

Time	Topic	Presenter
<b>Track A: Electrical and Computer Engineering - Alak Bandyopadhyay (AAM) &amp; Matthew Morrison (UOM), Chairs - Room Shelby 121</b>		
9:00 AM	Computation of Wave Equations and Their Applications	Alak Bandyopadhyay (AAM)
9:30 AM	Saving Time, Money, and Energy Through Compressed File Transfers in Mobile and Cloud Computing	Aleksandar Milenkovic (UAH)
10:00 AM	Energy-Efficient Sensing, Computing, and Communication for Future Connected World	Mohammad Haider (UAH)
10:30 AM	Break	
10:45 AM	ECE paves the information highway	Xiaoli Ma (GT)
11:15 AM	Spatial Functional Data Analysis for the Spatial-Spectral Classification of Hyperspectral Imagery	James Fowler (MSU)
11:45 PM	Programmable and Configurable Physical Computing	Jennifer Hasler (GT)
12:15 PM	Lunch	
1:45 PM	Two-dimensional devices - reliability and radiation effects	Andrew O'Hara (VU)
2:15 PM	CoCr-based Magnetic Thin Films: Image Processing and Nano-scale Magnetic Properties	Jafar Al Sharab (NSULA)
2:45 PM	Cooperative physical layer methods in network time synchronization for ad hoc and wireless sensor networks	Mary Ann Weitnauer (GT)
3:15 PM	Break	
3:30 PM	Software-based Detection of Recycled Flash Memory Chip	Biswajit Ray (UAH)
4:00 PM	Title not available for press	Sandip Das (KSU)
4:30 PM	Limitations and Application Specific Approaches for Automated Printed Circuit Board Reverse Engineering	Ulbert Botero (UFL)
5:00 PM	Adjourn	
<b>Track B: Civil, Coastal, and Environmental Engineering - Robert Whalin (JSU), Chair - Room Shelby 207</b>		
9:00 AM	Envisioning Resource-efficient Engineered Environmental Systems	Ganeswar Gude (MSU)
9:30 AM	Prospects of Rice Husk Ash (RHA) as a Supplementary Cementitious Material	Zahid Hossain (ASU)
10:00 AM	Seismic Hazard Mitigation in Memphis	Ashraf Elsayed (ASU)
10:30 AM	Break	
10:45 AM	A Hurricane Protection System for Houston/Galveston Bay Complex	Robert Whalin (JSU)
11:15 AM	Development of Innovative Bio-inspired Soil Improvement in Civil Engineering	Kejun Wen (JSU)
11:45 PM	Computational Neural Network-Based Modeling	Jacob Najjar (UM)
12:15 PM	Lunch	
1:45 PM	Application of Metagenomic Methods to the Analysis of Wastewater Biotreatment Systems	Ben Magbanua (MSU)
2:15 PM	Effect of Microbial Induced Calcite Precipitation Against Surface Erosion of Sandy Soils	Lin Li (JSU)
2:45 PM	Title not available for press	Aly M. Aly (LSU)
3:15 PM	Break	
3:30 PM	Title not available for press	Aly M. Aly (LSU)

<b>Track B: Civil, Coastal, and Environmental Engineering - Robert Whalin (JSU), Chair - Room Shelby 207</b>		
4:00 PM	Data-Driven Modeling and Assessment of Civil Infrastructures	Hongyu Zhou (UAH)
4:30 PM	TBA	TBA TBA
5:00 PM	Adjourn	
<b>Track C: Mechanical Engineering - Walt Holifield, Chair - Room Shelby 218</b>		
9:00 AM	Physical modeling of leaf scale and shrub scale fires	Babak Shotorban (UAH)
9:30 AM	Modal Vibration Analysis of Thick Visco-Elastic Cylinders	Hamid Hamidzadeh (TSU)
10:00 AM	Advancing manufacturing processes in the digital era	Judith Schneider (UAH)
10:30 AM	Break	
10:45 AM	A multiscale study of single crystal copper plate with octal orientation struck by a nickel projectile	Yucheng Liu (MSU)
11:15 AM	Alloy design for metal additive manufacturing	Amrita Mishra (UOM)
11:45 PM	Best practices in BIM Coordination and How to Get Clients to Understand	Jason Lowe (Barge)
12:15 PM	Adjourn	
1:45 PM	On the Degree of Disequilibrium Based Universal Automatic Constraints for the Rate-Controlled Constrained-Equilibrium Method	Fatemeh Hadi (TSU)
2:15 PM	Modeling and Analysis of Flexible Skin Structure for Camber Morphing Wing Technology	Bashir Alsaïdi (TSU)
2:45 PM	Measurement of delamination length of infused CFRP composites using optical fibers	Daniel Drake (MSU)
3:15 PM	Adjourn	
<b>Track D: Chemical, Petroleum, and Materials Engineering - Mayank Tyagi (LSU) &amp; Yu Lei (UAH), Chairs - Room Shelby 105</b>		
9:00 AM	In situ grown metal nanoparticle Catalysts: properties and control	Tae-Sik Oh (Auburn)
9:30 AM	Insights into Gas-Liquid Flow Systems Using Computational Fluid Dynamics (CFD) Simulations of Various Petroleum Engineering Applications	Mayank Tyagi (LSU)
10:00 AM	Title not available for press	James Knox (NASA)
10:30 AM	Break	
10:45 AM	Molecular Modeling of the Gas Separation Performance of Composite Ionic Polyimide + Ionic Liquid Membranes	Heath Turner (UA)
11:15 AM	Conversion of ethane to BTX over metal functionalized HZSM-5 catalyst: An insight into the kinetics	Yishi Xiang (MSU)
11:45 PM	Upgrading of natural gas using heterogeneous catalysis: From fundamentals to applied concepts!	Carlos Carrero Marquez (Auburn)
12:15 PM	Lunch	
1:45 PM	Atomistic Design of Nanostructured Architecture with Atomic Layer Deposition	Yu Lei (UAH)
2:15 PM	Energetics in two-dimensional materials: plasmon-induced carriers and nonlinear susceptibility	Donald Roper (UofA)
2:45 PM	Following the agglomeration and flocculation point of asphaltenes combining ultrasound and Electrochemical Impedance Spectroscopy	Jorge Moncada (UofA)
3:15 PM	Adjourn	

Symposium Track E: Aerospace Engineering - Robert Frederick (UAH), Chair - Room Shelby 158		
9:00 AM	Detecting a CubeSat in Close Proximity	Yang Cheng (MSU)
9:30 AM	Distributed Optical Sensing in Polymer Composites	Rani Sullivan (MSU)
10:00 AM	Propulsion Research and Aerospace Engineering Programs at the University of Alabama in Huntsville	Robert Frederick (UAH)
10:30 AM	Break	
10:45 AM	High-Order Shock-Fitting Solvers and Numerical Simulations of Hypersonic Non-Equilibrium Flows	Xiaowen Wang (UA)
11:15 AM	High-Speed Flow over Open Cavity and High-Resolution Numerical Scheme	Ovais Khan (Tuskegee)
11:45 PM	Fusion and fission/fusion hybrid propulsion concepts for rapid exploration of the solar system	Jason Cassibry (UAH)
12:15 PM	Lunch	
1:45 PM	Fast Aerodynamics with Fidelity	Roy Hartfield (Auburn)
2:15 PM	Overview of RS-25 Adaptation Hot-Fire Test Series for SLS, Status and Lessons Learned	Naveen Vetcha (UAH)
2:45 PM	Strain Distributions in Bonded Composites using Optical Fibers	Shuvam Saha (MSU)
3:15 PM	Break	
3:30 PM	Measurement of delamination length of infused CFRP composites using optical fibers	Daniel Drake (MSU)
4:00 PM	Incremental Steps Toward Space Flight Hardware	David Hewett (Dynetics)
4:00 PM	Adjourn	
Symposium Track F: Ethics and Engineering Education - Tom Reddoch (EPRI) Chair - Room Shelby 203		
9:00 AM	X, Y, and Z: Generational traits and educating the 21st century engineer	J. W. Bruce (TT)
9:30 AM	An 'Outside View' on Contemporary Engineering Education	David Connor (UAB)
10:00 AM	The Future of Engineering Education: Working through Disruption, Delusion, and Denial	Dale Callahan (UAB)
10:30 AM	Break	
10:45 AM	Engineering Education for a Generation Over-saturated with Knowledge	Silke Spiesshoefern (UofA)
11:15 AM	Experiential Engineering Curriculum development	Abidin Yildirim (UAB)
11:45 PM	Industry 4.0: Educational Requirements in Cybersecurity – an Airport Example	Andreas Deutschmann (DLR)
12:15 PM	Lunch	
1:45 PM	Historical Perspective and the Future of Electrical and Computer Engineering Education	Benedict Nwokolo (GSU)
2:15 PM	Multi-Institutional Approach in Delivering Shard Curricula for Next Generation Energy Workforce	Roy McCann (UofA)
2:45 PM	An Ethical Conversation	Griffin Pritchard (BELS)
3:15 PM	Break	
3:30 PM	An Ethical Conversation	Griffin Pritchard (BELS)
4:00 PM	An Ethical Conversation	Griffin Pritchard (BELS)
4:30 PM	An Ethical Conversation	Griffin Pritchard (BELS)
5:00 PM	Adjourn	

Symposium Track G: Power Systems Engineering - Sakis Meliopoulos (GT) and Roy McCann (UofA), Chairs - Room Shelby 103		
9:00 AM	Potential Applications of Power Electronics in Electric Power Distribution Systems	Juan Balda (UofA)
9:30 AM	Evolution of modern power systems	Ravi Gorur (UAH)
10:00 AM	Smart Distribution Course for 21 <sup>st</sup> Century Power Sector Workforce	Eltom Ahmed (UTC)
10:30 AM	Break	
10:45 AM	Challenges and Methods for Achieving >75% Renewable Energy Delivery	Roy McCann (UofA)
11:15 AM	Vault-based battery deployment in distribution networks	Farzad Ferdowsi (LSU)
11:45 PM	Control Coordination of Renewable Energy and Storage	Eduard Muljadi (Auburn)
12:15 PM	Lunch	
1:45 PM	A Centralized Storage Model for Distributed Photovoltaic Generation Systems	Rami Haddad (GSU)
2:15 PM	Condition Monitoring of a Campus Microgrid Element using Smart Sensors	Kaisar Khan (McNeese)
2:45 PM	Recent advances in calculation of the Voltage Collapse Point	Abdelrahman Karrar (UTC)
3:15 PM	Break	
3:30 PM	Resilient Power System Protection via Centralized Substation Protection	Sakis Meliopoulos (GT)
4:00 PM	Misoperation Analysis of Microprocessor Relay with Open Loop Transient Testing	Xiaoming Bian (Energy)
4:30 PM	Power System Fault Analysis	Mike McAnelly (PCS)
5:00 PM	Adjourn	
Symposium Track H: Power and Energy Engineering - Ebrahim Amiri (UNO), Chair - Room Shelby 205		
9:00 AM	Predictive Modeling for Ash Behaviors in Post-Boiler Equipment for Supercritical Coal-Fired Power Plant Applications	Kwangkook Jeong (ASU)
9:30 AM	Continuous Switching Reliability of Ultra-High Voltage SIC MOSFETS and IGBTs	Stephen Bayne (TTU)
10:00 AM	Device Engineering to Improve Efficiency and Stability of Organic and Perovskite Solar Cells	Dawen Li (UA)
10:30 AM	Break	
10:45 AM	Temporal Context Residential Power Consumption Anomalous Detection	Nur Sisworahardjo (UTC)
11:15 AM	Techniques for measurement and characterization of conducted EMI in power electronics	Andrew Lemmon (UA)
11:45 PM	The Emergence of Dual-Pole Synchronous Machines	Ebrahim Amiri (UNO)
12:15 PM	Lunch	
1:45 PM	High Power Density HTS Cables for Electric Transportation Applications – Opportunities and Challenges	Sastry Pamidi (FSU)
2:15 PM	Title not available for press	Thomas Habetler (GT)
2:45 PM	Title not available for press	TBA TBA
3:15 PM	Adjourn	

Symposium Track I: Biomedical and Biotechnology Engineering - Steve Elder (MSU), Chair - Room Shelby 216		
9:00 AM	A collagen-stabilizing approach to the treatment of osteoarthritis	Steve Elder (MSU)
9:30 AM	New Algorithms for Compressed Sensing of MRI: WTWTS, DWTS, WDWTS	Srivarna Janney (KSU)
10:00 AM	Engineering the Genome: Advances in Understanding and Manipulating Genetics	Eric Mandenhall (UAH)
10:30 AM	Break	
10:45 AM	Title not available for press	Xiaoguang Liu (UAB)
11:15 AM	The role of circulating exosomes in ischemic heart disease	Gangjian Qin (UAB)
11:45 PM	Computational Modeling for Enabling Therapy Guidance: Applications in Soft-Tissue	Michael Miga (VU)
12:15 PM	Lunch	
1:45 PM	Biomaterials Engineering for Molecular and Cellular Immunotherapies	Kyung-Ho Roh (UAH)
5:00 PM	Adjourn	
Symposium Track J: Industrial and Systems Engineering - Randy Buchanan (ERDC) and Paul Collopy (UAH), Chairs - Room Shelby 109		
9:00 AM	Incorporating Reliability and Set-Based Design into Life Cycle Cost models for Tradespace Analysis	Christina Rinaudo (ERDC)
9:30 AM	Systems Engineering Implications of the Digital Twin	Dale Thomas (UAH)
10:00 AM	Development of a Manufacturability Assessment Methodology for Tradespace Analytics	Larry Dalton (MSU)
10:30 AM	Break	
10:45 AM	Approximating the Pareto Set using Surrogate Models	Jonathan Storey (MSU)
11:15 AM	The Investigation of using Virtual Reality for conducting Data Analytics of Tradespace Datasets	Parker Jones (MSU)
11:45 PM	Enhancing the Understanding of Queueing Theory through Virtual Reality Training Tutorials	Michael Hamilton (MSU)
12:15 PM	Lunch	
1:45 PM	A Reimagining of Systems Engineering through Adoption of Art Methods	Bryan Mesmer (UAH)
2:15 PM	Preliminary Analysis of Value Contributed by Systems Engineers to Organizations	Garima Bhatia (UAH)
2:45 PM	Content Analysis of NASA's NextStep 2 Project to Elicit Preferences	Giulia Palma (UAH)
3:15 PM	Break	
3:30 PM	Complexity estimation using SysML	Victor Lopez (UAH)
4:00 PM	Examining Engineered System Through Holistic Value vs. Performance Metric Lenses: An Application to Launch	Christopher White (UAH)
5:00 PM	A Comprehensive NASA Projects Value Model: Describing Value Contributions from Knowledge	Joseph Clerkin (UAH)
5:30 PM	Adjourn	

Symposium Track K: Cyber Security - Yuliang Zheng (UAB) and Letha Etzkorn (UAH), Chairs - Room Shelby 107		
9:00 AM	Cybersecurity in Blockchains	Cheryl Ann Alexander (THS)
9:30 AM	Side-Channel Attack Mitigation using Asynchronous Circuits	Jia Di (UofA)
10:00 AM	Binary Analysis with Symbolic Execution	Ben Denton (DESE)
10:30 AM	Break	
10:45 AM	Dynamic Warning Design	Feng Zhu (UAH)
11:15 AM	Cybersecurity in Education: Cloud, Software Defined Network, and Intrusion Detection Modules	Letha Etzkorn (UAH)
11:45 PM	Using Deep Learning in identifying network intrusions	Rajeev Agrawal (ERDC)
12:15 PM	Lunch	
1:45 PM	Design and Synthesis of Trusted FeFET-Based Microelectronics for DO-254 Assurance	Matthew Morrison (UOM)
2:15 PM	Ensuring Trust and Integrity in Modern Semiconductor Supply Chain	Tauhid Rahman (UAH)
2:45 PM	Big Data in Cybersecurity	Lidong Wang (MSU)
3:15 PM	Break	
3:30 PM	User-Centered Cyber Security	Venkata Atluri (AAM)
4:00 PM	Model-driven Automated and Adaptive Deployment Techniques for Secure Cyberinfrastructures	Uttam Gosh (VU)
4:30 PM	Contents Security and Multimedia Forensics	Andrew Sung (USM)
5:00 PM	Adjourn	
Symposium Track L: Student Presentations - Chris Maggio (MC) and Jennifer English (UAH), Chairs - Room Shelby 150		
9:00 AM	Microgrid Energy Delivery System Design using ETAP Simulation	Chukwuemeka Ike (McNeese)
9:30 AM	Investigating Radar Cross Section Estimation via Deep Learning	Samantha Tidrick (MC)
10:00 AM	Cyber Attack Reconstruction in Cyber Physical Dynamic Systems Using Sliding Mode Observation Algorithms	Shamila Nateghi (UAH)
10:30 AM	Break	
10:45 AM	Cyber security of a power system under Simultaneous Attacks	Bhuvanewari Ramachandran (UWF)
11:15 AM	Towards a Fully Open and Secure Programmable Logic Controller	Thiago Alves (UAH)
11:45 PM	Combatting AMS counterfeits through electrical testing	Sreeja Chowdhury (UFL)
12:15 PM	Lunch	
1:45 PM	Analysis of Electric Utility Machine Learning Development Utilizing Advanced Metering Infrastructure Datasets for	Wes Conwell (UAB)
2:15 PM	Economic Impacts for Mississippi's Inland Waterway Systems Year Two Study	Emily Wall (MSU)
2:45 PM	Use of Nanoclays as Alternatives of Polymers Toward Improving Performance of Asphalt Binders	M M Tariq Marshed (ASU)
3:15 PM	Break	
3:30 PM	In-Plane Modal Vibration Analysis of Double Segment Rotating Disk	Ehsan Sarfaraz (TSU)
4:00 PM	Generalized Dynamics and control of 2 DOF Five Link Planar Robot	Sai Susheel Kode (UAH)
4:30 PM		
5:00 PM	Adjourn	