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2022 Arkansas Engineering Forum & Southeast Symposium on Contemporary Engineering Topics (SSCET)

September 16, 2022 at UA Little Rock

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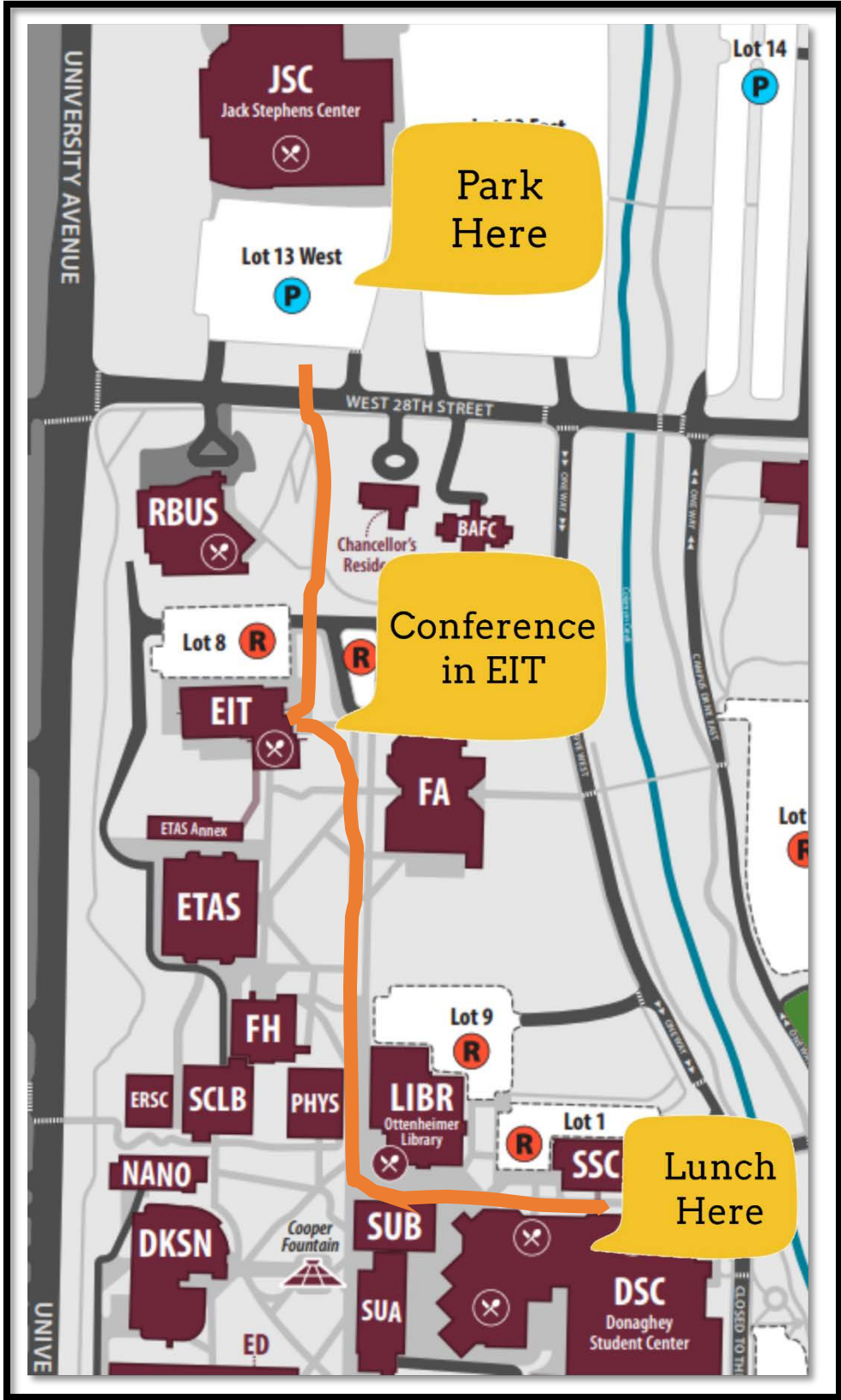




2022 SSCET & AEF Main Schedule

Friday, September 16th, 2022

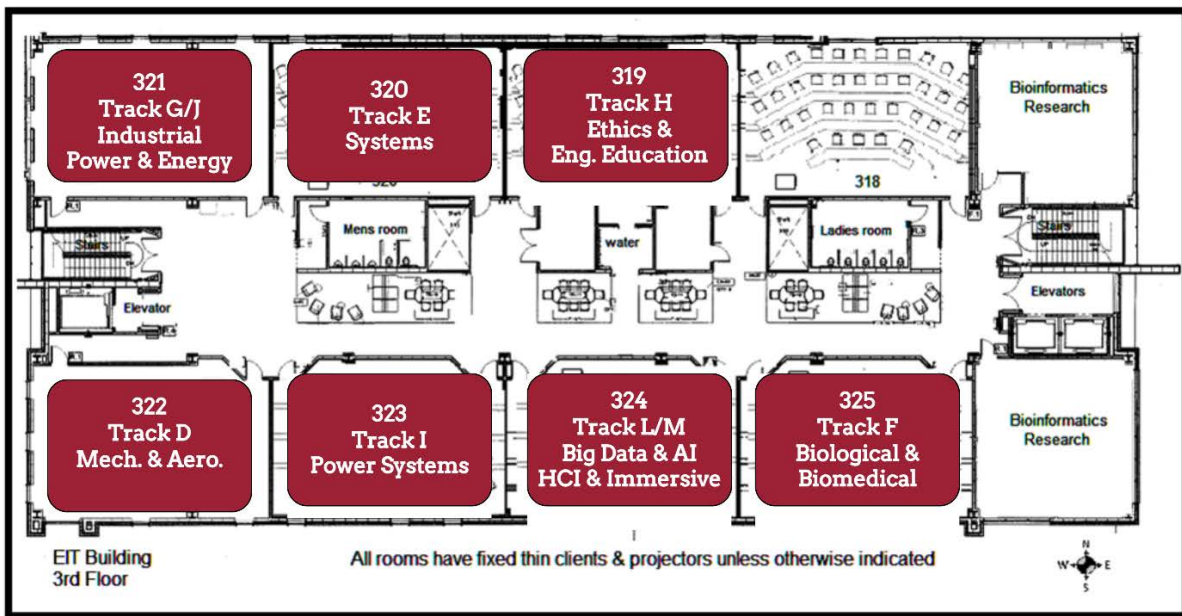
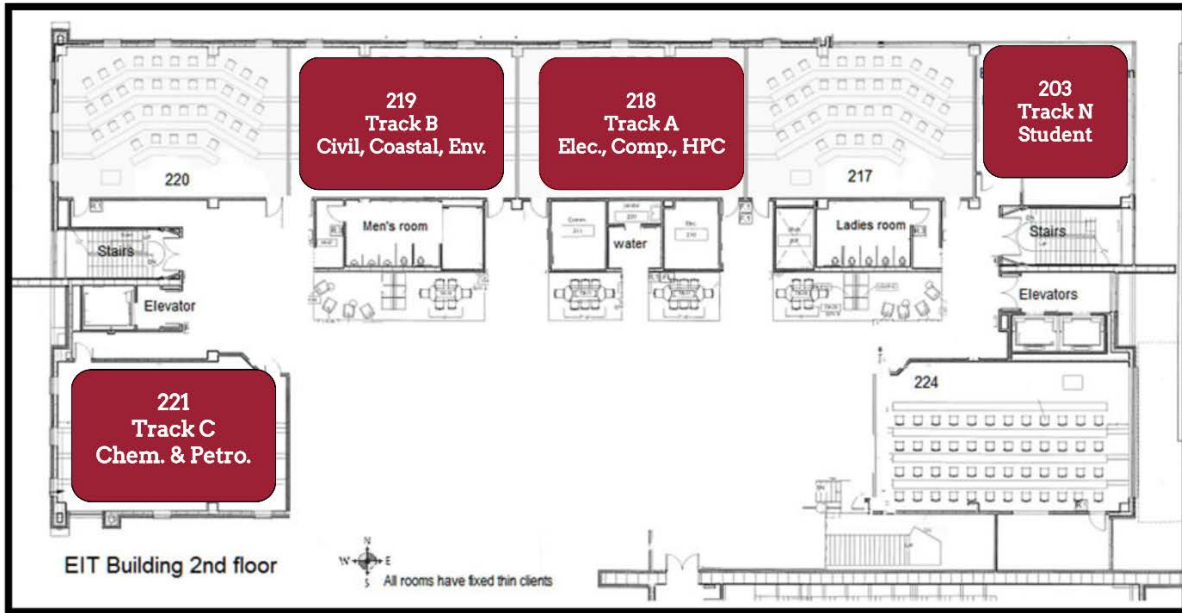
7:00 AM	Registration and Breakfast			EIT Lobby
8:00 AM	Welcome	Ann Baine	UALR, Provost	EIT Auditorium
8:20 AM	Keynote	Antoine	SPP, Engineering VP	EIT Auditorium
9:00 AM	Morning Symposium Tracks			<i>See Attached Details</i>
10:30 AM	Break and Student Posters			EIT Emerging Analytics Center (4 th Floor)
10:45 AM	Track Breakouts			<i>See Attached Details</i>
12:15 PM	Lunch			Ledbetter Room (See Attached Map)
1:15 PM	TBD			EIT Lobby
1:45 PM	Afternoon Symposium Track			<i>See Attached Details</i>
3:15 PM	Break, Student Posters, and VR Cave Demo			EIT Emerging Analytics Center (4 th Floor)
3:30 PM	Track Breakouts			<i>See Attached Details</i>
5:00 PM	Adjourn			



Park Here

Conference in EIT

Lunch Here



The Cybersecurity Track is being held in room 417. Follow signs on the 4th floor



Track A (Room 218): Electrical and Computer Engineering and HPC - John Daigle (UoM) and John Ball (MSU), Chairs				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Roadmap to the next generation of Digital Holographic Microscopes	Ana Doblas	UM
<input type="checkbox"/>	9:30 AM	Concurrent Data Structures for GPU Computing	Byunghyun Jang	UofM
<input type="checkbox"/>	10:00 AM	Automatic Safety Diagnosis in Connected Vehicle Environment	Shuang Tu	JSU
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	CodeChat: design as documentation	Bryan Jones	MSU
<input type="checkbox"/>	11:15 AM	New Insights into Robotics and Autonomous Systems: From Bio-inspired Intelligence to AI and Machine Learning.	Chaomin Luo	MSU
<input type="checkbox"/>	11:45 AM	Internet of Networked Buildings Solution for Scalable Agile Microgrids	Manohar Chamana	TTU
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	Introduction to Open Radio Access Networks: Part 1	John Daigle	UofM
<input type="checkbox"/>	2:15 PM	Introduction to Open Radio Access Networks: Part 2	John Daigle	UofM
<input type="checkbox"/>	2:45 PM	Data Driven Machine Learning Based Approach for Point-of-Care Health Monitoring Systems	Syed Kamrul Islam	UMo
	3:15 PM	Break		
<input type="checkbox"/>	3:30 PM	Mapping Spiking Neural Networks to Neuromorphic Hardware	Twisha Titirsha	UMo
<input type="checkbox"/>	4:00 PM	Threshold Switching Insulator-Metal Transition Materials-Promises and Challenges	Nazmul Amin	UMo
<input type="checkbox"/>	4:30 PM	Room Level Classification: Using Wifi Fingerprinting and Direction-of-Arrival	Fahmida Islam	MSU
	5:00 PM	Adjourn		



Track B (Room 219): Civil, Coastal, and Environmental Engineering - Robert Whalin (JSU), Chairs				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	"Lamar University's Center for Resiliency": A Holistic Approach to Resilience research	Thinesh Selvaratnam	Lamar
<input type="checkbox"/>	9:30 AM	Performance of Light Frame Structures in Hurricanes: Part 1	Vijaya Gopu	ULL
<input type="checkbox"/>	10:00 AM	Performance of Light Frame Structures in Hurricanes: Part 2	Vijaya Gopu	ULL
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	Large Eddy Simulation of Hurricane Winds and Its Application in Energy Infrastructure Systems	Chao Sun	LSU
<input type="checkbox"/>	11:15 AM	Warm Mix Asphalt and its Prospect in Arkansas	Zahid Hossain	ASU
<input type="checkbox"/>	11:45 AM	Computational fluid dynamics for wind engineering	Panneer Selvam	UofA
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	Pile Setup and Aging in High-Capacity Pressure Grouted Helical Piles	Firouz Rosti	McNeese
<input type="checkbox"/>	2:15 PM	High-Performance Partially Reduced Graphene Oxide Membranes for Osmotic Power Generation	Wei Zhao	UALR
<input type="checkbox"/>	2:45 PM	Utilizing Hydrodynamic Numerical Modeling for Emergency Scour Countermeasure Design and Sediment Transport	Donald Hendon	HDR
	3:15 PM	Break		
<input type="checkbox"/>	3:30 PM	Union County Water Conservation Board's development of the Ouachita River as an alternative source of industrial water to conserve the Sparta Aquifer	Robert Reynolds	Self
<input type="checkbox"/>	4:00 PM	Slope Stabilization using Vetiver grass: A Transformative Approach	Sadik Khan	JSU
	4:30 PM	Adjourn		



Track C (Room 322): Mechanical and Aerospace Engineering - David Huitink (UofA), Chair				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Moore's Law: Extension to Exponential Increase in Lifetimes of Interplanetary Spacecraft	Daniel Berleant	UALR
<input type="checkbox"/>	9:30 AM	Atomic Force Microscopy Techniques for Electronic DNA Sequencing	Steve Tung	UofA
<input type="checkbox"/>	10:00 AM	Electrohydrodynamic Printing of Conductive Inks for Flexible Electronics	Yiwei Han	UofM
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	Cementation of Particulate Soils on Photovoltaic Cover Glass Materials	Robert Fleming	ASU
<input type="checkbox"/>	11:15 AM	Advancing Integrated Thermal Management Schemes for High Density Power Electronics	David Huitink	UofA
	11:45 AM	Adjourn		



Track D (Morning - Room 221): Chemical and Petroleum Engineering - Mayank Tyagi (LSU), Chair				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Synthesis and characterization of Renewable Carbon Materials for Energy Application: Supercapacitor, Fuel Cells and Batteries	Noureen Siraj	UALR
<input type="checkbox"/>	9:30 AM	Modeling of Coupled Physical Processes in Tight Rocks	Femi Olorode	LSU
<input type="checkbox"/>	10:00 AM		Tianxing Cai	Lamar
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	petroleum	Yucel Akkutlu	TAMU
<input type="checkbox"/>	11:15 AM		Piran Kidambi	VU
<input type="checkbox"/>	11:45 AM		Myank Tyagi	LSU
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	Renewable P, N co-doped carbon as anode material for sodium ion batteries (SIBs)	Samantha Macchi	UALR



Track E (Room 320): Systems Engineering - Randy Buchanan (ERDC) and Greg Parnell (UofA), Chairs				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Systems Approach for Characterizing and Understanding Large-scale Additive Manufacturing Process	James Stinson	ERDC
<input type="checkbox"/>	9:30 AM	Feasibility of AI-Driven Autonomous Systems for Target Detection in Operational Environment in Army Missions	Daniel Pham	UAH
<input type="checkbox"/>	10:00 AM	A Study of Drone-based Explainable AI for Enhanced Human-AI Trust and Informed Decision Making in Human-AI Interactive Virtual Environments	Joseph Schwalb	UAH
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	Smart Base Installations: Bayesian Network for Decision Analysis to Support the Decision-Making Process During Severe Weather Events	John Richards	ERDC
<input type="checkbox"/>	11:15 AM	GOMS Analsis of Virtual Reality Menu Designs	Emily Wall	MSU
<input type="checkbox"/>	11:45 AM	Augmenting Military Wargaming with Deep Reinforcement Learning	William Leonard	ERDC
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	Forecasting Melt Pool Temperature Distribution in an Additive Manufacturing Process via Tensor Rank Decomposition and Ensemble Learning	Jonathan Storey	MSU
<input type="checkbox"/>	2:15 PM	Roadway Crash Trend Analysis with Innovative Trend Analysis and Mann-Kendall Test	Ahmed Hossain	ULL
<input type="checkbox"/>	2:45 PM	Updates to a rule-based expert system for manufacturability assessment	Larry Dalton	MSU
	3:15 PM	Break		
<input type="checkbox"/>	3:30 PM	Enabling Immersive Remote Maintenance	Christina Rinaudo	ERDC
<input type="checkbox"/>	4:00 PM	Integration of Weather and Traffic Data Analytics for Installation Decision Dashboards	John Richards	ERDC
	4:30 PM	Adjourn		



**Track F (Room 325): Biological and Biomedical Engineering - Jorge Almodovar (UofA),
Chair**

Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Multilayered Polymeric Coatings Enhance the Immunomodulatory Function of Mesenchymal Stromal Cells	Jorge Almodovar	UofA
<input type="checkbox"/>	9:30 AM	Cell-free biomanufacturing: Thinking outside the cell	Yongchan Kwon	LSU
<input type="checkbox"/>	10:00 AM	Biological Engineering for Nature-based Climate Solutions	Benjamin Runkle	UofA
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	Ultrasound in Cartilage Tissue Engineering: Modelling Analysis and Experimental Verification	Anu Subramanian	UAH
<input type="checkbox"/>	11:15 AM	Investigating Mechanisms of Cytoskeletal Ensemble Synergy Using Optical Tweezers	Nikki Reinemann	UofM
<input type="checkbox"/>	11:45 AM	Utilizing Near-Field Electrospinning to Design Next Generation Vascular Regeneration Grafts to Promote <i>In Situ</i> Regeneration	Gary Bowlin	UM
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	Investigating Manuka Honey Inspired Therapeutics for Prevention of Neutrophil-Induced Fibrosis of Biomaterials	Evan Main	UM
	2:15 PM	Adjourn		



Track G (Morning - Room 321): Industrial Engineering - Sandra Eksioglu (UofA), Chair				
Track J (Afternoon - Room 321): Power and Energy - Alan Mantooth (UofA), Chair				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM		Trenton Cason	ArcBest
<input type="checkbox"/>	9:30 AM	Understanding adaptive human behavior in embodied human-computer interaction (eHCI) systems	Katie Jurewicz	OSU
<input type="checkbox"/>	10:00 AM	Using data analytics to understand COVID-19 vaccine hesitancy in USA	Sandra Eksioglu	UofA
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	Using Data Analytics for Telehealth Utilization	Betul Cengil	UofA
<input type="checkbox"/>	11:15 AM			
<input type="checkbox"/>	11:45 AM			
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	Biomass Thermochemical Conversion - Catalytic Pyrolysis	Ashokkumar Misarilal Sharma	UALR
<input type="checkbox"/>	2:15 PM	Real-Time Stability Assessment in SST-Based Microgrids	Farzad Ferdowsi	ULL
<input type="checkbox"/>	2:45 PM	Renewable energy and evolving electric power landscape	Rajesh Sharma	ASU
	3:15 PM	Break		
<input type="checkbox"/>	3:30 PM	Mitigating Adverse Impacts of Increased EV Charging on Distribution Transformers	Masoud Kairimi	MSU
<input type="checkbox"/>	4:00 PM		Terrence Chambers	ULL
	4:30 PM	Adjourn		



Track H (Room 319): Ethics and Engineering Education -Silke Spiesshoefer (UofA), Chair				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Affirmative Scientific Support for Scholars in Energy Technologies (ASSSET)	Farzad Ferdowsi	ULL
<input type="checkbox"/>	9:30 AM		Silke Spiesshoefer	UofA
<input type="checkbox"/>	10:00 AM	Engaged and Active Learning Through Collaborative Online Lab Experiences	Selahattin Sayil	Lamar
	10:30 AM	Break		
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	Ethics	Keith Robinson	UALR
<input type="checkbox"/>	2:15 PM	Ethics	Keith Robinson	UALR
<input type="checkbox"/>	2:45 PM	Ethics	Keith Robinson	UALR
	3:15 PM	Break		
<input type="checkbox"/>	3:30 PM	Ethics	Keith Robinson	UALR
	4:00 PM	Adjourn		



Track I (Room 323): Power Systems - Juan Balda (UofA), Chair				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Short-term Electricity Price Point and Probabilistic Forecasts	Yong Fu	MSU
<input type="checkbox"/>	9:30 AM	DERMS (Distributed Energy Resource Management System)	Chris Long	AEP-SWEPCO
<input type="checkbox"/>	10:00 AM	SPP Grid Strength Assessment	Doug Bowman	SPP
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	Artificial Intelligence Methods for Transmission Line Fault Detection, Classification and Localization	Roy McCann	UofA
<input type="checkbox"/>	11:15 AM	power system decarbonization	Jian Shi	UH
<input type="checkbox"/>	11:45 AM		Juan Balda	UofA
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM		Simon Bian	Entergy
<input type="checkbox"/>	2:15 PM	Experimental Results of Traveling-Wave-Fault-Locator Testing	Prashanna Bhattarai	LA Tech
<input type="checkbox"/>	2:45 PM	Design and Analysis of a Time-Domain Incremental Quantity Distance Element in EMTP	Toby Russell	
	3:15 PM	Adjourn		



Track K (Room 417): Cyber Security - Chris Farnell (UofA), Chair				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM	Achieving Cyber Secure Inverter Based Generation	Alan Mantooth	UofA
<input type="checkbox"/>	9:30 AM	Combating Socio-Cognitive Security Threats: Challenges and Technological Solutions	Nitin Agarwal	UALR
<input type="checkbox"/>	10:00 AM	Understanding the Purdue Model for securing OT Networks	William Cox	USAF
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	Hack-proof Flash storage for ensuring security and end-user privacy	Biswajit Ray	UAH
<input type="checkbox"/>	11:15 AM	Truth and Deceit in Multimedia and Social Media	Andrew Sung	USM
<input type="checkbox"/>	11:45 AM		Uttam Ghosh	MMC
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM	AI-Enabled Analysis and Decision Making for Automating Vulnerability and Patch Management	Qingua Li	UofA
<input type="checkbox"/>	2:15 PM	Cybersecurity Overview of Distributed Energy Resources and Industrial Control Systems	Chris Farnell	UofA
<input type="checkbox"/>	2:45 PM	Non-Intrusive Cybersecurity Threat Sharing	Philip Huff	UALR
	3:15 PM	Adjourn		



Track L (Morning - Room 324): Big Data and AI - Henry Chu (ULL), Chair Track M (Afternoon - Room 324): Human Computer Interaction and Immersive Technologies – Aryabrata Basu , Chair				
Attended	Time	Topic	Presenter	Affiliation
<input type="checkbox"/>	9:00 AM		Henry	ULL
<input type="checkbox"/>	9:30 AM		Raju	ULL
<input type="checkbox"/>	10:00 AM	Transformer Language Model Based Causal Inference	Xiaowei	UALR
	10:30 AM	Break		
<input type="checkbox"/>	10:45 AM	The Internet of the Connected World	Samee	MSU
<input type="checkbox"/>	11:15 AM		Sahaj	UAB
<input type="checkbox"/>	11:45 AM		Wes	UAB
	12:15 PM	Lunch		
<input type="checkbox"/>	1:45 PM		Khoa Luu	UofA
<input type="checkbox"/>	2:15 PM	Augmenting Spatial Orientation of Pilots through Immersive, Peripheral Vision	Eduard Tudoreanu	UALR
<input type="checkbox"/>	2:45 PM	Digitalization of industry processes via multiple modes (e.g. VR/AR, interactive video) and its application for training development for Industry	Emily Wall	MSU
	3:15 PM	Break		
<input type="checkbox"/>	3:30 PM	Navigating a maze differently - a dissection of human spatial decision making in Immersive Virtual Reality	Aryabrata Basu	UALR
	4:00 PM	Adjourn		



Track N (Room 203): Student Presentations - , Chairs			
Time	Topic	Presenter	Affiliation
9:00 AM	Falsified data detection for security enhancement of Smart Inverters based on Machine Learning Techniques	Shayan Ebrahimi	ULL
9:30 AM	Investigation of Volt-VAr control parameter settings of Smart Inverters	Safayet Ullah	ULL
10:00 AM	Post-Natural Disaster Intelligent Energy Management	Samuel Yankson	ULL
10:30 AM	Break		
10:45 AM	An Enhanced RL-Aided Dual Active Bridge Converter for Electric Vehicle Charger	Maliha Mahazabeen	ULL
11:15 AM	Learning to Accelerate Globally Optimal Solutions to the AC Optimal Power Flow Problem	Fatih Cengil	UofA
11:45 AM	Ground Tire Rubber in Concrete	AbuSayedMohammad Akid	ASU
12:15 PM	Lunch		
1:45 PM	Soil Stabilization with Rice Rusk Ash	Fares Tarhuni	ASU
2:15 PM	Liquefaction Hazard Analysis of Northeast Arkansas	Rupesh Mahat	ASU
2:45 PM	MEC Based Collision Analysis for C-V2X communications	Avijit Sarker	UofM
3:15 PM	Break		
3:30 PM	Severity Analysis of Roadway Departure Crashes on Rural Two-lane Highways: Applying Fast and Frugal Tree with Association Rules Mining	Ahmed Hossain	ULL
4:00 PM	Automatic Safety Diagnosis in Connected Vehicle Environment	Di Wu	JSU
4:30 PM	Deep Learning Based Automatic Phase Reconstruction of Holograms Recorded by a Non-Telecentric Digital Holographic Microscope	Shash Patra	UM
5:00 PM	Adjourn		