



4TH ANNUAL MIDWEST PRECLINICAL IMAGING CONSORTIUM MEETING

May 6-8, 2018

**Washington University School of Medicine
St. Louis, MO**

In partnership with



Host sponsors



4th Annual Midwest Preclinical Imaging Consortium (MPIC) Meeting

The 4th annual Midwest Preclinical Imaging Consortium (MPIC) Meeting is hosted by Mallinckrodt Institute of Radiology (MIR) at Washington University School of Medicine, St. Louis, MO.

What started as a premier Midwest preclinical imaging meeting, MPIC has reached the national (and somewhat international) scale, and we committed to furthering the national appeal at MPIC 2018. This year, the meeting brings together over 180 preclinical imaging facility directors, managers, and users who are experts across all major imaging modalities. The goal of MPIC since its inception has been to facilitate an open dialogue between preclinical imaging facility directors, managers, and users. Additionally, we encourage an open dialogue between facilities and industry partners, who share the complementary goal of advancing transnational science through preclinical imaging. As in previous years, the MPIC has partnered with the World Molecular Imaging Society's (WMIS) to undertake the planning of this year's meeting.

In addition to the Program Committee, there are numerous individuals who assisted in planning the meeting. In particular, many thanks to Terry Sharp for her assistance in coordinating and organizing the meeting, as well as Nicole Fettig, members of Cyclotron Facility, Preclinical PET Imaging Facility, Small Animal MR Facility, and Optical Radiology Facility for their assistance.

Importantly, the meeting would not have taken place without the generous support of our numerous sponsors, including host sponsors. On behalf of MPIC Program Committee and the attendees, thank you for your support.

Sincerely,

Koresh Shoghi, PhD
On behalf of the MPIC Program Committee

Program Committee

Koresh Shoghi, PhD, Chair
Chad Haney, PhD
Charles Manning, PhD
Chin Ng, PhD
Jenny Yang, PhD
Justin Jeffrey, MS
Kah Whye Peng, PhD
Lara Leoni, PhD
Marty Pagel, PhD
Mike Nichols, PhD
Mike Shulte, PhD
Mohammed Farhoud, MS
Paul Territo, PhD
Walter Akers, PhD

Meeting Staff

Terry Sharp
Nicole Fettig
Amanda Klaas
Margaret Morris
Lori Strong

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Mallinckrodt Institute of Radiology
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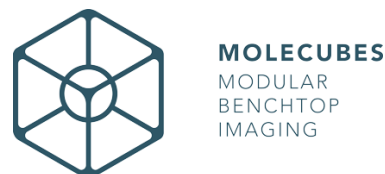
World Molecular Imaging Society

MPIC Thanks Our Generous Sponsors

PLATINUM LEVEL



GOLD LEVEL



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BRONZE LEVEL



Where and Logistics at MPIC

Registration –FLTC Atrium, 1st Floor

Breakfast and Refreshments – FLTC Atrium, 1st Floor

Presentations (Sunday, Monday, Tuesday) – Connor Auditorium, FLTC, 1st Floor

Facility Poster Session and Reception (Sunday) – Hearth Area, FLTC 2nd floor

Innovations in Technology Poster Session and Reception (Monday) – FLTC Atrium, 1st Floor

Research Poster Session (Monday) – FLTC Atrium, 1st Floor

Lunch (Monday, Tuesday) – FLTC Atrium, 1st Floor

Social Event at International TAP House, Monday at 6:45pm – 16 S. Euclid Ave, St. Louis, MO

Executive Committee Meeting (Tuesday) – Holden Auditorium, FLTC 1st Floor

Shuttles to/from Chase Park Plaza – Pick up/drop off will be at the Theater Entrance of Chase Park Plaza Hotel (not the front entrance of hotel).

Shuttle service will be provided on:

- Sunday 5/6 from FLTC to the Chase beginning at 9:00pm
- Monday 5/7 and Tuesday 5/8 from the Chase to FLTC 7:10 am – 8:00 am

Facility Tours (Monday and Tuesday) – Limited tours for the following MIR facilities will be available:

- Biomedical MR Facility—Joseph Ackerman, PhD, Director
- Cyclotron Facility—Sally Schwarz and Gregory Gaehle, Co-Directors
- Optical Imaging Facility—Samuel Achilefu, PhD, Director
- Preclinical PET Facility—Kooresh Shoghi, PhD and Richard Laforest, PhD, Co-Directors

Tour schedule:

- Monday, May 7, from 12:05-14:05
- Tuesday, May 8, 2018 from 15:15-16:30

Please sign up at the registration table for Facility Tours. This will be on a first come first serve basis until space is filled. Please meet in the FLTC Atrium at scheduled tour time.

4th Annual MPIC Meeting Agenda

Sunday, May 6

- 16:30 – 19:00** **Registration**
- 17:00 – 18:30** **Refreshments**
- 17:00 – 18:00** **Facility Discussions**
- 18:00 – 19:00** **Power Pitch Presentations**
Moderated by Joseph Ackerman, PhD, Professor of Radiology,
Director of the Biomedical MR Laboratory and Facility
- 19:00 – 21:00** **Opening Reception: Facility Poster Presentations**
Dinner and Networking, Hearth Area, FLTC 2nd floor

Monday, May 7

- 7:30 – 8:00** **Breakfast** – Sponsored by *MR Solutions*
- 7:30 – 8:00** **Registration**
- 8:00 – 8:10** **Welcome**
Koresh Shoghi, PhD
Associate Professor of Radiology and Biomedical Engineering,
Washington University School of Medicine
- 8:10 – 9:05** **Role of Translational Imaging in Biopharmaceutical Development**
James Goodman, PhD
Worldwide Research & Development, Director, Clinical and Translational Imaging, Pfizer Inc.
- 9:05 – 10:00** **Methods and Applications of Magnetic Particle Imaging**
Jeff W.M. Bulte, MS, PhD
Professor of Radiology and Radiological Science, Director of Cellular Imaging, Johns Hopkins School of Medicine
- 10:00 – 10:20** **Coffee Break** – Sponsored by *Perkin Elmer*
- 10:20 – 11:15** **Magnetic Resonance Fingerprinting: Opportunities and Challenges in Preclinical Imaging**
Chris A. Flask, PhD
Associate Professor of Radiology, Case Western Reserve University
- 11:15 – 12:10** **Photoacoustic Multispectral Imaging of Pathophysiology and Response to Therapy**
Ralph P. Mason, PhD, CSci., CChem., FRSC
Professor of Radiology, UT Southwestern Medical Center

- 12:10 – 14:10** **Lunch and Facility Tours #1**
Lunch sponsored by *MR Solutions*
- 14:10 – 15:00** **In vivo Pharmacokinetic Dose Findings Studies in Preclinical Models of Non-Human Primates**
Joel Perlmutter, MD
Professor of Neurology and Radiology, Washington University School of Medicine
- 15:00 – 15:50** **Quantitative Autoradiography for Assessment of Receptor Occupancy**
Jinbin Xu, PhD
Assistant Professor of Radiology, Washington University School of Medicine
- 15:50 – 16:10** **Break**
- 16:10 – 17:00** **Functional Connectivity Optical Intrinsic Signal Imaging in the Mouse Brain**
Joseph Culver, PhD
Professor of Radiology, Physics, and Biomedical Engineering, Washington University School of Medicine
- 17:00 – 18:30** **Innovations in Technology Poster Session and Reception**
FLTC Atrium, 1st Floor
- 18:45 -** **Social Event – Food, Drink and Fun**
Co-Sponsored by Mediso USA
iTAP – International Tap House, Central West End
(See location map at the back of program booklet)

Tuesday, May 8

- 7:30 – 8:00** **Breakfast**
- 8:00 – 9:00** **Radiomics and Machine Learning in Predictive Modeling**
Joseph O. Deasy, PhD
Professor and Chair, Department of Medical Physics, Memorial Sloan Kettering Cancer Center
- 9:00 – 10:00** **Spotlight Session: Oncology Models of Human Disease**
- 9:00 – 9:25** **Mouse Models in Oncology**
Nancy Boudreau, PhD
Chief, Tumor Metastasis Branch, NCI, National Institute of Health
- 9:25 – 9:50** **Large Animals in Preclinical Imaging**
Amy K. LeBlanc, DVM
Director, Comparative Oncology Program, NCI, National Institute of Health

- 9:50 – 10:00** **Discussion/Q&A**
- 10:00 – 10:30** **Coffee Break** – Sponsored by *Lightpoint Medical*
- 10:30 – 11:30** **Spotlight Session: Establishing Quantitative Mouse-to-Man Imaging Standards**
- 10:30 – 10:55** **Washington University Co-Clinical Imaging Research Resource (WU-C2IR2)**
Kooresh Shoghi, PhD
Associate Professor of Radiology and Biomedical Engineering,
Washington University School of Medicine
- 10:55 – 11:20** **The Duke Preclinical Research Resources for Quantitative Imaging Biomarkers**
Cristian Badea, PhD
Associate Professor of Radiology, Duke University School of Medicine
- 11:20 – 11:30** **Discussion/Q&A**
- 11:30 – 12:15** **Preclinical Hyperpolarized MR Program: from Beginning to Applications**
Kayvan Keshari, PhD
Assistant Professor of Radiology, Memorial Sloan Kettering Cancer Center
- 12:15 – 13:30** **Lunch and Research Poster Session**
- 13:30 – 15:00** **Spotlight Session: In vivo – Ex Vivo Pathology**
- 13:30 – 14:15** **Diffusion Basis Spectrum MR Imaging: In Vivo Histopathology**
Sheng-Kwei (Victor) Song, PhD
Professor of Radiology, Washington University School of Medicine
- 14:15 – 15:00** **Methods and Application of Matrix Assisted Laser Desorption/ionization (MALDI)**
Richard Drake, PhD
Professor and Chair of Proteomics, Medical University of South Carolina
- 15:00** **CONCLUSION**
- 15:15 – 16:30** **Facility Tours #2**
- 15:15 – 16:30** **Executive Committee Meeting – Closed Session**
Holden Auditorium

Power Pitch Presentations

Sunday, May 6th at 6pm

Presented in alphabetical order by company name

Company	Presenter	Title
Bruker BioSpin	Jeff Sumeracki	Bruker PET/MR: Best in Class
Cubresa Inc.	James Schellenberg, PhD	Cubresa: PET inserts for MRI Systems
Endra Life Sciences	Michael Walters, PhD	The Nexus 128: Bringing new capabilities to photoacoustics
FUJI FILM VisualSonics, Inc	Sarah Burris, PhD	VisualSonics: Imaging Solutions Across Applications
Imanis Life Sciences	Kah-Whye Peng, PhD	In Vivo. Ex. Vivo. One Technology for Tracking Translational Therapies
Invicro	Thomas J Liguori	Invicro Interdisciplinary Informatics: An approach to leveraging quantitative biomarkers
iThera Medical	Clinton Hupple, MSc	MSOT (Multispectral Optoacoustic Tomography) Imaging Core Values
Magnetic Insight	Matthew Smith, PhD	Developing High Sensitivity Magnetic Particle Imaging for Cell Tracking Research
MR Solutions	Gilberto Prudencio	MR Solutions Multimodality Imaging Innovations
Perkin Elmer	Christopher Reed	IVIS Lumina S5 and X5: Next Generation IVIS Lumina systems, no compromise imaging

Facility Posters

Sunday, May 6th at 7:00 pm

Poster #	Institution/Title	Presenting Author
F1	Washington University School of Medicine MIR Cyclotron Facility	
F2	Washington University School of Medicine MIR Preclinical PET Imaging Facility	Nikki Fettig
F3	Washington University School of Medicine MIR Small-Animal Magnetic Resonance Facility	James Quirk, PhD
F4	Washington University School of Medicine MIR Optical Radiology Facility	Kvar Black, PhD
F5	Vanderbilt University Center for Molecular Probes Radiochemistry Core Facility	Adam J Rosenberg, PhD
F6	Vanderbilt Center for Molecular Probes Preclinical/Translational Imaging Resources	Allison Cohen, PhD
F7	UT Knoxville Preclinical Diagnostic Testing Lab	Alan Stuckey, CNMT
F8	The Ohio State University Small Animal Imaging Core (SAIC)	Anna Bratasz, PhD
F9	Northwestern University Multimodality Imaging at the Center for Advanced Molecular Imaging	Chad Haney, PhD
F10	UT MD Anderson Cancer Center The Small Animal Imaging Facility	Charles Kingsley, PhD
F11	Cancer Imaging in Small Animals at the Duke Center for In vivo Microscopy	Cristian Badea, PhD
F12	MD Anderson Cancer Center The CCSG Small Animal Imaging Facility	John Hazle, PhD
F13	UW-Madison Small Animal Imaging Facility	Justin Jeffery
F14	University of Minnesota Imaging Centers, Microscopy and Imaging Resources	Yung Kim
F15	UAB Small Animal Imaging Facility	Suzanne Lapi, PhD
F16	The University of Chicago Integrated Small Animal Imaging Research Resource	Lara Leoni, PhD
F17	In Vivo Molecular Imaging for Small Animal Research at University of Louisville	Mingming Zhu, PhD
F18	University of Colorado Cancer Center Animal Imaging Shared Resources	Natalie Serkova, PhD
F19	Bindley Bioscience Imaging Facility	Andy Schaber, PhD
F20	Michigan State University Molecular and Cellular Imaging Center	Erik Shapiro, PhD
F21	University of Iowa Small Imaging Core	Susan Walsh, MA
F22	The SCi3 Service Center at Stanford University Multi-modality Preclinical Imaging for the Stanford Research Community	Timothy Doyle, D.Phil.
F23	St. Jude Center for In Vivo Imaging and Therapeutics	Walter Akers, DVM, PhD
F24	Pre-clinical Imaging at University of Colorado - pulmonary and developmental biology applications	Xiangning Wang
F25	STTARR Innovation Centre - State-of-the-art imaging resources for translational drug discovery and radiation research	Justin Grant, PhD
F26	University of Kansas Medical Center Animal MRI Core	Janna L. Harris, PhD

Innovations in Technology Posters

Monday, May 7th at 6pm

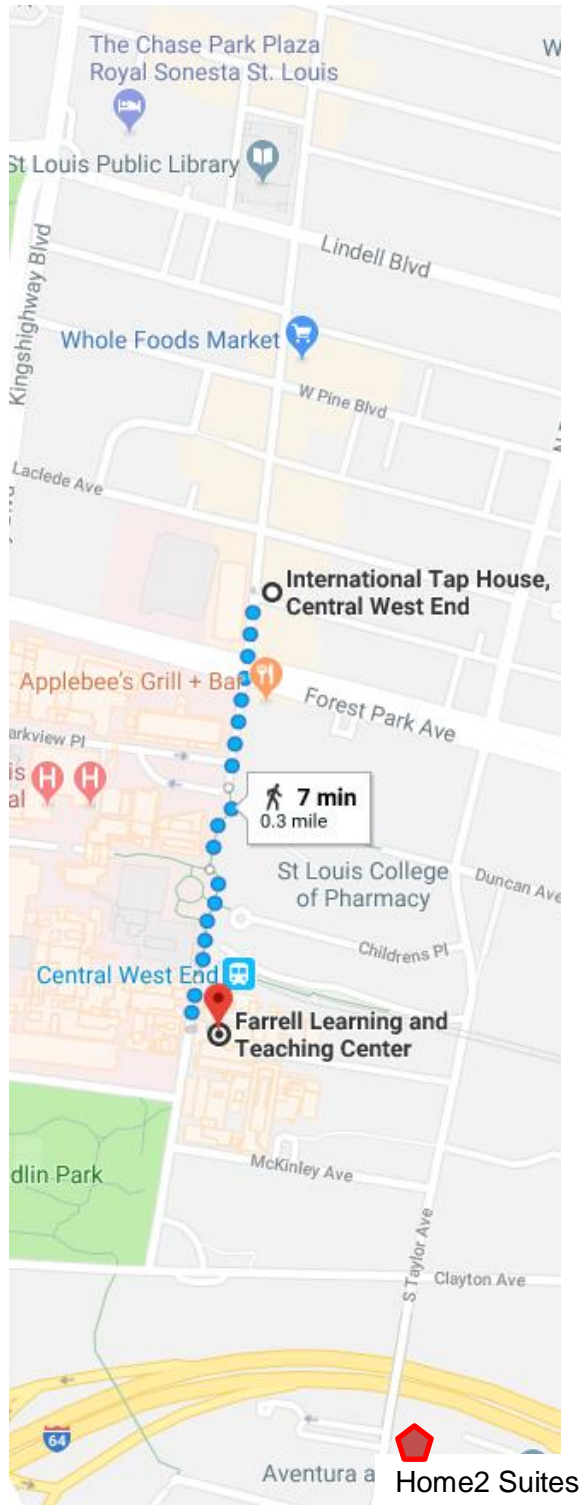
Poster #	Title	Company/ Presenting Author
1	A Multiresolution Approach to Correlative Multimodal Image Acquisition, Management, and Analysis	EMIT Imaging Mohammed Farhoud, MSc
3	Cubresa: PET inserts for MRI Systems	Cubresa James Schellenberg, PhD and John Saunders, PhD
5	Developing High Sensitivity Magnetic Particle Imaging for Cell Tracking Research	Magnetic Insight Matthew Smith, PhD
7	High throughput PET/CT imaging using a multiple mouse imaging system	Mediso Peter Koncz, MS
9	Introducing 4x4D omni-tomography: the ultimate in multimodality preclinical in-vivo imaging	MI Labs Frank S Schwahn
11	Mouse Whole Body High-frequency Ultrasound and Photoacoustic Imaging using a combined Epi- and Trans-Illumination Light Delivery Setup	FujiFilm VisualSonics Sarah Burris, PhD
13	Multimodality Imaging Innovations	MR Solutions Gilberto Prudencio
15	Imaging Performance of the MOLECUBES β -CUBE – a dedicated small animal PET scanner using monolithic LYSO scintillator	Molecubes Ewout Vansteenkiste and Brad Freese, MPH
17	Multispectral Optoacoustic Tomography (MSOT) for In Vivo Imaging: Principles and Applications	iThera Medical Clinton Huppel, MSc and Tullio Giannitti
19	Simultaneous 7T PET/MR Data Integrity and Beyond: Image Quality, Spectroscopy, Dynamic Imaging & Gating	Bruker BioSpin Michael Heidenreich and Eric Frederick
21	The effect of low frequency noise power on image quality in photoacoustic imaging systems	Endra Life Sciences Michael Walters, PhD
23	Untangle the complexities of the tumor microenvironment using multiplexed immunohistochemistry: View up to 6 biomarkers plus the nuclear stain on a single tissue section	Perkin Elmer Aniruddh Solanki, PhD
25	A New Approach to PET/CT Imaging	Sofie Biosciences Philipp Czernin, MBA
27	Safe, Efficient, and Ergonomic Delivery of Anesthesia Gas for In Vivo Imaging	Somni Scientific Pat Matsunaga and Josh Edelstein

Research Posters

Tuesday, May 8th at 12:15pm

Poster #	Title	Presenting Author
2	The Bayesian Toolbox: Optimal Signal Analysis "Made Easy"	Joseph Ackerman, PhD and James Quirk, PhD
4	Real-Time Fluorescence Guided Surgery with Cancer Vision Goggles	Christine O'Brien, PhD and Suman Mondal, PhD
6	Comparison Of Mouse Models of Radiation Necrosis Based On Anatomical MRI	Carlos Perez-Torres, PhD
8	Mouse Model of Brain Tumor-Induced Functional Connectivity Change	Inema Orukari, BS
10	Phantom for partial volume correction of quantitative preclinical PET data	Justin Jeffery
12	Near Infrared Targeting for Fluorescence-Guided Colonoscopy	Jade Jones, BHS RT (R)
14	Humanized Mouse Model for MRI Contrast Agent Evaluation	Faryal Mir, PhD student
16	MRI for Radiation Treatment Planning in Mouse GBM	Natalie Serkova, PhD
18	Intraoperative Fluorescence Imaging Using Near-infrared Fluorescent Hyaluronic Acid	Nicholas Wojtynek, PhD student
20	NIS reporter gene imaging: from mouse to Phase I veterinary and human trials	Kah-Whye Peng, PhD
22	Refined MRI Characterization of Ischemic Tissue Injury	Phillip Zhe Sun, PhD
24	Implantable Confocal Microscope for Dynamic Imaging of EMT in Breast Cancer Microenvironment	Zhen Qiu, PhD
26	Pre-Amplified Nanoparticle Contrast Agents for X-ray Computed Tomography	Shatadru Chakravarty, PhD
28	Initial Experiences with the Sofie GNEXT PET/CT	Sharon Samuel, BS
29	Optimized pre-clinical imaging with MRI and micro-CT for a co-clinical cancer trial	Stephanie Blocker, PhD
30	Quantitative MRI Protocols for Characterizing Triple Negative Breast Cancer Patient-Derived Xenografts (PDX)	Xia Ge, PhD
31	Development of Copper Doped Iron Oxide Nanoparticles for Potential MRI/PET Imaging Application	Yongfeng Zhao, PhD
32	Potential Role of Co-Registered Photoacoustic and Ultrasound Tomography in Diagnosis of Ovarian Cancer	Quing Zhu, PhD
33	Reproducibility of FDG-PET parameters in PET imaging of triple negative breast cancer (TNBC) patient-derived tumor xenografts (PDX) subtypes	Timothy Whitehead, PhD
34	Gaussian Mixture Models (GMMs) to assess tumor heterogeneity in PET imaging of triple negative breast cancer (TNBC) patient-derived tumor xenografts (PDX)	Madhusudan Savaikar, PhD
35	Novel MR imaging of the Mass and Function of Brown Adipose Tissue with Z-Spectrum	Kejia Cai, PhD
36	Near Infrared Targeting for Fluorescence-Guided Colonoscopy	Jade Jones
37	Preclinical Molecular Imaging in a Medical School. Opportunities & Challenges	Cynthia Yang, MS
38	Protein MRI contrast agent for precision MRI (pMRI)	Jenny Yang, PhD

Walking Directions to iTAP



To iTAP: From the FLTC, exit the West set of doors and walk North on Euclid Avenue. Proceed 0.3 miles (7 minutes walking) to iTAP.

Address: 16 S. Euclid Ave, St. Louis, MO