

| Time | Topic | Presenter |
|---|--|-----------------------------|
| Track A: Electrical and Computer Engineering - Alak Bandyopadhyay (AAM) & Matthew Morrison (UOM), Chairs - Room Shelby 121 | | |
| 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 | |
| | | |
| Track B: Civil, Coastal, and Environmental Engineering - Robert Whalin (JSU), Chair - Room Shelby 207 | | |
| 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) |

| Track B: Civil, Coastal, and Environmental Engineering - Robert Whalin (JSU), Chair - Room Shelby 207 | | |
|--|--|---------------------------------|
| 4:00 PM | Data-Driven Modeling and Assessment of Civil Infrastructures | Hongyu Zhou (UAH) |
| 4:30 PM | TBA | TBA TBA |
| 5:00 PM | Adjourn | |
| Track C: Mechanical Engineering - Walt Holifield, Chair - Room Shelby 218 | | |
| 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 Alsaidi (TSU) |
| 2:45 PM | Measurement of delamination length of infused CFRP composites using optical fibers | Daniel Drake (MSU) |
| 3:15 PM | Adjourn | |
| Track D: Chemical, Petroleum, and Materials Engineering - Mayank Tyagi (LSU) & Yu Lei (UAH), Chairs - Room Shelby 105 | | |
| 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 st 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 | |