participants felt the sessions provided a safe environment in which to be vulnerable and share, with one stating, "...very helpful to hear the different voices...frustration...and hope. It helped relieve me of some of my fatigue and hopelessness." Criticisms of the series include the virtual format, large group context, limited timeframe, and differences among participants in first-hand knowledge and experience. Of note, the feedback around respondents' varying degrees of first-hand experience with racism and trauma, although quite challenging to navigate, was a highly valuable source of guidance for continually adapting the series as needed.

**Potential Impact:** Racism has profoundly deleterious impacts on the health of individuals, communities, and systems. As healers, we work at the intersection of and live in these systems and have a

commitment to thoughtfully reduce the harms of this powerful social construct. It is imperative to continue these conversations and should be incorporated moving forward.

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## **Overcoming Stigma and Cultural Biases Related to Substance Use Disorders in a Family Medicine Clinic**

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**Idea:** Create a reflective workshop to decrease stigma and biases of staff and providers that may negatively affect patients with substance use disorders.

**Need/Rationale:** Stigma may occur at a structural level through institutional policies, among social groups, and at an individual level with internalized negative thoughts or maladaptive behaviors [1]. Research has shown that health professionals generally have negative attitudes towards patients with substance use disorders (SUD), while barriers to providing care include perceived manipulation, violence, and lack of motivation [2]. Stigma has been shown to reduce quality of care, contribute to poor patient health outcomes and feelings of disempowerment, as well as lower patient and provider satisfaction [3]. Attitudes of healthcare workers may be influenced by lack of education or training, cultural beliefs, minimal exposure to patients with substance use disorders, and inadequate institutional support. Previous surveys have demonstrated knowledge and attitude deficits that contribute to stigma and biases against patients with substance use disorders.

**Methods:** Conduct a survey of primary care clinic staff members including providers, nurses, pharmacists, and front office workers. The questionnaire will assess knowledge, attitudes, and beliefs related to caring for patients with substance use disorders. The survey will have specific questions that emphasize stigma, culture, and language. After completion of the pre-survey, our team will create a custom workshop that emphasizes stigma-reducing patient-centred language in addition to addressing areas for improvement identified from the pre-survey in the domains of culture and language. With the assistance of our health behavior psychologist, we will lead training sessions that emphasize culturally and linguistically congruent skills. The workshop will include reflective and patient-centered experiential exercises to help encourage providers to examine their own biases that may interfere with assisting patients with substance use disorders. We will also promote screening for substance use disorders and review resources available for patient care. Following the training, a post-survey will be administered to re-assess staff and providers' knowledge, skills, and attitudes related to caring for SUD patients. Results of the pre-and post-surveys will be analyzed to evaluate for any changes.

**Evaluation Plan:** The evaluation will be a qualitative and quantitative analysis with the primary outcome being the pre and post attitudes and beliefs of the clinic staff and providers. The secondary outcome will be the effectiveness of our workshop that emphasizes how to reduce stigma and biases towards substance use disorder assessment and treatment.

**Potential Impact:** This training will be incorporated into providers' curriculum and periodically held for clinic staff. Survey results can identify areas for further improvement. Reducing stigma and biases will help create a non-judgmental environment and improve quality of care for patients with substance use disorders at our family medicine clinic.

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### Turn Around, Bitesize – Flipped Classroom Simulation

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**Problem Statement:** Due to the COVID-19 pandemic, medical students face restricted time, both with patients and clinicians, to learn clinical assessment skills.

**Rationale:** Due to the restrictions on clinical time for UK medical students, there is a need for them to be taught an approach to the assessment of unwell patients through simulation-based education. Many departments are trying to make use of this approach, and at the same time, fewer students may attend each session due to social distancing restrictions, and faculty ability to sanitise equipment between uses. To maximise the use of the time in the simulation environment, we used a flipped-classroom approach, providing the students with video materials to watch prior to attending the session. This approach is consistent with Cognitive Load Theory (1), and allows the students to become familiar with the subject in their own time, before coming to the session where time is more limited. However, when making online materials for education, those materials must be of appropriate quality and content for the target learner to be engaged (2).

**Methods:** This session is given to 4th-year medical students at the beginning of their clinical practice blocks in hospital medicine and surgery. They are provided with access to videos, hosted on YouTube for ease of access, which explain the ABCDE approach to assessment of a sick patient and a case-based simulation of an anaesthetic to demonstrate airway assessment and management strategies. When they attend the session, the information given in these videos is consolidated and used in multiple simulations so that they have the chance to put the newly learned framework into practice and strengthen their understanding of its use. The first session was run without the pre-session learning materials, and the second session with the materials available and the students instructed to review them before attending. The students were surveyed at the end of each session, with scaled responses and free-text questions. We also had a live, anonymous, online forum feedback session with the students where they were able to share comments and build on one another's responses while interacting in real-time with questions from the tutors.

**Results:** The results of the first session showed that the students found great value in the teaching, but found the amount of learning overwhelming. They consistently expressed the desire for the materials to be available before the session to allow them time to absorb and understand the concepts. For the second session, 86.5% of the students found the materials useful and only 9.6% did not access them. The general nature of the free-text comments changed as well, with the students in the first session describing a desire to know more about the topic being covered before coming to the session, having a chance to prepare, and wanting more time with the tutors. In the second session, the free-text comments mostly said students would like more sessions of this style in the future or notes about running to time. In the online forum session, the students were impressed by the professional quality of the videos, found them clear and easy to follow and preferred the case-based style of learning. The students also felt that the videos had ongoing value after the COVID-19 pandemic has improved, to allow them to consolidate experienced learning events with these materials. The whiteboard style of responses also allowed students to respond with non-text opinions, such as emojis.

**Potential Impact:** Flipped classroom simulation is a learner-centered, effective method to teach clinical assessment skills and maximise the use of currently limited contact time with tutors. The materials provided have benefit before, during and after the sessions, and allow the learners to have a self-directed and flexible approach to their own learning.

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## Teaching Congenital Heart Defects to Medical Students Remotely Using Online Team Based Learning

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**Problem Statement:** To teach cardiac embryology and congenital malformations through a team-based interactive modality in a fully remote medical school curriculum.

**Rationale:** Due to the COVID-19 pandemic, our institution transitioned to a fully remote curriculum for second-year medical students. This posed many challenges for student engagement and for implementation of interactive team-based modalities. Even with our in-person curriculum, students struggled with cardiac embryology and malformations. We sought ways to deliver the information more interactively by integrating many of the topics covered during the cardiovascular subunit. Team-based learning allows for small group-based active learning with a small number of facilitators. TBL has increasingly been incorporated in medical school curricula and has been shown to be an effective teaching modality [1][2]. We sought to design a TBL session to cover cardiac embryology and congenital malformations while integrating clinical reasoning, physiology, pathophysiology, imaging, and EKG interpretation. Further, we sought to deliver this novel session fully online as part of the remote curriculum.

**Methods:** This session was developed for 2nd-year medical students who had completed four of six organ system based curricular blocks with the session at the end of the 4-week cardiovascular subunit. The session contained an Individual/Team Readiness Assessment Test (IRAT/ TRAT) as well as 3 vignette-based clinical cases. A 4th case was released after the session for further practice. All content was developed in collaboration between clinical and basic science faculty and clinical year medical students. Cases included additional media including heart sound audio clips, echocardiography videos and images, EKGs. The session was conducted remotely with all facilitators and students participating from home using an online TBL platform and video conferencing software with the ability to facilitate both the whole group as well as smaller subgroups for team-based discussion. The session was conducted for half of the class at a time and the students were split into 16 teams of 5-7 students per half. A survey was sent prior to the session asking about comfort and confidence with the material. Students were sent the same questions after the session as well as questions asking them to provide feedback on the session. All survey data was recorded on a 1 (Strongly Disagree) to 5 (Strongly Agree) scale. Two-tailed independent T-Tests were used to compare responses to the pre and post-session survey. Statistical significance was set to  $p < 0.05$ . All data were analyzed using SPSS for Mac version 27.

**Results:** 205 students partook in the session. The average score on the IRAT was 64.5% and on the TRAT was 99.5%. 127 and 105 students responded to the pre and post-session survey respectively. There was a statistically significant increase in student reported confidence in and comfort with the material covered from pre to post-session. Students reported an increase from 2.2 to 3.9 in their confidence in understanding congenital heart defects, from 2.3 to 3.8 in understanding the hemodynamic implications of congenital heart defects, from 2.1 to 4.0 in their comfort diagnosing congenital heart defects from a vignette, from 2.5 to 3.8 in their comfort interpreting common cardiac imaging, from 2.6 to 3.4 in their comfort diagnosing common abnormalities on EKG, from 2.5 to 3.2 in their comfort identifying murmurs, and from 2.7 to 3.5 in their comfort determining the hemodynamic factors that would change the properties of a murmur.  $P < 0.0001$  for all. Students overall found the activity to be helpful (4.5). They reported that it enhanced their education (4.6). They reported that it helped them understand the presentation (4.5), diagnosis (4.5), management (4.2), and complications (4.4) of congenital heart defects. The students overall found the activity engaging (4.5) and recommended that it be included for future classes (4.6). Students felt that the learning objectives for this session were clear (4.3) and that the session met the stated learning objectives (4.4).

**Potential Impact:** We successfully developed and implemented a TBL to teach cardiac embryology, pathophysiology, and malformations, integrating many topics covered during the subunit. It received excellent feedback, demonstrating the power and utility of interactive sessions such as TBL to integrate and teach complex topics even as part of a fully remote curriculum.

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### **Immersive Learning During a Pandemic: Use of Interactive Livestream in Anaesthesia Education**

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**Idea:** Video platform for medical students to experience anaesthesia and airway management in a safe environment remote from aerosol-generating procedures.

**Need/Rationale:** The COVID-19 pandemic has caused disruption not just in healthcare provision but also in the delivery of clinical teaching to medical students. At our medical school in the UK, students were withdrawn from clinical placements during the peak of the pandemic due to the risk of infection. Due to concern over both risks of viral transmission and low worldwide stock levels of appropriate personal protective equipment (PPE), on their return to clinical placements in August 2020 our medical school advised against students participating in the care of any patients with known or suspected COVID-19, or in aerosol-generating procedures (AGPs) which at that time were undertaken using enhanced PPE in all patients. Common procedures performed in anaesthesia such as bag-mask ventilation and endotracheal intubation are AGPs. These factors have made exposure to traditional bedside teaching of clinical anaesthesia challenging for medical students. We aimed to devise an innovative way of continuing to meet learning outcomes by delivering educational opportunities in a safe, aerosol-free environment.

**Methods:** In the initial phase of the project, we recorded a video of a patient being anaesthetised for use in small group teaching sessions. Written consent was gained from the patient and the anaesthetic management recorded using two mobile phone cameras from differing angles and a Go-Pro (California, USA) camera mounted on the anaesthetist's forehead. The footage was edited such that the playback pauses at critical points and an explanatory narrative added. Advice was sought from the institution's data protection team regarding any restrictions to use. Next, we investigated establishing a secure livestreaming platform to address the data protection issues and achieve a more immersive clinical learning experience. We identified a video conference system used for patient care in our ICU which utilised a secure communication protocol. Patient consent was obtained and a test run conducted. One unit of the system was placed in the operating theatre with the camera focusing on the patient and the anaesthetist. The second unit was placed outside of the theatre with an anaesthetic trainee playing the role of a medical student. Both units were connected over secure hospital Wi-Fi network and the anaesthetic management was streamed live from the theatre. The anaesthetic trainee was instructed to ask questions during the livestream and the anaesthetist in theatre was instructed to answer these questions as per normal in order to test real-time communication.

**Evaluation Plan:** Using pre-recorded video of real patient encounters poses serious data protection risks: potential data breach may occur by malicious attack, loss of storage medium, unsecured cloud storage on remote servers and recording of playback by medical students. To ensure security, our video can only be used in a supervised classroom which limits its utility. In addition, pre-recorded video cannot replicate the value of bedside teaching (1). The video conference system allowed us to stream the high-risk AGP phase of anaesthetic management from theatre to a room outside. Verbal communication for commentary, questions and answers was clear without detectable lag time and video quality was high enough to appreciate all important phases of anaesthesia. As this system streams live and does not record, the risk of a data breach is considered low. The value of livestreaming as an educational tool has been demonstrated previously (2). Our system enables effective learning for medical students and with minimal risk to patient confidentiality. It allows students to remain meaningfully involved in real patients' perioperative care, as they already participate in the non-AGP processes of pre-operative assessment and post-operative review.

**Potential Impact:** Livestreaming has potential beyond anaesthetic education during the current pandemic: it allows students to observe, and even participate in, the care of COVID-19 patients and

AGPs in a wide variety of clinical settings, and enabling interactive learning without physical presence further safeguards clinical teaching against a second wave.

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## **Weekly Review Sessions Using a Gamified Interactive Modality in a Remote Curriculum**

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**Idea:** With student requests for more interaction with lecturers in a remote curriculum, we developed review sessions on key topics with clinical faculty.

**Need/Rationale:** Due to the COVID-19 pandemic, second-year medical students at our institution began a remote curriculum for Fall 2020. The cardiovascular subunit, part of the fourth of six organ system based curricular blocks, typically contained significant instruction from clinical faculty members. Students found this interaction to be enriching and crucial to their learning. Due to the remote curriculum, there was less opportunity for students to interact with faculty. There was a need for directed review time in order for students to ensure that they were on track with the material and were able to assess their knowledge and ask questions. In order to deliver targeted and engaging reviews, we designed a series of online gamified weekly review sessions with clinical faculty. Gamified activities have been shown to be an effective teaching modality [1]. The goal was to provide a space for the class to come together as a large group, interact with clinical faculty, and review material from that week.

**Methods:** These sessions were implemented at the end of each week of the cardiovascular subunit. Sessions were 90 minutes long and were scheduled for half of the class at a given time. Sessions were conducted over video conferencing software with all faculty and students participating remotely. Common to each session was an interactive and fully online, formative, and gamified quiz designed for student self-assessment of the week's material. The quiz grants points based on the correct answers and the time required to answer the question. The students are able to track their progress against other students. The faculty then reviewed the quiz answers and explanations. Following the quiz, each session proceeded differently. The post quiz review session was designed to be adaptable to the needs of the students. For two of the four weeks, there was a case-based activity where clinical faculty led the group through a patient case, discussing presentation, diagnosis, management, and complications. For the remaining two weeks, the time was used as an open question and answer session for discussion of any student questions or concerns.

**Evaluation Plan:** We wish to evaluate this session based on student satisfaction as well as on improvement in medical knowledge. To assess satisfaction, we plan to release a survey at the end of the subunit covering satisfaction of these sessions. We plan to ask if the sessions enhanced the student's education, if they found it worthwhile, if it met the stated learning objectives, and if the student feels the sessions should be a part of the curriculum for future classes. To assess improvement in medical knowledge we plan to use a pair of pre and post-session surveys. These surveys will ask students to self assess their confidence and comfort with the material covered in that week's session. This will allow us to assess improvement in these metrics from before to after the session. After the Unit, we plan to comprehensively evaluate the remote curriculum including assessing any change in student performance on summative exams. We hope to see non-inferior performance when compared to past years with the in-person curriculum. While this would not be attributable to any one modality, it would help show us the utility of these weekly review sessions. If successful, these sessions can be implemented into the remainder of the preclinical curriculum.

**Potential Impact:** As medical schools navigate the COVID-19 pandemic, educators require novel ways of engaging and interacting with their students. These sessions are an interactive, engaging, and educational way to increase interaction between students and faculty and allow for directed review of material in a remote curriculum.

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### **EM-CO-VID (Emergency Medicine-COoperative Virtual Delivery) Learning**

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**Problem Statement:** Due to the COVID19 pandemic, medical students' education and applications are compromised by a lack of sub-internships in Emergency Medicine.

**Rationale:** Traditionally, Emergency Medicine bound medical students gain valuable personal experience with faculty and residents and improve their ability to practice emergency medicine through sub-internships at various programs. However, due to the current global pandemic, a virtual clerkship appears to serve as a potentially valuable substitute. A virtual clerkship could provide the opportunities to further expand core emergency medicine knowledge as well as less commonly taught nuances in emergency medicine. Topics such as health advocacy, social justice, and health equity are essential components of emergency medicine, but infrequently discussed and not standardized. A virtual clerkship offers the opportunity for students around the country to learn from and interact with a wide range of expert specialists who would otherwise be unable to make contact with every rotating student. In the future, a virtual clerkship can serve as a beneficial supplement to an in-person experience.

**Methods:** Medical students from various institutions were invited to participate in a two week virtual clerkship. The curriculum consisted of Zoom-based didactics, small group sessions, interactive activities such as "virtual escape rooms" and "teaching sessions," and daily asynchronous learning. Asynchronous materials included podcasts, free open access medicine (FOAM) blog posts and articles previously identified as high yield for chosen subjects areas. During "in-person" sessions over Zoom, days consisted of short didactics to reinforce asynchronous materials or expose students to professional development topics (introduction to teaching, skill development for interviewing in the Zoom-era, etc.) and future careers in Emergency Medicine (e.g. Toxicology, Administration, Education, Pediatric Emergency Medicine, Critical Care, Ultrasound, etc.). The curriculum also included various "active learning" techniques such as small group case based instruction to review medical knowledge topics or social determinants of health topics. Knowledge retention was evaluated using topic specific ROSH review questions in a pre-rotation and post-rotation test. Scores were compared using a paired T-test. Mixed-method surveys were sent to the students daily as well as at the conclusion of the clerkship to ascertain course feedback. The survey was developed by experienced emergency medicine education faculty and was piloted by residents with additional feedback incorporated into the survey.

**Results:** Medical students (n=26) from around the country participated in the virtual clerkship over the course of two sessions. Student knowledge was evaluated using topic specific ROSH review questions prior to the start of the clerkship and after the conclusion of the clerkship in a pre-test and post-test format. Pre-test mean scores (n=26) was 71.65% for all students (95% CI [68.25-75.21]) versus post-test mean scores (n=26) was 76.34% for all students (95% CI [74.68-78.01]). Students also completed mixed-method surveys to evaluate the reaction and satisfaction with the virtual learning environment. Responses were strongly positive: 80% strongly agreed that the virtual clerkship should be repeated in the future, while 15% agreed, and 4% neither agreed or disagreed (n=25). Students also felt that the virtual clerkship was valuable beyond the COVID-era. 44% strongly agreed, 40% agreed, and 12% of students neither agree nor disagree that the virtual clerkship should be continued into future calendar years even in a non-COVID era (n=25). One person felt that the virtual clerkship should not be continued beyond the COVID era citing "it would be more valuable to come together." The virtual clerkship was also a valuable networking tool. 92% of students strongly agreed and 8% of students agreed that they enjoyed meeting people from across the country during the virtual clerkship (n=25).

**Potential Impact:** A virtual clerkship can be a valuable, effective alternative to the traditional sub-internship, especially when in-person meetings and travel is limited. Additionally, it can serve as a

curriculum to address less commonly taught, but no less important content such as social determinants of health, career development, and professionalism.

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### **Textbook Wisdom for the YouTube Age: How We Are Learning to Teach Modern Remote Learners.**

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**Idea:** To build engagement amongst medical students in online learning by developing modern, highly produced videos in place of traditional PowerPoint.

**Need/Rationale:** The advent of the COVID-19 pandemic has necessitated rapid redevelopment of curriculums to suit the online learning platform in keeping with the need for social distancing. Traditionally developed teaching that works in face to face lecture environments does not translate well to the online environment by default, and prolonged exposure to PowerPoint presentations with voiceover narration, whilst being easier to produce at speed, does not produce engaging material that leads to effective learning (Guo). Online learning has many advantages including flexibility and control in the rate and style of engagement with learning content as well as the ability to support remote learning, and has been shown to improve overall academic outcomes (Chapman), but optimising these benefits requires that content is built with the medium in mind. The normalisation of rapid broadband connectivity presents an exciting opportunity to produce a new format of resources accessible across the world, with a solid grounding in educational theory to maximise engagement and learning, enhanced by lessons learned from social media and existing video hosting environments such as YouTube.

**Methods:** Fourth-year medical students in our centre rotate through placements in anaesthetics. A flipped classroom model is in place providing online tutorials in advance of placement, ensuring that underlying conceptual understanding is in place before exposure to the clinical environment. During a period of redevelopment brought to the fore by the COVID-19 pandemic, we sought to integrate lessons learned from medical education with those learned from the use of social media to produce content that was relevant to a modern student population who are well used to utilising platforms such as Twitter and YouTube. In place of PowerPoint style presentations, we produced tutorial videos with a presenter and visual cues. Students due to attend placement are directed to these videos before attending, and have the opportunity to explore the concepts in more detail during an online tutorial with a supervisor. Viewers can see the tutor's face throughout the video, enhancing engagement, and handwritten explanations or diagrams are superimposed with video editing software to enhance the understanding. Diagrams build in real time during the explanation, and videos can be paused or rewound to cover complex concepts multiple times. Seeing the presenter in real time and utilising short duration video with fast speech is known to promote improved learning, in contrast to the poor viewer retention seen with slides and voice (Guo). YouTube also facilitates caption generating, improving accessibility.

**Evaluation Plan:** Accountability: this development remains in its infancy, with some presentations yet to be modernised in the newer style. Four of six tutorials have been updated and are hosted on YouTube on an account branded as "Aberdeen Anaesthesia", making use of the built-in analytics abilities of the platform to measure user engagement, viewer retention and interest from out-with our own department. Reaction: data exists from the previous presentations and once development has concluded, both qualitative and quantitative data will be sought to gauge improvement in both accessibility and enjoyment from students alongside an increase in gained understanding of the subject matter through using this modern format of presentation. It is intended that this platform will lead to a large library of short, focussed tutorials which students can watch in their own time, covering key subjects more than once if required to ensure mastery, and the average watch time will be analysed to assess which formats were most successful amongst the videos produced. Ability to demonstrate understanding in supervisor-led tutorials will then be expected to improve in line with engagement with these videos, in keeping with the flipped classroom model.

**Potential Impact:** This project will improve the quality of education offered to UoA students in anaesthesia and critical care, whilst also promoting a culture of excellence in resource production and

teaching in our department, represented in the visibility of our productions on a global video hosting platform to share our work with a global network of learners.

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**Virtual Case Studies Series: Development of Clinical Skills and Patient Population Understanding**

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**Idea:** Enhancing clinical skills and exposure to the Detroit patient population for medical students utilizing Student Run Free Clinic virtual case studies.

**Need/Rationale:** Due to COVID-19 restrictions, Student Run Free Clinics (SRFC) such as Cass Clinic at Wayne State University School of Medicine cannot offer in-person volunteering. SRFCs provide medical students with a valuable opportunity to enrich their clinical training while simultaneously being exposed to the needs of medically underserved patients in the community (1). To address this gap, a collaborative virtual Case Studies and Patient Education Materials series was offered to first and second year students. The cases were designed on patients previously served by the SFRC and were structured to reflect AAMC Core Competencies for Entering Residencies (2). The virtual session was structured to emulate peer-to-peer learning and teaching dynamics of SRFC student teams. In this way, first year medical students learn essential clinical skills while obtaining immediate, peer feedback on their developing competencies while second year students develop mentorship and self-directed learning in preparing and delivering the session. A patient education component was also added for students to collaborate in exploring cultural and social determinants of health that impact health education and outcomes for the Detroit population served by Cass Clinic.

**Methods:** First-year (M1) and second-year (M2) students at Wayne State University School of Medicine elected to participate from September to December 2020. 1) Case studies included a chief complaint, vital signs, physical exam findings, and relevant past histories. M2 students were given the cases with probing questions and were responsible for facilitating the virtual session. 2) Two groups of two M2 and three M1 students per week arranged to meet via Zoom to work through a case. With M2 guidance, the M1s asked questions to elicit the medical history, suggest physical exam maneuvers, and consider differential diagnoses for their case. While collaborating to arrive at clinical diagnoses and treatment recommendations for the case, students engaged in practice with targeted feedback. 3) Students then created an infographic based on the identified condition within the case. These infographics will be distributed at Cass Clinic to educate patients with the corresponding condition on behavioral modifications that could improve health outcomes. 4) To evaluate learning and efficacy of the program, pre and post-surveys were completed by students on Google Forms. Survey questions were created to assess clinical competencies proposed by the AAMC Core Competencies for Entering Residencies (2). At the completion of the case study series, the survey results will be analyzed to determine if students felt more confident in these core competencies and understanding of the Detroit patient population.

**Evaluation Plan:** 1) Accountability: Students will submit a screenshot of their Zoom session and infographic to the Cass Clinic coordinators to ensure attendance and participation in the case series program. 2) Reaction: The sessions will be evaluated by analysis of responses to two post-survey questions assessing whether participants felt that the program prepared them to volunteer in a SRFC and skills that they would have liked to practice that the program did not currently offer. 3) Learning: Aggregated responses to post-survey questions regarding students' confidence in meeting select AAMC Core Competencies (2) will be analyzed and compared to confidence levels reported in the pre-survey to assess for improvement in clinical skills. 4) Behavior: Participants are allowed to elaborate on the post-survey question about how the program prepared them for in-person volunteering and rank their comfort with working with the Detroit community. We hope their responses reflect their increased sensitivity to and motivation to work with vulnerable patient populations in Detroit like those served by Cass Clinic.

**Potential Impact:** During the COVID-19 pandemic, medical schools and SRFCs face challenges in providing in-person clinical opportunities for students. A virtual case series program allows students to practice skills essential to their development as physicians and create educational materials to empower patients in the Detroit community to manage their own health.

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### **Virtual Gamification Using Kahoot! as a Means of Engaging Remote Learners**

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**Problem Statement:** To best adapt to remote learning, we incorporated gamification using the kahoot! platform into our curriculum to engage students from afar.

**Rationale:** The COVID-19 pandemic created a unique challenge to medical educators who were seasoned in teaching in-person sessions. There was a need to adapt and create distance learning alternatives while still ensuring student engagement. Studies over the past 20 years have shown that gamification can be successfully used in medical education to engage adult trainees and make learning more experiential [1]. Kahoot!, specifically, is a cost-effective online gaming platform that has been perceived by students as an enjoyable application that engenders motivation by fostering friendly competition [2]. It allows institutions to create timed quizzes and track players' individual progress. An upgraded educational subscription allows for up to 2,000 players and can be ideal for ranking participants as it provides instantaneous feedback.

**Methods:** We have incorporated the Kahoot! platform into our virtual pre-clinical and clinical sessions as follows: 1. We transitioned a once in-person patient safety simulation into a virtual patient safety game for our institution's Transition to Clerkship Week. The session was held on Zoom for 180 third-year medical students. Students were shown a series of standardized patient encounter videos [3] that demonstrated breaches in patient safety. Using kahoot!, we tested the student's awareness of each hazard and the patient safety implications. The students who identified the most patient safety hazards quickly and accurately were rewarded. 2. After a successful session, student coordinators hosted a faculty development session to discuss ways to implement kahoot! into other aspects of the distance-learning curriculum. To support faculty members with this new initiative, student coordinators provided training on its use, discussed the different gaming-modes available, and explained its use as a means of student evaluation. 3. The second application of this student-faculty initiative took place during the cardiology subunit of the second-year medical student curriculum. The subunit faculty leaders worked closely with the student coordinators to develop a post-lecture game to not only engage students and test their knowledge of cardiac physiology and pathology, but also to provide feedback on teaching methods. Students and Faculty educators were surveyed after each session.

**Results:** One-hundred third-year medical students were surveyed after completing the Virtual Patient Safety game-based session: When asked if the session was interactive, 96% of students strongly agreed. 95% of students believed that the session was useful for their training (80% of students strongly agreed; 15% students agreed), while 95% of students agreed that their knowledge of patient safety improved as a result of the session (76% strongly agreed; 19 % agreed). Five senior faculty members were surveyed after the kahoot! training session: When asked if the session demonstrated the benefits of integrating kahoot! gaming into medical education, 100% of faculty members agreed. 100% of faculty members believed that the student facilitators were knowledgeable of the kahoot! platform and related content. Overall, 100% of faculty members agreed (60% strongly agreed, 40% agreed) that they were likely to use kahoot! in future medical education sessions. Seventy-five second-year medical students were surveyed after participating in the cardiology post-lecture kahoot! review session: When asked if the session was interactive, 98.7 % of students agreed (90.7% strongly agreed, 8% agreed). Furthermore, when asked if kahoot! is a more engaging way of learning than using traditional teaching materials, 96% of students agreed. In summary, each application of the kahoot! platform into the distance-learning curriculum was met with positive reviews and promise for impacting the curriculum.

**Potential Impact:** Remote learning has become the "new normal" of 2020. Some of these changes are here to stay, and it behooves us as student educators to think of "cool" ways to engage our peers. We hope that by incorporating gamification into distance-learning, it will serve as an adjunct to online lectures, thereby reinforcing concepts and challenging learners.

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### **Comparison of Perceived Educational Value of an in-Person Versus Virtual Medical Conference**

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**Problem Statement:** Further research is needed to characterize the differences in educational value between virtual and in-person medical conferences.

**Rationale:** As a result of COVID-19, many medical conferences and other educational sessions have been moved to a virtual platform, or cancelled altogether. Book2Bedside (B2B) is a student-led Internal Medicine conference, hosted at McMaster University annually for medical students across Canada, attracting over 100 attendees each year. In accordance with social distancing mandates, B2B adapted to a virtual platform this year. While other studies have shown that virtual conferences improve accessibility and provide a comparable educational experience, further research is required to investigate the differences between virtual and in-person conferences to characterize their educational value.

**Methods:** In this retrospective observational study, demographic and survey data was compared between attendance perspectives for the in-person conference held in 2019 and the virtual conference held in 2020. Both conferences consisted of a series of didactic lectures in the morning followed by an afternoon of small-group workshops. In the survey, attendees reported their agreement to various statements regarding the conferences on a likert scale of 1 (Strongly disagree) to 7 (Strongly agree). Mann-Whitney Test was used to assess for between-group differences.

**Results:** There were 146 attendees at the in-person conference and 200 attendees at the online conference. 32 and 52 responses were gathered for the in-person conference (22% response rate), and virtual conference (26% response rate), respectively. Mann-Whitney Test revealed that learning objectives were better met for didactic, large group sessions in person (Median = 7) versus virtually (Median = 6),  $U = 2069.5$ ,  $p < .05$ . There was no significant difference in learning objectives being met when comparing in-person workshops (Median = 7) to virtual workshops (Median = 6),  $U = 2060$ ,  $p = .698$ . Survey takers agreed that the virtual nature of the conference made it more accessible for attendance, both geographically and financially ( $M = 6.32$ ,  $SD = 1.15$ ), and less susceptible to scheduling conflicts ( $M = 6.04$ ,  $SD = 1.14$ ). Survey takers additionally somewhat agreed that the virtual nature of the conference limited their interaction time with residents, other attendees, and faculty ( $M = 5.04$ ,  $SD = 1.43$ ).

**Potential Impact:** Results indicate that the virtual conference appeared to be more financially and geographically accessible to attendees while providing comparable educational value for small group workshops. For didactic lectures, however, learning objectives were better met in person, possibly owing to the perceived reduction in potential for interaction.

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## **Recorded Dyad Presentations: Innovative Approach to Peer-Teaching in an Emergency Remote Lab**

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**Idea:** First-year medical students improve communication skills and anatomic terminology in a remote learning setting by recording a dyad presentation.

**Need/Rationale:** Due to emergency circumstances of the COVID-19 pandemic, first-year medical students (MS1s) world-wide have not been able to attend gross anatomy (GA) lab in person (1). There are many challenges in converting the traditional in-person GA lab to a remote learning platform, such as organizing a peer-teaching opportunity. Peer-teaching has been shown to improve student-teacher learning outcomes, and verbalizing anatomical concepts is integral to both learning and assessment in the GA lab (2). Peer-teaching allows students to practice using anatomic terminology, improve their understanding of gross anatomy, receive feedback from faculty, and practice their communication skills in a stress-free environment. To achieve these goals in a remote setting without changing the curriculum calendar, we implemented the Recorded Dyad Presentation (RDP), which allowed MS1s to showcase their skills in a safe environment and improve professional communication.

**Methods:** The RDP was implemented with 210 MS1s over a 5-week remote GA curriculum on the musculoskeletal system. Each MS1 attended GA lab over Zoom 1-3 times per week for three hours at a time. The remote lab included: an ungraded quiz, an interactive lab presentation, collaborative work in breakout rooms, and time for questions. Each online section had 34-37 students and one GA professor. MS1s were randomly assigned virtual anatomy lab tables of 4-5 students. The RDP assignment included the following: 1) Sign-up: MS1s were advised in the first lab to select a partner from their lab table and sign up for a specific lab on Google Sheets. 2) Instructions: MS1s were provided with an RDP manual that detailed goals, expectations, presentation requirements, and a guide to recording on Zoom. In addition, MS1s received an instructional video and a sample RDP created by two second-year medical students (MS2s). 3) Due dates: Based on each pair's scheduled lab session, the RDP was due the following Monday by 9am. Each pair of MS1s had at least one weekend between learning the material and the due date to complete the assignment. 4) Record and submit: MS1s were encouraged to record their presentations via Zoom and to submit on time, as the assignment would reflect their professionalism. 5) Feedback: GA professors were asked to provide MS1s with prompt feedback, using standardized criteria based on the in-person peer-teaching evaluation form.

**Evaluation Plan:** 1) Accountability: We are gathering information from faculty to find out how many students submitted on time and how many students met expectations for the evaluation criteria. 2) Reaction: One week after the completion of all lab sessions, we will send two surveys, one to the MS1s and one to the GA faculty. We will assess perceptions of the usefulness of the RDP from both a student and professor perspective. 3) Learning: We will review the evaluation forms written by faculty to gauge student learning and review MS1 quiz results from each GA lab session to see if student pairs improved during the week of their assigned RDP. 4) Behavior: When the MS1s transition to in-person GA lab, we will send a second round of surveys to both the MS1s and faculty to assess how the RDP assignment may have prepared them for in-person peer-teaching in the context of in-person progressive lab dissection. All dyad presentation guidelines and materials were suggested and prepared by two MS2s in the Medical Educator Pathway who had recently completed two remote learning GA regional units and GA assessments. Their collaboration was critical to both the RDP and lab design.

**Potential Impact:** The RDP can be used as a model to implement peer-teaching in a remote learning or in-person format. Flexible and engaging, the RDP promotes active learning and professional development, which is increasingly at risk of becoming more passive due to the COVID-19 pandemic (3). Current plans are to continue the RDP.

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## **A Novel Virtual Multimodal Lab Structure Without Cadaveric Dissection During the COVID-19 Pandemic**

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**Idea:** Reimagining the new normal: developing a virtual multimodal anatomy lab without cadaveric dissection to teach new medical students remotely.

**Need/Rationale:** Gross anatomy curricula in particular faced challenges in the emergency transition to remote learning during the Covid-19 public health challenge [1]. While there have been many innovative changes to anatomy teaching over the past decades, the longstanding practice of cadaveric dissection has remained the cornerstone of medical anatomy curricula [2]. Existing lab structures based on cadaver dissection required radical transformation [3]. In developing a novel multimodal anatomy curriculum, we considered the following objectives: 1) to develop knowledge and skill through online distance learning [2]; 2) to ensure that learning modalities are synergistic and complementary to achieve objectives; 3) to develop an efficient and simple lab structure that faculty could implement with minimal additional technical support, and 4) to create formative assessment opportunities for a new summative exam format. A novel anatomy lab structure was designed for medical students who had never been in a dissection lab. This was achieved with the intense collaboration of medical students who had already been through the first months of emergency remote gross anatomy.

**Methods:** The organization of each virtual lab session was: 1) assessment 2) review and preview 3) collaboration 4) discussion. Included in each virtual anatomy lab was a formative quiz on previous lab material; an integrative review of answers and preview of lab via PowerPoint presentation with clinical correlations facilitated by the faculty member; virtual dissection in breakout rooms using newly created dissection videos matched to an iBook dissection manual, together with a 3D app and re-assembly in main room to discuss difficult concepts and regions. The incoming MS1 student class of 210 was divided into small groups consisting of 35 students with anatomy preceptors. Nine three-hour musculoskeletal anatomy lab sessions were held over five weeks. Three faculty repeated each lab twice. Students were assigned to virtual anatomy lab tables of four or five as in the on-campus labs. Students were assessed formatively in three formats: short Google quizzes with immediate review of answers, weekly quizzes integrated with other material from the week and lab dyad presentations evaluated, but not graded, by faculty. Formative quizzes were in the same format as the new summative exam structure. Supplementary material for students included an introductory lecture to virtual anatomy and a virtual anatomy toolbox for reference, both developed through collaboration between second year medical students and faculty.

**Evaluation Plan:** The efficacy of virtual anatomy labs is being evaluated using: facilitator guided student focus groups, qualitative surveys on the virtual labs and their components, end of unit ratings and comments using the Likert scale, frequency of resource utilization and student performance on the summative practical. Information will be gathered on the quality of time management of the lab session and the ease of learning with the novel structure. These approaches will be utilized to determine the strengths and weaknesses of the lab structure, with a focus on the effectiveness of each modality (lab presentations, dyad presentations, formative assessments, team based virtual dissection in breakout rooms, dissection videos, dissection manual, faculty discussion, toolbox) and on the impact of the remote learning on student attitude on the value of cadaver dissection to medical education. While supplementary resources such as the toolbox, anatomy lectures, and atlases were provided to students for use in lab, the usage and utility of these resources is not well known. A survey will be provided to students with a list of these supplementary with Likert scale scoring for their usage habits and the utility of the resource for the student.

**Potential Impact:** The current pandemic is viewed by our anatomy team as a major disruption that triggered a permanent transformation in the way we will teach and assess anatomy. The long term

effects of a cohort of students likely to go through an entire virtual anatomy course with no cadaver dissection or exposure to prosected specimens must be carefully evaluated.

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### **“Pass the Baton”: Sequential Team Leaders for Simulation Training**

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**Idea:** Increasing participation with the use of sequential team leaders within virtual simulation cases in a residency simulation curriculum.

**Need/Rationale:** Simulation-based education is a widely used tool in emergency medicine (EM) residency curricula. In a survey from 2008, 85% of EM residency programs reported incorporating simulation into their training. (3) However, increasing demand for simulation-based education has resulted in larger learner group sizes, leading to more passive learners during each session. (1) While studies suggest that learning outcomes do not differ between active simulation team leaders and passive observers, learner satisfaction is improved when observers play a more active role. (1,2) Results from our local needs assessment corroborate these findings, as residents felt their educational investment during a simulation session would be greater if they were given a more active role as observers. Unfortunately, time, personnel, and resource limitations make it impossible to grant all learners the opportunity to play the role of simulation team leader. In order to ensure that high quality learning occurs for both participants as well as observers, we propose the use of sequential team leaders within cases to increase resident engagement in, and active observation during, simulation sessions.

**Methods:** Due to COVID-19 and social distancing restrictions, our residency simulation curriculum has been converted to a virtual platform. All seventy-six PGY1 through PGY4 emergency medicine residents will participate as sequential case leaders during biweekly virtual simulation sessions held during protected educational conference time. Each simulation module will include residents of the same training level and will consist of two 10-minute cases and two case-specific 25-minute debriefing sessions. At the start of each case, two residents will be randomly designated to act as simulation team leaders. The remainder of the resident observers will be informed that a second team of two team leaders will be selected midway through the case scenario and will be expected to manage the case until its conclusion. Given that resident observers will not know whether they are in the “hot seat” or when this transition of leadership will happen, they will be forced to be actively engaged in the simulation scenario in case they are selected as the new team leaders. Both active participants and observers will be included in the case debriefs. The use of sequential team leaders during these virtual simulation sessions will draw upon active learning principles to enhance learner motivation and retention of educational material.

**Evaluation Plan:** We will assess learner reaction through use of online surveys sent to participants following each simulation session. Survey questions will gauge resident reactions to the use of sequential team leaders and elicit their perceptions about any increase in educational value or learner engagement as a result of this change in format. Additionally, six months after implementation of the sequential team leader model, we will conduct focus groups of mixed PGY levels to qualitatively explore a richer understanding of the learner experience in the role of both team leader and “hot seat” observer.

**Potential Impact:** As simulation-based education becomes more integrated into EM residency curricula, we must explore creative ways to increase active engagement and enhance learning. If the sequential team leader model is effective, it can transform our approach to in-person and virtual simulation sessions within our hospital and other residency training programs.

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## **Transition to Remote Simulation During COVID-19 Provides Educational Value**

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**Idea:** We sought to deliver our simulation curriculum fully remotely to internal medicine residents during the COVID-19 pandemic.

**Need/Rationale:** Our internal medicine residents typically undergo a longitudinal simulation curriculum, which has been shown to be beneficial to long-term learning [1]. A recent systematic review of 21 simulation studies also illuminated its potential role in preventing medical errors [2]. We have a robust simulation center complete with high-fidelity mannequins. In a typical year, we host approximately 10 sessions for internal medicine PGY1's and 25 sessions for combined PGY2/3's. Groups of about 4 residents solve various cases while an instructor and simulation technician take them through clinical scenarios that adapt to their medical decisions in real time. Each case is followed by a debriefing session with the simulation instructor who highlights the most pertinent learning points based on the residents' actions. Due to new social distancing guidelines from COVID-19, our simulation curriculum was halted. As a result, we adapted by moving our simulation sessions completely online starting July 2020.

**Methods:** Each 3-4 hour session covers 3 cases, which have been specifically designed for the level of learner at the session. They employ Zoom video conferencing technology using a recurring meeting link that is sent to the learners before each session. One simulation technician is alone at the simulation center displaying a monitor on Zoom while the learners and instructors are on their computers remotely. The majority of instructors previously received formal training in simulation instruction and debriefing, but no specific training was done in the use of remote simulation. Each session follows a similar format. First, a brief orientation takes place covering the basic expectations of the session, online meeting etiquette, and the limitations of remote simulation. The cases begin with the case stem that is presented to learners from the simulation technician's screen. After the case stem, the learners interact with the patient asking medical questions, requesting exam findings, work-up, and executing treatment plans. A variety of radiology images, point of care ultrasound, and laboratory data are available upon request. A virtual online defibrillator is also available with the ability to adjust the settings. The instructor maintains a private chat with the simulation technician to modify the clinical status of the patient based on the actions of the learners. After completing the case, the instructor debriefs with the learners online in a similar manner as the in-person version.

**Evaluation Plan:** At the close of each residency simulation session, we request completion of an anonymous evaluation form from all learners. The form contains five questions regarding the content of the course and three questions regarding the instructor. All eight questions are scored on a 5 point Likert scale. Example questions include "The course content was relevant to my training level or practice" and "The instructor was effective in facilitating my learning." During the pandemic, we have transitioned our paper evaluations to an online version that the students complete immediately following their online simulation session. Anecdotally, we have received very positive feedback about our online simulation forums. As we are still collecting data, we plan to conduct a quantitative comparison of in-person evaluations from prior years and remote evaluations from the 2020-2021 academic year to see if there are any significant differences in the usefulness of the session or perceptions of the instructor. Through this evaluation, we seek to better understand the beneficial qualities and limitations of remote simulation learning.

**Potential Impact:** We have continued our simulation curriculum while adhering to social distancing guidelines and promoting the safety of our participants. Beyond pandemics, remote simulation could bring cognitively engaging learning opportunities to institutions without access to a simulation center such as small residencies or even to UCLA global health partners.

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### **GrepMed - An Image-Based Medical Reference Platform for Sharing High Yield Infographics**

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**Idea:** GrepMed - An image-based medical reference platform for sharing high yield infographics to help clinicians make better decisions at the bedside.

**Need/Rationale:** Clinicians are inundated with text information via EMR systems which are a significant source of clinician burn-out. Traditional medical reference resources typically present information in the form of walls of text that can compound cognitive overload during the middle of a busy shift. High-yield medical infographics can shortcut the information retrieval process via easily digestible diagnostic schemas, management algorithms, checklists, decision aids, differential diagnosis lists, pharmacology tables, visual abstracts and much more. There is a vibrant community of clinicians sharing such Free Open Access Medical Education (#FOAMed) infographics on twitter and other platforms but there is no centralized resource that provides an evergreen repository for quickly finding and referencing these resources at the bedside.

**Methods:** We developed a free online medical education platform at GrepMed.com that allows medical educators to share high yield medical reference infographics. These infographics come in the form of diagnostic schemas, management algorithms, checklists, decision aids, differential diagnosis lists, pharmacology reference tables, visual abstracts and much more. We also developed .mp4 video support to allow crowd-sourcing of Point of Care Ultrasound (POCUS) and physical exam clips. Creators provide short descriptive captions, along with a number hashtags to label their content into categories which make them searchable by topic and subject matter. We developed several mechanisms to ensure high levels of content quality. A backend editorial interface allows us to monitor and editorialize all submissions to the website. We developed user voting mechanisms in the form of "like" and "bookmark" features that allow registered users to implicitly vote on the quality of images that have been contributed to our site. We have also added the ability for registered users to add editorial comments to provide additional commentary or to correct inaccurate or outdated information. A mobile friendly web-interface makes it easy for clinicians to utilize our platform at the bedside. Search engine optimization techniques are employed to index content with major search engines to ensure widespread global discovery and dissemination.

**Evaluation Plan:** We are measuring impact in terms of growing traffic, returning users and infographic dissemination. Since launching GrepMed we have seen website traffic double roughly every 6 months to become one of the most visited Free Open Access Medical Education resources online. We have recently crossed over 800 thousand image impressions per day as measured via Google Search Console, with over 100 million image impressions delivered in the past 6 months. We're used in over 190 countries every month, where many providers cannot afford expensive subscription medical reference websites. Providers using GrepMed span across medical specialties and members of the healthcare team. Users include attending physicians, residents, pharmacists, nurses, physician assistants, nurse practitioners, physical therapists and EMS providers. Our content is shared widely over social media platforms, with over 22 thousand followers on Instagram and 12k followers on Twitter. By crowd-sourcing content from medical educator contributors, we have been able to build up the largest online collection of Point of Care Ultrasound videos as well as a unique collection of searchable physical exam video clips for teaching bedside diagnosis.

**Potential Impact:** GrepMed provides an evergreen platform for medical educators to reach audiences rapidly and at a much larger scale than traditional publications and conferences. Crowd-sourcing infographics allows us to democratize the medical reference space, while providing a valuable free resource to clinicians across the globe.

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### **Influencing Education: Is Social Media a Useful Adjunct to Online Learning?**

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**Idea:** To improve engagement amongst medical students with online learning resources by using social media “influence”.

**Need/Rationale:** COVID has necessitated a rapid revolution in how we teach medicine. Most teaching has moved online, resulting in a deluge of new resources available to our learners. Many of these resources are reproductions of traditional teaching methods, such as presentations with voiceover narration, that have been successful in traditional learning settings. Unfortunately these methods have not translated well to digital delivery, and have poorer efficacy when compared to resources specifically designed for online education (1). Online learning at its best has many unique advantages, such as learner flexibility and control, which can lead to improved academic outcomes in engaged students (2). However online learning at its worst overwhelms learners with resources without providing a learning pathway, causing confusion and disengagement (3). Outside of education influencer marketing has been used as a digital answer to “word of mouth” advertising which attaches a premium to the individual product to differentiate them in saturated markets (4). We intend to use similar influencer tactics to signpost our medical students to curated learning resources, mitigating the novel burden of learning online and improving engagement with medical education.

**Methods:** In the advent of COVID, our fourth year medical students are gaining exposure to clinical specialties through a flipped classroom model, where students attend online lectures and tutorials before joining clinical attachments. Prior to their anaesthetic attachment, students are expected to have developed their conceptual understanding through their own online learning and by contributing to facilitated tutorials. As a department we have created several tailor-made videos, to replace traditional lectures, which aim to assist students with their own learning. These videos are freely available on YouTube to increase ease of access for students and to support the Free Open Access Meducation (FOAM) movement (5). The intent is that students watch these videos prior to contributing to tutorials and joining their clinical attachment. We plan to use social media platforms, such as Instagram and Twitter, to signpost videos to our students prior to their anaesthetic placement. We have created a social media strategy inspired by professional influencers. Our hope is that using social media strategies that are familiar to our modern students, will improve their engagement with online learning, thereby improving engagement with tutorials and clinical placements.

**Evaluation Plan:** We are currently collecting baseline data on engagement with our YouTube videos (this will last six weeks over one clinical attachment). After baseline data collection is complete, we will launch a social media strategy on Instagram for six weeks, during which we will continue to measure engagement with our YouTube videos. We will also measure additional parameters such as Instagram referrals. Throughout this project we will continue to collect both quantitative and qualitative feedback from our students in the form of opinion surveys with Likert scales and open text. Students’ ability to demonstrate conceptual understanding will be observed in tutorials and clinical attachments, and will hopefully improve in line with social media engagement.

**Potential Impact:** By transitioning to learning delivery methods and models which leverage the advantages of digital delivery, and engaging students through easily accessible platforms, meaningful engagement with learning content will increase resulting in students being better prepared for placements.

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### **An Online Faculty Resource: Expanding Illness Scripts to Include Determinants of Equity**

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**Idea:** We created an online collection of illness scripts that incorporate determinants of equity and formatted for just-in-time clinical teaching.

**Need/Rationale:** Clinical teaching is impactful when it occurs at the bedside. At the University of Washington (UW), teaching faculty physicians in the Colleges program guide junior medical students through their first clinical encounters with volunteer patients on the medical wards. Physician teachers with less experience with hospitalized adult patients expressed a need for a teaching resource to use during these early clinical experiences, especially for common diagnoses seen in the hospital setting. At the same time, the medical school was restructuring its curriculum to directly address inequities in healthcare. We created an easy-to-access online collection of illness scripts to serve as a refresher of common hospital diagnoses, a compilation of clinical pearls, and a reminder of physical exam maneuvers – aimed at the junior medical student. Each illness script includes a section on determinants of equity to facilitate conversations around health inequities in the hospital setting (1,2).

**Methods:** Fifteen illness scripts were created from October 2019 to January 2020. The presenting author gathered a collection of common diagnoses among hospitalized patients from UW School of Medicine College faculty. From this compiled list, the presenting author created illness scripts using resources found through the University of Washington (UW) Health Sciences Library. As the focus of teaching tool was teaching of junior medical students, less specialized resources were used. Textbooks found through UW eBooks, AccessMedicine, and Clinical Key were often used as references for the illness scripts due to the general overview provided for illnesses in the texts. PubMed was used to find primary literature and research about health equity for each of the diagnoses. After the first several illness scripts were produced, select College faculty who had requested a teaching aid were asked for their feedback, and the scripts were revised. Google Sites was chosen as the platform to share the completed illness scripts to facilitate mobile use of the teaching tool. After the creation of the website, faculty was again asked for their opinions. The final teaching resource can be found on <https://sites.google.com/uw.edu/modifiedillnessscripts/home>. IRB exemption was obtained to survey faculty on their experience with the teaching tool.

**Evaluation Plan:** Fifteen online illness scripts were shared with faculty in February 2020. Unfortunately, due to the COVID pandemic, in-hospital instruction of medical students was deferred for several months. With the start of the academic year this September 2020, the optional tool was shared with College faculty as well as clerkship directors (to share with faculty teaching students on clerkships). After several months of use, a brief online survey will be sent to teaching faculty in December 2020. The survey gathers demographic data of the educator, how often the tool was used, and faculty members' perspectives on the ease of use and effectiveness of the tool, particularly for aiding in discussions of determinants of equity on a five-point Likert scale. The survey also has a free response section for any feedback or suggestions of improvement. The responses will be analyzed all together as well as in sub-groups based on specialty and years of teaching experience.

**Potential Impact:** The online tool will allow faculty to provide effective just-in-time teaching for junior medical students on the medical wards. In addition, incorporating determinants of equity into clinical teaching has the potential to integrate health equity content more seamlessly and effectively into medical education.

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## Improving Efficiency in Learning Medical Knowledge via Keyboard Shortcuts

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**Idea:** An always-running background application that monitors predefined keyboard shortcuts to search any user-highlighted text via a web search engine.

**Need/Rationale:** Throughout medical school, medical students are introduced to a wealth of medical jargon they have not learned about previously. A study found 70% of medical students relied on Google for looking up unfamiliar biomedical knowledge. Anatomical structure names, pathology imaging descriptions, medication names, medical diseases, terminologies, and abbreviations are examples students would come across in online medical knowledge databases, patient charts, or textbooks. Aside from anatomy atlases, medical textbooks are text-heavy with occasional interspersed images. A study revealed 60% of medical students are multimodal learners via the VARK (Visual, Aural Read/Write, Kinesthetic) instrument assessment. When images are not available in a textbook, searching for images online is beneficial for multimodal learners. Access to E-books also increases the likelihood of directly searching unfamiliar terms on the internet via copy-pasting. Currently, a user would need to 1) highlight the text 2) copy the text 3) open an internet browser 3) click on the search field 4) paste the text 5) press search 6) click on the search engine's "Images" link. Cumulatively, these steps are time-consuming and repetitive.

**Methods:** A free, open-source background-running application for Microsoft Windows was created to monitor predefined keyboard shortcuts. When Ctrl+; is pressed, any user-highlighted text in the active desktop window (e.g. PDF reader, internet browser, electronic medical record system, or any desktop application) is copied, an internet browser is automatically launched (or a new browser tab is created if the internet browser is already opened), and the text is searched on the search engine. The user immediately reaches the search engine's text results page. When Ctrl+' is pressed, any text highlighted in the active desktop window is copied and the user is immediately brought to the search engine's images results page to view images associated with the text highlighted. With the application running in the background, a user would only need to 1) highlight the text 2) press Ctrl+; to search for a text definition or Ctrl+' to search for images.

**Evaluation Plan:** Positive feedback was received from students who have downloaded and utilized the application. Cumulative time on searching 10 terms for definitions and 10 terms for images using a cold-launch format (internet browser not running) without the application averaged 2 minutes and 49 seconds over 5 trials. Cumulative time of the same test utilizing keyboard shortcuts with the background-running application averaged 43 seconds over 5 trials. Utilizing the application resulted in 75% decrease in time to search a term. Future analysis of student academic performance, such as using USMLE Step or NBME Shelf scores, against frequency in utilization of the keyboard-shortcut monitoring application can be accomplished with informed consent and modification of the current application to track search counts via the application. The author predicts a positive correlation between number of searches and academic performance.

**Potential Impact:** With medical students looking up numerous terms for definitions or images throughout their curriculum, the benefit of utilizing an application that results in a 75% time saving in accomplishing the search task can be realized. All learners, not only limited to medical students, can benefit from this tool that assists users to be more efficient.

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### **eBite: A Medical Education Blog for a Worldwide Community of Learners**

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**Idea:** Using an innovative medical education blog to deliver thought-provoking content and establish a community of learners [1] through participant comments.

**Need/Rationale:** Public health concerns during spring 2020 have exposed a need for a barrier-free online medical education delivery system that promotes learner collaboration. Remote teaching was established in a rapid fashion, and theory – and best practice-based, active education – was re-established using discussion boards and other means to promote learner collaboration. However, while institutional learning management systems (LMSs) were available for institutional learners, innovative solutions were needed to discuss educational content independently. We developed the medical education blog eBite to deliver content that is easy to access from anywhere on any device. Contextualized by sociocultural and constructivist theories, a community of learners establishes rapidly as participants answer content-specific questions and exchange reflections and opinions [2]. Comparable to a discussion-board thread, learners' comments can be moderated as they reply to general questions and each other's views. Furthermore, the educational blog is versatile to support any teaching style and provides content as a standalone collaborative exercise or during a class session for use in, e.g., breakout groups, or as pre-work for a flipped classroom.

**Methods:** eBite will serve the needs of medical education learners. Established at a free Weebly site (<https://www.weebly.com/>), the site allows administrators to publish blog content using multiple types of media and display options, thereby supporting a variety of learning styles. Comment moderation is available to review and approve comments, if needed. As opposed to standard discussion board threads in LMSs, an engaging display using, e.g., text, videos, or surveys, can stimulate a rich discussion of the content. As an added benefit, the site is open to the public and non-course faculty, and public comments can enhance the discussion through fresh ideas and viewpoints. Comparable to discussion board grading, blog discussion can be graded using rubrics. The effectiveness of this blog will be determined using a combination of quantitative and qualitative evaluations (mixed-method research). We plan to use a post-event evaluation to inquire about satisfaction, collaboration, exchange of ideas, and ease of use using a 5-point Likert-type survey, with the following scale and anchors: 1=Strongly Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4=Agree, and 5=Strongly Agree. We will also include narrative questions aimed at obtaining additional insights: (1) Please comment on what you experienced as the most effective strategy for collaboration in educational blogs; and (2) Please provide any suggestions for improvement on the experience of using educational blogs for learning.

**Evaluation Plan:** A task-oriented evaluation plan includes (1) evaluation need; (2) evaluation focus; (3) evaluation methodology; (4) presentation of evaluation results; and (5) implementation of evaluation results [3]. The need and focus of the evaluation of the educational blog is twofold and include (1) determining the effectiveness of delivering barrier-free, ease of access educational content; and (2) measuring learner collaboration. A mixed-method research framework will be applied to not only measure the effectiveness of the educational blog but also provide a voice to study participants. We plan to disseminate the evaluation results locally and also report nationally and internationally at medical education conferences. Written feedback from participants will assist the administrators in customizing content to meet user needs and improve the overall experience. Evaluation results will be used to determine and implement changes to improve the effectiveness of the blog.

**Potential Impact:** Medical education learners worldwide will benefit from the innovative and thought-provoking educational blog eBite. Using multimedia display options and blog functionality, learners of all levels can connect with each other and participate in a growing community that will expand knowledge and broaden learning experiences.

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## Value in Using “Mediphors” in Clinical Counseling and Sharing Effective “Mediphors” With Colleagues

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**Idea:** Creating a database of “mediphors” for healthcare providers, students, and patients to utilize in order to improve provider-patient communication.

**Need/Rationale:** When patients do not understand their provider’s counseling, they are less likely to understand their disease process and treatment plan, which may make them more likely to make suboptimal healthcare decisions (1). Effective physician-patient communication is a key factor in improving health outcomes. Physicians who use figurative language that grounds their counseling in ideas familiar to the patient are rated by patients as better communicators (2). Medical metaphors and analogies, “mediphors,” are a possible way for providers to explain concepts in a way that is understandable for patients with low health literacy or different world views. However, there is no single mediphor for any medical concept that ensures a patient’s comprehension. As such, mediphors are seldom taught in medical education. Healthcare providers may benefit from having a repertoire of mediphors at their disposal so they may adapt their communication style for different patients. One way to share mediphors between colleagues and to students is through the resource Mediphors: a dynamic, mobile collection of mediphors that physicians and students can contribute to and use to search for ideas to improve their counseling, and for patients to explore health concepts.

**Methods:** We created the instagram account @mediphors to develop, catalogue, and distribute mediphors. Each week we post a mediphor displayed as a visual aid: a written explanation over an image. In the caption, the mediphor is explained further. An example of a posted mediphors reads “Targeted gene therapies are keys that can turn off the engine of cancer.” We then administered a survey to physicians (goal n=50) via Zoom or phone in order to assess their use and valuation of mediphors as a clinical counseling tool. Physicians were asked about their patient populations, the role of mediphors in their counseling, to produce examples of mediphors they use, and for examples of medical concepts that patients find particularly difficult. Physicians were asked about their likelihood of using a Mediphor resource, if the mediphors they provided could be included, and if they would like attribution. Additionally, we continue to add to and build out the @mediphors instagram using the mediphors and input provided by the interviewed physicians.

**Evaluation Plan:** The survey results will be described using simple descriptive statistics. Factors that will be described include the proportion of physicians using mediphors, how often they use them, the level to which value them, and how likely physicians are to use the described Mediphors resource. This will provide a sense of how useful mediphors are in clinical counseling and whether or not there is a need or desire for a Mediphors database. Additionally, the bank of mediphors collected during the interviews will be evaluated to determine which areas of medicine are deficient in mediphors. This information combined with the list of concepts that physicians cite as being particularly challenging to explain to patients will provide a target for areas that should be built out during the development of the Mediphors database.

**Potential Impact:** If physicians value mediphors and will engage with the resource, the instagram can transition into a searchable platform for physicians, students, and patients to engage with. And this information can be shared with curriculum departments, so metaphorical language can be emphasized during patient encounters in the first years of medical education.

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### **The Online Pediatric Education Network (OPEN)**

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*Children's Hospital Los Angeles*

**Idea:** Validate continuing medical education courses for clinicians in Armenia by linking a learning management system with an electronic health records.

**Need/Rationale:** Most physicians and nurses in Armenia have a desire to practice evidence based medicine and use data to guide their practice, but lack the training to apply medical evidence to their practice making it difficult for clinicians to stay up to date (1, 2, 3, 4). This can be at least in part attributed to the Soviet Era Semashko system's approach to medical education (5). A secondary problem is the limited access to electronic health records, which makes it nearly impossible to evaluate the impact of education intervention on patient outcomes. Despite a government led national EHR system, as of 2019, no health-care facility had successfully transitioned off of paper records (6). This paucity of data inhibits the ability for professional associations, international aid organizations, and institutions of higher learning to target medical education to the areas of greatest need. Armenian physicians have a positive perception of the usefulness and a positive attitude towards EHR technology (6). Given these facts and our early success implementing both an EMR and LMS, we propose to link the two in order to create a practice- and outcomes-driven medical education platform for Armenian providers.

**Methods:** Our project is based on Avetis (EHR) and LearnwithOPEN (LMS system for CMEs) that have been developed as part of the ongoing partnership between Children's Hospital Los Angeles and Armenia. We intend to start this project in 2021 and complete it by 2024. Avetis currently has 22,000 records for children in Armenia. LearnwithOPEN currently has 40 hours of online content with four CME courses under development and 382 registered users. By the launch of this project, we anticipate having over 100,000 records in Avetis. LearnwithOPEN will have approximately 40 certified CME courses for general pediatrics. Study Site: This will take place at a large pediatric clinic in Yerevan that uses Avetis. Phase 1 - Customized learning plans: We will enroll a cohort of clinicians to generate customized learning plans that recommend six CME courses based on a provider's patient population and relative outcomes data. We will track learner perceptions and likeability of the program through qualitative and quantitative methods. Phase 2 - Course Validation: We will investigate if our courses change practice behavior by enrolling a second cohort of clinicians. Based on learnings from phase 1, we will generate modified learning plans for each enrolled learner. After completing the learning plans, we will spend 12 months tracking each clinicians' practice patterns through the EMR system to determine if they are appropriately applying the guidance from their CME courses.

**Evaluation Plan:** Phase 1: We expect to enroll 10 healthcare professionals Each learner will complete at least five of the recommended courses within three months. We will utilize the existing analytics from LearnwithOPEN to benchmark and collect statistics around completion percentage, likeability through NPS and other qualitative methods. We expect each learner to take a different set of courses but will be able to compare their assessment outcomes on a particular topic with those of the broader LearnwithOPEN audience. We believe learners who use a customized learning plan, as opposed to other pediatricians who access LearnwithOPEN to complete courses that are more relevant to their patient population. Phase 2: We expect to enroll 15 clinicians in the second cohort who work in the same practice environment. We anticipate similar completion numbers to phase 1. After twelve months, we will create an aggregated, anonymized data set of patients' medical records treated by each individual medical professional. We will analyze that data and use historical records prior to this study as a comparison to determine if learners are applying the guidance from the CME courses.

**Potential Impact:** This project will explore the feasibility of using EHR data to customize continuing medical education. If successful, we will work to automate this approach to make it available for all medical professionals in Armenia. Additionally, both Avetis and LearnwithOPEN are built on open-source platforms to enable others to replicate our approach.

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### **Virtual Examination Room for ROP Management in Armenia**

Sikder, Abu; Dickhoner, James; Espinoza, Juan  
*Children's Hospital Los Angeles*

**Problem Statement:** Social media platforms can enhance pediatric ophthalmology training in retinopathy of prematurity and overcome traditional global health barriers.

**Rationale:** Retinopathy of prematurity (ROP) is a vasoproliferative retinal disease which affects premature infants and is a leading cause of childhood blindness around the world. In low and middle income countries (LMICs) increasing numbers of newborns are surviving infancy and prematurity due to advances in neonatal care. As more neonates survive, there is an increase in the incidence of ROP and therefore the need for care. Unfortunately, there is a lack of trained specialists to manage ROP in LMICs. Technology has been used successfully to combat workforce shortages and enhance training paradigms for screening, diagnosis, and treatment. Knowledge sharing networks and social media have leveraged technology to enhance educational discourse, consultation, and collaboration between physicians and care providers, internationally. Here we present our findings for using a Facebook virtual examination room (VER) to train Armenian ophthalmologists to screen, diagnose, and treat ROP.

**Methods:** Armenian ophthalmologists (trainees) are trained by international specialists (preceptors) through case-based consultation on ROP using a VER lasting from November 2012 to December 2018. Cases are presented as posts by trainees accompanied by RetCam images and information such as gestational age and birthweight. In each post, trainees and preceptors comment on the subject's ROP: stage, zone, plus disease, and treatment. The posts are analyzed quantitatively for group, participant activity, and clinical metrics. Group utilization metrics are extracted from HTML data using a customized python script for quantifying the number of: posts, likes, comments, views, and participants. Participant utilization metrics for preceptors and trainees are also extracted using a script to quantify the number of: posts, posts liked, comments, and comments liked. Additionally, data is further analyzed to evaluate how actively involved trainees and preceptors are. Clinical metrics for ROP are analyzed manually for birthweight, gestational age, stage, zone, plus disease, and treatment. Furthermore, comments for each post are analyzed qualitatively for common themes and agreement on clinical findings or recommendations.

**Results:** Preliminary results of group utilization show 221 posts from 2012 to 2018 with an average of 1.4 likes, 2.37 comments, 3.6 views, and 0.72 comments for those with engagement. Participant activity metrics show that trainees made 216 posts with 64 likes on those posts. They also made 65 comments with 25 likes on them. Preceptors made 0 posts with 0 post likes. They also made 93 comments which received 91 likes. 9 remaining posts were made by observers which received 7 likes. Observers also made 65 comments and received 25 likes. Participant activity will be evaluated based on the following scenarios per post: 2 preceptors commented, at least 2 trainees commented, and at least 2 observers commented. Clinical metrics show that 120 cases were posted. 114 cases included birthweight, with an average of  $1229 \pm 341$  g. Gestational age is available for 115 subjects with an average of  $31 \pm 5$  weeks. Specific breakdown of stage, zone, plus disease, and treatment opinions will be tallied by parsing through each post and categorizing accordingly. Stage ranges from 1-5 and zone ranges from 1-3. Plus disease can be pre-plus, plus, or minus. Treatment options include: Avastin, laser, and other (I/V injections, hemodialysis, vitrectomy). Qualitative analysis of the content includes reviewing each comment for conversation themes. In addition, agreement or disagreement over diagnosis, staging, and treatment recommendations in each post will be evaluated by reviewing the comments.

**Potential Impact:** The Virtual Examination Room is a feasible and engaging tool to enhance ROP training. While our focus has been on global health applications, US programs may benefit from similar tools that engage trainees and practicing professionals in more informal, multimedia settings.

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### **Utilization of Visual Abstracts Versus Text Abstracts for User Engagement on Twitter**

Wu, Constance (1); Chan, Alex (2); Cheung, Andrew (2); Succi, Marc D. (1,3)

(1) Harvard Medical School; (2) McMaster University; (3) Massachusetts General Hospital

**Problem Statement:** There is a need to increase online user engagement with medical publications and research.

**Rationale:** In the digital age of publication and era of social media, there is an increased need for precise and concise reporting of medical manuscripts to educate students, physicians, and other health professionals. 2MinuteMedicine.com has utilized text summaries/abstracts (TAs) since 2012 to provide curated reports for educational purposes and has more recently started utilizing visual abstracts (VAs) as a way of summarizing key study findings in a visual form. Other studies have shown that visual abstracts increase traffic to full-length journal articles when published on social media. However, there is an ongoing question of whether VAs increases user engagements over TAs since both are designed as quick reading material.

**Methods:** In this case-control study, we used Twitter to publish 18 pairs of VAs and TAs in order to investigate the effect of VAs on user engagement. Each VA/TA pair was published on the same day, covered the same content and had the same title on Twitter; posts for TAs had a nondescript control image and link to a text abstract, while VA posts had a partial preview and link to the full VA. The outcomes studied were views, engagement rate, and percent change in engagement rate. An online survey was also sent to users of 2MinuteMedicine.com to assess self-reported preferences for VAs versus TAs. On the survey, users reported their agreement to various statements about infographics versus text summaries using a scale of 1 (strongly disagree) to 5 (strongly agree).

**Results:** Results from Twitter showed that while there was no difference in the number of views on Twitter ( $p=0.83$ ), VAs had significantly higher engagement rates ( $p=0.002$ ), with an average fold change of 2.75 (95% CI 1.83 to 3.67). In terms of the survey, a total of 130 responses were collected. Survey takers reported that they would be more likely to remember information presented to them in an infographic instead of in a text summary (mean 4.05, SD 0.08), that they would be more likely to share infographics than text summaries (mean 3.81, SD 0.10), that they found information presented in an infographic form comparable to that in a text summary (mean 4.11, SD 0.08), and that they would be more likely to open emails containing an infographic or picture (mean 4.00, SD 0.10).

**Potential Impact:** Our results show that Twitter posts containing previews and links to VAs had more user engagement than posts with no visual content and links to TAs, which suggests that VAs are effective tools for promoting engagement with medical content on social media. Our survey results also indicate user preference for information presented in a visual form.

#### **References:**

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## **Virtual Pediatric Inpatient Rounds for Third Year Medical Students: Innovation in the Time of COVID**

Gordon, Bahareh; Shekarchi, Amy  
*Olive-View UCLA Medical Center and UCLA DGSOM*

**Idea:** Students were pulled from wards due to COVID-19. To mirror their experience on pediatric wards, we created a table top simulation of inpatient rounds.

**Need/Rationale:** Given the AAMC's recommendation to remove medical students from the clinical arena as the COVID-19 pandemic unfolded, we were put into the unique position of re-imagining the pediatric clerkship to ensure medical student engagement and learning. As such, we pulled from table top simulation to allow for fictitious, but near real experience, on the pediatrics wards so as to avoid any significant break in the trajectory of our learners. Table top simulation is an educational tool that allows learners to apply knowledge and skills through formal discussion of real-life scenarios when hands on training is not practical or available. This methodology has long been used by emergency management response teams and public health organizations in the preparation of disasters. We query that the outcome of this exercise, in the setting of remote learning, will accurately mirror inpatient rounds, allow for teaching opportunities for faculty and ultimately result in increased confidence of learners when they re-enter the clinical arena.

**Methods:** We conducted a needs assessment to identify similar curricula in the literature and found none within the databases we searched (PubMed, APPD Shareware House, MedEd Portal). The paucity of published literature demonstrated the need for quick, but thoughtful, development of a robust virtual curriculum given the unknowns surrounding the COVID-19 pandemic. We first chose five clinical scenarios (neonatal jaundice, culture negative sepsis, acute asthma exacerbation, abdominal pain, foreign body) and created electronic medical records for each patient that included documentation, vital signs, ins and outs, labs and imaging. We also designed a sign-out that the medical students would be given the morning of "rounds" by the "night team." Finally, an instructor's guide with teaching points and a formal evaluation rubric were created. Medical students were split into groups of five, and the evening before rounds, they were sent one liners about the cases they would be presenting the following morning, in addition to a link for the virtual platform. Upon "arriving" to rounds, medical students were given sign-out and provided 30 minutes to pre-round. After 30 minutes, the attending arrived and the team began rounds, as they would in person.

**Evaluation Plan:** Learners were afforded an opportunity for formal and anonymous feedback via Qualtrics, while faculty were asked to provide real time feedback via email. Themes for improvement were identified from faculty emails and informal conversations with participating medical students which informed the second iteration of the activity. Following the second round of this simulated experience, we again requested feedback from both faculty and learners in the same manner as before. As medical students have now returned to the clinical space, we are creating a survey to assess perceived confidence on pediatric inpatient rounds for students who participated in the virtual rounding curriculum as compared to those who did not.

**Potential Impact:** Primary impact will be in medical students expressing that this experience mirrors rounds. Secondary impact will be that students who participate in this activity perceive increased confidence when rejoining in person rounds as compared to colleagues who did not participate in this experience.

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- 3) *Am J Dis Child.* 1992;146(1):55-60. doi:10.1001/archpedi.1992.02160130057021

### Virtual Peer to Peer Teaching

Patel, Dipal R.; Goldberg, Tamara

*Mount Sinai Morningside - Mount Sinai West Hospitals and Icahn School of Medicine at Mount Sinai*

**Problem Statement:** The COVID-19 pandemic in New York City disrupted the traditional model of in-person academic activities for our graduate medical trainees.

**Rationale:** The COVID-19 pandemic led many graduate medical education programs to cancel or restructure in-person didactic sessions. While online sessions allow for some interactivity and social distancing, their format is typically passive and teacher driven. Technological issues, user discomfort, monotony of structure, and lack of engagement can all contribute to disruption of the learning environment. Alterations in resident and faculty schedules necessitate new and innovative teaching strategies to reach all learners, regardless of physical location, during their ambulatory rotation. Novel methods of virtual learning are essential to combat these challenges and to better engage trainees as both learners as well as virtual teachers. The solution we sought to utilize is a peer-to-peer virtual teaching strategy. We hope that through taking ownership of a topic and utilizing technology, resident learners will innovatively engage their peers while delivering core ambulatory content.

**Methods:** On day 1 of their ambulatory rotation block, Internal Medicine residents were asked to select a topic from a designated list. Topics were curated by ambulatory faculty with a focus on primary care; they were narrow in scope and capable of being presented in 10-15 minutes, depending on the platform. They were also provided with a list of potential virtual platforms to choose from with specific examples. Each resident was assigned a faculty mentor for the project. Residents had 1 week to complete a draft of the project and submit for review. After appropriate review and editing by the faculty, the project was considered ready for presentation. Residents are then able to access these projects from the program's education website. After completion of the project, residents were asked to evaluate their experience. Faculty members reviewed each project on creativity and educational content with a focus on pedagogical innovation. Each project can be evaluated by resident peers on creativity and educational content.

**Results:** Over a period of three 2-week block rotations, a total of 38 residents participated in this curricular activity. While the majority of the residents chose to use slide presentation, there were significant attempts at modifying these with narration and embedded videos for physical exam demonstrations. However, other educational methods were used including podcasts, infographics, tutorials, music videos, and a choose your adventure style medical case. Sixteen out of 38 participants also completed the self-evaluation. Overwhelmingly, 13 (81.3%) residents stated they would do the project again and 14 (87.6%) found the activity high yield in learning about an ambulatory topic. There was also an opportunity to provide free text comments and were generally enthusiastic in their desire to continue the project.

**Potential Impact:** This curricular innovation was implemented to fill a void created by the social distancing rules. This project was well received, and many requested it to be continued. Three residents commented on how learning the technology was difficult for them. Going forward, resident knowledge of the various platforms will be assessed before implementation.

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**Medical Student Report: A Novel Approach to Enhance Pediatric Education During a Pandemic**

Parke, Caitlin (1); Donovan, Maggie (1); Aboona, Majd (1); Grimaldi, Lisa (1,2)  
(1) University of Arizona College of Medicine- Phoenix; (2) Phoenix Children's Hospital

**Idea:** Building self-directed learning skills of medical students and pediatric residents utilizing a collaborative, case-based format in a virtual setting.

**Need/Rationale:** Pre-clerkship medical students have limited exposure to clinical pediatric experiences. This year, opportunities have been further curtailed due to the COVID-19 pandemic. Our medical students interested in pursuing a career in pediatrics desire earlier exposure to pediatric medicine, and our pediatric residents desire more opportunities to improve their teaching skills. We created the Medical Student Report (MSR), a collaborative effort with the Pediatric Interest Group and pediatric residency program to meet both groups of learners' needs in a virtual setting. We structured the MSR based on key learning principles to achieve the following goals: 1. Learners' developmental level was central in presentation development to encourage a respectful learning environment 2. Participants shared responsibility in creating sessions tailored to their own experience and interests, implementing self-directed learning 3. Active participation was encouraged during each session so that learners collaborated and applied knowledge. During this pandemic, where clinical experiences are restricted, the MSR provides an opportunity for students and residents to increase their pediatric knowledge and teaching skills in a safe environment.

**Methods:** One-hour, weekly MSR sessions take place over Zoom videoconferencing with one pre-clerkship medical student presenter, one pediatric resident presenter, and voluntary attendees (medical students and residents of all years). These sessions include: 1) Joint presentation by a pre-clerkship student and resident: This presentation is prepared prior to the session through collaborative efforts between the resident and student. The student is responsible for the basic science material of the presentation while the resident provides a pediatric case that applies these basic science concepts. 2) Case-based instruction: The case includes all aspects of a clinical encounter (history, exam, diagnostics). Open-ended questions are used to elicit active participation, clinical reasoning, and discussion among attendees. 3) Review: A case summary, highlighting the underlying pathology and science, is provided by the student presenter. This allows the student to foster teaching skills and apply basic science knowledge to a clinical scenario. 4) Feedback: At the end of the MSR, the student presenter receives feedback on his/her teaching skills from the resident presenter and MSR attendees. Overall, the MSR format promotes open discussion that is mutually beneficial for medical students and pediatric residents. Students learn the clinical pearls of common pediatric cases, and residents review the science and pathophysiology of these cases as they mentor the students.

**Evaluation Plan:** 1) Accountability: We will track the MSR attendance and degree of active participation among attendees at each session. 2) Reaction: MSR will be evaluated on a weekly basis through administration of surveys. Surveys for the presenters will include Likert scales that evaluate their perceived value of creating and presenting a case. Surveys for attendees will include Likert scales that assess how the session impacted their interest in pediatrics, their comfort level with pediatric knowledge, and their feelings of preparedness for pediatric clerkships. 3) Learning: Open-ended questions regarding what attendees learned and what they hope to learn in future sessions will be included in the weekly surveys. Open-ended questions will also be asked to presenters regarding confidence in the session's content and barriers towards creating the presentation. 4) Behavior: Past MSR attendees will receive a follow-up survey halfway through their clerkships to evaluate whether MSR had an effect on their clinical skills when encountering real pediatric cases.

**Potential Impact:** Despite the current limitations on pre-clerkship clinical exposure, the MSR allows medical students to foster clinical reasoning and self-directed learning through simulated, virtual clinical cases. If successful, these sessions can continue post-pandemic and can serve as a model for other institutions to develop critical-thinking caregivers.

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# Presenters' Bios

## **Abdole, Fouad**

### **Abrams, Amy MSW, MPH**

Social worker and community health educator with extensive experience working with individuals living with physical and cognitive impairments, and the families, professionals, and communities that support them. In current role, manage all aspects of non-profit organization's innovative education program, developing and delivering classes, webinars, workshops, and conference sessions on a range of topics for families, caregivers, individuals with dementia, healthcare and long-term care professionals, and other interested members of the community.

### **Acosta, David A., MD**

David A. Acosta, MD, provides strategic vision and leadership for the AAMC's diversity and inclusion activities across the medical education community, and leads the association's Diversity Policy and Programs unit. Dr. Acosta, a family medicine physician, joined the AAMC from the University of California (UC), Davis School of Medicine where he served as senior associate dean for equity, diversity, and inclusion and associate vice chancellor for diversity and inclusion and chief diversity officer for UC Davis Health System. He previously served as the first chief diversity officer at the University of Washington (UW) School of Medicine (SoM), where he established the Center for Equity, Diversity and Inclusion, and was the founder of the UW SoM Center for Cultural Proficiency in Medical Education. Dr. Acosta earned his bachelor's degree in biology from Loyola University and his medical degree from the UC, Irvine, School of Medicine. He completed his residency training at Community Hospital of Sonoma County in Santa Rosa, Calif., an affiliate of UC San Francisco School of Medicine, and a faculty development fellowship at the UW Department of Family Medicine.

### **Albright, Danielle, PhD**

Danielle Albright, Ph.D. is an Assistant Professor in the Department of Emergency Medicine at the University of New Mexico Health Sciences Center. She is the principal investigator for the New Mexico Intimate Partner Violence Death Review Team (Team). The Team is a statutory body tasked with the review of intimate partner homicides as well as other cases of violent death that can be attributed to intimate partner violence. The purpose of these reviews is to identify gaps in system responses to intimate partner violence and make recommendations for improving response in ways that may prevent future injury and death. In addition to this work, she is engaged in research on responses to sexual assault for people with disabilities and evaluates interpersonal interactions in emergent critical care encounters. Her research interests include interpersonal violence, injury prevention, interpersonal interactions in medical practice, collective behavior, and public policy. [DAlbright@salud.unm.edu](mailto:DAlbright@salud.unm.edu).

### **Alden, Stephane, BA**

Stephanie Alden is a fourth-year medical student at Harvard Medical School (HMS) in Boston, MA. She received her BA from Dartmouth College in 2016, where she majored in biological chemistry. She then spent a year at the National Cancer Institute working in small molecule discovery and translational cancer research. She has continued to pursue her pre-existing interest in oncology through clinical research while exploring additional interests in education and disability as part of HMS's Disabilities in Medicine and Dentistry Working Group. She is applying to internal medicine residency programs this year and hopes to pursue a career that allows her to combine her interests in clinical research, teaching, and patient care.

### **Ali, Shawkut Amaan, MD, MEd**

Shawkut "Amaan" Ali is a 2nd year family medicine resident at Harbor-UCLA. Amaan is originally from Atlanta, GA and attended medical school at Medical College of Georgia. Prior to medical school, Amaan completed a master's in counseling psychology at University of Georgia where he worked with juvenile offenders and worked at Emory School of Public Health on research projects involving patients with a mental illness and a chronic medical condition. Amaan has a passion for working with

underserved communities, specifically African American and Latino adolescents and adults, and hopes to continue to work with those populations upon completion of residency.

### **Alsomali, Mahmoud, MBBS**

Dalia Ameripour is a fourth year PharmD student with an area of concentration in education at the USC School of Pharmacy. She completed a 6-week experiential rotation with the Chair of Curriculum Committee. During this experience, she was responsible for lecturing in and creating assignments for the Pharmacy Literature Analysis and Drug Information course and acted as a facilitator for the interprofessional education course with pharmacy, medical, and nursing students. She has worked at CVS pharmacy for the past 7 years, where her responsibilities include educating patients on chronic and acute conditions and their medications. She has served as the Class Board Secretary for the past three years. Her responsibilities include acting as a liaison between students and faculty regarding course schedules and organizing the academic calendar. She also played a major role on the Student Committee for Diversity, Equity, and Inclusion last year. The committee strives to educate students on diverse cultural backgrounds and effective cross-cultural communication to build an inclusive culture within USC and cultivate patient-care centered pharmacists. Ameripour was awarded the Alumni Award for Excellence in Scholarship for her research evaluating how well pharmacy experiential rotations align with the Interprofessional Education Collaborative competencies. She has also been involved in research assessing how the curriculum and co-curricular activities fulfill program outcomes.

### **Ameripour, Dalia**

I graduated from King Saud University, College of Medicine in the year 2012 with a bachelor's degree in Medicine and Surgery, which has equipped me with a strong platform in medicine and its related fields, for instance, simulation based medical education. Furthermore, I finished my residency training in Saudi Board Emergency Medicine (SBEM) at King Saud Medical City in Riyadh in the year 2017, I worked as an attending physician. Soon after that, I got nominated to be the deputy/assistant program director for the SBEM there, my job included moderating and supervising residents' weekly academic activity. I recently finished my one-year simulation fellowship at the University of California Irvine, am a big fan of Free Open Access Medical Education (FOAMed). Email: M.alsomali88@gmail.com  
Twitter: @mahmoud\_427

### **Amorelli, Delores, MA**

Delores Amorelli is the Director of Faculty Educator Development at the Kaiser Permanent Bernard J. Tyson School of Medicine (KPSOM), where she oversees the school's program to support faculty in their continual professional growth as educators, including efforts to advance skills in teaching, assessment, curriculum development, leadership, and mentoring and to foster vibrant communities of practice. Before joining KPSOM, Ms. Amorelli served as the Associate Director of Faculty Development at Columbia University's School of Professional Studies (SPS). In this role, she was responsible for designing, developing, and facilitating workshops and related programming across several teaching and learning topics important to SPS faculty. She also conducted classroom observations for both full- and part-time faculty, as well as individual and small-group teaching consultations that focused on implementing evidence-based practices in the classroom. Ms. Amorelli is currently enrolled in a doctoral program in Educational Leadership and Management at Drexel University. She holds a master's degree in Library and Information Science, with a concentration in academic libraries, and a bachelor's degree in English, from the University of South Florida.

### **Angulo, Marco, MD, MSocSci**

As a core faculty member of AltaMed's Family Medicine Residency Program, Dr. Marco Angulo brings an invaluable combination of experience and perspective, thanks to his background of working with and training residents in a Federally Qualified Health Center (FQHC) setting. He is committed to creating a strong workforce that is well prepared to serve the medically vulnerable areas of Southern California. He graduated from the University of California, Berkeley, with a degree in Chicano Studies. He entered medical school at University of California, Irvine (UCI), and participated in the Program in Medical Education for the Latino Community (PRIME-LC), which was created to develop physician leaders to address health disparities in the United States and beyond. Dr. Angulo stayed on as a

faculty member at the UCI Family Medicine Department and served as the Director of Diversity and Inclusion for the medical school and as the Director of the PRIME-LC Residency Program. Prior to joining AltaMed, Dr. Angulo also served as Chief Medical Officer of an FQHC in Santa Ana. Throughout his career, Dr. Angulo has challenged the next generation of physician leaders to chip away at health disparities and develop solutions that lower barriers to patient care. In 2012, Dr. Angulo created the Health Scholars Program, one of the largest volunteer/clinical experience programs in Orange County dedicated to closing gaps in care and helping patients more effectively navigate the health care system.

**Armitage, Karen, MD, FAAP**

Karen Armitage, M.D., is the Director of Health Policy and Director/Advisor for the MD/MPH Dual Degree Program and the Preventive Medicine Resident MPH Program at the University of New Mexico (UNM) College of Population Health (COPH). She teaches students at all levels, from undergraduate students to medical residents in public health, population health management, health policy, legislative action & advocacy and essential provider roles in the public health system. Her research interests include evidence-based health policy and population health interventions, innovative health sciences curricula and the study of optimal health at every age and stage of illness in clinical and community settings. She previously served as Interim Dean of COPH from 2017-2019. In 2014-2015, she was selected as a Robert Wood Johnson Foundation (RWJF) Health Policy Fellow and worked in the U.S. Senate in Washington, D.C. She joined the faculty of UNM Department of Family and Community Medicine in 2011 after a career in the public health sector, most recently as Chief Medical Officer for the New Mexico Department of Health from 2007-2010. She has a BA in Biology and an MD from the University of California San Diego. She completed her pediatric residency and a RWJF research fellowship in Child Health Promotion at the University of New Mexico. [KArmitage@salud.unm.edu](mailto:KArmitage@salud.unm.edu).

**Arnason, Anne H., BS**

Anne Arnason is a fourth-year medical student at Loyola University Chicago's Stritch School of Medicine planning to pursue a career in academic internal medicine. At Loyola, she is the co-director of a student led mentorship group called Students Advising Students, teaches physical exam skills and the basics of EKG interpretation to second year medical students, and has worked in various roles for the Medical School Admissions Committee during her four years at Stritch. She enjoys engaging with her local community through work with Housing Forward and Back on My Feet, organizations that support housing and employment opportunities in Chicago.

**Austin, Jill, BScMedSci(Hons), MBChB, FRCA, PGCert (MedEd)**

Dr Jill Austin is a Consultant (attending) Anaesthesiologist in Aberdeen, Scotland, specializing in vascular and obstetric anaesthesia. She is an Honorary Senior Lecturer at the University of Aberdeen Medical School, where she is the Lead for the Year 4 Surgery and Critical Care Program. She teaches undergraduates about anaesthesia and critical care, resident anaesthesiologists about physiology and pharmacology, and works closely with residents to help them develop as medical educators.

**Awadallah, Nida S., MD**

Dr. Nida Awadallah is an assistant professor at the University of Colorado School of Medicine (CUSOM). Her medical practice centers on integrated health care and treating underserved populations. At the CUSOM she works as the Director of Remediation for medical students, residents and fellows, where she helps learners from all backgrounds maximize their potential in their medical careers. Previously, she was the Associate Program Director and Director of Education at the CU Rose Family Medicine Residency Program prior to joining the University of Colorado at Anschutz. In 2017, she was awarded the CU Department of Family Medicine Teacher of the Year Award. She participates as faculty for the Colorado Academy of Family Physicians education courses and is a physician consultant for The Center for Personalized Education for Providers where she participates in assessments and remediation recommendations for physicians across all levels of training and practice. She is a graduate of the CU Rose Family Medicine Residency Program and Northeast Ohio Medical University.

**Baal, Paige, BS**

Paige was born and raised near Detroit, Michigan. She attended college at the University of Michigan where she graduated with a BS in Neuroscience. During her time at the University of Michigan, she conducted research in cognitive psychology and wrote her honors thesis on distraction in students with ADHD. She also volunteered with the Hospital Elder Life Program at Michigan Medicine, the Ronald McDonald House in Ann Arbor, and the Sexual Assault Prevention and Awareness Program on campus. Paige began attending medical school at Wayne State University School of Medicine in 2019. Since starting medical school, she has become a co-coordinator for Cass Clinic, a student-run free clinic that serves the Detroit community. She is passionate about improving healthcare outcomes for the underserved population of Detroit and looks forward to helping do so throughout her medical school career.

**Bailey, Frank, MEd**

Frank Bailey, M.Ed., is the Medical Educator at Northern Light Health Eastern Maine Medical Center in Bangor, Maine. He received a B.S. degree in Kinesiology, Physiology, and Education with a concentration in Developmental Disabilities and M.Ed. degree in Kinesiology, Physiology, and Education with a concentration in Curriculum Design from the University of Maine at Orono. He is a certified EQ coach through the Lynn Leadership Group. He deploys tailored EQ curricula throughout the healthcare organization, with the goal of increasing team function to provide phenomenal patient care. He also oversees the Interprofessional Education Initiative, faculty appointments, and the faculty development of clinical preceptors. He has assisted in designing and implementing the University of New England's College of Osteopathic Medicine Longitudinal Integrated Curriculum (LIC) and is currently the LIC Program Director.

**Bailey, Jessica, MD**

Dr. Bailey joined the Department of Emergency Medicine at Oregon Health & Science University as faculty in 2017 after completing residency and fellowship training at OHSU. Her primary academic interest is improving trainee education through curriculum development, simulation, and experiential education methods. Her clinical interests also include community outreach, telemedicine, and disaster preparedness. Dr. Bailey acts as the secondary physician lead for the PEM-STAR (Pediatric Emergency Medicine-Specialty Training and Review) project and study in Thailand, with significant roles in study design, on-site needs assessment, curriculum development, curriculum deployment, data collection, and data analysis. She brought to the project more than a decade of unique experience in leadership training, debriefing, and experiential education and a passion for creating innovative educational curricula for medical learners, with particular utilization of adult learning theory. Throughout her medical training, Dr. Baily has been a strong advocate for the continued use of healthcare simulation as a key component in active physician learning and has created multiple pediatric simulation experiences for OHSU's pediatric and emergency residency programs as well as for local community physician practices.

**Baker, Matthew, MD**

Matthew Baker, MD, is a 3rd year pediatric resident at Children's Hospital Los Angeles. He grew up in Anchorage, Alaska and graduated from Liberty University with a Bachelor of Science degree in Biology and from George Washington University with a Doctor of Medicine degree. His interests include medical education, business administration, medical finance and resource utilization. His future plans include a Chief Residency year at CHLA during the 2021-2022 academic year, and he will pursue a fellowship in Pediatric Critical Care after that time.

**Barajas Eliseo, MD**

Eliseo Barajas, MD is a PGY-2 Psychiatry Resident Physician at Arrowhead Regional Medical Center in Colton, California.

**Barmanwalla, Amira, MD**

Amira Barmanwalla is a second-year general surgery resident at Arrowhead Regional Medical Center in Colton, California.

**Barqadle, Fatuma, MD, FAAP**

Fatuma Barqadle MD, FAAP is a pediatric hospitalist at Children's Hospital of Los Angeles (CHLA) and an Assistant Professor of Pediatrics at USC's Keck School of Medicine. She received her undergraduate degree from George Mason University and her medical degree from Virginia Commonwealth University/Medical College of Virginia. She completed her pediatric residency at INOVA Fairfax Children's Hospital in Falls Church, Virginia. She completed her hospital medicine fellowship at CHLA and is currently pursuing a Master of Academic Medicine at USC. She has completed a three-year longitudinal course on Leadership in Healthcare at CHLA. Her research and scholarly interests are in complex and chronic care, professional development leadership training and medical education. She is also passionate about diversity, equity and inclusion and social justice work in academic medicine.

**Bedi, Gurbani, BS**

Gurbani Bedi is a current second-year medical student at the Wayne State University School of Medicine (WSUSOM). She is currently part of the Health and Wellness Taskforce at WSUSOM.

**Benayoun, Jacqueline S., BA**

Jacqueline is a fourth-year medical student at SUNY Downstate College of Medicine in Brooklyn. She received a bachelor's degree in biochemistry at Yeshiva University with an associate in Judaic studies. She subsequently worked as a clinical research coordinator in the oncology department at Columbia University Medical Center during her gap year. Jacqueline is a member of the medical educator pathway at Downstate and is passionate about using creative and hands-on approaches to teach medical trainees. She plans to integrate these skills, as well as her interests in clinical research and health care advocacy, in her future career.

**Bent, Melissa, MD**

Melissa A. Bent MD, Assistant Professor, Department of Orthopaedic Surgery, Keck School of Medicine of USC. I am a clinical pediatric orthopedist who is the pediatric residency orthopedic elective director. I started at CHLA in 2017, co-physician lead for the Comprehensive Clubfoot Clinic, and am the primary orthopedist in the Spina Bifida Clinic. I am on the USC Admissions Committee and have an interest in Diversity Inclusion and medical education. Nationally, I serve on the American Academy of Pediatric Board for PediaLink, the home for AAP Pediatric education. I am also actively involved with other non-operative pediatric orthopedists working on advancing the field of non-operative pediatric orthopedist and educating pediatric residents and general pediatricians on musculoskeletal conditions.

**Benton, Carleigh MD**

Dr. Carleigh Benton is a third-year resident at the Denver Health Residency in Emergency Medicine. A graduate of the University of Maryland School of Medicine, Carleigh has an interest in medical education and hospital-based violence intervention programs. While in Baltimore prior to starting medical school, Dr. Benton worked at the Johns Hopkins School of Medicine in the fields of HIV and Hepatitis C clinical research. Dr. Benton currently serves as the resident lead for the medical education career track for the Denver Health Residency in Emergency Medicine.

**Berman, Hannah, BA**

Hannah Berman is a fourth-year medical student at the David Geffen School of Medicine at UCLA (DGSOM). She is currently a Head Tutor for the DGSOM Peer Tutoring program, in which she has been tutoring for the last three years. Hannah works to support medical students at all levels of education, including both preclinical and clinical years, through one-on-one, small group, and large group tutoring sessions. She is particularly interested in Step 1 and Step 2 CK support and anxiety reduction strategies, and leads workshops, panels, and guidance sessions to help navigate approaching these exams.

**Beyer, Logan, BS**

Logan Beyer is an aspiring pediatrician who aims to work at the intersections of health care, education, housing, and child policy. A North Carolina native, she attended Duke University as a

Benjamin N. Duke Scholar, where she pursued a self-designed course of study on the systems that impact child development, focusing on youth with disabilities. She was awarded the Harry S. Truman Scholarship in 2016 for both her scholarship and her commitment to public service. After receiving her Bachelor of Science from Duke, Logan interned with the American Youth Policy Forum in Washington, DC, where she researched policies on social and emotional learning for underserved youth. She then enlisted as an AmeriCorps National Service Member. During her two years as a construction crew leader with Habitat for Humanity, she built affordable housing for thirty-eight families in the Bay Area of California. In the fall of 2019, Logan matriculated at Harvard Medical School. She conducts research in the social and behavioral sciences and dedicates her time to advocating for a longitudinal disability curricular thread as part of the HMS Disabilities in Medicine and Dentistry Working Group. Additionally, she also serves in student leadership roles within both the Massachusetts Chapter of the American Academy of Pediatrics and the American Academy of Pediatrics.

### **Bhalla, Rumeena, MBChB, MA**

Rumeena Bhalla is a UK qualified physician based in Seattle, Washington, with 15 years' experience in public health education and mentoring. She began her career in Emergency Medicine but found a deeper interest in health promotion and disease prevention. She is also a closet artist and longed for a creative career. She undertook an MA in Film and TV Production and set up her first business making Bollywood style health education comedies. Over the past 15 years Ru has developed a portfolio career: she has been a doctor, teacher, health educator, small business owner, filmmaker, parent, CEO of a non-profit, mentor and coach.

### **Bhasin, Amman, BA**

Amman Bhasin is a third-year medical student at Wayne State University School of Medicine. He completed his undergraduate degree at Northwestern University and graduated Cum Laude with a B.A. in Neurobiology. He aspires to become a practicing Cardiologist in the future. His hobbies include Bhangra Indian folk dance, amateur cooking, and being an avid Miami Heat basketball fan.

### **Binoj, Iqbal, MD**

Iqbal M Binoj, MD Clinical Assistant Professor of Medicine, Cleveland Clinic Lerner College of Medicine, Case Western Reserve University and Consultant Physician, Hospital Medicine at Cleveland Clinic Abu Dhabi. After completing my Internal Medicine Residency in 2007, I practiced in Davenport, Iowa as a Lead Hospitalist for 8 years. I relocated to Abu Dhabi in 2014 and was part of the early group of physicians tasked with operationalizing the opening of the Cleveland Clinic Abu Dhabi in 2015. As faculty, I was part of the GME department team that set up the Transitional year program in 2017 and Internal Medicine Residency program in 2018. In my role as Transitional Year Rotation lead and core faculty for Internal Medicine I am engaged in curriculum and program development as the young program enters its third year.

### **Bluthenthal, Ricky, PhD**

Ricky N. Bluthenthal, Ph.D. is the Associate Dean for Social Justice and a professor in the Department of Preventive Medicine and the Institute for Prevention Research at USC's Keck School of Medicine. He received a BA in History and Sociology from the University of California, Santa Cruz and a PhD in sociology from the University of California, Berkeley. His research has established the effectiveness of syringe exchange programs, tested novel interventions and strategies to reduce HIV risk and improve HIV testing among injection drug users and men who have sex with men, documented how community conditions contribute to health disparities, and examined health policy implementation. His current studies include an observational cohort study of how cannabis legalization impacts use patterns and health outcomes of cannabis and opioids among people who inject drugs and a randomized controlled trial to test the efficacy of a single session intervention to reduce injection initiation risk behaviors among established people who inject drugs. Dr. Bluthenthal has authored or co-authored over 150 articles in peer-reviewed scientific journals such as the American Journal of Public Health, Social Science and Medicine, The Lancet, Addiction, and Alcoholism: Clinical and Experimental Research among others.

**Boucharel, Adria, MD**

Dr. Adria Boucharel is a pediatric anesthesiologist and clinician educator. Her primary administrative roles are Associate Director of Education for the Children's Hospital of Colorado (CHC) Department of Anesthesiology and Advisory College Program Faculty Advisor for the University of Colorado School of Medicine. During her years at CHC she has become increasingly involved in department and campus education related activities. She is a member of the department Education and Clinical Competence Committees. She interviews medical students for the Interview Subcommittee and serves as a voting member of the School of Medicine's Curriculum Steering Committee and Student Life Steering Committee. She is actively involved with ongoing curriculum reform efforts. Adria served as a faculty senator for two years, and as Secretary of the Faculty Senate for one year. She facilitates many small group sessions and yearlong courses for medical students, and other health professions students.

**Brandon, Caroline MD**

Caroline Brandon, MD is an Assistant Professor of Clinical Emergency Medicine at the University of Southern California Keck School of Medicine. She completed her emergency medicine residency training in 2017 and then emergency ultrasound fellowship in 2018 both at LAC+USC Medical Center. She was previously in the Ultrasound Division within the Department of Emergency Medicine, but most recently joined the residency office in July as an Assistant Program Director. Her areas of interest are in ultrasound, simulation and medicine student and resident education.

**Buenconsejo-Lum, Lee, MD**

Lee Buenconsejo-Lum, MD, attended Stanford University and completed her medical school and family medicine residency training at the University of Hawai'i (UH) John A. Burns School of Medicine in 1997. Her scholarly work has focused on reducing cancer health disparities in US Affiliated Pacific Islander populations. She is currently Professor of Family Medicine and Community Health. Since 2016, she serves as the Designated Institutional Official and Director of Graduate Medical Education (GME) at JABSOM. Her focus is to ensure that the UH GME programs graduate excellent physicians who can productively engage in population healthcare activities to achieve health equity in the populations they serve. She is also the Associate Dean for Academic Affairs, overseeing the continuum of medical education and related support functions.

**Bui, Phoebe, DO**

Phoebe is a Southern California native, having spent most of her life in Fountain Valley, California. She received her undergraduate degree from University of California, Irvine, majoring in human biology and minoring in Spanish, and went on to attend Western University of Health Sciences in Pomona for her osteopathic medical degree. After graduation, Phoebe was fortunate enough to begin her residency training in family medicine at Emanate Health in West Covina, where she is currently a first year. Besides medicine, Phoebe has many passions, including art – she loves to construct stained glass windows and paint. She is widely traveled and has studied abroad in England and Spain. She also enjoys salsa dancing and playing the piano.

**Butani, Lavjay, MD**

Dr. Lavjay Butani is a professor of Pediatrics and Chief of Pediatric Nephrology at the University of California Davis Medical Center, where he is the Mentoring Director for the Department of Pediatrics and the Director of student Development in the School of Medicine. He has presented several workshops on educational themes at national meetings. Dr Butani's research interests center around addressing strategies to improve outcomes after renal transplantation in children. He is also active in scholarship related to medical education, with an emphasis on reflective practice, humanism and professional values.

**Caetta, Alfonso, B.S**

Alfonso Caetta is a medical student at SUNY Downstate Health Sciences University College of Medicine. He serves as Class of 2022 Vice President and is part of the Medical Educator Pathway. He graduated from Cornell University in 2017 and Bard High School Early College Queens in 2013. His extracurricular interests include music, Brazilian Jiu Jitsu, and entomology.

**Calles, Ignacio, MD**

Ignacio Christopher Calles is a current resident in the Ronald Reagan – Olive View Emergency Medicine program in Los Angeles, California. His interests include diversity and inclusion in medicine and medical education. He was awarded the Randall Chase Memorial Scholarship at New York University for his efforts to support underrepresented medical students, residents, fellows, and junior attendings. He served as a co-president of the Student Diversity Initiative where he oversaw efforts that helped increase the numbers of matriculating underrepresented students by more than double. His past work includes a formal longitudinal mentorship curriculum, an individualized minority applicant liaison program, and multiple educational reforms. He is a resident representative to the Graduate Medical Education Diversity and Inclusion committee. His current projects include a new mentorship program targeting UCLA's minority medical students addressing imposter syndrome, stereotype threat, microaggressions, and starting careers in academic medicine. He is also creating new pipeline initiatives providing local underserved college and high school students with pre-health advising and clinical exposure.

**Camero, Karen, MD**

Dr. Camero is a general pediatrician from Los Angeles. She completed her pediatric residency training at Children's Hospital of Los Angeles and is currently pursuing a fellowship in academic general pediatrics with a focus on health equity. Dr. Camero spent many years living in Venezuela, where she completed her undergraduate studies and medical school. It was in South America where she first learned about health care disparities. After completing medical school, and a two-year post-graduate rotational internship, she returned to the US to pursue a career in pediatrics. Before residency, she took part in a UCLA scholars' program that aims to expand the number of Spanish speaking primary care doctors in California. Dr. Camero then joined the CHLA family for pediatric residency. During her time at CHLA, she took part and later co-chaired the residency program's Diversity and Inclusion Committee. Her work in this committee helped expand the residency program's efforts to recruit students from diverse backgrounds. After graduation, Dr. Camero vowed to continue providing quality healthcare to patients from underserved communities and remain involved in medical education, so she chose to stay at CHLA/Altamed for further training in her field.

**Campos, Gabriel, JD, MBA**

Gabriel Campos, JD, is a global diversity, equity and inclusion associate with W.L. Gore and adjunct faculty at the University of New Mexico School of Medicine. Prior to this, he was the director of the office of Diversity and Human Rights for the City of Albuquerque, New Mexico. He has a bachelor's degree in engineering, an MBA, and a Juris Doctorate. [Gabecampos@hotmail.com](mailto:Gabecampos@hotmail.com).

**Cao, Andrew, BSc**

Andrew Cao is a final year MD student at the Michael G. DeGroot School of Medicine (McMaster University). Andrew's academic interests include undergraduate medical education and optimizing STEMI reperfusion protocols. He has had the pleasure of organizing the annual Book 2 Bedside conference for the past 2 years.

**Capdarest-Arest, Nicole, MA(LIS), AHIP**

Nicole Capdarest-Arest, Blaisdell Medical Library, University of California – Davis, Sacramento, CA. Ms. Capdarest-Arest is the head of the Blaisdell Medical Library and, along with Ms. Studer, contributes to evidence-based practice curriculum at the UC Davis School of Medicine. Ms. Capdarest-Arest has over 10 years of experience working in medical education and health sciences libraries and has presented and published extensively on curricular innovations for teaching evidence-based medicine.

**Chan, Alex, BSc**

Alex is a MD candidate in his last year of studies at the Michael G. DeGroot School of Medicine at McMaster University. He has a found interest in medical education and educational content creation.

**Chan, Edward, MD**

Dr. Chan received his undergraduate degree in Economics from Harvard College and his medical degree from the University of Texas Medical Branch. He completed his general surgery residency at the Mount Sinai School of Medicine in New York and spent a year at Columbia University conducting research in cardiothoracic surgery. He graduated from cardiothoracic surgery fellowship at the University of Washington in Seattle. Dr. Chan joined the faculty of the Division of Thoracic Surgery at Houston Methodist in 2015 and is currently an Assistant Professor of Surgery and Cardiothoracic Surgery at Weill Cornell Medical College. His clinical interests include the treatment of benign and malignant diseases of the lung, esophagus, mediastinum, and diaphragm. He specializes in minimally invasive procedures, such as robot-assisted lobectomy, and maximally invasive procedures, such as lung transplantation. He is an associate program director for the Houston Methodist General Surgery Residency Program.

**Chan, Kwun Tsun**

Dr. Kwun Tsun Chan is currently a specialty trainee in anaesthetics (Year 3) at the Aberdeen Royal Infirmary, UK.

**Chang, Chih-Chiun, BS**

Chih-Chiun Jamie Chang is a fourth-year medical student at the University of California, San Francisco School of Medicine. He graduated Summa Cum Laude from California State University, Fresno where he received the Dean's Medal for his academic and research achievements in the College of Science and Mathematics. During his first and second year at UCSF, he conducted research projects in the departments of psychiatry and cardiothoracic surgery, receiving a Pathways Summer Explore Research Fellowship for his work. Between his third and fourth years of medical school, he completed a clinical research year in the department of oculofacial plastic, reconstructive, and orbital surgery. Currently, Chih-Chiun is a medical education fellow working with mentors, Dr. Abigail Phillips and Dr. Sara-Megumi Rumrill, to design and implement a program to recruit and train clinical skills peer tutors. Using his past experiences working as a mentor and peer tutor for medical and college students, he has contributed to developing core content for the curriculum materials, online learning platform, and tutor training sessions. He will be pursuing ophthalmology residency training at New York Eye and Ear Infirmary of Mount Sinai.

**Chen-Joea, Cynthia, DO**

Dr. Cynthia Chen-Joea currently serves as the Director of Inpatient Medicine at the Emanate Health Family Medicine Residency Program. Additionally, she is also the Chair of the Program Evaluation Committee at the residency and is an active member of the Physician Advisory Council in the hospital. She is a graduate of the Long Beach Memorial Family Medicine Residency Program, where she served as Academic Co-Chief and was the program's first resident to complete an area of concentration in Health Policy. She also completed a Health Policy fellowship at George Washington University. She attended Western University of Health Sciences for medical school where she was the Council Chair of the Council of Healthcare Advocacy and Reform and was Co-President of LACMA chapter. She has a Master's in Public Health from Drexel University, with a concentration on Health Management and Policy. Dr. Chen-Joea obtained her B.S. from UCLA with a major in Biology and minor in Developmental Psychology. Prior to medical school she was an early care and education teacher at UCLA. Her interests include public health, health policy and advocacy, maternal child health and procedures. In her spare time, she loves to cook, eat, read novels, play with her pup Murphy, binge watch Netflix, and travel.

**Chen, Marianne, MD**

Marianne Chen, M.D., is a Clinical Assistant Professor at Stanford University Department of Anesthesiology, Pain, and Perioperative Medicine. She completed her anesthesia residency and critical care medicine fellowship at Stanford before joining the faculty. She serves as an Associate Program Director for the residency program and previously was the medical student anesthesia clerkship director. Her interests in medical education include feedback, faculty development, and point of care ultrasound. She co-directs the Stanford Anesthesiology Teaching Scholars Program and is part of the Clinical Teaching Seminar Series leadership team at Stanford School of Medicine. Her

clinical interests are in liver transplant anesthesia and she is currently researching outcomes after liver transplantation.

**Chen, Nancy, MD**

Dr. Chen received her medical degree from the Columbia University Vagelos College of Physicians and Surgeons and completed her pediatric residency at the University of California, San Francisco. She completed a pediatric hospital medicine fellowship at Children's Hospital Los Angeles. She is currently a Clinical Assistant Professor of Pediatrics at Banner University Medical Center in Tucson, AZ. She has served as social-media co-chair for the Pediatric Hospital Medicine Conference as well as Pediatric Overflow Planning Contingency Response Network (POPCoRN). She is a board-certified pediatric hospitalist with an interest in social media, medical education and quality improvement.

**Chernock, Brad, MD, MS**

Brad Chernock is a surgical resident at Rutgers New Jersey Medical School (NJMS) in Newark, NJ. He graduated from NJMS in 2019 with distinction in medical education as well as earning recognition in the Gold Humanism Honor Society and Alpha Omega Alpha Honor Society. Prior to medical school he had a career in emergency services and disaster response. For over a decade, he served the City of Newark, NJ as a paramedic. He then perused training as a physician assistant at Cornell University, and work in the area Acute Care Surgery, often contributing to the education of allied health professionals through unique educational sessions. During his time as a physician assistant, he also was a member of FEMA Urban Search and Rescue Team – NJ Task Force 1 where he was a leader of the medical component. Dr. Chernock's research and clinical interests focus on team building, creating efficient and collaborative cultures, Grit and mindset as it relates to surgical training. He has lectured numerous times on performance psychology in times of crises and how to remain mentally ready to respond to emergencies. His experience in prehospital medicine, trauma surgery and his time working in multi-disciplinary disaster response teams, has helped develop his current interests in creating efficient high-performance teams. He hopes through his work he will help others develop teams that are collaborative, efficient, embody true mutual respect and have superior clinical outcomes.

**Chishti, Yasmin, BSc (hon), MD**

Fourth year resident in Physical Medicine & Rehabilitation at the University of Alberta. Current research interests include rural and Indigenous health.

**Christman, Grant, MD, MACM**

Dr. Grant Christman is a pediatric hospitalist at Children's Hospital Los Angeles and an assistant professor of pediatrics at USC's Keck School of Medicine. He is the Director of Education for the division of hospital medicine at CHLA and has completed the Masters of Academic Medicine at Keck. Current educational interests include utilizing E-learning to create innovative lectures and curriculum for learners of all levels. He also has an interest in physician coaching and has led faculty development workshops on the topic.

**Cigarroa, Natasha**

Natasha Cigarroa is a 3rd year medical student at UT Health McGovern Medical School. Her interest in medical education and inspired her work as an advocate for students on both a statewide and national level. She currently serves as Co-Chair of the Texas Chapter of the American College of Physician Medical Student Council (TXACP) and Representative to the Membership Committee for the national American College of Physicians (ACP). She has also worked within her own medical school to facilitate mentorship opportunities and share resources for students interested in pursuing Internal Medicine.

**Clemmensen, Brooke, BS**

Brooke is currently a second-year medical student at the University of Nevada, Reno School of Medicine.

**Clithero-Eridon, Amy, PhD**

Amy Clithero-Eridon, Ph.D., is a faculty member in the Department of Family & Community Medicine at the University of New Mexico School of Medicine. Amy has a PhD in Family Medicine from the University of Kwazulu-Natal in Durban, South Africa. She also has a master's degree in Business Administration with a concentration on health systems and a master's level certification in Medical Education from the University of New Mexico. In addition to teaching medical students about social determinants of health, health policy, and health services research, she participates in numerous educational research initiatives focusing on educational best practices, health services research, and social accountability within medical education. [AClithero@salud.unm.edu](mailto:AClithero@salud.unm.edu).

**Cobb, Carmen, MD**

Dr. Cobb received her MD degree at the Medical College of Georgia and completed Combined Internal Medicine-Pediatrics Residency at the Medical College of Wisconsin (MCW) and continued as med-peds hospitalist and co-director of residency global health track at MCW. She is currently Assistant Professor of Internal Medicine and Pediatrics at the University of California San Francisco, with clinical work as a hospitalist and educational work as co-director of pediatric Competency Based Immersion Experience (COBIE). Her clinical and research interests include global health, medical education, healthcare of LGBTQ populations, and curriculum development.

**Cohen-Cutler, Sally, MD MS**

Dr. Cohen-Cutler is currently an advanced research fellow in the Cancer and Blood Disease Institute at Children's Hospital Los Angeles (CHLA). She graduated from Columbia University with a BA in English, and then earned her medical degree at the University of Chicago Pritzker School of Medicine. She completed her pediatric residency at Johns Hopkins Hospital. Dr. Cohen-Cutler has strong interests in medical education, health outcomes, and optimization of health systems in the context of childhood cancer care. As Immediate Past Chief Fellow, she worked closely with the administration to create a new Hematology-Oncology fellowship orientation program and full educational curriculum. She is passionate about optimizing didactic and clinical education for trainees, which she believes contributes directly to provider wellness at all levels. Her educational work is synergistic with her research. Dr. Cohen-Cutler is currently a PI of a study that aims to optimize long-term follow-up care for patients who receive radiotherapy for cancer. She is also the co-investigator of a study of outcomes in adolescent and young adult patients with colorectal cancer. Both studies involve impact measures of quality of life, patient distress, and cost of cancer. Her overarching mission is to improve the quality of life of childhood cancer patients, even if those lives are cut short, and she is passionate about the education and well-being of those who provide that care.

**Cole, Amy, MS**

Amy Cole is an Academic Technology Analyst with the UNC School of Medicine IT department. She has over 10 years of experience working in higher education, and advanced skills in creating, reviewing and distributing content for use by students and the greater community. She is experienced in change management, implementing software solutions, providing technical assistance and managing information systems. She has worked extensively on the student success platform and continues to support this initiative as the application administrator. Amy holds an M.S in Information Technology Management from the University of North Carolina at Greensboro and a BA from the University of North Carolina at Chapel Hill.

**Cosimini, Michael MD**

Michael Cosimini is Assistant Professor of Clinical Pediatrics at the Keck School of Medicine of USC and an attending physician at Children's Hospital Los Angeles. He is a contributor and Associate Editor for the CME podcast "Pediatrics Reviews and Perspectives." He is also the author of Empiric Pediatric, a card game that teaches guideline based antibiotic use in pediatric. His scholarship focuses on innovative techniques in medical education with a focus on serious games and podcasting. The game discussed in the article (Empiric Pediatric) is available for sale as a print on demand product with a small margin that goes to Michael Cosimini (the author of the game and this abstract). This cost is intended to cover the costs of the development of the game.

**Crandall, Cameron, MD**

Cameron Crandall, MD is a tenured Professor and the Vice Chair for Research in the Department of Emergency Medicine at the University of New Mexico School of Medicine. At the University of New Mexico, he serves as the Director of Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Diversity and Inclusion in the Office of Diversity at the Health Sciences Center. He graduated from the Johns Hopkins University School of Medicine in 1993 and completed his residency in emergency medicine at UNM. Since 1996, he has served continuously as faculty in emergency medicine. In addition to clinical medicine, his academic work has focused on the intersection of emergency medicine, substance use, and violence—in particular gender-based violence, including intimate partner violence and sexual assault. He currently recently leading an effort to modernize their electronic health record to allow the system to recognize LGBTQ patients as they identify.

**Crispen, Patrick, EdD**

Patrick Crispen is the Director of Educational Technology for the USC Keck School of Medicine where he also holds a faculty appointment as an Assistant Professor of Clinical Medical Education. He is also an Assistant Professor (adjunct) at USC's Rossier School of Education where he teaches face-to-face and online masters- and doctoral-level education classes. Between 2009 and 2014, Crispen served as a manager in USC's Information Technology Services where he managed USC's enterprise-level learning management system and ancillary course technologies budgeting, staffing, and support services. Crispen has 25 years of experience in the field of educational technology and has assisted higher education institutions, K-12 schools and districts, state departments of education, regional and national educational consortia, and corporations with the creation and deployment of effective academic technology methodology and curriculum. Crispen has also authored four titles for the lynda.com online training library and has co-authored two classroom technology textbooks. Crispen sat for a doctorate in educational leadership under Richard Clark at USC in 2010, a master's degree in educational technology (online) from Pepperdine University in 2001, and a bachelor's degree in economics from the University of Alabama in 1998.

**Cummings, Felicia, MD**

Felicia was born and raised in Monrovia, CA, and went to Arkansas for undergrad as well as for medical school at the University of Arkansas for Medical Sciences. She has a large Hispanic family and views her patients and peers at Emanate Health as a big extension of that family. She is interested in serving her local community, as well as pursuing a sports medicine fellowship. In her free time, she loves playing volleyball, especially sand volleyball, and is very competitive when it comes to athletics. Off the court, however, she enjoys singing Disney songs and hanging out with her husband and family. She is always willing to try new foods and go on new adventures.

**Custer, Adam, MD**

Dr. Custer is a resident physician at UCLA Medical Center.

**Dantus, Emily, BA**

Emma completed her BA in Neuroscience at Stanford University and, after graduation, spent several years working as an Associate for the Boston Consulting Group. She then went on to work in Biz Ops for early-stage startup Capsule in NYC while applying to medical school. While at Keck, she immersed herself in business endeavors, building on her prior work experience in healthcare consulting. She served as President of the Business of Medicine Student Interest Group and increased student membership by 100% compared to the year prior. In that role, she collaborated with students from the Marshall School of Business to present Keck students with a panel of speakers highlighting non-clinical routes open to medical students after graduation. She also continued to build on her interest in telemedicine by designing and developing a proposal for a novel digital health tool in a Digital Health Innovation course in her fourth year.

**Darwish, Ali, MD**

Ali Ghassan Darwish, MD was born in Orange County, CA and is a graduate of California State University, Fullerton where he obtained his Bachelor's of Science in Molecular and Cellular Biology, Bachelor of Arts in Philosophy and minor in Chemistry. During his time as an undergraduate, Dr.

Darwish was the President of multiple organizations and was elected as a Board of Director for the College of Natural Sciences and Mathematics. After graduating, he went on to UC Irvine where he conducted advanced post-graduate training in cancer genomics research at the Chao Comprehensive Cancer Center and CHOC Children's Hospital; helping spearhead the deployment of personalized cancer care in patients with refractory and recurrent cancers. Dr. Darwish obtained his medical degree at St. George's University School of Medicine where he also founded the now nationally recognized SGU Interest Group in Genomics – an organization that contributes over \$10,000 in annual donations. During his time at SGUSOM, he was also inaugurated in the Gold Humanism Honor Society, elected as a representative for Student Government, and lead campus-wide tutoring sessions. Currently Dr. Darwish is also an active mentor at The Sharon Disney Lund Medical Intelligence and Innovation Institute, which focuses and executes projects in the areas of artificial intelligence, machine learning and innovation in medicine.

### **Daulton, Robert, BS**

Robert completed his undergraduate studies at the Ohio State University in Biology and Spanish prior to matriculating to the University of Cincinnati College of Medicine (UCCOM). He has a growing interest in medical education and serves on the UCCOM M3/4 Curriculum Committee. He is a member of the social media team for the Pediatric Overflow Contingency Response Network (POPCoRN) and is also a co-founder and producer of a medical education podcast called the UnsCriped Medicine Podcast. He hopes to match into a categorical pediatrics residency programs this March.

### **Deemer, David, MA**

David A. Deemer, M.A., is a medical student at the Loma Linda University School of Medicine in Loma Linda, CA. He received an M.A. in Bioethics from the Loma Linda University School of Religion and a B.S. in Biomedical Science from Union College in Lincoln, NE. His master capstone research topic explored ethics in health systems with an emphasis on government-purchased electronic health record systems. Deemer also has experience in academic medicine survey analysis and is published in peer-reviewed journals on the topic. He plans to graduate in May 2021 and pursue an Internal Medicine residency.

### **Deshpande, Rasika, MD**

Dr. Deshpande is a second-year resident physician in the Department of Obstetrics and Gynecology.

### **Dhanani, Sofia**

Sofia Dhanani is a third-year medical student at the Keck School of Medicine of USC, pursuing a career in pediatric neurology. As a UC Berkeley alumna, with a BA in Cognitive Science, she has seven years of neuroscience and neuro-oncology research experience, and a background in computational neuroscience. She was the co-founder and CEO of two medtech startups, focused on improving global health literacy and access to mental health services, respectively, prior to her brief career in healthcare and pharmaceutical consulting. She is currently conducting research at both the Keck School of Medicine studying medical student education, and at Children's Hospital Los Angeles studying pediatric brain tumors.

### **Diaz, Gerald MD**

Dr. Gerald Diaz is a practicing internal medicine physician and former software engineer. He received his BS in computer science from Stanford University and worked as a software developer for several years before getting his MD from St. Louis University in 2010. He completed two years of radiology training before switching specialties to internal medicine. He finished his internal medicine residency at UC Davis in 2016 where he was voted Resident of the Year. Dr. Diaz is looking to leverage his background in technology to deliver medical education at scale and reduce cognitive overload.

### **Dickens, Johnn**

**Dickhoner, James, MD**

Dr. Dickhoner spent his career developing innovative solutions in the digital health space that combine the intellectual rigor of an academic approach with the best practices of modern software development to benefit underserved people both here in the US and abroad. He is particularly passionate about catalyzing change in the domains of care coordination and personal health records through contributing to open-source projects. Dr. Dickhoner currently serves as the Director of International Digital Health at Children's Hospital Los Angeles. He joined CHLA in 2019, after Dr. Tom Lee recruited him to take on the primary leadership role for his ongoing work in Armenia. Dr. Lee was particularly interested in Dr. Dickhoner's ability to continue the development of Avetis, a personal health record system that Dr. Dickhoner and Dr. Juan Espinoza had launched earlier. Additionally, Dr. Dickhoner leads the team who is developing Learn With Open ([www.learnwithopen.org](http://www.learnwithopen.org)), an open source, free access learning platform for physicians in LMICs. He is also involved in the development of a mobile vision clinic and serves as the Clinician Adviser for KidsX, a pediatric digital health accelerator. Prior to joining CHLA, Dr. Dickhoner co-founded Orderly Health, a venture backed digital health company that is focused on improving the patient experience with healthcare. The initial product offering was an automated patient coordination chat bot that leveraged natural language processing loosely based on research he conducted in medical school.

**Diller, David, MD**

Associate Program Director of LAC + USC Emergency Medicine Residency.

**Dunn, Vicky, MBBS, MRCP, DRCOG**

Vicky Dunn is a British-trained Family Physician. She graduated from Newcastle University Medical School in the UK and practiced in the North East of England for 15 years before moving to the United States. After hurdling all of the USMLE exams, she became faculty at USC Keck's Family Medicine Department in 2015. She is currently participating in the Masters of Academic Medicine Program at USC. Her clinical practice is in college health, where she sees her clinical role in as an extension of her teaching as she seeks to educate her student patients about their own health, especially with regard to healthy living, stress management, and disease prevention.

**Edelman, Devorah MD**

Dr. Edelman is an Assistant Program Director for the Internal Medicine Residency Program at Mount Sinai Morningside and Mount Sinai West. She is the Site Director for the Internal Medicine Residency at William F. Ryan Community Health Center and sees her own patients at Mount Sinai Doctors Ansonia. She is actively pursuing accreditation in Obesity Medicine and has a number of active Quality Improvement projects. Her other main area of academic focus is in resident feedback and remediation.

**Eisenmann, Kathryn M., PhD**

[kathryn.eisenmann@utoledo.edu](mailto:kathryn.eisenmann@utoledo.edu); Associate Professor; University of Toledo College of Medicine and Life Sciences, Dept of Cancer Biology; Associate Professor; University of Toledo College of Medicine and Life Sciences, Dept of Medical Education.

**Eisner, Shirley, PhD**

Dr. Eisner is Associate Professor at the Department of Cell Biology of SUNY Downstate College of Medicine. She has a primary COM responsibility to teach and develop curriculum for gross anatomy, embryology, neuroanatomy and pre-clerkship radiology. She is also Co-Director for the Medical Educator Pathway, an optional track for medical students to prepare for future professional leadership and/or educator positions in an academic medicine. Dr. Eisner is Associate Director for the Infection and Host Defense Unit. She teaches and develops curriculum in every unit of the IPC including lectures, laboratory, radiology rotating exhibits and TBLs. She has expertise in using cadaver dissection and clinical/surgical/radiology sessions to teach medical gross anatomy. She plays a major role in integrating basic and clinical sciences in the COM curriculum, the basis of her research interests in medical education and curriculum innovation. She has received numerous medical education awards including the Outstanding Educator of the Year Award in 2019 at SUNY Downstate College of Medicine and the Inaugural Award for Excellence in Education in 2015. In 2018, Dr. Eisner

was awarded the Clarius Medical School Platinum Ultrasound Medical Education Award. She serves as the SUNY Downstate Faculty Representative as well as a member of the Programming Committee on the AAMC Council of Faculty and Academic Societies of the AAMC. She also chairs the Medical Student Subcommittee for the LCME Accreditation Self Study for the 2021 site visit.

### **Espinoza, Juan, MD**

After completing his undergraduate degree at Washington University in St. Louis, Juan Espinoza received an Intramural Research Training Award (IRTA) at the Immunotherapy Unit of the National Institute on Aging at the National Institutes of Health. During his time at the NIH, Juan worked on small molecule design, developing new therapeutic and research tools. Successively, Juan attended the USC Keck School of Medicine, receiving his MD in 2010. Juan completed his pediatric residency at Children's Hospital Los Angeles in 2013, and in 2014 he became an Assistant Professor of Clinical Pediatrics at Children's Hospital Los Angeles and the USC Keck School of Medicine. Dr. Espinoza's clinical time is focused on complex care coordination and obesity management, while his research focuses on digital health, health information systems, and patient-generated health data. He is the CTSI Director of Clinical Research Informatics for CHLA, and Medical Director of the CHLA Innovation Studio. In 2016, he joined the team at CTIP (The West Coast Consortium for Technology & Innovation Pediatrics) and took over as Director and Principal Investigator in 2018 with a new \$6.6 million FDA grant. The guiding principle of Dr. Espinoza's work is that data and technology have the potential to narrow the health gap faced by underserved communities all over the world. Juan's academic interests are complemented by his experiences outside of medicine; in 2010 he co-founded GC/MDDM, a digital media production company that works with television, film, web, and mobile technologies. Through this endeavor, he has partnered with both the entertainment and healthcare industries to create and implement technology and media solutions to healthcare and education problems. Dr. Espinoza utilizes these same skills in his teaching, research, and clinical practice.

### **Femi, Isoke, PhD**

Isoke Femi, PhD, builds out immersive and transformational learning experiences for GLIDE staff, community, clients, congregants and supporters. Drawing from her psychological training and life experience, she engages deeply with issues of racial justice and the spiritual wellbeing of America.

### **Figueroa, Sallie, RN, EdS**

Sallie Figueroa is the Network Director for HonorHealth in the metro-Phoenix area. She has worked in healthcare for over 30 years, with the past 20 years as an administrator for GME and UME programs. Her current role is responsible for oversight of GME, UME, CME, and Medical Libraries. Interests include issues surrounding educational ethics, well-being and communication.

### **Fischer-Colbrrie, Megan, MD**

Megan Fischer-Colbrrie is a first-year resident in Emergency Medicine at LAC+USC Medical Center. She recently graduated from UC San Diego School of Medicine after completing an additional year of research. She attended Stanford University as an undergraduate. Her current areas of interest include critical care medicine and global health.

### **Florio, Cecilia, MD, MPH**

As the Program Director for AltaMed's Family Medicine Residency Program, Dr. Cecilia Florio led a team of educators in establishing the health system's first residency program. In her role, she focuses on recruiting doctors who are committed to serving ethnically diverse communities – both by providing culturally sensitive care and developing programs that inspire minorities to pursue careers in health care. Dr. Florio joined AltaMed after spending 17 years as a clinician educator at UC Irvine, and more recently, at UC San Francisco (UCSF). She is passionate about the specialty of Family Medicine and about caring for those with the greatest needs. Dr. Florio spent her childhood in Mexico, first living in Cholula, Puebla, and then in Mexico City. She moved to the United States at age 17 to attend Smith College, where she majored in Biology. After graduating from the UCSF School of Medicine, she obtained a Master of Public Health at the Johns Hopkins School of Hygiene and Public Health and went on to complete her residency in Family Medicine at UC Davis. At her first job at La Clinica de la Raza in the San Francisco Bay Area, she discovered the positive impact of the community clinic

model. Because of the emphasis on service, accessibility and advocacy, she has continued to work at federally qualified health centers (FQHCs) throughout her 20-year career. Dr. Florio loves spending time her two kids and her spouse. She has two cats and is an advocate for animal welfare.

### **Fonseca, Giuseppe Allan, MS**

Giuseppe Fonseca is a 4th year medical student at University of Texas Rio Grande Valley School of Medicine and Chair of the Texas Chapter of the American College of Physician Medical Student Council (TXACP). As one of the student representatives for the TXACP board of directors, he has intimate knowledge of the stress and anxiety experienced by medical students across the state due to COVID-19. His team created several resources to help overcome some of the hurdles that this unprecedented application cycle has created. He has also assisted in policymaking and helped connect students from various Texas Medical Schools to resources to succeed in internal medicine.

### **Fukuma, Nina, BS**

Nina Fukuma is a second-year medical student at the Keck School of Medicine. She served as a research assistant, as well as a volunteer, for the Age Friendly Student Senior Connection earlier this year. Her research interests include care for the homeless and underserved, geriatric medicine, and narrative medicine.

### **Fung, Cha-Chi, PhD**

Dr. Fung received her PhD in educational psychology from USC Rossier School of Education in 2003. She is the Vice-Chair for the Department of Medical Education and the Assistant Dean for Medical Education at Keck School of Medicine of USC. She has 18 years of experience in medical education research and faculty development. Dr. Fung is the course director for Designing Research on Innovations in Academic Medicine and Implementing Research on Innovations in Academic Medicine for the Master of Academic Medicine program at Keck School of Medicine of USC. She is also a faculty member for the AAMC Medical Education Research Certificate (MERC) program. At the national level, Dr. Fung has served as the regional representative for the AAMC Medical Education Scholarship Research and Evaluation (MESRE) Section and is currently the immediate past Chair for the Western Group on Educational Affairs (WGEA). Her area of interest is in assessment and evaluation.

### **Gabriel, Andrew, DO**

Andrew Gabriel is a 3rd year resident at Kaiser Oakland's internal medicine program. He has a passion for both ultrasound and teaching that predates his residency. He currently has his own portable ultrasound machine and factors it into his medical decision making both on wards and in clinic. His future goal is to incorporate ultrasound into his daily practice while working with residents and medical students to help propagate its utility at the bedside.

### **Gaeta, Marina, BS**

Marina is a fourth-year medical student at the Yale School of Medicine. She has served on Yale's Education Policy and Curriculum Committee, acted as a teaching assistant and facilitator for preclinical and clinical education, and is an assistant course director for the medical school Clinical Reasoning course. Her research interests are in the social determinants of health and medical education. Prior to medical school, she taught science in the transitional bilingual program of a PreK-8 school in New Haven, Connecticut for three years.

### **Galust, Henrik, MD**

Dr. Henrik Galust completed his undergraduate degree at the University of California Los Angeles and earned his medical degree at the Northeast Ohio Medical University. He is currently a third-year resident at the Denver Health Residency in Emergency Medicine. Dr. Galust's areas of interest include undergraduate medical education, mentorship, curricula development, resident education, and professional development.

### **Gamez, Jorge, MD**

Dr. Gamez is a Family Medicine Resident, PGY3, at Adventist Health White Memorial.

**Gantman, Brooke, BS**

Brooke K. Gantman is a second-year medical student at the University of Nevada, Reno School of Medicine. Brooke completed a B.S. in Molecular Microbiology & Immunology with a minor in Spanish Language & Culture from the University of Nevada, Reno (UNR) in 2019. She became a Phi Kappa Phi Fellow in 2019. Prior to entering medical school, Brooke performed extensive research in biological chemistry, focusing on drug-development targeting the quorum-sensing circuits of *Enterococcus faecalis*. She published three articles in this field, including a co-author paper in ACS Infectious Diseases. Additionally, Brooke worked as a live transcriber for Deaf undergraduate students at UNR for four years. In her time there, she created a novel mentorship and teaching program for new transcribers. During medical school, Brooke developed a research interest in medical education. She is currently researching the effects of MedFIT, an integrated, comprehensive pre-matriculation orientation program, on incoming first-year medical students. Brooke was a Co-Head Mentor for the program in 2020 and worked with many committees and school leaders to develop a hybrid in-person/online program that was still highly-regarded by matriculating students. Brooke will continue to research the effects of MedFIT on students' success through continued leadership in the program's development over the next three years. She hopes to positively-influence students' preparation for medical school through MedFIT.

**Garnett, Christopher, BA**

Christopher Garnett is a 3rd year medical student at SUNY Downstate Health Sciences University in Brooklyn NY. Chris received a bachelor's degree in Mathematics and Economics from Fordham University in the Bronx, NY. At Downstate, Chris is a part of the medical educator pathway where he has created and implemented multiple Team Based Learning activities across a variety of disciplines. Chris has done research across multiple areas including medical education, telemedicine as well as Otolaryngology. Chris hopes to continue his passion for medical education utilizing novel technology by pursuing a career in academic Otolaryngology.

**Glaeser, Alexandra, MD**

Alexandra Milin Glaeser is an Assistant Professor of Medicine and hospitalist physician at UCLA Medical Center. She is the co-director of simulation for the internal medicine residency as well as the procedure service. She is also involved in point of care ultrasound teaching, quality improvement research, and is the Vice Chair of the Acute Care College at the David Geffen School of Medicine.

**Go, Ruth, MD**

Dr. Ruth Go was born and raised in Vancouver, British Columbia. She completed her undergraduate studies at the University of Washington, earning a Bachelor of Science degree in microbiology with a minor in public health and graduated cum laude with College Honors. She continued her education in Seattle, obtaining her medical degree at the University of Washington School of Medicine where she also took part in the underserved pathway curriculum. She then went on to complete a pediatric residency at Loma Linda Children's Hospital where she served as a pediatric representative for the GME committee. Throughout residency, she was active in multiple quality improvement including ones to improve physician handoffs, to improve the sepsis protocol, and to reduce emergency room visits for patients with asthma. She is currently a Clinical Assistant Professor of Clinical Pediatrics at Keck School of Medicine of USC and a pediatric hospitalist at Children's Hospital of Los Angeles. She remains actively engaged with quality improvement projects and medical education at the medical student and resident levels.

**Goldberg, Tamara MD, FACP**

Dr. Goldberg is the Director of the Primary Care Track and Associate Program Director for the Internal Medicine Residency Program at Mount Sinai Morningside and Mount Sinai West. Dr. Goldberg has created a novel, innovative curriculum for the primary care track focusing on community medicine and health disparities. Dr. Goldberg is actively involved in gender equity research and has led to the creation of both resident and faculty Women in Medicine focus groups within Mount Sinai Morningside - Mount Sinai West Hospitals.

**Gonzalez, Sarah, BS**

Gonzalez is a second-year medical student at Wayne State University School of Medicine located in Detroit, Michigan. She received her undergraduate degree in Biological Sciences from the University of California, Irvine. From 2016-2018, she completed the formal post-baccalaureate program at San Francisco State University for pre-health professionals. During this time, she volunteered as a medical Spanish interpreter at a Level 1 Trauma Center and worked at a private Dermatology practice in Sausalito.

**Gordon, Bahareh MD MS**

Bahareh Gordon, MD is the Associate Chief of Pediatrics at Olive View – UCLA and an Associate Program Director for the UCLA Pediatric Residency training program. She also serves as the Director of the Pediatric Same Day/Urgent Care Clinic at Olive View. Dr. Gordon attended medical school at the George Washington University School of Medicine and Health Sciences and subsequently completed her residency at UCLA, where she also served as a Chief Resident.

**Gordon, David, MD**

David Gordon, MD MPH is an Associate Clinical Professor in the Department of Pediatrics at UCSF. He is the Associate Medical Director for pediatric urgent care at San Francisco General Hospital. He is a co-director for the UCSF Pediatrics Competency-Based Immersion Experiences (COBIE) program and a UCSF Institute for Global Health Sciences Faculty Affiliate. He attends at the San Francisco General Hospital pediatric urgent care clinic and is fluent in medical Spanish. With support from the Baylor International Pediatric AIDS Initiative (BIPAI), Dr. Gordon co-founded the quality improvement program, the developmental stimulation program, and the pediatrics residency program for University of Gondar Hospital, Ethiopia. He has medical and public health experience in seven countries.

**Gowda, Deepthiman, MD, MPH, MS**

Deepthiman Gowda, MD, joined the Kaiser Permanente Bernard J. Tyson School of Medicine as Assistant Dean for Medical Education. Prior to joining Kaiser Permanente, he served as Director of Clinical Practice in the Program of Narrative Medicine and Director of Foundations of Clinical Medicine Tutorials at the Vagelos College of Physicians and Surgeons at Columbia University. As Chair of the Fundamentals of Curriculum at Columbia, he led efforts to improve equity, inclusion, and diversity in the curriculum. He is a general internist and has focused his research on narrative medicine and the use of visual art in medical education, interprofessional education, and the Core + Clusters approach to clinical skills training. He was a Macy Faculty Scholar and a member of the New York City Board of Health for eight years and currently serves as National Co-Chair for the National Board of Medical Examiners Step 2 Clinical Skills Committee. He is committed to bringing about a more person-centered, equitable, and effective healthcare system through inspired and engaging medical education.

**Granovetter, Michael C., AB**

Michael Granovetter is a dual-degree medical student at the University of Pittsburgh and PhD student in cognitive neuroscience at Carnegie Mellon University. His primary research interests are understanding the underlying neural mechanisms of and potential interventions for neurodevelopmental and pediatric neurological disorders. At the same time, he has a dedicated interest in utilizing an evidence-based approach to improving medical education. At the University of Pittsburgh, he has applied this interest as a student representative on the school Curriculum Committee, Curriculum Continuous Quality Improvement Committee, and Curriculum Reform Task Force, among other curricular teams and initiatives.

**Greb, Alexandra, BS**

Alexandra is a second-year medical student at UC Irvine. She previously attended UC Davis where she attained her B.S. in Chemistry. At UC Davis, her research experiences included investigating the molecular markers of depression. While at UC Irvine, she has completed research projects in medical education, radiation oncology, and toxicology. She is also involved in teaching sex education in the

community and volunteering at UC Irvine's Orange County Free Clinic. In the future, she hopes to pursue academic medicine and teaching.

### **Green, Bart, DC, MSED, PhD**

Bart Green is a chiropractor for Stanford Health Care at an integrated worksite health center. In practice for 28 years, he has served on the staff at Naval Medical Center San Diego, where he was responsible for starting chiropractic services in interdisciplinary care teams in three sports medicine clinics and a comprehensive combat casualty care center. He also owned a private practice and worked in academic health centers. Bart is also an epidemiologist and published in several academic and scientific journals. He is on the faculty of the National University of Health Sciences. Dr. Green is the Editor of the Journal of Chiropractic Education.

### **Greene, Ericka, MD**

Dr. Greene is Co-director, MDA Neuromuscular Clinics, Director and head of the Neuromuscular Medicine Division in the Department of Neurology at the Houston Methodist. Her clinical focus is neuromuscular disorders where she directs clinical trial research and serves as Vice Chair of education. She is course director for the Practice of Medicine for the TAMHSC-ENMED campus. She has served for the American Academy of Neurology (AAN), the American Board of Psychiatry and Neurology, and the American Association of Neuromuscular & Electrodiagnostic Medicine as an exam write, education program chair, and committee chair. Ericka is a first-year student of the Masters in Academic Medicine Program of USC-Keck School of Medicine. She is married to Rodney and they enjoy their three adult sons, precious grandchild, and three dogs.

### **Greminger, Amy, MD**

Dr. Greminger is an assistant professor in the Department of Family Medicine & Biobehavior Health at the University of Minnesota Medical School, Duluth campus. She completed her residency in Internal Medicine at Abbott Northwestern in 2006. Since coming to teach at the medical school in 2017, she has focused on understanding and implementing best practice in medical education. Dr. Greminger received a Herz Faculty Development Award to develop skills in simulation in 2018 and has worked to put these skills into practice. She currently directs the University of Minnesota, Duluth Campus Simulation Committee. She has extensive experience with teaching and course directing and has developed case based learning for many different applications, including case based approaches in cardiovascular, pulmonary, renal, hematology, gastrointestinal, neurological, and end of life care scenarios. Dr. Nordgren and Dr. Greminger together have developed a novel approach to teaching case-based learning in a large group setting that builds on these previous skills. Dr. Greminger has given presentations on both Simulation and Case Based Teaching at the Best Practices in Health Professions Education Conference in 2019 and 2020.

### **Grimaldi, Lisa, MD, FAAP**

Lisa Grimaldi is a pediatric intensive care physician at Phoenix Children's Hospital in Phoenix, AZ. Dr. Grimaldi received her undergraduate degree from New York University and her medical degree from the University of Medicine and Dentistry of New Jersey - New Jersey Medical School. Her residency in pediatrics and fellowship in pediatric critical care medicine were completed at Columbia University, Morgan Stanley Children's Hospital of New York Presbyterian. Dr. Grimaldi has a special interest in congenital heart disease and has focused her clinical career in the cardiac intensive care unit setting. She is also interested in graduate medical education and previously served as the Fellowship Director for the Pediatric Cardiac Intensive Care Fellowship at St. Joseph's Hospital in Phoenix and as the Associate Program Director for the Pediatric Critical Care Fellowship at Phoenix Children's Hospital. Dr. Grimaldi has been a member of the faculty at the University of Arizona College of Medicine – Phoenix since 2009 and holds the rank of Associate Professor in the Department of Child Health. She has been actively involved with medical student education since joining the faculty and has participated in curriculum development and teaching in both the pre-clinical and clinical curriculum.

### **Gupta, Roopali MD**

Dr. Gupta is an Associate Professor of Health Sciences at the University of California, San Diego and serves as the Education Chief for the Division of Geriatrics. She holds a passion for medical

education, has been the recipient of regional and national academic teaching awards, and is actively involved with the teaching of trainees at multiple levels, including medical students, residents, and fellows. She is the Program Director for the Geriatrics Fellowship Program and Co- PI of a HRSA GWEP (Geriatrics Workforce Enhancement Program) Grant. She is also an active clinician seeing patients at the Medicine for Seniors outpatient primary care clinic in La Jolla. She is a former recipient of a Geriatric Academic Career Award.

### **Habboosh, Noor, BA**

Noor Habboosh, BA is a fourth-year medical student at the George Washington University School of Medicine and Health Sciences. Prior to and throughout medical school, she has maintained a commitment to excellence in clinical research and medical education, especially through her membership in the GW Clinical and Translational Research Scholarly Concentration. Her recent research interests have centered around the impact of various learning modalities on medical and surgical education. She has been involved in clinical medical education through her role as an instructor the physical diagnosis course for first- and second-year medical students, and as a peer mentor and tutor. Prior to medical school, Noor had a lead role in a large-scale longitudinal multicenter randomized study examining the impact of depression screening on health outcomes in Acute Coronary Syndrome patients in New York City, where she gained an appreciation for the research process. She has conducted research in foreign policy, international healthcare access, and human rights. She is committed to health care equity and inclusion, through her efforts for community health engagement as a Gold Humanism Honor Society member, and as a clinic manager for the GW Healing Clinic, where she helped to provide healthcare to underserved populations in the DC region. Noor graduated from Columbia University with a BA in Political Science, where she was recognized as a distinguished community leader.

### **Halabi, Reem, BS**

Reem Halabi is a second-year medical student at the University of California, San Diego School of Medicine. She received her Bachelor of Science in Microbiology, Immunology, and Molecular Genetics with a minor in Biomedical Research from the University of California, Los Angeles in 2017. She then worked as a research assistant at Dr. Douglas Black's laboratory at UCLA, where she investigated mechanisms of post-transcriptional RNA modifications in neurons. Currently, she is a mentor at the Program for Underrepresented Medical Applicants (PUMA), which aims to increase the number of historically underrepresented individuals in the medical field. She also serves on the Core Curriculum Committee and the Health Equity Thread Committee of the School of Medicine. She was recently selected as a Sanford Scholar at the Sanford Institute of Empathy and Compassion and has been conducting research on empathy and burnout among medical students.

### **Halle, McKenzie, MD**

McKenzie Halle, MD, is a PGY3 Emergency Resident at LAC+USC Emergency Medicine. Her research interests include medical and graduate education, violence prevention, and working with marginalized populations in the Los Angeles community. She currently serves as an EMRA Program Representative and as a peer representative on the Graduate Medical Education Committee. She is also the leader of a new Hospital Based Violence Intervention Program, which aims to educate residents on community violence prevention organizations and bring much needed trauma resources to her patient population. Her work outside of the hospital has led her to mentor first-generation High School students through a San Diego based program Reality Changers, as well as mentor undergraduate and graduate students interested in her specialty. She is actively working on a new medical education initiative, Code Learn, to enhance bedside learning and create lasting change at her residency program at LAC+USC.

### **Hallowell, Ronan, EdD**

Dr. Hallowell is an assistant professor of Clinical Medical Education at USC's Keck School of Medicine. As a learning scientist in the Department of Medical Education, he works with colleagues to provide a suite of curriculum and instruction services to faculty and administrators that includes instructional design, faculty development and the Physician-Citizen-Scientist Curriculum Renewal Initiative. Dr. Hallowell is a faculty affiliate at the Gehr Family Center for Health Systems Science and

Innovation where he co-teaches the Introduction to Health Policy course for second year MD students in the Professionalism and the Practice of Medicine Program. He is part of the team creating new health systems science and social justice curricula to be launched in 2021 and is an American Medical Association Health Systems Science Scholar. Dr. Hallowell serves as an associate director of the USC Center for Mindfulness Science which is a collaborative hub for interdisciplinary research and innovation in the practice of mindfulness. He is also a founding faculty member of the new M.S. degree program in Narrative Medicine teaching research methods. Dr. Hallowell conducts research on curriculum design, the medical humanities and cross-cultural perspectives on medicine. He holds an EdD in Educational Psychology from USC, a MA in Philosophy and Religion from the California Institute of Integral Studies and a BA in Economics from Boston College.

### **Hartwig, Kim, MD**

Dr. Kim Hartwig is teaching faculty for the KPSJFMR, since 2019. Her undergraduate studies were in De Salle University Bachelor of Science in Nursing and received her medical degree from the University of Perpetual Help: College of Medicine in the Philippine. After graduating from residency at Mercy Medical Center in Merced, she continued to work in a rural community doing full scope family medicine and working as teaching faculty until she joined the San Jose Kaiser Family Medicine department in 2015. She completed the University of California San Francisco Family Medicine Faculty Development Fellowship in 2020. She is now the faculty for community medicine curriculum.

### **Haworth, Ian, PhD**

Dr. Ian Haworth is an Associate Professor and Vice Chair in the Department of Pharmacology and Pharmaceutical Sciences at USC. He received his Ph.D. in Physical Organic Chemistry from the University of Liverpool, UK, and then spent three years as a Postdoctoral Fellow at the University of Oxford, UK, before joining USC in 1992. His research work lies at the interfaces of chemistry, biochemistry, and computational prediction of molecular structure. This work involves development and utilization of algorithms for prediction of drug-protein molecular interactions and simulation of ADME properties of drugs. Dr. Haworth also has a major role in teaching of medicinal chemistry and biopharmaceutics in the Pharm.D., Ph.D. and Masters programs at USC, and he has lectured and taught courses on this content worldwide. He is also currently Co-Director of the International Summer Program in the USC School of Pharmacy. Dr. Haworth has utilized problem-based learning and active learning in teaching of Pharm.D. science courses for many years, and he has published and presented widely on these educational approaches. Dr. Haworth is also interested in utilization of computational methods for evaluation of educational outcomes, including new approaches to curriculum mapping and assessment.

### **Hernandez Schulte, Mayra A., MD**

Dr. Mayra Hernandez Schulte is a 3rd year Family Medicine resident physician at AH White Memorial Medical Center. She is interested in working to improve racial disparities in populations of color and improving reproductive access to women.

### **Hernandez, Adriana, MD**

Dr. Hernandez, who originally hails from St. Louis, Missouri, received her Bachelor of Arts degrees in Spanish and Latin American Studies at Tulane University before heading to Baylor College of Medicine in Houston, Texas for her medical degree. She moved to Los Angeles after matching to the pediatric residency program at CHLA in 2013 and has never left. Following graduation from residency and completion of the program's Education Track, Dr. Hernandez served an additional year as a chief resident, in which she was able to more fully participate in resident education and curriculum design. Since 2017, she has worked as a pediatric hospitalist at CHLA and as an assistant professor-clinician educator within USC's Keck School of Medicine. In 2019, she was hired to her dream position of assistant program director of the pediatric residency program at CHLA.

### **Hernandez, Gerardo, MD**

Dr. Gerardo Hernandez is delighted to be serving as core faculty for the AltaMed Family Medicine Residency in South Gate, California. His role in the residency program includes teaching residents in the outpatient and inpatient setting, curriculum development, healthcare advocacy, and community

outreach and engagement. Having grown up in Maywood, Ca, a neighboring city to South Gate, Dr. Hernandez is honored to be coming back and serving his home community to provide an empathetic and compassionate approach to medicine. As core faculty at AltaMed Family Medicine Residency, Dr. Hernandez is enthusiastic to be a teacher, primary care provider, mentor, and community advocate. He is eager to train the next generation of well-rounded healthcare providers and community leaders to deliver equitable care for all communities. Dr. Hernandez's interests include community and upstream medicine, minor procedures, public health/advocacy, social justice, and diversity in medical education.

### **Hernandez, Robert, MD**

Dr. Hernandez is a senior resident physician at Adventist Health White Memorial who specializes in Family Medicine. He is a father as well as an advocate in sports medicine and postpartum health.

### **Hierholzer, Ariel, BS**

Ariel Hierholzer is a second-year medical student at the University of Nevada, Reno School of Medicine. She joined the Healthier Nevada Committee because she has a passion for health education and in particular preventative health care for Northern Nevada teenagers. Her current research involves evaluating the efficacy of an evidence-based health curriculum designed by medical students when taught to teens. In addition, she recently received a grant from the Alpha Omega Alpha Honor Society to establish a free medical clinic serving homeless and transient young adults in Washoe County. Prior to attending medical school, Ariel graduated with her Bachelor of Science in Clinical Nutrition and then worked in the Human Health Services division of her home county. Her work with the elderly and those who are disabled prompted her to pursue projects that combined advocacy with education. In her free time, she enjoys writing for Jivome, a holistic health website, as well as snowboarding and being by any large body of water.

### **Hiserote, Patricia, DO**

I am a Family Medicine physician at Kaiser Permanente Santa Rosa, and am board certified with the American Board of Family Medicine. I practice full-spectrum family medicine, in addition to training medical students and residents. I have helped to build many programs and have additional experience in physician development, teaching and mentoring. I completed my medical school training at Western University of Health Sciences where I was an undergraduate teaching fellow and received my Master's of Science in Health Professions Education. I completed my Family Medicine training at UCSF Fresno where I stayed on as a faculty physician until moving to Northern California in 2006. I started at Kaiser Permanente Santa Rosa in January 2012 and am the Program Director for the Kaiser Permanente Santa Rosa Family Medicine Residency that opened in July 2018. Prior to joining Kaiser Permanente, I was the Chair of the Primary Care Department at Touro University-California College of Osteopathic Medicine. As Chair, I was responsible for the oversight of all four years of Osteopathic medical training and managing this multispecialty department.

### **Hitt, Jasmine BS**

I am a M3 at the University of Kansas School of Medicine. I served as the Director of Volunteers for JayDoc Free Clinic from February 2019 - February 2020. JayDoc Free Clinic is a student run free clinic that provides free healthcare for the Greater Kansas City population.

### **Holland, Savanna**

Savanna Holland is a second year MD candidate at the University of Louisville School of Medicine with an interest in medical education. She is currently enrolled in the Distinction in Medical Education (DIME) track, through which she has assisted with the creation of a Business of Medicine elective course. Mrs. Holland currently serves on the leadership teams of the Louisville Diaper Campaign, Cardinal Street Medicine, and the UofL chapter of the American Medical Women's Association. Through these leadership opportunities, Mrs. Holland has helped raise awareness of the income disparities of Louisville. Mrs. Holland plans to continue working in medical education upon the completion of her MD.

**Hu, Kimberly, MD**

Dr. Hu is a first-year psychiatry resident at The Ohio State University in Columbus, Ohio. She completed her medical school training at the University of Illinois at Chicago where she also completed a Bachelor's of Science in Mathematics and a Bachelors of Science in Biological Sciences and was a member of the Honors College. During her medical school training, Dr. Hu was awarded the James Scholar for her research in workplace-based assessments for pediatrics milestones. She is currently pursuing a Masters of Public Health. Her research interests include undergraduate and graduate medical education. She served as a research assistant in the UIC College of Medicine Department of Medical Education for nine years and wishes to pursue a career in academic medicine.

**Huertas-Arias, Brigitte, MD**

Dr. Huertas-Arias was born in Colombia, grew up in India and spent several years in Thailand. She is a graduate of Hunter College in New York City. She obtained her medical degree at SUNY Downstate College of Medicine in Brooklyn, NY. She is currently doing pediatric residency at Children's Hospital Los Angeles and plans to further her training in a pediatric emergency medicine fellowship. Dr. Huertas-Arias is passionate about mentorship and under-represented minorities. She is a founder for the Diversity and Inclusion mentoring Program (DIMP) at CHLA.

**Humphrey, Kristen, BS**

Kristen completed her undergraduate studies at the University of Michigan in Biopsychology, Cognition, and Neuroscience. After graduation, she moved to Los Angeles to teach high school Chemistry through Teach for America. She is interested in medical education, and she has enjoyed serving on the Curriculum Committee and developing this elective while working to earn her MD at the University of Cincinnati College of Medicine (UCCOM). She plans to pursue a pediatrics residency upon graduation this summer.

**Isaac, Mitchell, MD**

Mitchell Isaac completed his undergraduate education at Presbyterian College, graduating summa cum laude with a major in medical physics, and minors in mathematics and biology. He then went on to complete medical school at the Medical University of South Carolina. While in medical school, he conducted research and published manuscripts in the field of laryngology. Once he completed his medical degree, he then went on to pursue residency in otolaryngology at the Medical University of South Carolina. He is currently a fourth-year resident in the program participating in several research projects investigating the use of intra-operative videos for the purpose of analyzing technique and behaviors.

**Issaq, Hela, MD, MPH**

Dr. Issaq is teaching faculty for the KPSJFMR, which began with its first class of residents in July 2018. Her undergraduate studies were in Molecular Cell Biology at the University of California, Berkeley and received her medical degree from the University of Michigan and her Master's in Public Health at Dartmouth College. After graduating from residency at Harbor-UCLA, she joined the San Jose Kaiser Family Medicine department where she became faculty. She completed the University of California San Francisco Family Medicine Faculty Development Fellowship in 2019. She is now the Quality Improvement director as well as the head of community medicine curriculum and site directory for Community Medicine Fellowship.

**Itani, Reem, MD**

Dr. Reem Itani is a Pediatric Hospitalist at Children's Hospital LA. She served as class president at the Keck School of Medicine for all four years prior to her starting and completing her residency in Pediatrics at the University of Chicago, where she also served as Chief Resident. Her academic interests include pre-clinical medical education, resident remediation strategies—particularly within the realms of mentorship and coaching, and public health outreach through local elementary schools. She currently teaches the Introduction to Clinical Medicine course at USC's Keck School of Medicine and serves on both the Student Affairs as well as the Admissions and Recruitment Committee. She is a member of the executive board of the Salerni Collegium Alumni Association.

**Jain, Aarti, MD**

Aarti Jain is an Assistant Professor of clinical emergency medicine at USC's Keck School of Medicine and is an Assistant Program Director for the emergency medicine residency program at the LAC+USC Medical Center. She completed her emergency medicine residency training and medical education fellowship at the LAC+USC Medical Center and is currently enrolled in the Master of Academic Medicine program through the Keck School of Medicine. Her current efforts are aimed at integrating simulation-based education into the emergency medicine residency curriculum. Her academic interests include simulation-based education, curricular innovation, and physician wellness.

**Johnson, Claire, DC, MEd, PhD**

Claire Johnson is a professor at National University of Health Sciences. Dr. Johnson is the Editor in Chief of National's three scientific, peer-reviewed journals that are indexed in PubMed. The Journal of Manipulative and Physiological Therapeutics is the flagship journal for the chiropractic profession. She has developed the Journal of Chiropractic Medicine as a specialty journal, and the Journal of Chiropractic Humanities, which is the most cited philosophy journal of the profession. She is a chiropractic physician and provides care for Stanford Health Care in an interdisciplinary on-site wellness center at the Qualcomm Health Center in San Diego. She completed a diplomate in sports chiropractic, received her master's degree in health professions education, and a PhD in public health epidemiology.

**Johnson, Kendall**

Kendal Johnson is a first-year medical student at California University of Science & Medicine in Colton, California.

**Jones, Teresa S., MD**

Dr. Teresa Jones is an Assistant Professor of Surgery at University of Colorado School of Medicine. She currently practices at the Veteran Affairs Eastern Colorado Health Care System in Aurora, Colorado. In addition to her clinical practice, she works as a faculty specialist in the department of Graduate Medical Education where she helps surgical residents and fellows meet their training goals.

**Kafilmout, Imad, MD, MACM, FAAP**

Imad Kafilmout, MD, MACM, FAAP is a core faculty member in the Family Medicine (FM) Residency Program and FM Obstetrics Fellowship Director at San Joaquin General Hospital, in Stockton, CA. He is a graduate of University of Baghdad, College of Medicine and has completed his residency in 1998 at West Virginia University and his Master of Academic Medicine at the University of Southern California in 2017. His primary professional interests within academic medicine are assessment and faculty development.

**Kalili, Rosalie, MD**

Dr. Kalili completed her medical school training at the John A. Burns School of Medicine in Hawaii and her pediatric residency training at the University of Nevada School of Medicine Reno. A board-certified general pediatrician of 10 years in the Las Vegas valley, Dr. Kalili made her transition to academic medicine with the opening of the new medical school, and now serves as the assistant director of Problem-based learning (PBL) at the University of Nevada Las Vegas School of Medicine. Dr. Kalili has a passion for teaching and has served her community and affiliated universities through various teaching positions: parish catechist, Americorps volunteer, TarWars coordinator and presenter, HCOP mentor, Department of Pediatrics chief resident, Baby basics class, Pediatric clerkship preceptor, Office-based practice preceptor, Doctoring course mentor, PBL facilitator, PBL faculty guide mentor, and PBL teaching elective mentor. Dr. Kalili, wishing to develop her academic career and scholarly activities, is grateful for her participation at UNLV Best Teaching Practices Expo 2019, WGEA Conference 2019, and NICE 2019. And although travel and events were halted during 2020, was eager to share her contributions in PBL methods, accepted for poster presentations at both the UNLV Best Teaching Practices Expo 2020 and WGEA Conference 2020.

**Kennedy, Meghan, B.S.**

Meghan Kennedy is a second-year medical student at Keck School of Medicine of USC. She completed a BA in both Neuroscience and English at Vanderbilt University in 2019, earning highest honors for a thesis implicating hippocampal amnesia with decreased communication and gesture abilities. Her primary research interest is the intersection between medicine and communication. She is currently working with Dr. Brian Nguyen on developing a resource for sharing medical metaphors and analogies.

**Khan, Masrur, MD**

Masrur Khan, MD, is a 2nd year pediatric resident at Children's Hospital Los Angeles. He is from Queens, New York. He graduated from Boston College with a Bachelor of Science degree in Physics and from Albert Einstein College of Medicine with a Doctor of Medicine degree. His interests include medical education, serving the medically underserved, and wellness. He has interests in acute care and plans to pursue a fellowship in Pediatric Emergency Medicine after residency.

**Khashimova, Zilola, MD**

Dr. Zilola Khashimova is a medical doctor specializing in Obstetrics-Gynecology and Laparoscopic Surgery with experience in Family Medicine. She has taught medical students and residents for over 15 years as a part of teaching hospital and Physician Assistant students for the last 5 years at Francis Marion University and Dominican University of California. Dr. Khashimova has several peer-reviewed publications in medical journals. She has experience presenting at conferences, trainings, and seminars, and is certified in Hospital Administration, Ovarian Failure, Oncology, and Ultrasound Diagnostics. Dr. Khashimova was awarded the distinction of Honorary Faculty Fellow at Dominican. She is a member of the South Carolina Ob/Gyn Society, the European Society of Gynecology (ESG), the Physician Assistant Education Association (PAEA), and the European Women's Management Development International Network (EWMD). She has an MBA from Francis Marion University, is a member of the Beta Gamma Sigma honor society and is certified as a Strategic Planner.

**Kim, Albert J., MD, MACM**

Albert Kim is an assistant professor in the Division of Emergency Medicine (EM) at Washington University in Saint Louis (WUSTL). He also serves as an Assistant Residency Director and Director of Residency Recruitment for the EM Residency, and is the Fellowship Director for the EM Fellowship in Education Scholarship. He received his MD at the Northwestern University Feinberg School of Medicine, and completed his EM Residency, including a Chief Resident year, at WUSTL. Following residency, he simultaneously created and completed the EM Medical Education Fellowship at WUSTL while completing his Masters of Medical Education at the Keck School of Medicine at USC. Clinically, he divides his time at the Emergency Departments at Barnes-Jewish Hospital, Barnes-Jewish West County Hospital, and the Saint Louis Children's Hospital. His education interests in Graduate Medical Education include Bedside Teaching, Resident-as-Teacher, and Mentorship/Career Planning. Within Undergraduate Medical Education, he serves as the Assistant Faculty Advisor for the EM Interest Group.

**Kim, Erica, BS**

Erica Kim is a second-year medical student at the University of Nevada, Reno School of Medicine. She received her Bachelor of Science degree in Biology from the University of Nevada, Reno. As a lifelong resident of Reno, Nevada, Erica has sought out opportunities to serve and better the community that she grew up in. She currently serves as one of the managers of the Student Outreach Clinic at UNR Med, a student-run clinic that provides free medical care for uninsured and underinsured patients of Northern Nevada. She is also involved in the Healthier Nevada: Youth Educational Modules project, which focuses on designing and teaching evidence-based, interactive preventive health curriculum to hundreds of high school students in the local school district. As a member of this project, Erica is involved in research that seeks to determine whether a medical student-led health education curriculum influences a high school student's comfort level and likelihood of discussing personal health issues with a healthcare provider.

**Kim, Rory, PharmD, MACM**

Rory E. Kim, PharmD, MACM, BCACP is an assistant professor of Clinical Pharmacy in the Department of Clinical Pharmacy at the USC School of Pharmacy. Dr. Kim completed a PGY1 Pharmacy Residency and a Fellowship in Ambulatory Care and Academia. She is a Board Certified Ambulatory Care Clinical Pharmacist and earned a Master of Academic Medicine degree from the Keck School of Medicine. She is the Director of the PharmD Scholarly Project and the Co-Director of the USC School of Pharmacy International Summer Program. She serves as a clinical pharmacist on an interprofessional care team in the Specialty Endocrine Clinic at Los Angeles County Medicine Center. She coordinates the PharmD Scholarly Project course series and the Pharmacy Literature Analysis and Drug Information courses. Dr. Kim has presented and taught regionally, nationally, and internationally on topics related to health professions education, educational technology, inter-professional practice, diabetes, and smoking cessation.

**Kirkland, Tracie DNP, 2nd year PhD Student**

Dr. Tracie Kirkland is a servant leader with over 30 years of experience in healthcare. She is a clinical associate professor in the Suzanne Dworak-Peck School of Social Work, Department of Nursing. She is an adult and pediatric nurse practitioner. She completed her DNP at Texas Christian University, MSN at Virginia Commonwealth University, and her BSN at Hampton University. She is a researcher, educator, and lifelong learner. She is currently a 2nd year PhD student at Texas Woman's University where she is interested in assessing food insecurity in ethnic minorities and its link to chronic diseases. She is also an adult and pediatric nurse practitioner in one of Houston's largest healthcare systems. She is authentic and enthusiastically enjoys working with patients, families, and communities in addressing social determinants of health and improving health related outcomes. She is also a full-time clinical assistant professor at the University of Southern California where she serves as faculty lead in the area of pediatrics. Her passion for training the next generation of nurse practitioner students has been realized in various geographical regions of the country in both traditional face-to-face and online learning programs using Zoom before the era of COVID-19.

**Krasnick, Marla, BS**

Marla Krasnick is a second-year medical student at Wayne State University School of Medicine. Marla is a member of the health and wellness committee.

**Krotinger, Anna, BA**

Anna Krotinger is a pre-medical student, a graduate of Wesleyan University, an MBE Candidate at Harvard Medical School, and a project coordinator at OPENPediatrics.

**Kucybal, Karolina, MD/MPH**

Creating a teaching tool with illness scripts that include a segment on health equity integrates my passion for medicine, public health, and education. In graduate school, I compared what I was learning in medical school with the realities I studied in my public health program. In residency, I honed my skills in education through the Clinician Educator Pathway. I have given lectures on both clinical reasoning and microaggressions in health care. It is my hope that my Cool Idea will help promote conversations around disparities in care.

**Kuilanoff, Elizabeth, MD MPH**

As a coordinator for the AltaMed Institute for Health Equity, Vanessa contributes to the development of AltaMed's Medical Education Department through undergraduate, graduate and continuing medical education initiatives. During her undergraduate career at California State University, Northridge (CSUN), Vanessa was involved in the American Society for Biochemistry and Molecular Biology, CSUN's Chemistry and Biochemistry club, where she held a vice president position, Chicanos for Community Medicine, and Women in Science. Following her curiosity for neuroscience, Vanessa researched obesity-induced neuroinflammation and the effects of interleukin-6 on the maternal gut microbiome and the alternation of mouse offspring brain development. Vanessa has been giving back to her community as a lifeguard, swim instructor, and pool manager for 9 years and a water polo coach for 3 years. Vanessa grew up experiencing health disparities first-hand as a patient of community health centers. She hopes to eliminate health disparities by combining her passion for

science and providing quality and humanistic care to those in underserved areas through a direct patient-physician relationship.

### **Kumar, Anika, MD**

Dr. Kumar is Assistant Professor of Pediatrics at Cleveland Clinic Lerner College of Medicine of Case Western Reserve University. Dr. Kumar serves as the Co-Director for Pediatrics Grand Rounds and the Research Director for the Pediatric Hospital Medicine Fellowship at Cleveland Clinic. She has served as the Social Media co-chair for the Pediatric Hospital Medicine Conference (2017-2019) and Pediatric Overflow Planning Contingency Response Network (2020). Dr. Kumar is Board Certified in General Pediatrics and Pediatrics Hospital Medicine. Her research interests include the use of social media and technology in communication and education.

### **Kumar, Nina, BS**

Nina Kumar (nina.kumar@downstate.edu) is currently a second-year student at SUNY Downstate College of Medicine in Brooklyn, New York. In 2017, Ms. Kumar graduated from Columbia University School of Engineering and Applied Science, where she earned a BS in biomedical engineering. Before starting medical school, she worked as a Clinical Research Coordinator (CRC) for two years at the James J. Peters VA Medical Center in The Bronx, New York. As the CRC for the Thermoregulation Program, Ms. Kumar was responsible for recruiting subjects, conducting studies, analyzing data, and handling all communication with the IRB for five active research studies. She was first author on two accepted abstracts and presented at the Experimental Biology conference in San Diego in April 2018. Since starting medical school, Ms. Kumar has joined the Medical Educator Pathway and serves as the Vice President of Downstate Dialysis Sidekicks, a mentorship program between Downstate students and pediatric/adolescent dialysis patients. In 2020, she delivered gross anatomy (GA) tutoring through a remote platform to students in physical therapy, occupational therapy, and physician assistant programs over the summer and to first-year medical students during their 5-week musculoskeletal curriculum. Drawing from her experiences as both a student and teaching assistant during the COVID-19 pandemic, Ms. Kumar has collaborated with a group of her peers and professors to convert in-person GA lab to a remote format.

### **Lamb, Shona, MD, MPH**

### **Langah, Rumman, MD**

Dr Rumman Langah, MD is a consultant Hospital Medicine physician at Cleveland Clinic Abu Dhabi. Prior to this position, he was Assistant Professor of Medicine at Emory University School of Medicine and Medical Director for progressive care unit at Emory University Hospital. He is currently Core Faculty for Internal Medicine Residency at Cleveland Clinic Abu Dhabi and is involved in program and curriculum development.

### **Laughton, Sydney, BS, BA**

Sydney Laughton is a second-year medical student at the University of Nevada, Reno School of Medicine. She received her Bachelor of Science degree in Biology and Bachelor of Art in Mathematics from the Gonzaga University in 2017. As a lifelong resident of Reno, Nevada. Sydney has sought out opportunities to serve and better the community that she grew up in. She currently serves as one of the laboratory managers of the Student Outreach Clinic at UNR Med, a student-run clinic that provides free medical care for uninsured patients of Northern Nevada. She is also a co-chair representing the medical school on the Interprofessional Education (IPE) committee. Prior to medical school, Sydney worked as a scribe in a Pain Specialty clinic and an Ophthalmology clinic. During these experiences, she encountered many health care professionals working together and saw both positive and negative interactions. This guided Sydney to help develop and improve IPE at UNR to better educate her peers on the necessity of these interactions in their future careers. As a member of this committee, Sydney is involved with both research and planning to guide the curriculum of Interprofessional Education.

**Lawson, Kelly**

Dr. Lawson earned her Bachelor of Science in Human Biology in 2015 at the University of Texas at Austin, graduating with Highest Honors and as a Distinguished College Scholar. She went on to complete medical school training at University of Texas Southwestern Medical School. She received her Medical Degree in 2019 and was elected to both Gold Humanism Honor Society and Alpha Omega Alpha Honor Society. During her training, her dedication to pediatrics was recognized with the Kurt Ian Wey Senior Pediatric Award, a scholarship awarded to a student selected for showing compassion for sick children, having significant medical knowledge, and maintaining a good sense of humor. Dr. Lawson is now training as a Pediatric Resident at Children's Medical Center Dallas, University of Texas Southwestern. Her interests are geared towards primary care pediatrics and medical student education in this area.

**Le, Ha D.H., BA**

Ha D.H. Le is a second-year medical student at the University of Utah School of Medicine (UUSOM). She graduated from Harvard College with a B.A. in Biomedical Engineering and a minor in Film Studies. Ha is interested in the intersections among medical education, social justice, and underserved urban health. As a student at the UUSOM, she has primarily focused on advocacy and mentorship. She is a part of the Class of 2023 Professionalism & Diversity Committee, where she has helped launch a mentorship program for University of Utah college students who are underrepresented in medicine; a leader of WE WILL: Women Empowering Women in Leadership; a member of the UUSOM chapter of White Coats For Black Lives; and a tutor for the Academic Success Program. She is also co-president of the Wellness Student Interest Group and Writers in Medicine and has contributed to the COVID-19 Health Literacy Project and COVID-19 Task Force on Domestic Violence.

**Le, Mai, BS**

Mai is a medical student at the Oregon Health & Science University in Portland, OR. In addition to her coursework, Mai serves as the community outreach coordinator for her school's chapter of the Student National Medical Association (SNMA), and as secretary for her region's SNMA. She earned her bachelor's degree at Oregon State University, where she majored in biochemistry and minored in social justice. Her interests include racial equity, women's health, and immunology. In her spare time, she enjoys spending time with her parents and dog. She can be reached at [lemai@ohsu.edu](mailto:lemai@ohsu.edu) for further inquiries. Prior to joining AltaMed, Dr. Melgar completed her medical training at UC Davis and family medicine residency training at Long Beach Memorial. Dr. Melgar then completed a Community Medicine Fellowship, where she divided her time teaching as Jr. Faculty and collaborating with many community organizations. During that time, she successfully opened a new student run clinic and implemented an inter-professional collaborative behavioral health clinic for uninsured patients. Dr. Melgar went on to become faculty at Long Beach Memorial Family Medicine Residency Program, where she was Director of Community Engagement and Diversity. She was the lead faculty for the Neighborhood MED pipeline mentoring program, onsite Food Pantry and Diversity/Health Equity Committee. She also implemented a new integrated behavioral health clinic and Community Medicine Area of concentration for the residents.

**Le, Ngantu, BS**

Ngantu Le is currently a second-year medical student at University of Nevada, Reno School of Medicine.

**Le, Nhu-Nguyen, MD**

Nhu-Nguyen is a fourth-year resident in emergency medicine at LAC+USC where he is currently serves as Education Chief Resident with Molly and Scott. He grew up in Orange County, California and attended Santa Clara University as an undergraduate. He went to medical school at Creighton University in Omaha, Nebraska. Nhu-Nguyen is currently applying for fellowship in Ultrasound and is planning to pursue a career in academic emergency medicine.

**Lee, Edward, MD**

Edward Lee is an Associate Professor of Medicine in the hospitalist section at UCLA Medical Center. He is an associate program director for the internal medicine residency program and co-director for simulation. He is the physician lead at the UCLA simulation center for TeamSTEPPS training courses and the UCLA simulation instructor course.

**Lee, Min Hyung**

Min Hyung Lee is a fourth-year medical student at UT Southwestern Medical School and will be applying to Psychiatry this year. Min Hyung has contributed to the development of a narrative medicine elective, an elective on critical appraisal of scientific literature, and a course training student patient navigators at UTSW. Min Hyung is passionate about medical education and her future goal is to work as a child psychiatrist in academics.

**Lee, Mindy, BA**

Mindy Lee's career has been a practice of deconstructing behavior in digital and physical interfaces, whether that's at the polls, in virtual reality, or while waiting to get blood drawn. She is passionate about harnessing design techniques as a means of developing useful, delightful technology to underserved communities. In early 2020, Ms. Lee joined the Children's Hospital Los Angeles team as a Senior International Health Designer. Her primary role is to lead the production of online educational materials at OPEN ([www.learnwithopen.org](http://www.learnwithopen.org)), an open source, free access learning platform for physicians in LMICs, while also experimenting with educational formats. She serves as an advisor for the development of Avetis, a personal health record system developed by Dr. Thomas Lee and Dr. Juan Espinoza. She has additionally been involved in the development of a mobile vision clinic at CHLA and a vision screening mobile app at Vision to Learn. Prior to joining CHLA, Ms. Lee worked in data and design capacities. She worked in machine learning in building political models and in data analysis at Upworthy. Since graduating from the design program at the Umea Institute of Design in Sweden, Ms. Lee has been involved in user research and strategy in various industries, such as video games, real estate, and health. She graduated from Williams College with a B.A. in Chemistry and Economics.

**Lee, Tommy, MD**

Tommy Lee, MD is the program director for the general surgery residency training program at Arrowhead Regional Medical Center in Colton, California.

**Lenz, Annika, BS**

Annika Lenz is a third-year medical student at the Keck School of Medicine of USC. Although keeping an open mind, her interests are shifted towards pediatric sports medicine which combines her passion for kids and athletics. From experience as a student-athlete-alumna at UCLA, while pursuing a major in psychobiology, she has always enjoyed the combination of sports and science, while interacting with others in a team setting. In addition to participation in medical school education research, she has been active in research involving molecular pathways in colorectal cancer, investigating the impact of sex, age, and ethnicity on the survival of patients with rectal cancer, and participated in the NIDDK Research Internship at Stanford last year. She most recently was investigating whether the CCR5  $\Delta$ 32 mutation and gene expression predicts outcome in patients with metastatic colorectal cancer.

**Leung, Kenneth, MS**

Kenny is a third-year medical student at Carle Illinois College of Medicine – “the world's first engineering-based college of medicine” – located at University of Illinois, Urbana-Champaign. Kenny previously received his Bachelor's degree in Electrical Engineering and Computer Science from University of California, Berkeley, and Master's degree in Medical Engineering from University of Washington. Prior to starting medical school, he worked as a software engineer at a healthcare joint-venture developing population health management and hospital quality metrics analytics software, at a start-up implementing back-end interfaces to connect labs, hospitals, e-prescribing and lab interpretation service companies together, as well as at a quality-driven hospital improving a software system's front-end user interface for the care team and provider to easily enter procedure data and

generate a procedural report. He has strong interests in developing products that provide an intuitive end-user experience and help users be more efficient in their tasks. He hopes to become a future physician-innovator to deliver compassionate medical care, advance healthcare innovations, and advocate adoption of impacting healthcare technologies.

**Lezak, Michael, Rabbi**

Rabbi Michael Lezak was a Congregational Rabbi in San Rafael, CA for 18 years where he helped his congregants to sanctify the most powerful moments in their lives and to think deeply about their obligation to engage regularly with issues of racial and social justice and environmental justice. He joined GLIDE Center for Social Justice in 2017 where he partners with Dr. Femi and GLIDE staff to help America make amends for blighted racial history.

**Liu, Alan, MD**

Alan Liu, MD, is an assistant professor at the Department of Medical Education at USC's Keck School of Medicine and the Assistant Director of the Clinical Skills Education and Evaluation Center. He administers and implements Objective Structured Clinical Examinations (OSCEs) in collaboration with the Introduction to Clinical Medicine course and the core clerkships. He evaluates medical students' performance of core competencies related to patient care and communication skills through the Clinical Performance Exam (CPX). Along with evaluation and assessment, he also engages in the remediation of clinical skills of the medical students. Dr. Liu recruits and trains standardized patients for both teaching and assessment as well as monitoring their performance for quality assurance. He is the Lead Trainer of the Trainers' Group in the California Consortium for the Assessment of Clinical Competence (CCACC), which is a consortium of eight allopathic medical schools in California. He is also a member of the American Association of Medical Colleges Group on Educational Affairs (AAMC-GEA).

**Lizaranzu, Nigel**

Mr. Lizaranzu is a digital media specialist with the Learning Sciences Team in the Department of Medical Education at the Keck School of Medicine at USC.

**Luo, Shuhong, EdD, MSN, RN**

Shuhong Luo, EdD, MSN, RN, is an Associate Professor at the College of Nursing, SUNY Upstate Medical University. Luo has been teaching courses in education, research, and informatics at various levels. She received her bachelor's degree from Peking University Health Science Center in Beijing, China, her master's degree in Nursing Informatics from the University of Nebraska Medical Center, and her doctoral degree in Instructional Technologies from the University of Nebraska-Lincoln.

**Ly, Kevin, MD**

Rutgers RWJ Medical School at CentraState Medical Center, Family Medicine Residency Program; '18 St. George's University School of Medicine; '13 New Jersey Institute of Technology.

**Madhok, Manu, MD**

Dr. Madhok joined as Staff Physician in Emergency Department at Children's Minnesota in 2002. He has been actively involved with Fellow and resident education, and numerous research and QA/QI projects. He was the director of the Pediatric Emergency Medicine Fellowship for 10 years. He is a past board member of the American Academy of Pediatrics-MN Chapter and the American College of Emergency Physicians-MN Chapter. He is the co-chair of the research committee for the International Pediatric Simulation Society. Dr. Madhok attended Medical school at the prestigious All India Institute of Medical Sciences in New Delhi, India. He completed residency in Pediatrics at Dupont Hospital for Children, Thomas Jefferson University in Philadelphia, PA. He did fellowship in Pediatric Emergency Medicine and Toxicology at Cardinal Glennon Children's Hospital, St. Louis University. He also completed Masters in Public Health at St. Louis University. He has a passion for simulation based medical education and has done numerous workshops and courses for physicians, nurses and paramedics in the past. His research focus has been in pain management, quality improvement, toxicology and simulation.

**Mahajan, Deepti, BA, MA**

Deepti Mahajan (deepti.mahajan@downstate.edu) is currently a second-year medical student at SUNY Downstate College of Medicine in Brooklyn, NY. Ms. Mahajan graduated from Case Western Reserve University (CWRU) in 2019 where she earned a BA in biochemistry from the College of Arts and Sciences and a MA in Bioethics and Medical Humanities from the School of Medicine. She worked extensively in student education for three years as a supplemental instructor in the department of Chemistry; organizing and holding review sessions biweekly and assisting the professor in curriculum development. She additionally took on the role of mentoring newly hired supplemental instructors and training them for their roles. During this time, she researched in the department of Neuroscience at CWRU, studying the molecular and cellular characteristics of the immune response in peripheral nerve injury. At her medical school, Ms. Mahajan is the vice president of the Internal Medicine Interest Group, where she has organized educational workshops and mentorship events, and is a member of the Medical Educator Pathway (MEP). As a member of MEP, Ms. Mahajan worked with a group of her peers and professors to address the challenges with medical education during the COVID-19 project, by converting Gross Anatomy lab to a remote format for incoming medical students. In the long term, Ms. Mahajan strives to develop her skills and make meaningful contributions as a medical educator and future physician.

**Mahata, Sumana, BS**

Sumana Mahata is a second-year medical student at UC San Diego School of Medicine. She received her Bachelor of Science in Biology from Caltech in 2017. She then worked as a Medical Assistant at Brigham and Women's Hospital in the Plastics and Reconstructive Surgery division before starting at UC San Diego School of Medicine in 2019. She is currently a leader in the school's Medical Humanities Interest Group, which aims to raise awareness of humanities in medicine and try to incorporate non-science disciplines into the curriculum; and Med Mindset, a mentoring group aiming to foster an interest in medicine in underrepresented students. Sumana is also one of the leaders in the Pathology Interest Group, organizing a talk on the pathology of several diseases with a focus on social impact and disparities. She recently participated in the 2020 NIDDK Medical Student Research Program, investigating the immune system's role in a potential new mouse model for Type 1 Diabetes. She has several publications in journals such as Diabetes and Journal of Endocrinology. With regards to art, Sumana currently runs an artist shop under the pseudonym "Hodgepodge Bricolage." She creates patterns that are related to science and medicine. Her science patterns are well-received, most recently featured on Dr. Anthony Fauci's mask during a Coronavirus Task Force Briefing on June 26, 2020. She recently partnered with the American College of Rheumatology's annual conference to have her work featured on the conference materials, namely masks and notebooks. She recognizes the power of art in medicine and hopes to move that awareness forward through projects such as the one for this conference.

**Manriquez, Alexa, MD**

Dr. Manriquez was born and raised in southern California. She completed her undergraduate work at UCLA and medical school at USC's Keck School of Medicine. She is currently a second-year Pediatrics resident at Children's Hospital of Los Angeles. Her interests are broad and include health equity, diversity and inclusion, mentorship, education, and public policy. She feels fortunate to have been invited onto the Diversity and Inclusion Mentoring Program team and to help develop the program in its inaugural year.

**Mantri, Sneha, MD MS**

I am Assistant Professor of Neurology and Director of Medical Humanities at Duke University. In addition to my clinical training (neurology residency, movement disorders fellowship), I hold a Master of Science in Narrative Medicine from Columbia University. Formal coursework included seminars on social justice, post-colonial theory, narrative ethics, and qualitative research methods. My master's thesis examined the perspectives and attitudes of medical students on reflective writing portfolio; this data was used in the redesigned curriculum at Columbia's College of Physicians and Surgeons to develop a Signature Reflection component in the first-year curriculum. More recently, my attention has turned to the challenges of burnout and moral injury. I serve as burnout champion for the Department of Neurology and have developed the first moral injury symptom scale for health professionals. I am

particularly interested in how we might use the strengths of medical humanities to build resilience, mitigate the effects of burnout and moral injury, and ultimately reduce attrition. As Director of Medical Humanities at Duke, I am in the process of developing a longitudinal set of educational offerings, spanning undergraduate pre-health students through to practicing clinicians. This abstract presents a new interprofessional elective across the health system, focusing on issues of race, pandemics, and social justice in healthcare.

### **Martin, Andrés, MD, MPH**

As the Riva Ariella Ritvo Professor at the Yale Child Study Center, Dr. Martin has dedicated much of my energies over the past decade to education, training and mentorship in child and adolescent psychiatry (CAP), in three programmatic initiatives: 1) he led the formation of the Donald J. Cohen Mentorship Program for medical students at Yale (since 2002). This program has since been replicated in 13 other medical schools across the country; 2) he helped establish and lead through IACAPAP (the International Association of Child and Adolescent Psychiatry and Allied Professions) its Donald J. Cohen Mentorship Program for International Scholars in Child and Adolescent Mental Health (since 2004); and 3) In his former role as Editor-in-Chief for the Journal of the American Academy of Child and Adolescent Psychiatry (2008-2017), he established the John F. McDermott Assistant Editor-in-Residence position in 2008 to provide mentorship for clinician-scientists interested in pursuing careers in scholarly academic publishing. His current program of research focuses on creating and testing novel learner-centered interventions in both patient simulation and the classroom. His areas of interest include: using shared living experiences of physicians to improve mental health attitudes to stigma for medical students, sexual health in CAP, and addressing bystander behavior in incidences of patient racism to create opportunities for communal learning and repair between supervisors and trainees.

### **Martin, Jessica, MD, MHSA**

Jessica Martin serves as the GME Director of Accreditation & Program Development and the Director of Education for the Department of IM at UTRGV SOM. She has research experience at various institutions including Laredo Medical Center, where she led an NCI health disparities grant among Hispanics. She has also led oncology research at Doctors Hospital of Laredo where she served as Director of Cancer Center for 6 years. She began her work in medical education while in Laredo, where she held faculty appointments at both Laredo Community College and Texas A&M International University. She taught graduate courses in Anatomy, Medical Terminology, and Pharmacology. In the TX RGV, she continued her role in academics where she attained a UTRGV SOM faculty appointment and has gained extensive experience in accreditation, program development, and compliance. She enjoys working closely with residency/fellowship program directors and coordinators as well as teaching faculty, residents, and staff in areas including research, quality improvement, wellness, and faculty development. She serves on various UTRGV and DHR Health committees and is currently the PI and Co-PI on two NIH grants regarding COVID in collaboration with UTHSC Houston, as part of the CTSA network. She has published and presented multiple oral and poster presentations at the national level.

### **Maruvada, Smita, MD**

Dr. Maruvada is a PGY3 at LSUHSC-Shreveport and pursued her medical training in India. While her primary role is caring for my patients, she is constantly looking for ways to improve her clinical acumen. After stepping outside from classroom teaching, she sometimes feels lost with the vast number of resources available online which, in addition to clinical responsibilities, makes learning a daunting task. However, "it's not the load that breaks you down, it's the way you carry it," and hence, her and her team took a collective drive to provide a single platform for everyone to not only hone their clinical skills but also master their board prep.

### **Masini, Irene, BS**

Irene Masini is a second-year medical student at UC Irvine. She attended UC San Diego during her undergraduate years where she received a BS in human biology and minored in Spanish literature. In addition to her coursework, she spent her time there volunteering for the local Student-Run Free Clinic and tutoring her peers. She also researched inflammatory responses to burn wounds in the

Eliceiri lab in the Surgery Department of the UC San Diego medical school. At UC Irvine, she is currently on the board of the Ob-Gyn interest group and teaches sex education to ninth grade students at a local high school. She is also involved in the local student run clinic as the volunteer coordinator and is tutors in a program for first year medical students. Her interests include reproductive health, medical school education, women's healthcare, and healthcare for the uninsured. Her hobbies are hiking, reading, connecting with her family, and exploring new foods.

### **Masserano, Benjamin MD**

Benjamin Masserano, MD, earned a Bachelor of Science in biology from Arizona State University followed by a Medical Doctorate from Washington University School of Medicine in St. Louis and acceptance to the University of Texas Southwestern Pediatric Residency Program. During his training, he fostered a passion for education. He acted as a coordinator for multiple projects, including a high school medical immersion program, global health trips to Navajo Nation and Nicaragua, and the production of physical exam training videos, which are still utilized today. In residency, Dr. Masserano designed a communication simulation curriculum for fourth year medical students, which was made part of the regular curriculum. As an undergraduate, he worked in a cellular biology laboratory studying nanoparticles and was second author for a publication in *Advances in Experimental Medicine and Biology*. In medical school, he pursued clinical research in the area of pediatric craniosynostosis. Acting as the principal investigator, Dr. Masserano published research in *The Cleft Palate and Craniofacial Journal* and presented his findings at the American Cleft Palate-Craniofacial Association 2016 conference. Upon graduating medical school, he was awarded the F. Sessions Cole award in pediatrics for achievements in patient care, advocacy, and the utilization of emerging technologies.

### **Massoud, Louis, BS**

Louis Massoud is a third-year medical student at Wayne State University School of Medicine. He completed his undergraduate degree at UCLA and graduated Summa Cum Laude with a B.S. in Biology. He aspires to become a practicing Cardiologist in the future. His hobbies include playing acoustic guitar, running marathons, and is an avid Barcelona soccer fan.

### **Matthews, Megan, MS**

Megan Matthews, MS, is a fourth year PharmD student with an area of concentration in education at the USC School of Pharmacy. She received her Master's in Pharmacology from the University of Vermont. She is currently a pharmacy intern at CVS Pharmacy. In pharmacy school, Matthews found an interest in academia, involving herself in school-wide conversations regarding the curriculum in her role as the Curriculum Council Representative. Serving as the liaison between students and faculty, she was able to advocate for the needs of her classmates while learning the intricacies of developing a curriculum and understanding the responsibilities that fall on the institution. She has experience in private tutoring and teaching small groups that she has adapted to a larger classroom setting through her advanced rotation in academia. This rotation provided experience in designing in-class sessions and assessment of student performance. Matthews has been involved in research relating to interprofessional education in experiential rotations and the role of co-curricular activities in fulfilling school outcomes. She completed her Scholarly Project on her research titled "Learn Together, Work Together: A qualitative analysis of interprofessional learning during experiential PharmD education" for which she and her partner received first place.

### **Mattson, Peter, MD**

Peter is a first-year resident in emergency medicine at LAC + USC Medical Center, with an interest at the intersection of reducing disparities in health and informatics. He is a recent graduate of the Warren Alpert Medical School at Brown University.

### **May, Win, MD, PhD, FRCP**

Dr. Win May is a professor in the Division of Medical Education and the Director of the Clinical Skills Education and Evaluation Center at USC's Keck School of Medicine. She is a Distinguished Faculty Fellow of the USC Center for Excellence in Teaching, and a member of the California Consortium for the Assessment of Clinical Competence. Dr. May was a member of the Association of American

Medical Colleges (AAMC) Research in Medical Education (RIME) Planning Committee and served as a member of the United States Medical Licensure Examination (USMLE) Step 2 Clinical Skills Test Material Development Committee for the National Board of Medical Examiners. She also served as a member of the Advisory Committee of the AMA Learning Environment Study. She is a co-director of the Intersessions Course, teaches in the Introduction to Clinical Medicine (ICM) Program and has been a faculty mentor in the Professionalism and the Practice of Medicine (PPM) course since its inception. She is also an instructor in the Masters of Academic Medicine and Faculty Development programs. Dr. May has worked collaboratively with the Institute of Creative Technologies to develop a virtual standardized patient. Prior to joining USC in May 2000, Dr. May worked for the World Health Organization (WHO) in Geneva and New Delhi. She was the founding Dean of the Institute of Nursing in Myanmar. Dr. May is a reviewer for medical education journals and has written journal articles and book chapters in medical and nursing education. She was awarded an honorary Fellowship from the Royal College of Physicians of London.

### **McClenaghan, Rachael Eimear, MBChB**

Core Trainee Anaesthetics - Aberdeen Royal Infirmary; Honorary Teaching Fellow - University of Aberdeen.

### **McDermott, Allyson, MD**

Allyson McDermott, MD: Allyson is an Assistant Professor of Clinical Pediatrics at Connecticut Children's and the Assistant Clerkship Director for Inpatient Pediatrics at the UCONN School of Medicine. She also serves as the Faculty Director for her division's faculty development educational programming. Allyson completed her residency in pediatrics at Children's Hospital Los Angeles, where she began her journey into medical education as part of the Education Track; and continued at CHLA for her fellowship in pediatric hospital medicine where her scholarly work focused on evaluating parental understanding of asthma education prior to hospital discharge. She has recently completed the Master of Academic Medicine degree through Keck School of Medicine at the University of Southern California to further her educational and leadership skills. Outside of work, Allyson enjoys spending time with her family and friends, chasing personal bests on her spin bike, and experimenting with new recipes. [amcdermott@connecticutchildrens.org](mailto:amcdermott@connecticutchildrens.org)

### **McDermott, Shannon, PhD**

I am a Research Project Manager at the Kaiser Permanente Santa Rosa Family Medicine Residency program. Prior to joining Kaiser Permanente, I completed my PhD and Master of Policy Studies at UNSW Australia and worked as a research fellow at the University of Sydney conducting applied research projects in areas of homelessness, mental health, and older adults. I am experienced in qualitative and mixed methods research, quality improvement, curriculum design and program evaluation.

### **McGlawn-McGrane, Britton, MS**

Britton McGlawn-McGrane, MS is a third-year medical student at the USF Health College of Medicine. He has a passionate interest in teaching anatomy and medicine to students. He has been involved in multiple educational projects including teaching high school, undergraduate, graduate, and medical students. His research involvements include studying the implementation and delivery of medical curriculum to pre-health undergraduate students, assessing the efficacy of case-based learning for medical students, and teaching cadaveric anatomy in a project on the use of anatomy practicals in medical school. He is a member of the Medical Education Scholarly Concentration Program at USF.

### **McMahand, Dakota, MA**

Dakota McMahan is a higher education professional who loves supporting adult learners. She earned her Associate of Arts in Arts & Humanities from El Camino College, Bachelor of Arts in Interdisciplinary Studies with a concentration in Public Administration from California Baptist University and Master of Arts in Education Administration with a concentration in Higher Education and Adult Learners from the University of South Dakota. Dakota has worked in the higher education field for over five years at various institutions including Biola University and Dignity Health California Hospital Medical Center. She helped establish the Family Medicine Residency Program as a Program

Administrator at Charles R. Drew University of Medicine and Science. Currently, she is an Institutional Coordinator for Graduate Medical Education in the Office of Academic Affairs at Children's Hospital Los Angeles.

**McMullin, Juliette, MD**

Juliet McMullin, PhD, is the Interim Dean for the College of Humanities, Arts, and Social Sciences and Professor of Anthropology at the University of California, Riverside. As cultural and medical anthropologist, her recent work explores how storytelling about illness in comic form creates communities of support. Her projects are committed to creating opportunities for people to share their stories. She has taught Graphic Medicine courses to undergraduates and medical students. Along with teaching 10-week seminars, Dr. McMullin has been leading comics making workshops for medical students, patients, and broader community members. Her most recent project includes a collaborative study with the City of Hope to examine the role of comics making in cancer symptom management. She is also the Co-Director for the Center for Health Disparities Research at UCR and lead for the Community Engagement and Dissemination Core. She is the author of *The Healthy Ancestor: Embodied Inequalities and the Revitalization of Native Hawaiian Health* and an edited volume of *Confronting Cancer: Metaphors, Advocacy, and Anthropology*. She also has several articles exploring the role of storytelling in Graphic Medicine.

**McRae, Deena, MD**

Dr. McRae's previous roles have included Psychiatry Residency Program Director, Clinical Foundations medical student course director, and Assistant Dean for Graduate Medical Education at the UC Irvine School of Medicine. She has also served as the Associate Chief of Staff for Education at the Tibor Rubin Veterans Affairs Medical Center. Since 2016, she has held the roles of Associate Dean for Graduate Medical Education and Designated Institutional Official at the UC Irvine School of Medicine. In addition, she has been the Chair of the medical school's wellness and professionalism committee, Chair of the interdisciplinary quality and safety committee, and Founder/1st interim Chair of the UCI School of Medicine Advisory Council for Clinical Faculty Equity and Diversity. In these leadership roles, Dr. McRae works very closely with hospital and school leadership, as well as medical students, resident physicians, and faculty. She has worked closely with the Associate Vice Chancellor for Diversity and Inclusion on multiple projects, policies and programs to promote diversity and inclusive excellence in our housestaff, faculty and staff. She is also working closely with the UCI Office of Equal Opportunity and Diversity and the UCI Office of Academic Affairs to ensure that UCI's processes and programs are effectively promoting diversity and inclusive excellence.

**Melgar, Ana Karina, MD**

As associate program director for AltaMed Family Medicine Residency Program, Dr. Karina Melgar's role is to support the program director and faculty in order to provide a safe and inclusive learning environment for the residents. Dr. Melgar is involved in curriculum building, rotation development, recruitment, scheduling, and evaluation. Through mentoring, Dr. Melgar cultivates leadership in community engagement and health equity. In addition, Dr. Melgar provides comprehensive and compassionate care to her patients, while empowering them to continue to improve their health. Prior to joining AltaMed, Dr. Melgar completed her medical training at UC Davis and family medicine residency training at Long Beach Memorial. Dr. Melgar then completed a Community Medicine Fellowship, where she divided her time teaching as Jr. Faculty and collaborating with many community organizations. During that time, she successfully opened a new student run clinic and implemented an inter-professional collaborative behavioral health clinic for uninsured patients. Dr. Melgar went on to become faculty at Long Beach Memorial Family Medicine Residency Program, where she was Director of Community Engagement and Diversity. She was the lead faculty for the Neighborhood MED pipeline mentoring program, onsite Food Pantry and Diversity/Health Equity Committee. She also implemented a new integrated behavioral health clinic and Community Medicine Area of concentration for the residents.

**Messina, Michael, DO**

Emergency Medicine PGY-2 Resident at LAC+USC Medical Center

**Miller, Simone, MD**

Simone Miller is a third-year resident physician in the LAC+USC Emergency Medicine Residency Program. She completed her medical degree at the University of Massachusetts Medical School with a focus in global health. Simone has served as a member of her residency program's Graduate Medical Education Committee for the past two years, and ultimately plans to pursue fellowship training in medical education. Her current professional interests include innovations for on-shift learning, physician wellness, and educational upskilling in resource limited settings.

**Milne, Sarah-Anne, MBBS**

Sarah-Anne Milne is a Year 2 trainee in Anaesthetics at the Aberdeen Royal Infirmary in Scotland. She completed her medical undergraduate training at Barts and the London School of Medicine and Dentistry (University of London), gaining her MBBS in 2016. During that time, she also completed a BSc in Medical Sciences with Reproductive and Developmental Science at Imperial College London. She has an interest in Medical Education and, as an honorary associate of the University of Aberdeen, runs the Anaesthetic tutorials for the Year 4 medical students.

**Minhas, Prabhjot, BS**

Prabhjot Minhas is a second-year medical student at the University of California, San Francisco School of Medicine and the Program in Medical Education for the Urban Underserved (PRIME-US) at UCSF. She graduated with her bachelor's degrees in genetics and anthropology and a minor in disaster management from the University of Georgia in 2019. She has previously conducted research on placental malaria and vaccine development, refugee and migrant health, and disaster response and solidarity. Her academic interests include social justice in medicine, health equity, migrant health, and medical education.

**Miotto, Gabriella, MD, MPH**

I have a great love of Nature, poetry, dance, language, travel, and human rights, and look for ways to combine these. I trained in medicine at McGill University in Montreal, Quebec, family medicine at UC Irvine, and public health at UCLA. My life as a family physician has focused on community medicine in California and Alaska, as well as humanitarian relief and development work internationally in Latin America and the Balkans, with such groups as PROSECO, the UNHCR, and Doctors of the World. My current interests lie in the realm of the imagination and medicine, how body and psyche, both landscapes, can partner with each for healing through imagery, poetry, dream-tending, and seasonal/shamanic and multicultural wellness body practices. I'm an active member of the Laguna Poets Workshop and am currently on staff at the community clinic "TCC/The Children's Clinic, Serving Children and their Families", in Long Beach, California.

**Modi, Trisha, MBA, BS**

Trisha Modi is a medical student and research specialist at the Texas Tech Health Sciences Center - School of Medicine in Lubbock, TX. She is a leader in medicine and a future physician who is working to solve today's most complex health challenges by decreasing economic barriers to care. Trisha is a medical research professional with a Master of Business Administration focused on Health Organization Management from Texas Tech University's Rawls College of Business, and a Bachelor of Science (BS) focused on Biology from the University of Wisconsin-Madison. As a graduate of the Texas Tech MD/MBA dual-degree program, she has empowered herself with the knowledge to not only address the medical concerns of patients but also to tackle and strategize against the economic barriers to mental healthcare.

**Mody, Kaizeen C, DO, MS**

Dr. Kaizeen Mody is a 3rd year Family Medicine resident physician at the AH White Memorial Medical Center. Her interests include women's health, community medicine, and public health. She hopes to incorporate these into her future practice and continue working with underserved communities and improve access to healthcare

**Moore, Charles, MBChB, FRCA**

Dr. Charles Moore is a year five specialty trainee in Anaesthetics in Aberdeen Royal Infirmary. He completed his undergraduate training with MBChB at the University of Aberdeen in 2014 and progressed through foundation and specialty training, gaining FRCA in 2019. He is developing interests in obstetric and airway anaesthesia, and as an honorary associate of the University of Aberdeen has continued an interest in medical education for many years. His educational interests include the use of technology to improve learning and simulation.

**Morningstar-Kywi, Noam, MS**

Noam Morningstar-Kywi, MS, is a fourth year PharmD student at the USC School of Pharmacy, where he also received his Master's in pharmaceutical sciences, specializing in computational medicinal chemistry. He has taught pharmacology, drug design, and analysis of drug-drug interactions in the USC School of Pharmacy International Summer Program for the past three years and has given talks on the same topics in the PharmD and MS curricula. Utilizing his computational experience, Noam has pioneered new educational technology at the School of Pharmacy. He has developed and continues to work on interactive patient-case simulation software deployed at all levels of the PharmD curriculum, as well as a Bloom's Taxonomy driven adaptive practice question generator for didactic course material. Noam has presented on the applications of educational technology and on the integration of clinical and basic science education in the U.S. and internationally. He currently works in the School's computational chemistry lab, where his research focuses on methods for predicting off-target side effects to enhance rational drug design.

**Morse, Kimberbly, MSW, LCSW**

Kimberly Morse, MSW, LCSW earned her Master of Social Work degree at University of Washington with a concentration in Health/Mental Health in 2001. Kimberly has spent her social work career working with a variety of ages and medical conditions, in medical settings across the U.S, including Children's Hospital of Los Angeles (CHLA) since 2011. She has worked with patients and families in the area of Cystic Fibrosis (CF) over the past nine years at CHLA. Kimberly has received CF Foundation grant funding to support mental health and has participated in nationwide CF quality improvement networks. Kimberly has presented at national CF conferences and CHLA workshops on topics related to mental health, transition, health care co-production, ethical dilemmas, and managing challenging behaviors. As a clinical supervisor and former field instructor, Kimberly teaches the importance of effective communication in building both care teams and relationships with patients and families.

**Mou, Margaret, DO**

Dr. Margaret Mou is currently a second-year Pediatric Hospital Medicine Fellow at Texas Tech University Health Sciences Center. She went to undergrad at University of Texas at Austin, medical school at University of North Texas Health Sciences Center, and did her residency and chief year at NYU Winthrop in New York. She is passionate about medical education and physician wellness.

**Moughal, Saad, MBBS**

Saad Moughal is a junior doctor in the United Kingdom with a passion to pursue a neurosurgery training programme.

**Moulton, Haley, BA**

Haley Moulton is a graduate of Dartmouth College, a medical student at the Geisel School of Medicine at Dartmouth, and a research coordinator for OPENPediatrics.

**Mowchun, Justin, MD, MScEd**

Since 2014, Dr. Mowchun has been the director of the Geisel School of Medicine at Dartmouth neurology clerkship. He was also the co-director of the neurology preclinical course from 2013- 2019. he has been on the neurology residency and clinical neurophysiology competency committees and program evaluation committees since 2013. Dr. Mowchun received his master's in medical education leadership in 2016 from the University of New England. He is also a Harvard Macy Faculty member at A System Approach to Assessment in Health Science Education Course, Harvard Macy Institute,

Boston, MA (March 2018 and 2019). At the course he has assisted health professional educator with their assessment projects and has also presented on “Direct Observation of Students: emphasizing the formative while supporting the summative.”

**Mulla, Zuber D., PhD**

Zuber D. Mulla, Ph.D., C.P.H., is Professor of Obstetrics and Gynecology and Assistant Dean for Faculty Development at the Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center El Paso. He is an epidemiologist and has published over 90 papers in peer-reviewed journals. Dr. Mulla's honors include the Outstanding Teacher Award from the El Paso Regional Campus of the UT-Houston School of Public Health, and the Professional Achievement Award from the University of Arizona Alumni Association in Tucson. Mulla is certified by the National Board of Public Health Examiners. He completed his doctorate in Epidemiology at the University of South Florida College of Public Health, Department of Epidemiology and Biostatistics, in Tampa, FL.

**Munoz, Maria, MD**

Maria Munoz, MD, is a Family Medicine Physician in South Texas. She is Clinical Associate Faculty in the Department of Family and Community Medicine at the University of Texas Rio Grande Valley. She was the Clerkship Director and Associate Program Director, at the University of Texas-Rio Grande Valley (UTRGV), Family Medicine Residency. Prior to joining UTRGV, she was the Family Medicine Regional Clerkship Director for the University of Texas Health Science Center in San Antonio. She serves on the Commission of Public Health with the Texas Academy of Family Medicine as well as the Commission on Continuing Education. She is interested in curriculum development and resident/student evaluation processes. She has 2 beautiful children, John Paul and Matthew. Her personal hobbies include crocheting and writing children's books.

**Murray, Collyn T., MD, MACM**

Collyn Murray is an assistant professor in the Division of Emergency Medicine (EM) at Washington University in Saint Louis (WUSTL). She also serves as an Assistant Residency Director for the EM Residency and is responsible for the design and administration of the 2-year EM Resident Conference Curriculum. Dr. Murray received her MD at the University of North Carolina at Chapel Hill (UNC) and completed her EM Residency at UNC as well. She recently completed her 2-year EM Education Scholarship Fellowship at WUSTL, during which she completed her Masters of Academic Medicine at the USC Keck School of Medicine. Clinically, she divides her time between the Emergency Departments at Barnes-Jewish Hospitals, and the Saint Louis Children's Hospital. Her education interests in Graduate Medical Education include Bedside Teaching, Resident-as-Teacher, and Conference Curriculum Design.

**Nadamuni, Mridula, MD**

Mridula is a fourth-year resident in Internal Medicine and Pediatrics who is passionate about transitions of care and implementing patient-centered care programs. She values the narrative as a unique tool to train medical students and residents in contextualizing the experience of illness and hopes to continue this work during her upcoming year as a chief resident. When not at work, she enjoys cycling as a way to explore the outdoors and relieve stress.

**Nahm, Sue J., MA, MPhil**

Sue Nahm is the Director of Student Academic Support at UCLA's David Geffen School of Medicine. She coordinates academic programming for medical students, coaches individual students on study and test taking strategies and oversees the tutoring program. She is passionate about developing resources and tools to help medical students navigate the professional and academic demands of medical school, and helping students succeed in the professional endeavors.

**Neilson, Eric, MD**

Dr. Eric Neilson was born and raised in Long Beach, California and completed undergraduate studies in Microbiology at the University of California, Santa Barbara before graduating from Ross University School of Medicine in 2009 with highest honors. His family medicine training was completed at Presbyterian Intercommunity Hospital-University of California, Irvine in Whittier, CA and included an

emphasis in Tropical Medicine with clinical training in Cameroon and Zambia. After residency, he worked with the Veterans Affairs in Oregon and then, as a full-spectrum general practitioner in Taupo, New Zealand. Dr. Neilson most recently served in the Peace Corps Global Health Service Partnership in Tanzania as a senior lecturer and clinical supervisor at the University of Dodoma in the departments of Internal Medicine and Pediatrics, while completing a fellowship in Global Clinical Education with Massachusetts General Hospital. He joined the Ross faculty in the Department of Clinical Medicine in January 2016 and is now an Associate Professor and Clinical Skills Course Director. He continues to pursue interests in Global Health, Health Equity and research in the integration of basic science and clinical medicine using clinical reasoning and simulation activities.

### **Nelson, Lydia**

Lydia Nelson is a third-year medical student at USC'S Keck School of Medicine. She has a special interest in bringing care to underserved communities, specifically those who may be socially isolated such as those living with HIV, experiencing homelessness or incarceration, and mental illness. She also has an interest in shifting the culture of medicine to be more welcoming for folks of diverse backgrounds and combating burnout in the medical field. During her time at Keck she has been involved with the Primary Care Program, the Keck Human Rights Clinic, and the Family Medicine Student Interest Group. She was born in Leeds, England, raised in Santa Barbara, California, and attended University of California, Berkeley for her undergraduate degree in Integrative Biology.

### **Nguyen, Tan, MD**

Tan Q. Nguyen, MD, is a Dean's Scholar at the UC Irvine School of Medicine and an Associate Professor in the Department of Family Medicine. He serves as the director of the department's Faculty Mentorship Program and a representative on the GME Resident Wellness Committee. He has co-led monthly wellness sessions using poetry, art, music and reflective writing. As an inaugural member of the Academy for Innovation in Medical Education, he contributes to educating students, residents and faculty using creative curricula, including TBL, gaming, podcasts, flipped classrooms, SIMS and point of care ultrasound. His research includes the examination of student wellness and development, using creative outlets involving poetry, mask and comic creation. He is an effective speaker, presenting at Pri-Med, American Society for Bioethics and Humanities, World Ultrasound Congress, OC Medical Association Wellness Series, and most recently at the 2020 USC IME Cool Ideas poster session on teaching heart sounds to medical students. He incorporates poetry in his clinical practice to enhance student and physician relationship with patients. He values creativity in learning and patient care and has been awarded the OC Medical Association Physician of Excellence and UC Irvine School of Medicine Excellence in Teaching 2020.

### **Noelker, Joan P., MD, MACM**

Joan Noelker is an assistant professor at Washington University in Saint Louis (Wash U). She has an MD from the Royal College of Surgeons in Ireland and a Masters of Medical Education from the Keck School of Medicine at USC. She is a St. Louis native and returned to the area after medical school to complete residency training, including a chief resident year, followed by a medical education fellowship at Wash U. She works clinically in the emergency departments at Barnes-Jewish Hospital, Children's Hospital and Barnes-Jewish West County Hospital, and her non-clinical time is divided between administrative work within the EM residency, teaching and mentoring residents and medical students, curriculum development and educational research. Additionally, she is a member of two curriculum committees within the medical school for the new Gateway curriculum, and a member of the advisory board for the new Teaching Scholars Program at Wash U. Dr. Noelker has interests in simulation in medical education, transitions within medical education, undergraduate and graduate level medical education and dissemination of EM core knowledge through speaking engagements. She has received multiple local teaching awards over the past several years, a national award by the American College of Emergency Physicians (ACEP) for public speaking in 2016, and a national teaching award through ACEP in 2018.

### **Nordgren, Kendra, MD**

Dr. Nordgren is an assistant professor in the Department of Biomedical Sciences and the Assistant Dean of Admissions at the University of Minnesota Medical School (UMMS), Duluth Campus. She

completed her doctorate degree at the Mayo Clinic Graduate School in 2006, and post-doctoral training at the UMMS Duluth Campus. Since joining the faculty in 2013, Dr. Nordgren has focused on development of innovative educational methods and resources for health professions education. In particular, her work emphasizes the importance of active learning strategies and builds on the framework of discovery learning theory. Dr. Nordgren is an alumna of the Harvard Macy Institute's Program for Health Professions Educators and is a faculty member for this year's cohort. She is the co-recipient of a UMMS COVID-19 Medical Education Innovation Grant to develop a virtual continuing medical education course on structural and social determinants of health in the age of COVID-19 and has been selected as a fellow for the 2020-21 cohort of the UMMS Medical Education Outcomes Center's Faculty Fellowship program. Her extensive experience teaching and course directing in medical education, as well as in bachelors and master's education programs allowed her to leverage guided discovery learning theory to develop a novel approach for case-based learning in health professions education. This work has been presented at the UMMS Best Practices in Health Professions Education conference in 2019 and 2020.

### **Novak, Daniel, PhD**

Dr. Novak is an Assistant Professor of Clinical Medical Education at the Keck School of Medicine of USC. He earned a master's degree in educational technology and instructional design from San Diego State University, and his Ph.D. in Learning Sciences from the University of Washington, Seattle. His practice focuses on the development of innovative postgraduate professional training programs for teachers, engineers, and physicians. His research focuses on the development of expertise across the career-span, with a focus on how learners develop expertise through reflective and deliberate practice. In 2018, he served as a consultant for a WHO funded project to support pediatric health in Mongolia and won a grant from the American Medical Association's Accelerating Change in Medical Education initiative. In 2019, his team won the AAMC Western Group on Educational Affairs' Computer Research in Medical Education (CRIME) award for innovative technological research, and his latest article in *Academic Medicine* has been nominated for the New Investigator award in the Research in Medical Education division.

### **Null, Gregory, MA**

Greg Null, MA is the Assistant Director for Assessment and Accreditation at the University of Pittsburgh School of Medicine. Greg is responsible for the management of assessment and accreditation initiatives at the School of Medicine. He works with faculty and administrators to develop curriculum quality improvement processes and collect and monitor compliance data. He also contributes to OMED's initiative to improve faculty teaching, and to conduct medical education research.

### **Nurmsoo, Sean, MS**

Sean Nurmsoo is a medical student at Dalhousie University Faculty of Medicine.

### **Nyquist, Julie G., PhD**

Dr. Nyquist is the director of the Master of Academic Medicine Program and the lead instructor for the Introduction to Academic Medicine and the Accreditation and Program Evaluation courses. She is also part of the team that teaches learning and curriculum design, professionalism and leadership. Dr. Nyquist also developed and directs a flexible (online) elective for 4th year medical students, Preparing to Teach and Lead in Medicine, that has been completed by over 250 medical students since first offered in 2018. Dr. Nyquist has been on the faculty at USC since 1981, and from 1981–2014, she served as the program evaluation specialist for the school. She has been a member of most of the school's curriculum committees and co-chaired the university's effort to move toward Competency-Based Medical Education (CBME). Within faculty governance, she has served twice as President of the Medical Faculty Assembly and also served in many capacities with the university-wide Academic Senate, including service on the board (2002-2006, 2010-2012). In conjunction with her USC position, Dr. Nyquist held the role of Director of Medical Education at a regional medical center in Bakersfield, California for eight years. Nationally, she has developed and delivered over 900 workshops and presentations on a wide variety of educational and leadership topics, primarily to groups of health professions' faculty.

**Ogunyemi, Dotun, MD**

Dotun Ogunyemi, MD is the DIO and Associate Chief Medical Officer at Arrowhead Regional Medical Center in Colton, California. He is also a professor of Obstetrics & Gynecology at California University of Science & Medicine in Colton, California.

**Olson, Holly MD, MACM**

Holly Olson, MD, MACM is a graduate of US Military Academy at West Point and Vanderbilt University School of Medicine. She completed the MACM program at USC in 2017. She is Board Certified in Obstetrics-Gynecology and previously served as Ob-Gyn Program Director and Director of Medical Education and Designated Institutional Official at Tripler Army Medical Center, Honolulu, Hawaii. She is currently an Assistant Professor and faculty in Obstetrics and Gynecology at the University of Hawai'i John A. Burns School of Medicine and serves as the Deputy Designated Institutional Official for Graduate Medical Education.

**Olson, John, PhD**

Dr. Olson is an Anatomy Professor at the A.T. Still University School of Osteopathic Medicine in Arizona. As an undergraduate in biology at the Massachusetts Institute of Technology, he studied microscopy and biophysics, and upon graduation went to work for a biopharmaceutical research company in Cambridge, MA developing and manufacturing monoclonal antibodies linked to paramagnetic particles used in MRI imaging. John then went to Arizona State University and received a PhD in Molecular/Cellular biology and discovered the first vertebrate sperm chemoattractant, allurin, and developed computer software with microscopy techniques to visualize cellular movement. He joined the faculty at Arizona State for many years at the Downtown Phoenix Campus teaching anatomy, physiology, genetics and biochemistry, and was an adjunct Professor at ATSU-SOMA. He later joined SOMA full time to become a Course Director for their osteopathic medical program and continues to teach the next generation of osteopathic physicians.

**Osho, Aladeyemi, BA**

Aladeyemi is a fourth-year medical student at SUNY Downstate Health Sciences University in Brooklyn, NY. She received her Bachelor's degree in Biological Sciences at Rutgers University, where she worked as a tutor for undergraduate and high school students. Aladeyemi is a member of the Medical Educator Pathway at Downstate, where she has strengthened her passion for medical education, addressing health disparities, increasing diversity in healthcare professions, and using gamification and other interactive tools to engage adult learners. She is pursuing a residency in Obstetrics and Gynecology and hopes to continue these educational pursuits.

**Pace, Lauren, BA**

Lauren Pace is a fourth-year medical student at University of Maryland School of Medicine currently applying to residency in Obstetrics and Gynecology. Her interests in the medical education space include innovative curricular concepts that enhance the well roundedness of future physicians. Prior to making a career shift and applying to medical school, Lauren worked in public relations. In this role she learned the value of strong communication skills, a trait that she has worked to carry through her medical school experiences, including leadership in the Humanism Symposium. Lauren obtained a Bachelors of the Arts in Creative Writing from Dartmouth College in 2012. She loves crossword puzzles, novels, and true crime podcasts and enjoys spending time with her Bernedoodle puppy, Winston.

**Palmer, Brandon, MD**

Dr. Brandon Palmer is a second-year pediatric hospital medicine fellow at the Children's Hospital Los Angeles. He is also currently enrolled in the Masters of Academic Medicine at USC's Keck School of Medicine, with a focus on curriculum development and educational scholarship production. He has specific interests in utilizing adult learning theory to build curriculum for advanced practice providers and building mentorship programs for learners of all levels. In addition, he enjoys caring for children with medical complexity, and practicing shared decision-making with patients and families. His long-term goal is to be a hospitalist-educator in academic medicine, with a leadership role in graduate medical education programs.

**Pan, Daniel, BA**

Daniel Pan is a second-year medical student at the University of Pittsburgh School of Medicine (Pitt Med) and a 2018 graduate from Princeton University. He loves mentoring and advising both high school and undergraduate pre-medical students during his free time. During his undergraduate years at Princeton, he was involved with numerous mentoring organizations and worked with many more students unofficially. Similarly, as a medical student, he has led multiple mentoring organizations for premedical students and volunteered his time to introduce high school and middle school students to the field of medicine. Since taking the Medical College Admission Test (MCAT) in 2018, he has worked one-on-one with almost 80 students preparing for the MCAT without any financial compensation because he understands how high the costs of becoming a physician already are. To further support other aspiring physicians, he came up with the idea to found a volunteer student organization at Pitt Med to support medical school applicants. By working with fellow classmate, Toby Zhu, the student organization, Giving a Boost, was established to provide free application support to students in the greater Pittsburgh area as well as those in the nearby region.

**Pandya, Deshanki, MD****Panesar, Amreeta, MD**

Dr. Amreeta Panesar was born and raised in Irvine, California. She completed her undergraduate studies at the University of California, San Diego in psychology with a minor in biology. She then attended medical school at Ross University School of Medicine in Portsmouth, Dominica and graduated with honors. She completed her pediatric residency at University of California, San Francisco in Fresno and was voted by her co-residents and faculty with the “Excellence in Teaching” award in her third year of residency. She also helped create the sepsis protocol at the community hospital she worked to provide evidence-based guidelines to the ED residents. She is currently working as a pediatric hospitalist at Children’s Hospital of Los Angeles and has been appointed to Clinical Assistant Professor of Pediatrics at Keck School of Medicine of USC. Her interests at CHLA include quality improvement and medical education. She also teaches Introduction to Clinical Medicine to first year medical students at Keck School of Medicine.

**Parke, Caitlin, MS**

Caitlin Parke is a current second year medical student at the University of Arizona College of Medicine, Phoenix (UACOMP). Caitlin completed her undergraduate education at the University of California, Berkeley majoring in both Anthropology and Integrative Biology. She then completed her Masters of Biomedical Sciences at Tufts University before beginning medical school. Caitlin is currently a scholar through the Arizona Area Health Education Centers (AHEC) program and recently received a National Health Service Corps Scholarship through the Health Resources and Services Administration. She is a co-leader of the UACOMP Pediatrics Interest Group and currently leads a collaborative effort between UACOMP students and undergraduate students at Arizona State University to create an online resource bank of science, math, art and health (STEAM) related educational content for Kindergarten-8th grade students. Caitlin has a special interest in health literacy, especially in the pediatric population, and hopes to eventually work clinically as a pediatrician and health educator.

**Patel, Dipal R. MD, FACP**

Dr. Patel serves as an Associate Program Director for Ambulatory Education for the Internal Medicine Residency Program at Mount Sinai Morningside and Mount Sinai West. She oversees the education component for the three primary care internal medicine clinics located in affiliated Federally Qualified Health Care facilities. Dr. Patel’s focus is on curricular development and quality improvement in the clinics.

**Patel, Palak, MD**

Dr. Patel is a Clinical Assistant Professor of Anesthesiology at the Arizona College of Medicine in Phoenix.

**Paz-Soldan, Gonzalo, BA**

Gonzalo is a 3rd year medical student at SUNY Downstate College of Medicine in Brooklyn, New York. As part of the steering committee of the Medical Educator Pathway at Downstate he has worked on implementing student-led medical education projects into his school's curriculum. His own projects revolve around the ultrasound curriculum for pre-clerkship students. He is planning on pursuing a residency in Emergency Medicine.

**Pelley, John, PhD, MBA**

John Pelley, PhD, is a professor in the Department of Medical Education at Texas Tech University HSC SOM, Lubbock, TX. Dr. Pelley developed the EPA Thinking concept by extending the metacognitive concepts and methods currently taught at his online website. These concepts compose the Expert Skills Program designed to help students improve critical thinking skills. He has served five times as an AOA Visiting Professor and also received the AOA Robert J. Glaser Distinguished Professor Award, 2010, in recognition of this work. He has published an invited college textbook chapter on learning styles, an IAMSE manual chapter on metacognition, and other articles on brain-based active learning. Additionally, his TED Talk, "Bodybuilding for the Brain" has had over 200,000 views. He served on the original board of directors for the Team Based Learning Collaborative and is also experienced with PBL. He has conducted flipped classroom sessions in Zoom interactive video involving breakout rooms. He has previously served as Academic Affairs Dean and Admissions Dean.

**Peña-Garcia, Vanessa, BA**

As a coordinator for the AltaMed Institute for Health Equity, Vanessa contributes to the development of AltaMed's Medical Education Department through undergraduate, graduate and continuing medical education initiatives. During her undergraduate career at California State University, Northridge (CSUN), Vanessa was involved in the American Society for Biochemistry and Molecular Biology, CSUN's Chemistry and Biochemistry club, where she held a vice president position, Chicanos for Community Medicine, and Women in Science. Following her curiosity for neuroscience, Vanessa researched obesity-induced neuroinflammation and the effects of interleukin-6 on the maternal gut microbiome and the alternation of mouse offspring brain development. Vanessa has been giving back to her community as a lifeguard, swim instructor, and pool manager for 9 years and a water polo coach for 3 years. Vanessa grew up experiencing health disparities first-hand as a patient of community health centers. She hopes to eliminate health disparities by combining her passion for science and providing quality and humanistic care to those in underserved areas through a direct patient-physician relationship.

**Pitts, Sophie, MBChB**

Dr. Sophie Pitts MRCP UK, Acute Care Common Stem (Acute Medicine) Year 3 Physician Trainee, Aberdeen Royal Infirmary, UK.

**Prevette, Christopher L., MS**

[christopher.prevette@utoledo.edu](mailto:christopher.prevette@utoledo.edu); E-Learning Instructional Design Specialist; University of Toledo College of Medicine and Life Sciences, Department of Medical Education.

**Quinn, Lauren M.**

Lauren Quinn is a specialty registrar in endocrinology and diabetes, and a National Institute of Health Research Academic Clinical Fellow. She is tenacious, resilient and committed to improving patients' lives through academic research. Her research interests span from digital health and education, to understanding the pathophysiology of type 1 diabetes and working towards a cure. She is passionate about raising standards of diabetes care globally, alongside improving quality of life and reducing complications at the individual patient level. Lauren's broad research acumen combined with significant national leadership and teaching positions continually inspire her to dedicate her career to academia. Her greatest strengths include her motivation, enthusiasm, hardworking nature, caring approach and willingness to embrace leadership to make positive change happen.

**Qureshi, Hira**

Hira Qureshi is a second-year medical student at Case Western Reserve University (CWRU) in Cleveland, Ohio. She entered medicine primarily to address her observation that there is a gap between the ideals and reality of healthcare and a need for compassionate physicians. She values education and mentorship and serves as the mentorship co-chair for the Holden Surgical Society at CWRU. Recently, she was one of 10 students who was selected to participate in CWRU's Interprofessional Scholar Collaboration in Teaching and Learning, a competitive 8-month program that focuses on furthering student's skills in teaching, curriculum development, and educational scholarship. Through this program, she began working with Dr. Schirokauer to create a course for pre-clinical students that would pair them with seriously ill patients so that they could experience healthcare from the other side. Thus far, Hira and Dr. Schirokauer have designed a robust 8-week elective and plan to launch the pilot in the summer of 2021.

**Ramaswamy, Meghna, BS**

Meghna Ramaswamy is a fourth-year medical student at the University of Maryland and is applying to residency in Obstetrics and Gynecology. Her career interests include teaching, global health and patient advocacy. While in medical school, she was an active member of the global health interest group and incorporated the University of Maryland as a chapter of the Global Surgery Student Alliance. She also served as student representative to the American College of Education Internationalization Lab, an effort to improve communication and collaboration regarding global health opportunities for students across the different schools at the University of Maryland. She is particularly happy to have had the opportunity to participate in, and eventually sign on as student leader for, the Humanism Symposium. She graduated from the University of Maryland, College Park with a B.S. in Bioengineering and a minor in Religious Studies.

**Ramirez Wiedeman, Claudia, PhD**

Claudia Ramirez Wiedeman is Director of Research and Evaluation at USC Shoah Foundation - The Institute for Visual History and Education. She oversees the strategic direction of the Institute's research agenda and evaluation activities. Working with Institute leadership, affiliated scholars worldwide and assessment professionals, Claudia is responsible for facilitating and producing relevant, impactful and groundbreaking cross-disciplinary research, measuring impact of programmatic efforts and maintaining an Institute-wide, evidence-based approach to innovation and sustainability. Claudia received her Ph.D. from the University of California, Los Angeles and previously held a tenured faculty position at a liberal arts university.

**Rasmussen, Chad, DDS**

Chad Rasmussen is a Consultant at Mayo Clinic in Rochester, Minnesota, Assistant Professor of Dentistry at the Mayo Clinic College of Medicine, Vice Chair of Education for Mayo Clinic Dental Specialties, Associate Program Director for the Orthodontics residency training program at the Mayo Clinic Graduate School of Medicine, and is Board Certified in Orthodontics and Dentofacial Orthopedics. He is a graduate of the University of Minnesota School of Dentistry and the orthodontic residency at Washington Hospital Center and Children's National Medical Center in Washington, DC. Dr. Rasmussen has been an educator for pre-doctoral dental and dental hygiene students; orthodontic, pediatric dental, and oral and maxillofacial surgery residents; and oral and maxillofacial prosthetic fellows. His educational interests include interprofessional education, and clinical interests lie in the orthodontic management of patients with cleft and craniofacial disorders, orthognathic correction of skeletal dysplasias, head and neck cancer, sleep disordered breathing, and facial trauma.

**Razfar, Aria, PhD**

Aria Razfar is Professor of Education and Linguistics at the University of Illinois Chicago. He earned his Ph.D. from the University of California, Los Angeles in 2003. In a relative short time, he has established himself as one of the leading scholars in the fields of applied linguistics, education, and learning sciences. He has authored theoretically driven empirical studies and conceptual pieces that draw on qualitative and quantitative methods, sociocultural theories of learning, and the application of language ideologies in urban schools. His publications have appeared in premiere academic journals

such as Anthropology of Education Quarterly, Human Development, Linguistics and Education, Mind, Culture, and Activity, and TESOL Quarterly, and a top-selling book titled Applying Linguistics in the Classroom: A Sociocultural Perspective (Routledge, 2014). The U.S. Department of Education and the National Science Foundation have provided major funding for his research on language learning, mathematics, and science. In 2014, he was recognized for his scholarship by being named the University of Illinois at Chicago's Researcher of the Year for the Social Sciences. He was a fellow at USC Shoah Foundation's Center for Advanced Genocide Research in the summer of 2018.

**Reed, Sabrina, MD**

Dr. Sabrina Reed is a board-certified Adult psychiatrist who recently completed her Child and Adolescent Psychiatry Fellowship at UCLA where she served as a chief fellow. She attended Northwestern for her undergraduate studies majoring in psychology with a minor in global health prior to completion of her medication training at the University of Illinois at Chicago. She currently is a Clinical Assistant Professor at USC working with transitional age youth at the Student Health Center and adolescents at Augustus Hawkins inpatient unit. She is interested in medical education and teaches the pre-clinical medical student psychiatry course at USC and is enrolled in the Masters of Academic Medicine Program.

**Reouk, Divya, MD**

Dr. Reouk is Associate Program Director at Kaiser Permanente San Jose Family Medicine Residency Program. She is the director for the didactics and academic sessions for the residency program. In addition, she is part of the evaluation committee and serves as curriculum director for professional development, lifestyle medicine, integrative medicine, global health and endocrinology. She conducts faculty development for the residency. She is also the CME planner for the department of Family Medicine. Dr. Reouk completed her undergraduate and medical training at Christian Medical College, Vellore, India and completed her Family Medicine Residency at Loma Linda University, Loma Linda. She completed the University of California, San Francisco Family Medicine Faculty Development Fellowship in 2017. Outside of her role as Associate Program Director, Dr. Reouk practices full scope family medicine.

**Richey, Joyce M., PhD**

Dr. Richey is currently a faculty member in the department of Physiology and Biophysics at Keck School of Medicine of USC and a member of the diabetes and obesity research groups. Dr. Richey conducts research examining the relationship between diabetes, obesity and hypertension. She has received research grants from the National Institute of Digestive, Diabetes and Kidney Disorders; National Institute of Heart, Lung and Blood; American Heart Association and the American Diabetes Association. Her research has resulted in publications in peer-reviewed medical journals. She is the immediate past president of the Los Leadership Council of the American Diabetes Association; chairperson of the Los Angeles African American Diabetes Task Force; and a peer grant reviewer for the Western and National Affiliates of the American Heart Association.

**Richmond, Richard, MBBS**

I have been working in Paediatrics in the UK since 2016.

**Ring, Jeffrey, PhD**

Jeffrey Ring, PhD, is a health psychologist dedicated to health equity and justice. He works in the field of medical education, leadership and team coaching, behavioral health integration and health practitioner resilience and wellbeing.

**Rojas Thaireaux, Marla, BA**

Marla was born and raised in Venezuela, but moved to Miami, Florida with her family when she was 12 years old. After high school, Marla moved to Atlanta, Georgia to attend Emory University where she not only fell in love with medicine but also discovered a passion for the study of language and culture within the field of public health. She graduated in 2017 with a double major in Linguistics and Anthropology, with a concentration in Public Health. Marla decided to take two gap years to work as a Health & Nutrition Program Coordinator for a non-profit Head Start program for underserved, low-

income families in South Florida. There, she had the pleasure to link medicine with linguistics, culture and public health while aiding children and families in navigating their health care. As a medical student at Wayne State University School of Medicine, Marla has been able to continue serving vulnerable populations in the Detroit community as a co-coordinator for the student-run free clinic Cass Clinic.

### **Romanos-Sirakis, Eleny, MD, MS**

Dr Romanos-Sirakis is currently the Director of Pediatric Hematology/Oncology at Staten Island University Hospital Northwell Health and an assistant professor of pediatrics of the Zucker School of Medicine at Hofstra/Northwell. She completed her fellowship in Pediatric Hematology/Oncology from New York University Langone Medical Center. In addition to her clinical duties, she has recently completed a Master's degree in Health Professions Pedagogy and Leadership in order to promote medical education for pediatric residents and colleagues. She is actively involved in development of curricula for pediatric resident education and faculty development programs at her institution.

### **Rosculet, Nicholas, MD MPhil**

Nick Rosculet, MD MPhil, is a third-year resident at Children's Hospital – Los Angeles. He was born in Michigan and spent his childhood in northeast Wisconsin. After high school, he moved east and completed his undergraduate degree (BA in biophysics) at the University in Pennsylvania, followed by medical school at the Johns Hopkins University School of Medicine. Additionally, he completed an MPhil in Clinical Science – Experimental Medicine at the University of Cambridge. He is interested in the applications of machine learning and other big data predictive modeling methods to clinical datasets to develop clinical decision support tools. He is currently applying for fellowship training in pediatric critical care medicine, with plans to begin fellowship in July 2021. When he is not at the hospital, you can find him playing tennis, hiking the mountains and wilderness of Southern California, or making future plans for travel (on hold right now given COVID restrictions, of course).

### **Ross, Andrew, MD**

Dr. Andrew Ross is an Assistant Professor of Radiology in the Musculoskeletal Imaging and Intervention Section, and in this role, he provides clinical radiology education to fellows, residents, and medical students. Dr. Ross is also a prolific researcher whose interests include cost-effective imaging, rapid MRI protocols, and the intersection of public health and radiology. Throughout his career, Dr. Ross has provided mentorship to medical trainees pursuing research, including trainees as primary authors on several high-profile presentations and publications. He has developed a framework for identifying medical students interested in radiology early in medical school and matching them with faculty mentors to maximize their exposure to the discipline.

### **Sall, Dana, MD, MEd, FACP**

Dr. Dana Sall is the Program Director for the Internal Medicine Residency program at HonorHealth Scottsdale Thompson Peak Medical Center. She completed her undergraduate medical education at SUNY Upstate Medical University and her internal medicine residency at the University of Cincinnati. After residency she pursued a master's degree in Education. She has experience in both undergraduate and graduate medical education. Areas of interest include adult learning theory, curricular development, assessment and feedback, procedural competence and simulation.

### **Saluja, Sonali, MD, MPH**

Saluja is an assistant professor of medicine and a health services researcher at The Gehr Center for Health Systems Science. Saluja's research focuses on health disparities as well as access to care for vulnerable populations. Her projects have examined access to insurance and primary care in the setting of health care reform. Saluja currently has an institutional K award to study how safety-net patients in Los Angeles County are navigating the healthcare landscape under the ACA. Saluja is also the course director for the new Gehr Schaeffer Health Policy Educational Series at the Keck School of Medicine. Saluja attended medical school at the University of Wisconsin and completed her residency training in Internal Medicine at Providence Portland Medical Center in Portland, Oregon. She received a Master of Public Health from the Harvard T.H. Chan School of Public Health while she completed her fellowship training in General Internal Medicine at the Cambridge Health Alliance. Saluja is board

certified in internal medicine and currently sees patients at LAC+USC hospital where she teaches and supervises residents and medical students.

**Sandhu, Nimerta, BS, MPH**

Sandhu, BS U.C. Berkeley, MPH Harvard T.H. Chan School of Public Health, is a fourth-year medical student Drexel University College of Medicine.

**Sarwar, Safdar, MBBS**

Safdar Sarwar is a junior doctor in the UK currently pursuing ENT training.

**Schaff, Pamela, MD, PhD**

Pamela Schaff, MD, is an Associate Professor of Medical Education, Family Medicine, Pediatrics and Director of the HEAL (Humanities, Ethics/Economics, Art, and the Law) Program at the Keck School of Medicine (KSOM) of the University of Southern California (USC). She graduated from Pomona College with a BA in English Literature and received her MD from Icahn School Medicine at Mount Sinai. She has practiced pediatrics since completing her residency at Children's Hospital of Los Angeles and has taught at KSOM since 1986. She served as Director of the ICM program from 1996 to 2007, Assistant Dean for Curriculum from 2007 to 2012, and Associate Dean for Curriculum from 2012 until August 2016. She also served as Undergraduate Medical Education (UGME) chair for the Group on Educational Affairs (GEA) of the Association of American Medical Colleges (AAMC) from 2012-2014. She chaired the GEA's working group on professional identity formation from 2015-2018. Her current areas of investigation include professional identity formation and the role of the arts and humanities in medical education. She was awarded the Excellence in Teaching Award in 1998, 2002, 2005, and 2017, KSOM's Master Teacher Award in 2005, the USC-Mellon Mentoring Award in 2008 and USC's Remarkable Woman Award in 2010. She is currently completing her doctoral work in Literature and Creative Writing at USC.

**Schaivone, Kathryn, MPA**

Kathryn Schaivone is an Instructor of Clinical Medical Education at USC's Keck School of Medicine.

**Schirokauer, Oliver, MD, PHD**

Oliver Schirokauer, PhD, MD, is an assistant professor in the Department of Bioethics at Case Western Reserve University in Cleveland, Ohio, where his responsibilities include overseeing the ethics curriculum for the medical students and co-directing the two-year Foundations of Clinical Medicine seminars program for the pre-clerkship medical students. In 2010, after 18 years as an academic mathematician, Dr. Schirokauer decided to switch careers to medicine as a result of personal experiences that convinced him that patients adjusting to a new diagnosis of major illness would benefit from more support. He established and now directs the Medical Facilitation Program at the MetroHealth System in Cleveland. This program focuses on helping newly diagnosed patients make sense of their circumstances and engage effectively in their care.

**Schlegel, Elisabeth Frieda Maria, MSc, PhD, MBA, MS-HPPL**

Dr. Elisabeth Schlegel is an Associate Professor in the Department of Science Education at the Zucker School of Medicine at Hofstra/Northwell. As Assistant Director of Faculty Development and Medical Education Research, she is responsible for a spectrum of institutional strategies such as program development and innovative faculty development across the educational landscape for the medical school as well the affiliated Healthcare system (Northwell Health) with a focus on coaching of faculty to implement active learning methods. As co-director of the Longitudinal Medical Student as Teacher elective, Dr. Schlegel enjoys supporting medical students to become effective, successful clinician-educators.

**Sella, Sarah, BS**

Sarah is a second-year medical student at the University of Nevada, Reno School of Medicine. She graduated with a Bachelor's of Science in Biochemistry and Molecular Biology from University of Nevada, Reno in 2018. Sarah comes from a small town in Northern California. A medical scarcity in her community sparked an interest and drive to pursue avenues for the betterment of medicine. She

currently helps manage the Diabetes Improvement through Management and Education program at the Student Outreach Clinic at UNR Med, a student-run clinic that provides free medical care for uninsured patients of Northern Nevada. She co-chairs the Interprofessional Education (IPE) committee for her medical school. Sarah began her medical career working in an assisted living facility caring for the elderly, moving on to work for several years as a scribe in a Level Two Trauma Emergency Room. Sarah experienced both positive and negative interprofessional interactions as she worked through the medical field. Those experiences coupled with those she shares with her twin sister, who also works in the medical field as a nurse, strengthens her appreciation for how necessary Interprofessional Education is. In addition to the IPE research presented today, Sarah partakes in the development and improvement of IPE curriculum at her current medical school, in order to prepare all medical professionals who leave this institution for the teamwork they participate in when entering the medical field.

**Selleck, Mark, DPhil, MD**

Mark Selleck, DPhil, MD is a clinical assistant professor of pediatrics (clinician educator) at the University of Southern California Keck School of Medicine and an attending pediatric pulmonologist at Children's Hospital Los Angeles. Prior to entering medicine, he worked for over a decade as a developmental biologist with an interest in development of the nervous system during embryogenesis. He taught medical school anatomy and graduate school developmental neurosciences at USC. After transitioning to a career in medicine, he completed pediatric residency and pediatric pulmonology fellowship training at Children's Hospital Los Angeles. Dr. Selleck's clinical involvement includes general pulmonology, neonatal lung disease, cystic fibrosis, neuromuscular diseases and rheumatologic lung disease. His research interests include neonatal lung disease and interstitial lung disease associated with rheumatologic conditions. His teaching interests include effective bedside and outpatient clinic teaching, provider wellness and professional development.

**Seraj, Siamak M., MD, MPH**

Dr. Seraj is part of the Internal Medicine Faculty at the San Joaquin General Hospital and is interested in patient safety and quality improvement.

**Shango, Kathren**

**Shapiro, Johanna, MA, PhD**

Johanna Shapiro, MA, PhD is the Director of the UC Irvine Program in Medical Humanities & Arts and a Recall Professor in the Department of Family Medicine. She has served as poetry co-editor for Pulse: Voices from the Heart of Medicine and Poetry and narrative essay co-editor for the journals Families, Systems & Health and Family Medicine. She has been co-organizer of the UCI Poetry of Hope and Healing Symposium, open to the general campus community, which includes a poetry writing component. She has given several workshops at Society of Teachers of Family Medicine on teaching reflective writing and has taught poetry writing and poetry appreciation for 2 decades to medical students. Her overall research and scholarship have been the exploration of students' socialization and professional identity formation, especially as expressed through their original creative work including reflective writing, examining the impact of training on student empathy, medical student-patient relationships and the management of difficult clinical encounters. She is widely published in the field of medical humanities and is the recipient of many teaching awards and honors including STFM's Humanism in Medicine Award in 2020.

**Shekarchi, Amy MD MPH**

Amy Shekarchi, MD is the Director of the Pediatric Primary Care Medical Home at Olive View-UCLA and the Olive View based site director for UCLA medical students. Dr. Shekarchi attended medical school at Texas Tech University and then completed her pediatric residency at UCLA. Dr. Shekarchi also holds a Master's in Public Health with a focus on Health Policy and Administration from the UCLA Fielding School of Public Health.

**Shen, Sprina, DO**

Dr. Shen is currently a 3rd year resident at Loma Linda Children's Hospital and her goal is to become a pediatric hospitalist. She is well qualified to be a part of this research project as she is training in a program that serves 1.3 million underserved children at a 343-bed tertiary hospital and sees huge patient volumes with a full range of patient diversity and medical complexities. Her interests are rooted in academic medicine and quality improvement, as well as serving the underserved communities in San Bernardino County. Over the last few years of her training, Dr. Shen has gained autonomy and continues to devote herself to taking care of children of underserved communities. Education is also a strong foundation upon which she wishes to build her medical career on. During residency, Dr. Shen was exposed to clinical scenarios where problems were identified and are now currently being addressed through quality improvement research. By assessing the risk factors for hypoglycemia in infants and utilizing the proper tool for classifying them, Dr. Shen believes we can improve patient safety, decrease unnecessary procedures, and decrease the length of hospitalization stays. She hopes to incite an institution-wide change across the country and share the positive effects of this project and ultimately improve the hospitalization stays for new mothers and their infants. Dr. Shen is also involved in other quality improvement projects and overall, these opportunities have provided her with the technical tools to carry out current and future projects as she progresses in her medical career.

**Shivaprakash, Namrata, MS, MPH, BS**

Namrata Shivaprakash is a student and research specialist at the Riverside University Health System in Southern California. She is a rising leader in medicine and a future physician who is passionate about solving today's most complex health promotion and public health issues with data-driven approaches. She is a medical research professional with a Master of Science (MS) focused on Biomedical Science, a Master of Public Health (MPH) focused on Epidemiology from the University of Illinois at Chicago School of Public Health, and a Bachelor of Science (BS) focused on Biology from the University of Wisconsin-Madison. While having a demonstrated history of research and work experience in healthcare, her passions lie in social emergency medicine along with access to healthcare, health promotion, and global health initiatives to improve healthcare and education infrastructures in low-income/developing communities.

**Sikder, Abu, BA**

Abu Sikder is an aspiring physician and med-tech researcher focusing on leveraging technology guided by medical knowledge to ameliorate health disparities and inequity. He received his undergraduate degree in molecular biology from the University of California, Berkeley. Abu is particularly interested in utilizing mHealth technologies to provide scalable access to quality care. Additionally, he is passionate about the patient experience of underserved populations and improving care through a preventative approach to medicine and empathetic, holistic health management. As a Research Associate for Children's Hospital Los Angeles, he supports international health projects and domestic research endeavors alongside Dr. Dickhoner and Dr. Espinoza. This includes publishing work from their 10-year partnership in Armenia on retinopathy of prematurity, medical ontologies, vision screening, and telehealth. Furthermore, Abu provide technical guidance for their software development efforts which include: health record systems, education platforms, and mHealth apps. Before joining CHLA, Abu developed a clinically successful psychotherapy Med-Tech app integrating Mentalizing Imagery Therapy with Dr. Felipe Jain. Moreover, he co-founded a fully funded tech company called Etch where he developed a contact management app that used machine learning and natural language processing to aggregate all online data, emails, and events of individuals within one's network into curated, full-text searchable profiles.

**Singh, Malkinder, MD**

Dr. Singh is a 3rd year Internal medicine resident at San Joaquin General Hospital. His interests include resident wellness, cardiology, and patient safety.

**Singh, Rishabh, BS**

Rishabh Singh is a second-year medical student at Boston University School of Medicine. He studied bioengineering at Cornell University and worked at cardiac tissue engineering startup, TARA

Biosystems, before beginning his medical training. He is interested in learning how principles of technology, design, and medicine can intersect to create better patient outcomes and positive experiences with the healthcare system. At BU, he is involved with activities like Art Space, an organization that seeks to empower through creative expression, and in.vision, a brand new technology & entrepreneurship elective course.

### **Smart, Michael, BMBS**

After graduating from Peninsula College of Medicine and Dentistry in 2017, Michael moved to Aberdeen to complete his foundation training. Following this, he decided to pursue a career in anaesthesia and is currently working to complete the first stages of his anaesthetic training in Aberdeen.

### **Smith, David R, MD**

Dr. Smith is an active member of CDIM, the national organization of clerkship directors of internal medicine, including working as an author on the national CDIM Curriculum Committee. He also serves as a case reviewer for AQUIFER, a national online learning module for third year clerkship students, used by an average of 18,600 medical students per year. Regionally, he is the chair of CREATE, Chicago Regional Educators Advancing Teaching Excellent, an annual half day academic conference uniting internal medicine educators from more than 7 different institutions in the Chicagoland area for presentations and workshops on faculty development, curriculum development and medical education research. Locally, he is involved with teaching learners at Loyola University Stritch School of Medicine from preclinical years through residency, as well as serving as an advisor and mentor for internal medicine trainees.

### **Smith, Phoebe, MD**

Phoebe Smith ([psmith2@memorialcare.org](mailto:psmith2@memorialcare.org)) is a third year resident currently in training at Long Beach Memorial Family Medicine in Long Beach, CA. She obtained her undergraduate degree from University of Puget Sound and went on to complete her graduate studies at the Chicago Medical School at Rosalind Franklin University. She has special interests in sexual health and family planning, adolescent medicine, and LGBTQ medicine. She currently is collaborating with other residents and faculty to create and participate in a LGBT+ medicine track/concentration at her residency program. Outside of medicine she enjoys reading fantasy and sci fi series, dancing (especially Zumba and salsa!), and spending time with her cats.

### **Souter, Karen, MD, MB BS FRCA ACC MACM**

Karen Souter is a practicing anesthesiologist and an ICF Associate Certified Coach (ACC) with 23 years' experience as a university faculty physician. Her extensive knowledge of academic medicine informs her work as a coach. Karen's areas of coaching expertise are in career planning, promotion portfolio development, medical leadership and navigating the fine balance between a successful career and a nurturing home and family life. Karen's philosophy as a coach centers on the partnership between coach and coachee; she works to create a safe space for her clients to explore and find alignment between core strengths and values and their goals. She believes that the greatest wisdom comes from within and her coaching focuses on deep listening and using powerful questions to re-frame limiting beliefs and behaviors. She works with clients to shift mindsets towards growth, curiosity and creativity. Karen has successfully coached mid-career medical faculty moving into leadership roles in areas such as navigating difficult conversations, using 360o evaluations, leading teams, negotiating and developing their own personal leadership style. She has created an effective program coaching academic faculty on successfully navigating university promotion pathways. Karen offers well-received hands-on workshops teaching coaching skills to academic faculty as a way of enriching their own teaching, mentoring and leadership skills. Karen trained as a physician anesthesiologist in the UK and Canada and moved to the US in 2002 where she joined the medical faculty at the University of Washington. She is a full professor in the Department of Anesthesiology & Pain Medicine and has a master's degree in academic medicine (MACM) from the University of Southern California. She served as the anesthesiology residency program director for 12 years and was awarded the ACGME "Parker J Palmer Courage to Teach" award for her leadership and innovation as a residency

program director. Her training and certification as a coach was a natural progression in the career of a medical educator founded on caring, creativity, mentoring and giving back.

**Sparks, Scott, MD**

S Scott Sparks, MD, Assistant Professor of Clinical Urology, Department of Urology, Keck School of Medicine of USC. Dr. Sparks is a Pediatric Urologist at Children's Hospital of Los Angeles and serves as Program Director for the new Pediatric Urology Fellowship as well as an Assistant Program Director for the USC Urology Residency Program. He has been at USC for 5 years and previously was on faculty at George Washington University in Washington, DC. He has been active in surgical education and training since completing his fellowship 10 years ago. He also has an active interest in SGM/LGBT+ representation in medicine and specifically in surgery. In this capacity he has participated in mentoring programs and interest groups with the goal of increasing the number of SGM in surgical fields. He has also been involved in advocacy at the state level to limit laws restricting genital surgery in minors.

**Starr, Gail, RN**

Gail Starr, RN, is the Clinical Coordinator at Albuquerque Sexual Assault Nurse Examiner Collaborative (SANE) where she has worked since 2007. She has a Bachelor in Psychology from UNM and a Master's in Criminal Justice in Forensics from Loyola University. She not only manages the team of SANEs but also performs patient care and teaches a variety of community members about Strangulation, Sexual Assault, and Intimate Partner Violence. She testifies in court, but ensures the medical exam is focused on patient healing. She is also addicted to Korean Dramas.

[Gail.starr@abqsane.org](mailto:Gail.starr@abqsane.org).

**Steinemann, Susan, MD**

Susan Steinemann, MD, received her medical degree at the University of California San Diego and completed General Surgery residency at the University of California Davis and Surgical Critical Care fellowship at the University of Hawai'i. She is a Professor of Surgery, the former Director of Surgical Medical Student Education and Interim Chair of Surgery at the University of Hawai'i. She has served national roles as President of the Association for Surgical Education and Chair of the American College of Surgeons Committee on Medical Student Education. She is the Assistant Designated Institutional Official at the University of Hawai'i John A. Burns School of Medicine.

**Stiene, Katherine, MD, MPH**

Katherine Stiene, MD, MPH is a PGY3 Emergency Resident at LAC+USC Emergency Medicine. Her research interests include health policy, socioeconomic determinants of health and access to care, as well as medical and graduate education. She is currently working on a quality improvement project as part of the Healthcare Scholars Administration Program to improve the hospital's system for linkage to primary care and follow up visits, especially for those underinsured and uninsured. Along with her peers, she is also part of a resident group working on initiatives that focus on medico-legal resources and immigrant access to care as a way to further help marginalized patient populations in Los Angeles. Now as a senior resident and adapting to new teaching and leadership roles, she is actively working on a new medical education initiative, Code Learn, to enhance bedside learning at her residency program at LAC+USC.

**Stollman, Tyler, BS**

Tyler Stollman is a fourth-year medical student at the Medical College of Georgia at Augusta University. He received his bachelor of science in biology from the University of Georgia and graduated Suma Cum Laude in 2015. While earning his undergraduate degree he became involved in research in plant biology and psychology. His research in psychology led to an oral presentation at UGA's annual CURO conference. At the Medical College of Georgia, he received the Dean's Medical Scholar Program award for his retrospective study on comorbid autoimmune disease in schizophrenic patients enrolled in the CATIE clinical trials. This research resulted in a poster presentation. He was also involved in a study looking at TNF naive patients with Rheumatoid Arthritis and their cognitive function before and months after beginning therapy with anti-TNF biologic medications. He is a Sub-Investigator on a retrospective study of patients who delivered at AUMC from 2012-2018 who were

diagnosed with a birth defect prior to delivery. He is currently the principal investigator of two research projects at MCG. The two projects focus on the use of virtual reality simulation to increase medical student empathy and the use of an online visual learning guide to reduce the fear associated with learning the pelvic exam in first year medical students.

**Strohm, Maureen, MD**

Dr. Maureen Strohm, Adjunct Clinical Professor of Family Medicine at USC's Keck School of Medicine, is founding program director for HCA Sunrise Health's inaugural Addiction Medicine Fellowship at Southern Hills Hospital in Las Vegas, NV - the first addiction medicine fellowship in Nevada. Her academic career began at Keck USC in 1983, shortly after completing her family medicine residency. She served as Director of Year 1 ICM from 1990-1995, then Family Medicine Program Director at California Hospital Medical Center until 2009 when she left Keck USC to become founding director for the Eisenhower Medical Center Family Medicine Residency program in the Palm Springs area. In 2015, she joined HCA to participate in GME development for HCA's Far West Division in California and Nevada. She then became founding family medicine program director for HCA Healthcare Sunrise Health GME in Las Vegas. Over the years, her passion for addiction medicine education has been a key focus, combining the fundamentals of doctor-patient communication, family dynamics, the bio-psycho-social model, along with clinical care of one of most marginalized patient groups in healthcare today - culminating now in a new addiction medicine fellowship.

**Studer, Amy, RN, MSN, MSLIS, AHIP**

**Swann, Grace, BMedSci, BMBS (Hons)**

I am currently a foundation year two doctor at the Great Western Hospital in Swindon, UK. I am passionate about medical education and particularly how the coronavirus pandemic has impacted this.

**Tanaka, Pedro, MD**

Dr. Tanaka is a Clinical Professor in the Department of Anesthesia, Stanford University Medical School. He is Brazilian and completed medical school, anesthesia training, and his PhD in Brazil. He came to Stanford University for a sabbatical year in 2007. It was a great fit on both sides, and he decided on a long-term career at Stanford. He graduated from "The Master of Academic Medicine program" at University of Southern California in 2014 and is currently in his fifth year doctoral program in education at University of Illinois at Chicago. At Stanford Dr. Tanaka has been involved with resident education not only through direct supervision, but by initiating and working on several educational projects (Development and implementation of OSCEs, new lecture format "libero", iPad as a teaching tool in the orthopedic rotation, and Feedback tool). He currently serves as one of the Associate Residency Program Directors, Chair of the Education Committee, Co-Director of Teaching Scholars Program, Associate DIO and director of The Advanced Training in Medical Education at Stanford Anesthesia. His clinical activity has focused on anesthesia for orthopedic surgery, particularly orthopedic total joint replacements. Dr. Tanaka's areas of interest are: Developing, leading and evaluating programs; Designing curricula and assessing learners; and Designing, implementing and studying innovations.

**Tang Girdwood, Sonya, MD, PhD**

**Tehrani, Babak, MS, MD**

Dr. Tehrani is a resident physician at the Brown University Internal Medicine Residency program. Prior to earning his medical degree, Dr. Tehrani achieved a Bachelor's of Science at Purdue University as well a Masters in Physiology at Loyola University Chicago. Dr. Tehrani earned his medical degree from Albany Medical College in 2019 where he graduated with a distinction in advocacy for his work with and research on children in the foster care system. Dr. Tehrani also spent time as president of both an HIV education group and Lyme disease awareness group. Education is important to Dr. Tehrani, he earned a teaching award as a 4th year medical student. Additionally Dr. Tehrani worked on his medical school's curriculum review committee. Tehrani has been involved in a

wide range of research topics including: cardiology, hematology, endocrinology, and health care disparities.

**Thomas, Chennelle, MD**

Dr. Thomas' role in this project was that of data collection, review, and analysis. This project has required organization and self-motivation. Her time spent on this project during a busy residency demonstrates her dedication to patients through contributions to the scientific literature. Training at a large tertiary children's hospital gives this project an advantage in terms of the large number of neonates in the study as well as the racial, ethnic and socioeconomic diversity of the population. Dr. Thomas finds this work to be important because of the effects of over testing and overtreatment of neonates. This puts undue stress on neonates, their families, and the health care system. The importance of developing evidence-based guidelines cannot be understated. She finds this incredibly useful for her future as a general pediatrician.

**Thurlapati, Aswani, MD**

Dr. Thurlapati is a PGY2 resident at LSU Health Sciences Shreveport. After training in medical school in India and now undergoing higher training in the United States, she has personally witnessed the health care standards and trainee education in both worlds. Having a diverse educational background and coming from a teaching family, clinical education has been a vital part of her interests. As a result, she decided to become a member of the clinical educator track in the residency program and join a group of wonderful residents to promote a self-paced, structured curriculum accessible to everyone in this current COVID-19 social distancing. Through this project, her aim is to provide an interactive, resident-driven and faculty supervised online platform focusing on all the high-yield topics for the ABIM boards and delivered in a succinct manner. She believes this will pave the way for innovative didactics catering to our own residents' learning methodology.

**Tinkham, Sara**

Sara Tinkham is the Director of Medical Student Advising Programs with the UNC School of Medicine. Sara joined the School of Medicine in 2014 as a Clerkship Coordinator & Assistant Residency Program Coordinator. Since 2018, she has served as the coordinator of the advising program for the Office of Medical Education. Sara is experienced in managing the advisory process as well as preparing students to develop their career planning goals. She has extensive leadership skills and was the driving force behind the successful implementation and launch of the student success platform.

**Toburen, Bryce, MD**

Dr. Bryce Toburen, a current first year Psychiatry resident at The Ohio State University, graduated from the Medical College of Wisconsin in Milwaukee, WI in 2020. During his medical school training, he completed additional training in Quality Improvement and Patient Safety. He earned a BA in Psychology from Washington University in St. Louis, where he was a research assistant in the Social Behavior Laboratory. His research interests currently include social determinants of health and medical education.

**Tolchin, Dorothy, MD, EdM**

Dorothy W. Tolchin, MD, EdM is an Instructor in Physical Medicine and Rehabilitation part-time at Harvard Medical School (HMS), and the Director of Medical Student Education for the HMS Department of Physical Medicine and Rehabilitation. She is the faculty advisor for the HMS Disabilities in Medicine and Dentistry Working Group, which focuses on disability curricular reform as well as career development for emerging leaders in clinical care for people with disabilities. Dr. Tolchin earned an AB in psychology and biology from Harvard College (2001), EdM with a focus on disability policy from the Harvard Graduate School of Education (2002), and MD from Harvard Medical School (2006). She completed residency training in Physical Medicine and Rehabilitation at Spaulding Rehabilitation Hospital/HMS (2010), where she also served as chief resident. Dr. Tolchin completed fellowship training in neuromuscular disease/electromyography in the Partners Neurology/HMS program (2011), and hospice and palliative medicine training at New York Presbyterian Hospital/Columbia University Medical Center (2012). Informed by over twenty years of experience in

the disability field, Dr. Tolchin's medical education research and her direct teaching of medical students, residents, and fellows center around optimizing accessible, equitable healthcare for people with disabilities.

### **Tougas, Caroline, MD**

Caroline Tougas is an orthopedic surgeon at Children's Mercy Hospital and a Clinical Assistant Professor at the UMKC School of Medicine in Kansas City. A native of Toronto, she completed medical school at the University of Ottawa and orthopedic residency at Dalhousie University in Halifax, Canada. She then moved to Los Angeles where she completed orthopedic trauma fellowships at USC and Cedars-Sinai Medical Centre from 2015-2017, followed by an orthopedic pediatric fellowship at UCLA from 2017-2018. She now resides in Kansas City, Missouri where she specializes in pediatric orthopedic trauma at Children's Mercy Hospital. She is currently pursuing a Master of Academic Medicine degree through Keck School of Medicine at the University of Southern California to further her educational and leadership skills. From a teaching perspective, her primary focus is improving orthopedic residency education and curricula. She is an AO Trauma Faculty and an active member of the Orthopaedic Trauma Association, the American Academy of Orthopaedic Surgeons and the Pediatric Orthopaedic Society of North America. She also participates in global outreach orthopedics with Doctors Without Borders, most recently in Port-au-Prince, Haiti.

### **Treat, Robert, PhD**

Robert Treat PhD is an Associate Professor of Emergency Medicine and the Director of the Office of Measurement and Evaluation. He provides consultation to MCW faculty, residents, and staff in addressing key evaluation/measurement related questions and is responsible for the analysis and evaluation of educational outcomes data for residents and medical students.

### **Truong, Shani MD**

Shani Truong MD, is a third year resident at the UC Davis Affiliated Family Medicine Program at San Joaquin General Hospital in French Camp, California. She holds a medical degree from The University of Queensland in Brisbane, Australia, and she completed her undergraduate degree at the University of California, Davis and graduate studies at Tufts University. Her professional interests are working in medically underserved areas, full-spectrum family medicine and maternal and child health. Her previous projects looked at effective models of care for adolescent mothers.

### **Urbanowicz, Erin, MPH**

As a Latina medical student, Erin Urbanowicz is dedicated to issues of equity and creating change in the medical system to provide better care for her future patients and her community. Her master's degree in public health and bachelor's degree in social justice have equipped her well to lead as the Latino Medical Student Association's (LMSA) co-president at her school's chapter as well as the National Conference Chair. In addition to her involvement with LMSA, she has led educational projects involving evidence-based medicine, systemic racism and trauma, and a student-run class on Medical Spanish. She also serves on the Equity and Justice Subcommittee which is dedicated to developing curricular elements related to the elimination of health inequities, and promotion of anti-racist and anti-oppressive medical education. Her service-driven leadership is well respected by her peers and is demonstrated by her LMSA chapter award for community service in 2019. With these experiences, Erin hopes to create a more culturally humble and trauma-informed environment among her peers, and thus reduce the inequities in the medical system. Outside of school, Erin enjoys spending time with her family, walking her dog, Ruby, and cooking traditional Uruguayan dishes. She can be reached at [urbanowi@ohsu.edu](mailto:urbanowi@ohsu.edu).

### **Urdang, Zachary MD PhD**

Zachary Urdang is currently a general surgery resident at Oregon Health and Science University. Zachary has a strong track record for social justice, community outreach, and volunteer initiatives. He graduated from Oregon Health and Science University with honors in diversity, equity, and inclusion in 2020 having earned his MD/PhD degrees in medicine, and neuroscience with focus on hearing research and aminoglycoside ototoxicity. Zachary also published on community outreach events led by OHSU community members. Zachary's interests include surgery, surgical biomaterials,

regenerative medicine and foreign body responses, sensory neuroscience, community outreach/social justice, and medical/science education. He is a native of Flagstaff, AZ having earned his BS in chemistry/biochemistry from The U. of Arizona in 2010. Please feel free to contact Zach on social media @zachary\_urdang insta/FB/twitter.

**Ureste, Peter, MD**

Peter Ureste, MD works as a psychiatrist and clinical professor on the inpatient unit at Zuckerberg San Francisco General Hospital, one of the teaching sites for the University of California San Francisco (UCSF). He provides direct health care to patients with serious mental illness, and clinically supervises UCSF medical students and psychiatry residents. Dr. Ureste also serves on multiple committees including the UCSF School of Medicine Admissions Interview Committee, works as career advisor and coach in the Bridges Curriculum with medical students, give talks at national conferences, and does scholarly projects that includes writing and editing academic books and articles.

**Vallabhaneni, Pramodh, FRCPCH, PGDip Ed, PGCert Leadership**

Dr Pramodh Vallabhaneni currently works as a Consultant Paediatrician at the Department of Paediatrics, Swansea Bay University Health Board. Pramodh has an active interest in Medical Education and Patient Safety. He was awarded the Best Paediatric Educational Supervisor in 2016 and also won the Rising star award in 2017 from Swansea University Medical School. Current academic roles include , lead for education: school of paediatrics,HEIW. Pramodh has an active interest in inter-professional education and also jointly leads the pathways to medicine module at Swansea university medical school.

**Villano, Nicholas, MD**

Dr. Villano is a hospital medicine physician at Beth Israel Deaconess Medical Center.

**Ville, Nette, MD**

Dr. Ville received her Bachelor of Science in 2015 from the University of Florida, with major in Biochemistry and minor in Communications. She stayed at the University of Florida College of Medicine for her MD, which she completed in 2019. She is in the process of completing her pediatric residency at UT Southwestern Children's Medical Center. She is a member of Texas Pediatric Society and serves on the Nutrition and Health committee. Her career interests include general pediatrics, medical education, and patient advocacy.

**Violette, Caroline, MD**

Dr. Violette is a first-year resident physician in the Department of Obstetrics and Gynecology.

**Vuong, Ashley, MD/MA**

A third year resident at UCLA-Ronald Reagan/Olive View Emergency Medicine Residency Program, Ashley Vuong has a passion for medical education and social emergency medicine. She graduated summa cum laude from Pennsylvania State University with degrees in Immunology & Infectious Diseases and Toxicology and a minor in Global Health. She graduated from the Lewis Katz School of Medicine at Temple University with a M.D. and a M.A. in Urban Bioethics and was inducted into the Alpha Omega Alpha Honors Society and the Gold Humanism Honors Society. Ashley served as a Study Assistance Coordinator for the Student Academic Support program, developed a play to teach elementary school students about human health, served as a guest teacher at a local Philadelphia high school to teach topics such as sexual and gender health, served as a tour guide on the Admissions Council, and served as secretary for Temple's American Medical Association chapter. Now in residency, Ashley was a resident leader in the development of a Virtual Clerkship, is resident chair of the Medical Student Education committee, and leads projects for the Equity, Diversity, and Inclusion Committee, the Recruitment Committee, and the Community Engagement Committee. She is also serving as the secretary for U ACT, a UCLA Health-wide advocacy collaboration organization. Ashley wants to continue to work in Medical Education in the future and focus on education surrounding social determinants of health in emergency medicine.

**Wahi-Singh, Pia**

Pia Wahi-Singh is a year 2 MBChB student at The University of Edinburgh Medical School, UK.

**Wald, David A., MD**

Dr. Wald is a Professor of Emergency Medicine at the Lewis Katz School of medicine. He has been on faculty for 23 years and currently serves as the Emergency Medicine Clerkship Director and the Assistant Dean for Clinical Simulation. His interest is in curriculum development.

**Walterscheid, Brooke, MBA**

Brooke Walterscheid is a fourth-year medical student at the Texas Tech University Health Sciences Center in Lubbock, Texas. She matriculated through the Texas Tech University Honors College Early Acceptance Program and additionally completed a Master of Business Administration prior to entering medical school. Dedicated to leadership and service, Walterscheid currently serves as the student regent to the Texas Tech University System Board of Regents. She was selected by Governor Greg Abbott of Texas to represent the 55,000 students of the TTU System, and she is the 15th student to be appointed to this role. She had formerly represented TTUHSC as student body president. Her areas of research include the integration of telemedicine, patient diagnostics, and medical education. She is also actively involved in advocacy, formerly completing a U.S. House of Representatives congressional internship and is an active member of the Texas Medical Association. Stemming from her experience growing up in rural Texas, she aspires to represent rural and underserved patient populations. This application cycle, she is applying to dermatology residency programs and plans to complete a fellowship in pediatric dermatology.

**Wang, Judy, MSE**

Judy Wang is a second-year medical student at Boston University School of Medicine. She received her BS in Biomedical Engineering in 2018 from Johns Hopkins University, and MSE. in Computer Science the following year. She has pursued research in deep learning for medical image analysis and computational cancer genomics. She is currently working on clinical projects in head and neck cancer and medical education.

**Wang, Ying, PharmD, APh**

Dr. Ying Wang is an Assistant Professor, Director of Professional Experience Programs (PEP) and Supervisor of USC Safety-Net Clinical Pharmacy at the USC School of Pharmacy. She received her PharmD from USC and completed a one-year Pharmacy Practice Residency focused on Ambulatory Care in 2007. Immediately after completing her residency, Dr. Wang worked at the Edward R. Roybal Comprehensive Health Center as a full-time pharmacist where she provided primary care and anticoagulation services and was involved with quality assurance projects required at the health center. She also worked as a per diem pharmacist at Kaiser Permanente East Los Angeles. In 2009, she returned to USC as a full-time clinical pharmacist at QueensCare Health Centers (QHC), where she provided comprehensive medication management services to underserved and underinsured patients in various areas of Los Angeles County. Throughout her practice sites, she served as a consistent preceptor for residents, P1-P4 students on rotations, volunteers, and visiting international students in order to provide more learners with exposure to pharmacy practice in the safety-net clinical setting.

**Ward, Marianne, MEd, MS**

Marianne Ward is an instructional designer based in Los Angeles, CA. She earned her bachelor's degree in Anthropology from Willamette University in Salem, OR in 2008 and her first master's in Sport Management from the University of San Francisco at their satellite campus in Orange, CA in 2010. Since 2008, Marianne has spent her career supporting faculty members at Children's Hospital Los Angeles (CHLA) and the Keck School of Medicine (KSOM) at the University of Southern California (USC). Currently, she is the Manager of Medical Education Programs in the Department of Pediatrics at KSOM and CHLA. In 2019 she graduated from the Rossier School of Education at USC with a Master of Education in Learning Design and Technology (LDT). Through the LDT program, Marianne developed a true passion for creating effective instruction. You can learn more about her instructional design work at <https://mbward.weebly.com/>.

**Warner, Kendal, BS**

Kendal M. Warner is a second year medical student at the University of Nevada, Reno School of Medicine (UNR Med). Kendal received two Bachelor of Science degrees in Neuroscience and Biochemistry & Molecular Biology from the University of Nevada, Reno in 2017. During her education, she worked to ultimately present and publish her dissertation on SIK-mediated regulation of feeding behavior and fat metabolism in *C. elegans*. Upon completion of her degrees, Kendal worked as a Teaching Assistant for Anatomy & Physiology and then went on to become an Ophthalmic Assistant. Kendal's current research focuses on furthering develop a program meant for helping medical students effectively matriculate called MedFIT. Her research integrates different ways in which to best adapt a skills-based approach rather than a lecture-based process to UNR Med's orientation program. As one of the Co-Head Mentors for the program, she worked with a combination of student committees, administrative support, and contributions from UNR Med to aid in MedFIT's operation. Her dedication to curriculum improvement and professional development will continue through her membership on the school's Global MedFIT Committee. Kendal chose to help those at UNR Med integrate into their first year of medical school in order to bring her passion of education and medicine together. She strives to help provide students with the tools and support they need to reach academic, mental, and social success in medical school.

**Wattenbarger, Sara, DO**

Dr. Sara Wattenbarger is a board-certified emergency medicine physician at Vituity and clinical faculty member at Kaweah Delta Health Care District Emergency Medicine Residency located in Visalia, California. Since joining the clinical faculty in 2018, she has also served as a regular lecturer for the residency's weekly conference. After receiving her medical degree from Midwestern University/Arizona College of Osteopathic Medicine in 2014, she went on to complete residency at Arrowhead Regional Medical Center, the county hospital and regional trauma center for San Bernardino County, California.

**Way, Estefania, MD**

Estefania Sevilla Way, MD is a faculty member in the Family Medicine (FM) Residency Program at San Joaquin General Hospital, in French Camp, CA. She completed medical training and obtained her medical degree at Universidad Cientifica del Sur in Lima Peru. After that she completed one year of Medical Rural Service working for the Air Force as a General Physician focusing on Primary Care in Agrupamiento Aereo Tarapoto "AGRAT" in the Amazon Basin of Peru. Afterwards, migrated to the U.S where she joined the UCLA IMG Program, obtained her medical credentialing and completed her Family Medicine Residency training in 2020. Her professional interests are working full spectrum family medicine in medically underserved areas, focusing in preventative and primary care with interest in HIV/STI prevention and treatment.

**Weinberger, Kevin, DO**

Dr. Kevin Weinberger is currently a second year pediatric resident at the University of Arizona, Tucson. He plans to pursue a career in pediatric hospital medicine and medical education, including a pediatric hospital fellowship under the mentorship of Dr. Nancy Chen and Dr. Rachel Cramton. His current interests are palliative care and end of life management.

**Weingarten, Michael S., MD, MBA, FACS, FSVS**

Weingarten, BS SUNY Binghamton NY, MD Columbia University College of Physicians and Surgeons, MBA Villanova University, is an Assistant Dean of the Scholars Program and Professor of Surgery at Drexel University's College of Medicine.

**Weller, Indigo, MS, MFA**

Indigo Weller is a qualitative researcher, writing workshop facilitator, and writer currently working in collaboration with Dr. Martin at the Child Study Center at Yale. He received his MFA in creative writing at CalArts, and his M.S in narrative medicine at Columbia. His current research addresses issues ranging from physician burnout and moral distress in medical education to mapping Child Psychiatrists' experiences working during COVID-19. During his MBE at Harvard, he is focusing on tracing healthcare providers' appraisals of the hero narrative during COVID-19 in concert with the

emergency medicine department at Columbia. Indigo also writes plays and poetry exploring how family systems metabolize bioethical issues, such as medical decision-making and navigating advance directives for dementia patients.

### **White, Earla, PhD, MEd**

Dr. Earla White is an Associate Professor of Health Systems Science and Chairperson of the Undergraduate Medical Education Department at the A.T. Still University School of Osteopathic Medicine in Arizona. Also, she is a national faculty member of the American Medical Association's Health Systems Science Scholars Academy. Her educational background includes a PhD in Health Services from Walden University, Master of Educational Leadership in Higher Education and Bachelor of Applied Science in Health Promotion from Northern Arizona University, as well as a Post-Graduate Certificate in Health Information Management from Alabama State University. Dr. White has taught and mentored students at undergraduate, graduate, doctoral, and post-doctoral levels. She has held positions as an academic program director, environmental forensic science quality assurance director, and peer-review journal content and APA editors. Dr. White has a diverse background in health services to include health information administration, informatics, education, and quality assurance. Dr. White's research, publication, and presentation focus is on positive social change for health services, health disparities, health equity, as well as education and continuing inter-professional development for the health professions.

### **Wilkins, Kirsten, MD**

Dr. Wilkins is Associate Professor and Director of Medical Student Education in the Department of Psychiatry at the Yale School of Medicine. She also serves as Director of the Yale Interprofessional Longitudinal Clinical Experience. As Firm Director for Integrated Care, Dr. Wilkins works in outpatient primary care-mental health integration and geriatric psychiatry at the VA Connecticut Healthcare System in West Haven, CT. She is board-certified in General Psychiatry by the American Board of Psychiatry and Neurology, with subspecialty certification in both Geriatric Psychiatry and Consultation-Liaison Psychiatry. She has co-authored several peer-reviewed publications and has presented regionally and nationally in the areas of clinical geriatric psychiatry, medical student education, learning climate, and the education of medical trainees in geriatric psychiatry. Current areas of research interest include medical education in geriatric psychiatry, integration of mental health and primary care, health professional attitudes toward psychosocial aspects of medicine, and medical student mental health.

### **Wolfert, Adam, BA**

Adam Wolfert is a 3rd year medical student at SUNY Downstate Health Sciences University in Brooklyn NY. Adam received a bachelor's degree in Biology from Washington University in St. Louis where he also served as a Teaching Assistant during his senior year. He is a member of the Medical Educator Pathway at Downstate where he has sat on multiple curricular committees. He also sat on the LCME Medical Student Subcommittee as part of Downstates LCME reaccreditation Self Study process. Adam's past research includes medical education, telehealth, and Orthopedic Surgery. Adam is passionate about medical education and hopes to pursue a career in academic medicine.

### **Wong, Lye-Yeng, MD**

Zachary Urdang is a 1st year resident at Oregon Health and Science University (OHSU). He is interested in academic surgery, community outreach, and health equity. He earned his MD/PhD degrees at OHSU where he majored in neuroscience with emphasis in hearing research, cochlear inflammation, and drug-induced hearing loss. He was a strong advocate for underserved medical efforts as a student and graduated with honors in diversity, equity, and inclusion.

### **Wood, Elena, MD, PhD**

Dr. Wood received her MD (1994) from the Siberian State Medical University (SSMU) and PhD in general oncology and medical informatics (1998) from the Cancer Research Institute of the Siberian Branch of the Russian Academy of Medical Sciences. She served as Assistant Professor at SSMU Department of Public Health and Health Care (2001-2004). She was a National Council for Eurasian and East European Research Carnegie Foundation fellow (2002) at the MCG Center for Telehealth,

where she worked after that until 2016 when she moved to the MCG Academic Affairs. In 2007 she had a fellowship in Biomedical Informatics at the Marine Biological Laboratory, National Library of Medicine. In 2011 she received the degree of Master in Clinical and Translational Science from the MCG, College of Graduate Studies. In 2015 she completed her educational research fellowship at the Innovation Educational Institute at the MCG which she joined in 2018 as educational researcher. She is Physical Diagnosis, Patient-Centered learning and Case-based learning courses preceptor and academic advisor to medical students. Her professional interests include designing, developing, and evaluating innovations in medical education in general. She holds a number of teaching and innovation awards. She has published more than 90 journal articles, book chapters, and abstracts.

### **Wright, Erika, PhD**

Erika Wright holds a PhD in English from the University of Southern California. She has appointments as a Lecturer in the English Department (University Park Campus) and as an Associate Professor of Medical Education at KSOM. She is also the Associate Director of the HEAL (Humanities, Ethics/Economics, Art and the Law) program at USC. She co-teaches the professional identity formation workshop for the Family Medicine clerkship and the Medical Arts and Humanities selective at USC with Dr. Pamela Schaff. She has published on medicine and literature, health and disease, graduate education, and medical professionalism

### **Wu, Constance, MPhil**

Constance Wu is a MD candidate at Harvard Medical School in the joint Harvard-MIT Health Science and Technology program.

### **Wu, Maryann, EdD**

Wu currently serves as an Assistant Dean for Assessment and Assistant Professor of Clinical Pharmacy at the USC School of Pharmacy. She is responsible for the overall assessment of the Doctor of Pharmacy (PharmD) program, including developing and overseeing assessment processes related to curriculum, teaching, and faculty evaluations. She also oversees the quality and consistency of assessments being conducted, evaluates the results, develops reports, and informs all relevant stakeholders. Wu serves as the co-faculty advisor for PharmD students interested in pursuing a career in academia through the Area of Concentration (AoC) in Education and also co-teaches a Pharmacy Education Seminar course to third-year PharmD students. She is a co-founder of AARDVARC (Automated Approach to Reviewing and Developing Valuable Assessment Resources for your Curriculum) that focuses on helping schools and programs with managing and centralizing their syllabi, improving their curricular and programmatic assessment, increasing efficiency in data collection, assisting with accreditation review, enhancing reporting to senior leadership, addressing faculty workloads, identifying experiential activities, facilitating peer review of teaching, and improving the overall efficiency of academic and business operations.

### **Wu, Velyn, MD, FAAFP, CAQSM**

Velyn Wu, MD, FAAFP, CAQSM is an Associate Program Director for the University of Florida Family Medicine Residency Program and an assistant clinical professor in the Department of Community Health and Family Medicine at the University of Florida College of Medicine. Dr. Wu attended medical school at the University of South Florida College of Medicine. She completed both her family medicine residency training and fellowship in Primary Care Sports Medicine at Halifax Health Family Medicine Residency and Sports Fellowship in Daytona Beach, FL and is currently pursuing a Master of Academic Medicine through the Keck School of Medicine at USC. She is on schedule to complete the program in August 2021. Prior to her current position, she was the assistant director of sports medicine and core faculty at Lynchburg Family Medicine Residency in Lynchburg, VA from 2014-2019. She worked in a community private practice from 2011-2014 in Jacksonville, FL where she maintained a broad scope of practice, providing care to patients of all ages.

### **Yang, Katie, MS**

Katie Yang is the Medical Education Research and Outreach Coordinator for the Department of Radiology at the University of Wisconsin-Madison School of Medicine and Public Health. She is also the Basic Science Assistant Block Leader for the preclinical medical student course, Mind and Motion,

which serves as the foundational neuroscience, neurology, psychiatry, and musculoskeletal physiology course within the curriculum. Yang's work has focused primarily on maximizing student engagement through use of user experience principles and methodology. She received her BA in Psychology from the University of Pennsylvania and her Masters in Neuroscience from the University of Wisconsin-Madison.

### **Yoo, Esther, BA**

Esther Yoo (esther.yoo@downstate.edu) is currently a second-year medical student at SUNY Downstate College of Medicine in Brooklyn, NY. In 2018, Ms. Yoo graduated from Case Western Reserve University, College of Arts and Sciences, where she earned a BA in chemistry and BA in anthropology, with a concentration in medical anthropology. She has always had an interest in serving as an educator in some capacity; as an undergraduate, she supported students as a peer tutor in a variety of science courses. After graduating, she helped the Cleveland Sight Center set up piano lessons for clients who are blind or have low vision, and also taught these classes. She also continued participation in research on polymer composites and graphene-derived materials at CWRU. Upon entering medical school, Ms. Yoo found an opportunity to provide classroom support for local elementary schools through America Reads/America Counts. In response to the challenges of medical education during the COVID-19 pandemic, she worked with a group of her peers and faculty members to re-design the gross anatomy curriculum to better suit the needs of incoming medical students. Moving forward, Ms. Yoo hopes to continue improving her skills as both a future clinician and educator and learn more about academic medicine.

### **Zapata, Geny B., PsyD**

Geny Zapata, Psy.D. is a clinical health psychologist who serves as Director of Behavioral Science at Adventist Health White Memorial Medical Center Family Medicine Residency Program. She earned her Doctorate in Clinical-Community Psychology from the University of La Verne and is a licensed psychologist in California. Dr. Zapata completed a two-year American Psychological Association (APA) accredited fellowship in Behavioral Medicine and In-patient Psychiatry at Harbor-UCLA Medical Center as well as an APA accredited internship at Children's Institute Incorporated. She is a CAPIC/MHSA grant recipient for her work with underserved populations. Additionally, she serves as a member of the board at the Reiss-Davis Graduate Center for Child Development and Psychotherapy and is the chair for the Academic Affairs Committee for the institution. Dr. Zapata has worked in hospital and clinical community settings, providing culturally and linguistically appropriate mental health services to populations of diverse backgrounds. She provides clinical supervision, consultation, and education to doctoral and master level medical and mental health providers.

### **Zappas, Michelle, DNP, FNP-BC**

Dr. Michelle Zappas is a Clinical Associate Professor and a founding faculty member in the Suzanne Dworak-Peck School of Social Work, Department of Nursing. She began this position in November 2015. She is passionate about providing evidence based preventive and cost effective health care to a diverse population across the lifespan. Dr. Zappas has nearly a decade of clinical experience working as a Family Nurse Practitioner in a variety of busy, urban clinics in Los Angeles and New York City. In this capacity she has been directly involved in providing primary care to patients across the lifespan, including transitional aged youth. Additionally, she has served as the bio-medical liaison to interprofessional teams comprised of nutritionists, social workers, physicians, psychologists, and nurses. Dr. Zappas currently is the lead for pathophysiology and teaches in other theoretical and clinical courses regarding integrative family practice in the Department of Nursing, the theoretical and clinical courses regarding integrative family practice. Situated in the department of nursing she is well- and uniquely-positioned to work with the NGPP team to integrate interprofessional education between social work and nurse practitioner students. She is Caucasian, born and raised in California. In addition to English, she speaks Spanish and American Sign Language.

### **Zhu, Toby, BS**

Toby Zhu is from St. Louis, Missouri and attended the University of Pittsburgh for his undergraduate degree in biomedical engineering. He is currently a MS2 at the University of Pittsburgh School of Medicine and has a passion for mentorship. As someone who has gone through the medical school

application process, Toby understands the trials and tribulations of the process and seeks to help others suffer less than he did. Hence, him and a friend started "Giving a Boost," a new organization at the University of Pittsburgh School of Medicine that pairs medical students with Pittsburgh area medical school applicants. The organization aims to help minorities and other disadvantaged groups applying to medical school who may not have access to those in medicine or afford expensive consulting services. Outside of mentorship, Toby is also very interested in medical innovation and the impact that upcoming technology will have on the daily practice of future physicians.

# Thank You

## to everyone who made the 2021 IME Online Conference possible

*The Conference Chair (Dr. Julie Nyquist) and Co-Chair (Dr. Cha-Chi Fung) want to take this opportunity to thank all of those who made the 2021 IME Conference possible. First, we need to recognize Pamela Teplitz, the Conference Coordinator, without whose hard work the conference could not have taken place. Listed below are over 100 more individuals whose help was important to the conference's success.*

This meeting depends on the many volunteers' willingness to devote their time and expertise to making the IME possible, especially during the abrupt changes required by the pandemic this year. We would like to thank the following people for their invaluable help with planning the meeting, reviewing abstracts, and serving as moderators and facilitators.

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# Keck School of Medicine of USC

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## ◆ Course Overview and Objectives ◆

### Innovations in Medical Education 2021 Online Conference

#### Course Description

The Department of Medical Education at the University of Southern California invites you to participate in our 18th annual Innovations in Medical Education (IME) Online Conference on Thursday and Friday, February 18-19, 2021. The conference joins together a growing community of educators, leaders, scholars, and learners working together to promote change through innovation in health professions education. Our goal is to move education in the health professions toward a higher level of excellence and wellbeing by providing a forum for sharing innovative ideas and educational innovations.

The 2021 IME Online Conference is a perfect place to share and learn more about the process of medical education. Inventive changes will be shared, particularly those made on the fly in response to the crises of 2020 by educators from multiple health professions.

The 100% online program provides access to sessions for registered attendees using both Zoom livestreaming and pre-recorded video. The twenty-four interactive conference workshops are designed to enhance participant skills related to teaching, leadership, social justice, use of technology, educational scholarship, professional development, and promotion of wellbeing. Multiple topical oral presentations, poster sessions, and hosted networking provide opportunities for dissemination of participant scholarly work, live question and answer sessions, and networking in a collaborative atmosphere. All session recordings, handouts, slides, and posters will be available only to registrants throughout and for six months after the conference. Our 2021 keynote speaker, Dr. David Acosta, is the Chief Diversity and Inclusions Officer for AAMC.

#### Conference Outcome Objectives

By the end of the conference, participants will be better able to —

1. Utilize evidence-based principles of teaching, leading, mentoring, and educational scholarship in their work within health professions' education.
2. Incorporate techniques for enhancing the learning environment and wellbeing for all participants within their educational setting.
3. Enhance the teaching and assessment of their learners in relation to the six ACGME Core Competencies by adapting the cool ideas and innovations learned about at IME.
4. Incorporate cool ideas and innovations into the development of curricula and teaching at all levels of health professions' education.

#### CME Accreditation Statement

The Keck School of Medicine of USC is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

#### Credit Designation

The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of *15.25 AMA PRA Category 1 Credits™*. Physicians should claim only the credits commensurate with the extent of their participation in the activity.

# Keck School of Medicine of USC

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## ◆ Core Competencies ◆

### Innovations in Medical Education 2021 Online Conference

The American Board of Medical Specialties (ABMS) and the Accreditation Council of Graduate Medical Education (ACGME) have embarked on a joint initiative to quantify and evaluate a set of 6 physician core competencies by which the individual physician will be measured for Residency Certification, Board Certification and more recently, Maintenance of Certification (MOC).

It is the intent of the Office of Continuing Medical Education at the Keck School of Medicine of USC to develop our CME activities in the context of desirable physician attributes.

The following are a list of Core Competencies that will be covered in one or more of the presentations at this conference.

- **Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
- **Medical Knowledge** about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
- **Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
- **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.
- **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- **Systems-Based Practice**, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Keck School of Medicine of **USC**  
Office of Continuing Medical Education

**CULTURAL AND LINGUISTIC COMPETENCY IN CONTINUING MEDICAL  
EDUCATION POLICY**

**INTRODUCTION:**

The Accreditation Council of Continuing Medical Education (ACCME) expects accredited providers to operate business and management policies and procedures of their CME program so that their obligations and commitments are met. As part of this accreditation requirement, the ACCME expects that accredited providers located in California will be in compliance with all applicable California state laws regarding continuing medical education delivered in California. CA A.B. 1195 requires that cultural and linguistic competencies are incorporated into the formulation and planning of Continuing Medical Education (CME) programs.

The Keck School of Medicine of the University of Southern California Office of Continuing Medical Education incorporates cultural and linguistic competencies in the formulation and planning of Continuing Medical Education (CME) courses in order to maintain, develop, or increase the knowledge, skills, and professional performance that a physician uses to provide care, or improve the quality of care provided for patients.

**POLICY:**

Educational activities should include, but are not limited to, the following criteria:

1. Scientific or clinical content with direct bearing on the quality or cost-effective provision of patient care, community or public health, or preventive medicine;
2. Quality assurance or improvement, risk management, health facility standards, or the legal aspects of clinical medicine;
3. Bioethics or professional ethics;
4. Strategies to improve the physician-patient relationship.

A.B. 1195 provides for three ways to comply with the law:

1. Address cultural competency, a set of integrated attitudes, knowledge, and skills that enables a health care professional to care effectively for patients from diverse cultures, groups, and communities. Items to be addressed include linguistic skills, cultural information to establish therapeutic relationships, cultural data in diagnosis and treatment, and cultural and ethnic data applying to the process of clinical care. To comply with the cultural competency requirement, an activity should include one or more of the following:
  - a. applying linguistic skills to communicate effectively with the target population;
  - b. utilizing cultural information to establish therapeutic relationships;
  - c. eliciting and incorporating pertinent cultural data in diagnosis and treatment;
  - d. understanding and applying cultural and ethnic data to the process of clinical care.

2. Address linguistic competency, the ability of a physician to provide patients who do not speak English or who have limited ability to speak English with direct communication in the patient's primary language. To comply with the linguistic competency requirement, an activity may incorporate translation/interpretation resources and/or strategies into activity materials.
3. Provide review and explanation of relevant federal and state laws and regulations regarding linguistic access.

**EXEMPTION:**

At the activity site, KSOM OCME will provide supporting documents and resources to the physicians, including, but not limited to, handouts, websites, patient education, and local resources. Continuing medical education activities that are exempt from these requirements include those activities solely dedicated to research and other activities that do not contain patient care components (such as leadership).

**IMPLEMENTATION / MONITORING:**

Documentation of compliance will be presented on the application and/or planning form for the CME activity. This policy will be included in the planning packet for activity directors and faculty so that the program and presentations will comply with the law.

KECK SCHOOL OF MEDICINE OF THE UNIVERSITY OF SOUTHERN CALIFORNIA  
OFFICE OF CONTINUING MEDICAL EDUCATION

## **Cultural and Linguistic Competence Resources for Health Care Providers**

### State and Federal Law

Federal Civil Rights Act: 42 U.S. Code § 1981 - Equal rights under the law

**(a) Statement of equal rights.** All persons within the jurisdiction of the United States shall have the same right in every State and Territory to make and enforce contracts, to sue, be parties, give evidence, and to the full and equal benefit of all laws and proceedings for the security of persons and property as is enjoyed by white citizens, and shall be subject to like punishment, pains, penalties, taxes, licenses, and exactions of every kind, and to no other.

**(b) "Make and enforce contracts" defined.** For purposes of this section, the term "make and enforce contracts" includes the making, performance, modification, and termination of contracts, and the enjoyment of all benefits, privileges, terms, and conditions of the contractual relationship.

**(c) Protection against impairment.** The rights protected by this section are protected against impairment by nongovernmental discrimination and impairment under color of State law

<https://www.law.cornell.edu/uscode/text/42/1981>

Executive Order 13166

On August 11, 2000, the President signed Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency". The Executive Order requires Federal agencies to examine the services they provide, identify any need for services to those with limited English proficiency (LEP), and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency. The Executive Order also requires that the Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.

<http://www.justice.gov/crt/executive-order-13166>

Dymally-Alatorre Bilingual Services Act of California

The Dymally–Alatorre Bilingual Services Act (California Government Code Section 7290 et. Seq.) was signed into law in 1973, to eliminate language barriers that preclude people of our State, who either because they do not speak or write English or because their primary language is other than English, from having equal access to public services. This Act mandates that State and local agencies directly involved in the furnishing of information or the rendering of services to the public must in specifically prescribed situations employ a sufficient number of qualified bilingual persons in public contact positions to ensure the provision of information and services to the public in the language of the non-English speaking people.

<http://www.bsa.ca.gov/pdfs/reports/99110.pdf>

### Cultural and Linguistic Competence

Center for Effective Collaboration and Practice

It is the mission of the Center for Effective Collaboration and Practice to support and promote a reoriented national preparedness to foster the development and the adjustment of children with

or at risk of developing serious emotional disturbance. To achieve that goal, the Center is dedicated to a policy of collaboration at Federal, state, and local levels that contributes to and facilitates the production, exchange, and use of knowledge about effective practices.

<http://cecp.air.org/>

#### National Center for Cultural Competence (NCCC)

The mission of the National Center for Cultural Competence (NCCC) is to increase the capacity of health and mental health programs to design, implement, and evaluate culturally and linguistically competent service delivery systems to address growing diversity, persistent disparities, and to promote health and mental health equity.

<http://nccc.georgetown.edu/index.html>

#### Limited English Proficiency (LEP)

Limited English Proficiency promotes a positive and cooperative understanding of the importance of language access to federally conducted and federally assisted programs. This site acts as a clearinghouse, providing and linking to information, tools, and technical assistance regarding limited English proficiency and language services for federal agencies, recipients of federal funds, users of federal programs and federally assisted programs, and other stakeholders. <http://www.lep.gov/>

#### DiversityRx

The purpose of DiversityRx is to improve the accessibility and quality of health care for minority, immigrant, and indigenous communities. We support those who develop and provide health services that are responsive to the cultural and linguistic differences presented by diverse populations. <http://www.diversityrx.org>

#### National Alliance for Hispanic Health

Mission is to improve the health and well being of Hispanics. The Alliance informs consumers, supports health and human service providers in the delivery of quality care, improves the science base for accurate decision making by promoting better and more inclusive research, promotes appropriate use of technology, insures accountability, advocates on behalf of Hispanics, and promotes philanthropy. <http://www.hispanichealth.org/>

#### National Center on Minority Health and Health Disparities

The mission is to promote minority health and to lead, coordinate, support, and assess the NIH effort to reduce and eliminate health disparities. NCMHD will conduct and support basic, clinical, social, and behavioral research, promote research infrastructure and training, foster emerging programs, disseminate information, and reach out to minority and other health disparity communities. <http://www.nih.gov/about/almanac/organization/NCMHD.htm>

#### National Council on Interpreting in Health Care

A multidisciplinary organization based in the United States whose mission is to promote culturally competent professional health care interpreting as a means to support equal access to health care for individuals with limited English proficiency. <http://www.ncihc.org/>

#### Think Cultural Health

The goal of Think Cultural Health is to Advance Health Equity at Every Point of Contact through the development and promotion of culturally and linguistically appropriate services. Think Cultural Health provides continuing education programs that are designed to help individuals at all levels and in all disciplines promote health and health equity.

<https://www.thinkculturalhealth.hhs.gov/content/continuinged.asp>

## Cultural Guides and Assessment Tools

### The Provider's Guide to Quality & Culture (not a U.S Website)

The quality of the patient-provider interaction has a profound impact on the ability of patients to communicate symptoms to their provider and to adhere to recommended treatment. It also has an impact on the patient's feelings about being respected (or disrespected) as an individual, a member of a family, and a member of a cultural group.

Cultural competence begins with an honest desire not to allow biases to keep us from treating every individual with respect. It requires an honest assessment of our positive and negative assumptions about others. An organization can help its health care professionals begin to gain cultural competence through formal training, but for most people cultural competence takes consistent individual practice over time.

<http://erc.msh.org/mainpage.cfm?file=4.0.htm&module=provider&language=English&ggroup=&mgroup=>

### Guide to Culturally Competent Health Care

Be prepared for the culturally rich and diverse world of healthcare. This concise, easy-to read handbook prepares you to relate to individuals from different cultures. This guide explores 34 different cultures and the issues to be sensitive to; including cultural variations regarding personal space, dietary preferences, communication, symptom management, activities of daily living, and religious and health practices.

<http://site.ebrary.com/lib/uscisd/reader.action?docID=10865357&ppg=1>

### Assessing Change: Evaluating Cultural Competence Education and Training

The AAMC commissioned an expert panel to review cultural competence studies that measured learner changes in attitudes, knowledge, and skills. This guide, which is based on the panel's findings, provides these resources for educators and researchers an inventory of the research studies that assess the outcomes of cultural competence education and training, four recommended strategies to advance the research and evaluation, a Cultural Competence Assessment Tool Checklist, along with a guide to using the tool, to help educators and research measure facets of cultural competence in published assessment tools and an overview of three evaluation approaches for curriculum development and evaluation. [Assessing Change: Evaluating Cultural Competence Education and Training](#)

### AAMC Tool for Assessing Cultural Competence Training

With increasing diversity in the U.S. population and strong evidence of disparities in health care, it is critically important that health care professionals are specifically educated on how their own and their patients' demographic (e.g., gender, income, race and ethnicity, etc.) and cultural (e.g., language, religion, etc.) factors influence health, health care delivery and health behaviors. In 2000, the Liaison Committee on Medical Education (LCME) introduced two standards about cultural competence that inspired medical schools to introduce cultural competence education into the undergraduate curriculum. TACCT will help in that effort.

TACCT is a self-administered assessment tool that can be used by medical schools to examine all components of the entire medical school curriculum. TACCT enables schools to identify gaps and redundancies in their curricula, which will enable schools to make the best use of opportunities and resources. The TACCT can be used for both traditional and problem-based curricula.

[Tool for Assessing Cultural Competence Training \(TACCT\) - PDF Version](#)

## Health Disparities

### AMA Racial/Ethnic Health Care Disparities

Recent studies have shown that despite the steady improvements in the overall health of the United States, racial and ethnic minorities experience a lower quality of health services and are less likely to receive routine medical procedures and have higher rates of morbidity and mortality than non-minorities. Disparities in health care exist even when controlling for gender, condition, age and socio-economic status. The American Medical Association provides links for activities to eliminate health disparities, commission to end health care disparities, and research finding and recommendations. As well as an inspirational program for new generation of physicians called Doctors Back to School. <http://www.ama-assn.org/ama/pub/physician-resources/public-health/eliminating-health-disparities.page>

### Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care

The Institute of Medicine researched the extent of disparities in the types and quality of health services received by U.S. racial and ethnic minorities and non-minorities; explore factors that may contribute to inequities in care; and recommend policies and practices to eliminate these inequities. The report from that study, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, found that a consistent body of research demonstrates significant variation in the rates of medical procedures by race, even when insurance status, income, age, and severity of conditions are comparable. [IOM Treatment](#)

### OMH Minority Population Health Statistics

The Office of Minority Health is dedicated to improving the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities. Supported by the U.S. Department of Health and Human Services, OMH provides detailed demographic, language fluency (where relevant), education, economic, insurance coverage and health status information, as well as full census reports on Black/African American Health, American Indian/Alaskan Native Health, Asian American Health, Hispanic/Latino Health and Native Hawaiian & Pacific Islander Health.

[OMH Minority Population Health Statistics](#)

### CDC Race & Ethnic Minority Populations and Health Disparities & Inequalities Report 2013

Centers for Disease Control and Prevention's Office of Minority Health and Health Equity (OMHHE) mission is to advance health equity and women's health issues across the nation through CDC's science and programs, and increase CDC's capacity to leverage its diverse workforce and engage stakeholders toward this end. Goals are in health equity, women's health, diversity & inclusion, organizational capacity. Plus visions of a world where all people have the opportunity to attain the best health possible.

<http://www.cdc.gov/minorityhealth/populations.html>

[CDC Health Disparities and Inequalities Report – United States, 2013](#)

### HHS Action Plan to Reduce Racial and Ethnic Health Disparities

The *HHS Action Plan to Reduce Racial and Ethnic Health Disparities* outlines goals and actions HHS will take to reduce health disparities among racial and ethnic minorities. With the HHS Disparities Action Plan, the Department commits to continuously assessing the impact of all policies and programs on racial and ethnic health disparities. It will promote integrated approaches, evidence-based programs and best practices to reduce these disparities. The HHS Action Plan builds on the strong foundation of the Affordable Care Act and is aligned with programs and initiatives such as Healthy People 2020, the First Lady's *Let's Move* initiative and the President's National HIV/AIDS Strategy.

[HHS Action Plan to Reduce Racial and Ethnic Health Disparities](#)

## Cultural Knowledge/ Language – Specific Sites

### Ethnomed

EthnoMed contains information about cultural beliefs, medical issues and related topics pertinent to the health care of immigrants to Seattle or the US, many of whom are refugees fleeing war-torn parts of the world. <http://ethnomed.org/ethnomed>

### The Cross Cultural Health Care Program

The mission of The Cross Cultural Health Care Program is to serve as a bridge between communities and health care institutions to advance access to quality health care that is culturally and linguistically appropriate. We provide resources and training for individuals and institutions with the goal of systems change and a vision that *Healthcare in every Community, every Community in Healthcare*. <http://xculture.org/>

### **Black/African American Health**

Traditional Beliefs: Cultural Competency

[http://etl2.library.musc.edu/cultural/traditional/traditional\\_2.php](http://etl2.library.musc.edu/cultural/traditional/traditional_2.php)

OMH Minority Populations: African American Profile

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=61>

### **American Indian/Alaska Native/Native Hawaii**

Alaska Native Knowledge Network

ANKN is a resource for compiling and exchanging information related to Alaska Native knowledge systems and ways of knowing. ANKN creates and distributes a variety of publications that assist Native people, government agencies, educators and the general public in gaining access to the knowledge base that Alaska Natives have acquired through cumulative experience over millennia.

<http://www.ankn.uaf.edu/Publications/Knowledge.html>

OMH Minority Populations: American Indian/Alaska Native Profile

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=62>

### **Asian American/Pacific Islander**

Provider's Guide to Quality & Culture Asian American and Pacific Islander Seminars (Not a US Government web site) <http://erc.msh.org/aapi/index.html>

OMH Minority Populations: Asian American Profile

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=63>

OMH Minority Populations: Native Hawaiians and Pacific Islanders

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=65>

### **Hispanic/Latino/Spanish**

USA-Mexico Border Health Cultural Competency Page (HRSA grantee Web site)

<https://www.raconline.org/topics/border-health?topic=cultural%20competency>

The Provider's Guide to Quality and Culture

Designed to assist healthcare organizations throughout the United States in providing high quality, culturally competent services to multi-ethnic populations.

Sponsoring organization: Health Resources and Services Administration.

<http://erc.msh.org/mainpage.cfm?file=1.0.htm&module=provider&language=English>

Traditional Beliefs: Cultural Competency

[http://etl2.library.musc.edu/cultural/traditional/traditional\\_12.php](http://etl2.library.musc.edu/cultural/traditional/traditional_12.php)

Hablamos Juntos: Basic Building Blocks of Translation

[http://www.hablamosjuntos.org/sm/default.translation\\_basics.asp](http://www.hablamosjuntos.org/sm/default.translation_basics.asp)

Hablamos Juntos: Interpreter Services

<http://www.hablamosjuntos.org/is/default.index.asp>

Quality & Culture Topic: Working with an Interpreter

<http://erc.msh.org/mainpage.cfm?file=4.5.0.htm&module=provider&language=English>

Quality & Culture Topic: Non-Verbal Communication

<http://erc.msh.org/mainpage.cfm?file=4.6.0.htm&module=provider&language=English>

Legal Mandates for Interpreter Services

[http://etl2.library.musc.edu/cultural/interpreters/interpreters\\_3.php](http://etl2.library.musc.edu/cultural/interpreters/interpreters_3.php)