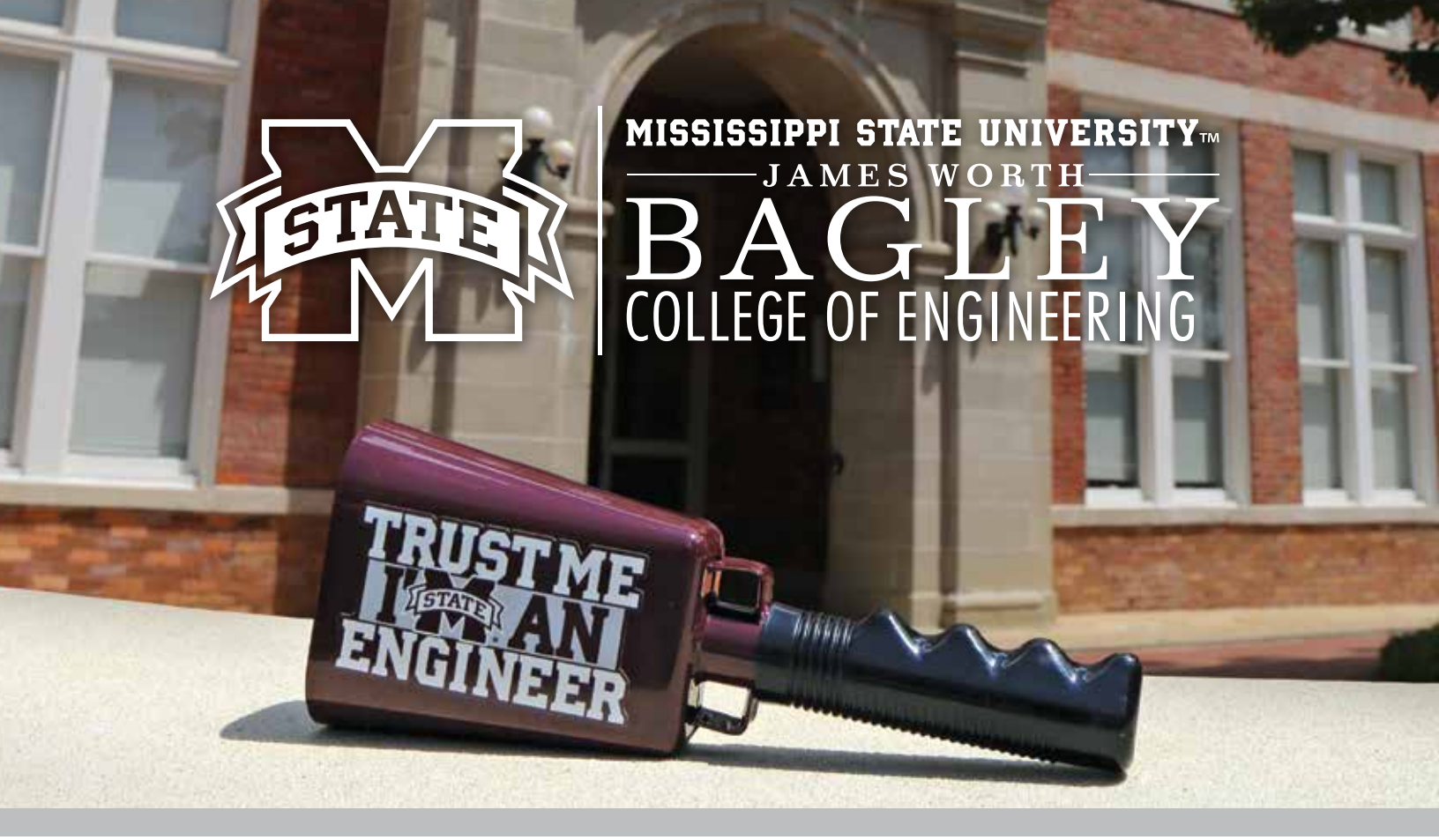
MISSISSIPPI STATE UNIVERSITY
JAMES WORTH BAGLEY COLLEGE OF ENGINEERING

ASEE-SE 2025 CONFERENCE

The Lifelong Engineer:
Enduring, Meaningful Impacts in Engineering Education

March 9-11, 2025

ASEE AMERICAN SOCIETY FOR ENGINEERING EDUCATION



MISSISSIPPI STATE UNIVERSITY™

JAMES WORTH

BAGLEY

COLLEGE OF ENGINEERING

THE Bagley College of Engineering
at Mississippi State University

is **YOUR** place for
the future of engineering.

15 undergrad
13 master's
12 doctoral
DEGREES

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CONFERENCE SCHEDULE

SUNDAY, MARCH 9, 2025		
12:00 P.M. – 6:00 P.M.	Registration and Check-in open	The Mill, Main Hallway
3:30 P.M. – 4:30 P.M.	Research center tour	Raspet Flight Research Lab 114 Airport Rd, Starkville
3:30 P.M. – 5:30 P.M.	Executive board meeting	The Mill, Dunn Room
6:00 P.M. – 8:30 P.M.	Welcome social	The Little Dooey 100 Fellowship St, Starkville
MONDAY, MARCH 10, 2025		
7:00 A.M. – 5:00 P.M.	Registration and Check-in open	The Mill, Main Hallway
7:30 A.M. – 8:30 A.M.	Breakfast and business meetings *Generously sponsored by Airbus*	The Mill, Ballroom
8:40 A.M. – 9:45 A.M.	Welcome and plenary session	The Mill, Ballroom
9:10 A.M. – 9:40 A.M.	Student poster setup	The Mill, Main Hallway
9:45 A.M. – 10:00 A.M.	Break	The Mill, Main Hallway
9:40 A.M. – 11:40 A.M.	Student poster competition	The Mill, Main Hallway
10:00 A.M. – 11:20 A.M.	Technical Session 1	The Mill, Rooms 1302 and 1303
11:20 A.M. – 11:40 A.M.	Break	The Mill, Main Hallway
11:40 A.M. – 1:00 P.M.	Lunch and Thomas C. Evans Paper Presentation *Generously sponsored by TVA*	The Mill, Ballroom
1:00 P.M. – 2:00 P.M.	Workshops and roundtable discussions	The Mill, Cleveland Gallery, Dunn Room, McDaniel Room, Rooms 1302 and 1303
2:00 P.M. – 3:20 P.M.	Technical Session 2	The Mill, Rooms 1302 and 1303, McDaniel Room, Clark Room
3:20 P.M. – 3:40 P.M.	Refreshment break *Generously sponsored by Mr. Richard Cannon*	The Mill, Main Hallway
3:40 P.M. – 5:00 P.M.	Technical Session 3	The Mill, Rooms 1302 and 1303, McDaniel Room, Clark Room
5:30 P.M. – 8:30 P.M.	Dinner and awards ceremony	The Mill, Ballroom
TUESDAY, MARCH 11, 2025		
7:30 A.M. – 10:00 A.M.	Registration and Check-in open	The Mill, Main Hallway
7:30 A.M. – 8:30 A.M.	Breakfast and business meetings	The Mill, Ballroom
8:40 A.M. – 10:00 A.M.	Technical Session 4	The Mill, Rooms 1302 and 1303, McDaniel Room, Clark Room
10:00 A.M. – 10:10 A.M.	Break	The Mill, Main Hallway
10:10 A.M. – 11:30 A.M.	Technical Session 5	The Mill, Rooms 1302 and 1303, Clark Room
11:40 A.M. – 12:40 P.M.	Lunch and business meetings	The Mill, Ballroom

2025 HOST SITE COORDINATORS

Morgan Green, Ph.D.
Assistant Teaching Professor
Mechanical Engineering
Mississippi State University

Maryam Mirabolghasemi, Ph.D.
Associate Professor
Petroleum Engineering
Mississippi State University

We welcome you to Mississippi State University (MSU) and the 2025 American Society for Engineering Education Southeastern Section Conference! We are excited to share a taste of the great times that Starkville and MSU have to offer.

Our local arrangements team has been at work for over a year to bring this conference to fruition. None of this is possible without their service. We met frequently to share updates on our own tasks and to get feedback and assistance from others on the team. We are grateful for their dedication to hosting a successful conference that shows off the wonderful things happening in the Bagley College of Engineering and at Mississippi State University.

- **Amy Barton** coordinated the registration table and swag bags and gathered materials for the conference booklet.
- **Madison Butler** secured corporate sponsorships to help offset the cost of hosting a conference of this magnitude.
- **Seamus Freyne** helped plan and maintain the budget.
- **Aaron Grimes** organized the Little Dooey dinner and social, the Raspet Flight Center tour, the plenary and keynote speakers, and shuttles throughout the event.
- **Jenna Johnson** helped organize and plan the signage and other display needs.
- **Ben Moore** and **Michael Lane** designed and maintained the registration website.
- **Alexis Nordin** helped plan and maintain the budget, kept MSU faculty and students in the loop about the conference, and assisted with a wide range of miscellaneous tasks.
- **Kristen Polk** designed and assembled the conference program, maintained our website, and created other promotional materials.
- **Shelly Sanders** and **Haifeng Wang** coordinated the logistics for the Student Poster Competition and managed the needs and setup at the Mill Conference Center.

We also thank the ASEE-SE officers for their time and effort that went into planning specific areas of this conference: Technical Program Chair Nancy Moore, Undergraduate Research and Design Chair Michael Potter, Awards and Recognition Chair M.A. Karim, and Proceedings Editor John Brocato.

We welcome and thank the attendees, undergraduate poster presenters, paper presenters, Division chairs, and ASEE-SE Board for their part in making this conference possible. Thank you for sharing your experiences and joining the effort to improve engineering education across the Southeast.

Morgan Green and **Maryam Mirabolghasemi**
ASEE-SE Conference Host Co-Chairs

WELCOME!

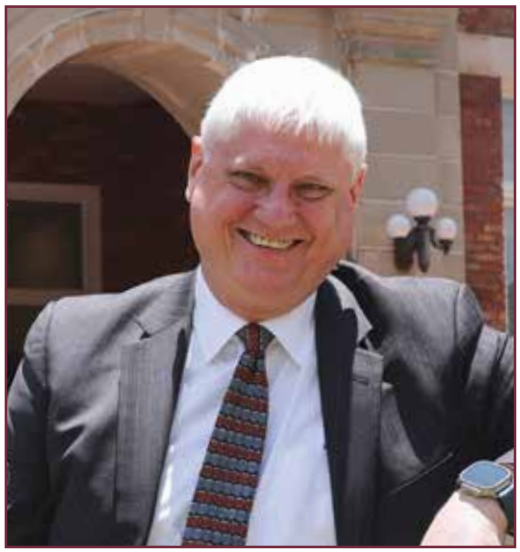
Welcome attendees, colleagues, and guests,

As President of the American Society for Engineering Education Southeastern Section, I would like to extend a warm welcome to each of you attending the 2025 ASEE Southeastern Section Conference hosted by Mississippi State University. I sincerely thank the organizers, presenters, and participants for their collective efforts in bringing this conference to life.

This annual conference offers a rare opportunity for like-minded individuals to connect, exchange ideas and learn from one another. The conference's rich program features renowned keynote speakers, conference paper presentations, interactive roundtable discussions, thought-provoking panel discussions, an undergraduate student poster competition, and ample networking opportunities. This event offers a unique platform for advancing the field of engineering education.

I encourage you to actively engage with your fellow attendees, share your expertise, and explore new ideas resulting from your participation here. May this conference serve as a source of inspiration, may it cultivate new collaborations, and establish meaningful impacts for you in engineering education.

Sincerely,
Natalia Cardelino, Ph.D.
President, ASEE Southeastern Section



Welcome to the Bagley College of Engineering and Mississippi State University!

We are excited to have you join us for the ASEE-SE Conference. While here, I encourage you to explore our campus and engage with our talented faculty and staff. With more than 5,000 students, the Bagley College of Engineering is the largest college at MSU. We offer 15 undergraduate degrees, including the first bachelor's degree in artificial intelligence in the SEC, along with more than 20 graduate degrees across our eight academic departments. We are also home to numerous research centers, including the Center for Advanced Vehicular Systems, the Institute for Clean Energy Technology, the Performance Computing Collaboratory, and many more.

Our students are actively engaged in national and international competitions ranging from EcoCAR, which takes autonomy to the next level, to Space Cowboys, which is building a rocket to reach 30,000 feet in the atmosphere. Our faculty are engaged in cutting-edge research covering everything from cellular engineering to materials to augmented and virtual reality.

While you're here, we hope you'll also explore downtown Starkville, which was recently ranked by *USA Today* as the Best Small Town in the South. There are many wonderful places to eat and shop.

If you have any questions while you're here, please don't hesitate to ask. Our planning committee has dedicated many long hours to make this conference informative and entertaining, and we want you to gain as much as you can from it.

Robert A. Green, Ph.D., PE, F.NSPE
Interim Dean, James Worth Bagley College of Engineering

SPEAKERS

Dr. Asim Ali, Executive Director of the Biggio Center for the Enhancement of Teaching and Learning

As the Executive Director of the Biggio Center for the Enhancement of Teaching and Learning, Dr. Asim Ali advances the center's mission of providing professional development programs, services, and resources to enhance instructional innovation and support scholarly and creative activities. Ali oversees a team of more than 90 professionals, graduate students, and staff members across the center's various units, which include Auburn Online, educational development, instructional technology, testing services, and Engaged and Active Student Learning, or EASL, classrooms, and classroom buildings.

Dr. Ali co-leads Auburn's augmented and virtual reality initiative, AUX, in collaboration with the Office of Information Technology. Dr. Ali also leads work on artificial intelligence for the Office of the Provost and the AI@AU Initiative to build capacity for understanding and implementing AI in teaching and learning.

As the founding Director of Auburn Online from 2014-2019, Dr. Ali strengthened the University's role in eLearning by providing central resources to support faculty in the development and instruction of online education, expanding the University's online course offerings by more than 300 percent. Under Dr. Ali's leadership, Auburn Online launched the institution's first fully online degree completion programs in 2018. In addition, Dr. Ali and his staff recently worked with faculty to develop support services and courses for Auburn First, the University's revised dual enrollment program.

Dr. Ali holds a bachelor's degree in software engineering, a master's degree in information systems management, and a Ph.D. in adult education from Auburn University. He lives in Auburn with his wife and three children.

Hagan Walker, Co-founder and CEO of Glo®

Hagan Walker is the Co-founder and CEO of Glo® – an idea turned company that was born out of a classroom project at Mississippi State University. After graduating in 2015, Hagan turned down an offer with Tesla Motors to pursue Glo® full-time, patenting a liquid-activated light up circuit, which is the main technology behind Glo's two brands, Glo Cubes® and Glo Pals®.

Glo Cubes® are liquid-activated light up drink cubes and Glo Pals® are liquid-activated light up sensory toys for children. Since inception in 2016, Glo® has sold more than 4 million products to customers in 36 countries and their products can be found in more than 1,400 retailers throughout the North America, including Macy's, Nordstrom, SeaWorld, and many others.

Hagan is a private pilot, has skydived more than once, and has a 11-year-old Irish Setter named Canelo.

Glo® is based in Starkville, Mississippi where all products are developed, packaged, and shipped. The company now has 27 employees and recently moved into their new corporate headquarters – a $1.4 million renovation of an historic theater in downtown Starkville, Mississippi. Glo® was just named number 282 on the *Financial Times'* Fastest Growing Companies in America.

TECHNICAL SESSIONS

MONDAY, MARCH 10 | TECHNICAL SESSION 1 | 10:00 A.M. – 11:20 A.M.

LOCATION	Room 1302	Room 1303
DIVISION	Artificial Intelligence I	Electrical Engineering and Computer Science
MODERATOR	Adam Barnes	Li Zhang
10:00 – 10:16	Educating Engineers in the Design of AI-Enabled Agriculture Robots: From Concept Development to Field Implementation *Muhammad Hassan Tanveer, Rizwan Patan, Carrington Chun, Razvan Cristian Voicu and Adeel Khalid*	Bridging Theory and Practice: Undergraduate Engagement in Computer Vision and Robotics *Ayush Vasu Gowda, Daniel Raviv, and Juan David Yepes*
10:16 – 10:32	AI Unleashed: Navigating Ethical Integration of Generative Tools in an Undergraduate Classroom *Bryn Elizabeth Seabrook*	Teacher-Guided Project-Based Coding Practice Enhance High Level Programming Language Learning *Chaohui Ren, Cheryl Seals, and Karen Nix*
10:32 – 10:48	Generative AI Tools in Teaching and Educational Research in Engineering *Adeel Khalid and Sanjeev Adhikari*	Enhancing Student Engagement in Electrical Engineering: The Impact of Hands-On Learning Tools on Student Engagement *Shobhit Aggarwal and Gregory J. Mazzaro*
10:48 – 11:04	Project-Based Learning and the AI4K12 Framework in High School AI Curriculum: A Systematic Review *Erin Bosarge*	
11:04 – 11:20	AI-Human Transference Learning and Assessment: Optimizing Knowledge Transfer and Understanding through AI-Generated Contextualization *Razvan Cristian Voicu, Muhammad Hassan Tanveer, and Ayse Tekes*	Performance Unveiled: Comparing Lightweight Devices Testbed and Virtual Machines for Edge Computing *Faiza Akram, Andrew Zheng, April Guo-Yue, Cooper Medved, Claire Johnson, Asad Waqar Malik, and Samee U. Khan*

MONDAY, MARCH 10 | TECHNICAL SESSION 2 | 2:00 P.M. – 3:20 P.M.

LOCATION	Room 1302	Room 1303	McDaniel Room	Clark Room
DIVISION	Mechanical Engineering	Technical Communication	Undergraduate Research and High Impact Practices	Instructional Design I
MODERATOR	Adam Piper	Cecelia Wigal	Kenneth Marek	Priscilla Hill
2:00 – 2:16	Development Of A New Course: Control Design for Autonomous Vehicles Using A Quadcopter As The Learning Platform *Oguzhan Oruc, Andrew B. Williams, Kevin Skenes, and Eva Singleton*	Understanding How ECE Senior Undergraduates Perceive Their Strengths and Weaknesses in Individual vs. Collaborative Writing *Alexis P. Nordin*	Exploration of Collaborative Design Spaces: Student Engineering Interactions and Workflows in Product Development *Frederick Rowell, Todd Schweisinger, and John R. Wagner*	Exploring Engineering Students' Perspectives of Instructors' Test Beliefs and Behaviors: A Secondary Data Analysis by Current Undergraduate Engineering Students *Maya Al Shanti, Thiha Myat Thu, and Kai Jun Chew*
2:16 – 2:32	An independent study on designing and building of an ASTM D5470 standard apparatus for testing thermal performance of various materials *Hammad Afzal Quddus, Landon James Yarbrough, Megan Elizabeth Batchelor, and Chandan Roy*	Generative AI in Engineering: Tool or Trouble? *Claire Lynn McCullough and Mike Dalton*	A Mercer on Mission (MOM) to Identify Educational Needs through Collaborative Engagement *Abby Anne McDowell, Sarah K. Bauer, and Amro Khasawneh*	Using Modeling Activities to Engage Students in Learning *Li Zhang*
2:32 – 2:48	Development of a Heat Sink-Focused Heat Transfer Laboratory for Mechanical Engineering Education *Megan Elizabeth Batchelor and Chandan Roy*	Better Student Presentations: A Mini-Course in Visual Design Principles to Turn Engineering Students Into More Effective Communicators Immediately *Phyllis Beck and Alexis P. Nordin*	Interdisciplinary Undergraduate Research in Prosthetic Hand Development: Bridging Mechanical and Biomedical Engineering *Lianjun Wu, Belle Lin, Melanie L. McElroy, Jordi Riera Shephard, Michael Norenberg, Dorina Marta Mihut, and Arash Afshar*	Engineering Student Preferences on Homework Grading and Exam Preparation *Gafar Abbas Elamin*

MONDAY, MARCH 10 | TECHNICAL SESSION 2 | 2:00 P.M. – 3:20 P.M.

LOCATION	Room 1302	Room 1303	McDaniel Room	Clark Room
DIVISION	**Mechanical Engineering**	**Technical Communication**	**Undergraduate Research and High Impact Practices**	**Instructional Design I**
MODERATOR	**Adam Piper**	**Cecelia Wigal**	**Kenneth Marek**	**Priscilla Hill**
2:48 – 3:04	A Systematic Teaching Method for Modeling, Simulation and Control of Quadrotor Uncrewed Aerial Vehicles *Oguzhan Oruc, Andrew B. Williams, Kevin Skenes, and Eva Singleton*	Fast-Track to Research Writing Mastery: A 9-Week Intensive for Graduate Students *Shenghua Wu, Min-Wook Kang, John Cleary, and Lisa LaCross*	Programming Projects for First-Time Coders: Using Visualization to Learn Logic *Brett Freidkes*	Enhancing Student Engagement in Numerical Methods: The Impact of Alternative Grading Practices *Vivek Singhal*
3:04 – 3:20	Relating Kinetic Energy Changes to Power Generation in a Mechanical Engineering Wind Turbine Lab *Chuck H. Margraves, Kidambi Sreenivas, Trevor S. Elliot, and Lance Isaac Rose*	On teaching technical writing in an introduction to engineering design class *Gustavo Molina*	Understanding the Impact of an International Service-Learning Trip to Belize on Mental Health: A Case Study of Students and Faculty *Abby Anne McDowell, Sarah K. Bauer, and Amro Khasawneh*	

MONDAY, MARCH 10 | TECHNICAL SESSION 3 | 3:40 P.M. – 5:00 P.M.

LOCATION	Clark Room	Room 1302	Room 1303	McDaniel Room
DIVISION	**K-12 and First Year Students**	**Civil, Construction, and Geotechnical Engineering I**	**Bioengineering, Renewable Energy, and Student Success**	**Program Development I**
MODERATOR	**Erin Bosarge**	**Shenghua Wu**	**Claire McCullough**	**Adaline Buerck**
3:40 – 3:56	An Experience Report on Teaching Quantum Key Distribution to Incoming College Freshmen *Abbas Attarwala, Spencer Matthew Pollard, and Jaime Raigoza*	Construction and Engineering Faculty Internships: A Reflective Case Study *Kenneth Stafford Sands*	WIP: Evaluating the Impacts of an Integrated, Project-based Approach to Biomedical Engineering Laboratory Teaching *Sierra Milligan and John Ray Morelock*	Exploring Foundry-Guided Holistic and Interdisciplinary Communication Strategies for Engineering Education *Robby Sanders, Andrea Arce-Trigatti and Pedro E. Arce*
3:56 – 4:12	Impact of an Interdisciplinary Engineering Design Project on First Year Students *Valmiki Sooklal and Sandip Das*	Design Concepts for Pre-Engineering Students - Endurance Vessel Boat and Bridge Building Projects *Mariam Rezai and Redahegn Sileshi*	Cost-Reduction of Solar Power Plants by Utilizing Plant Byproducts *Jack Cuilla and Fazil T. Najafi*	Building Strong Communities: Exploring Qualitative Data on Virtual Learning Support Structures to Support Non-Traditional Groups in Foundational Engineering Courses. *Kimberly A. Luthi, David Paul Harvie, John K. Wilson, and Monica Surrency*
4:12 – 4:28	Fostering Early-Stage Design Thinking: A Hands-On Design Exercise for Freshman Engineering Students *Sylmarie Davila-Montero*	An Investigation into the Effectiveness of Web-based Pre-Class Reading Responses *Simon Thomas Ghanat, William J. Davis, Tess Doeffinger, Anthony Songer, and Mostafa Batouli*	Sustainable Cities Using Renewable Energy a Case Study of a Renewable City *Omar McFarlane Sweeney, Vani Ruchika Pabba, and Fazil T. Najafi*	Navigating Pathways: Qualitative Insights into Personal and Professional Trajectories of Non-Traditional Groups across Engineering-Related Academic Disciplines *Michael Kosloski, Bettina Mrusek, and Kimberly A. Luthi*

MONDAY, MARCH 10 | TECHNICAL SESSION 3 | 3:40 P.M. – 5:00 P.M.

LOCATION	Clark Room	Room 1302	Room 1303	McDaniel Room
DIVISION	**K-12 and First Year Students**	**Civil, Construction, and Geotechnical Engineering I**	**Bioengineering, Renewable Energy, and Student Success**	**Program Development I**
MODERATOR	**Erin Bosarge**	**Shenghua Wu**	**Claire McCullough**	**Adaline Buerck**
4:28 – 4:44	Create your 3D Eye: A Lesson Module for Grades 6-8 from ImageSTEAM Teacher's Workshop *John M. Mativo, Ramana Pidaparti, and Jarron Gravesande*	A Comparative Analysis of Primavera P6 and Industry Alternatives for Construction Management and Scheduling *Ashish Sunny Abraham, Rajarajan Subramanian, Sofia M. Vidalis, and Fazil T. Najafi*	Math Placement Testing: Performance and Persistence in Civil Engineering *James C. Squire, Matthew K. Swenty, and Charles D. Newhouse*	Engineering Student Retention: Integrating Corporate Onboarding Practices with Social Identity and Self-Determination Theories *Hai T. Ho and Scott J. Tippens*
4:44 – 5:00	Creating Opportunity from Challenge: A Virtual Approach to Building STEM Confidence and Skills *Frank Andrasik, Bashir Morshed, and Robert W. Hewitt*	A Mobile Wall Mockup (MWM) as a Learning Tool for Construction and Engineering Education *Andrew Hughes and Kenneth Stafford Sands*	Boosting Programming Success for Diverse, Large Engineering Classes: Game-Based Visualization and Phased Assessment in Computing Education *Nilanjana Raychawdhary, Chaohui Ren, and Cheryl Seals*	Improving Engineering Education Through Characterization and Evaluation of Educational Technologies *Daniel Hernandez, Ariadna Mendoza, Xiaofeng Tan, Kathryn Bridson, and Pegah Farshadmanesh*

TUESDAY, MARCH 11 | TECHNICAL SESSION 4 | 8:40 A.M. – 10:00 A.M.

LOCATION	Room 1302	Room 1303	McDaniel Room	Clark Room
DIVISION	Instructional Design II	Laboratories	Capstones	Civil, Construction, and Geotechnical Engineering II
MODERATOR	Kenneth Sands	Chandan Roy	Chuck Margraves	John Brocato
8:40 – 8:56	Impact of Attendance on Student Performance in Environmental Engineering Courses after the End of COVID-19 Intervention: A Case Study *M. A. Karim*	Development of a Software Tool to Improve Educational Outcomes in a Time Constant Measurement Experiment *Kenneth Marek*	Comparison of Teamwork Assessment Methods in Engineering Classes *Adam Barnes*	A Gender-based Comparative Analysis of Motivations and Challenges in Construction Education *Saeed Rokooei, George D. Ford, and Read Allen Robertson*
8:56 – 9:12	Multiple Instructors in a Flipped Classroom Environment *Kari J. Lippert and Sean Walker*		Capstone Projects in Virginia Civil Engineering Programs: A Comprehensive Review of Practices and an assessment of Virginia Military Institute's Outcomes *Rebekah Martin, Kacie Caple D'Alessandro, Charles D. Newhouse, and Tanjina Afrin*	The Case for a Separate FE Exam for Construction Engineering: Addressing Curriculum Discrepancies and Student Performance *Nahid Vesali and Mostafa Batouli*
9:12 – 9:28	Weekly Quizzes In Lieu of Homework *Anna K. T. Howard and Nicholas Garcia*	Mini-Laboratory Activities for Observing Electromagnetic Fields in a Required Undergraduate Course for Electrical Engineers *Gregory J. Mazzaro*	Application of a House of Quality Intervention in an Engineering Capstone Design Course *Nathan John Washuta, Deirdre D. Ragan, and James Righter*	Infusing Climate Concepts into Geotechnical Engineering Lessons *Scott Curtis and Simon Thomas Ghanat*

TUESDAY, MARCH 11 | TECHNICAL SESSION 4 | 8:40 A.M. – 10:00 A.M.

LOCATION	Room 1302	Room 1303	McDaniel Room	Clark Room
DIVISION	**Instructional Design II**	**Laboratories**	**Capstones**	**Civil, Construction, and Geotechnical Engineering II**
MODERATOR	**Kenneth Sands**	**Chandan Roy**	**Chuck Margraves**	**John Brocato**
9:28 – 9:44	Implementation of MyOpenMath in Chemical Engineering Instruction *Priscilla J. Hill and Bill B. Elmore*	Empowering Undergraduates with NLP: Integrative Methods for Deepening Understanding through Visualization and Case Studies *Nilanjara Raychawdhary, Sutanu Bhattacharya, Chaohui Ren, and Cheryl Seals*	Capstone Design Experience at Southern Arkansas University (SAU)-The Model, Implementation, and Relevance in ABET Accreditation Process. *Lionel Hewavitharana and Mahbub K. Ahmed*	Student-Focused Videos for Civil Infrastructure Education and Promotion *Montana Jane Lang, Taylor Cagle, and Isaac L. Howard*
9:44 – 10:00	The Effectiveness of Multiple-Attempt-Testing in Upper Engineering Classes: Kinematics of Mechanisms and Introduction to Vibrations and Controls *Marino Nader*	Innovative Approaches to Medical Device Design Education: A Collaborative Industry-Academia Model *Kenan Baltaci and Vivek Singhal*	Implementation of Multidisciplinary Senior Design Projects within Single-discipline Course Section Framework *Michael V. Potter and Lorna Cintron-Gonzalez*	Augmented Reality for Teaching Rebar Configurations: Improving Comprehension and Student Engagement *Sultan Al Shafian, Da Hu, Jayhyun Kwon, and Adam Kaplan*

TUESDAY, MARCH 11 | TECHNICAL SESSION 5 | 10:10 A.M. – 11:30 A.M.

LOCATION	Room 1302	Room 1303	Clark Room
DIVISION	Instructional Design III	Program Development II	Artificial Intelligence II
MODERATOR	Bryn Elizabeth Seabrook	Seamus Freyne	Todd Schweisinger
10:10 – 10:26	A Cause-and-Effect Approach to Empowering Engineering Students *Mazen I. Hussein*	Mapping the Path to KEEN Fellowships: Trends, Insights, and Impacts from 2020-2024 *Simon Thomas Ghanat, Nahid Vesali, and Mostafa Batouli*	AI-Assisted Grading - A Study on Efficiency and Fairness *Rajarajan Subramanian, Sofia M. Vidalis, Vani Ruchika Pabba, and Fazil T. Najafi*
10:26 – 10:42	Fostering Entrepreneurial Mindsets: Designing Foundry-Guided Strategies to Develop Interdisciplinary Skills in Student Teams *Robby Sanders, Andrea Arce-Trigatti and Pedro E. Arce*	Pilot Strategy to Enhance Mechanical Engineering Student Retention Through Active Academic Advising and Early Engagement *JuEun Lee and Joshua Paul Steimel*	Call to Action! *Sally J. Pardue and Anna K. T. Howard*
10:42 – 10:58	Emotional Intelligence for Aspiring Project Engineers *Eva Singleton*	Transforming Teaching Evaluations One Department at a Time *Adam Piper, Jenna Johnson, and Daniel Dunaway*	Generative AI into Embedded Systems with Existing Resources *Philip Lee*
10:58 – 11:14	Teaching Digital Twins *Kari J. Lippert, Sean Walker, Roy Daniel McLeod, Sudhanshu Tarale, Christine Goldman Robinson, Matthew Christopher Monday, and David Seger*	Evaluation of a Social Marketing Class for Engineers *Adaline M. Buerck*	
11:14 – 11:30	Exploring the Impact of Panopto on Learner Engagement *Hannah Hedrick and Nancy Moore*	Student Perceptions of Success: A Comparison of Direct and Indirect Measurements *Ryan Daniel Doczy, Jai Kyoung Jung, and Aksel Seitllari*	

CONFERENCE INFORMATION

FOR THE LATEST INFORMATION and UPDATES, GO TO

https://sites.asee.org/se/conference

REGISTRATION DESK HOURS AT THE MILL

Sunday	12:00 P.M. – 6:00 P.M.
Monday	7:00 A.M. – 5:00 P.M.
Tuesday	7:30 A.M. – 10:00 A.M.

NUMBERS TO KNOW

Emergency: 911

The Mill Conference Center: (662) 325-7300 (downstairs desk); (662) 325-7000 (upstairs desk)

WiFi

1. When searching for available wireless networks, select msuguest and click Connect.
2. Once connected, a web browser will open where you can provide the msuguest WiFi password that is posted at the Mill Conference Center.
    a. If a browser doesn't automatically open, open a web browser manually and try to browse to a webpage (e.g. https://www.google.com).
    b. You will be prompted for the MSU guest password.

GUIDELINES FOR PRESENTERS AND MODERATORS

Before the Session

Presenters and moderators should arrive 10 minutes early to the room where the session is being held. The moderator should meet the presenters as they enter the room and review the pronunciation of their names. Presenters and moderators should load and open all presentations on the session room computer before the session starts. Moderators should bring a timing device such as a smartphone or watch.

Beginning the Session

Moderators will start the session with the personal introductions and review time limitations (10 min. presentation per paper with 5 minutes for Q&A and transition). The moderator will provide visual warnings for 5 minutes and then 2 minutes left.

Transition Between Presentations

At the end of each presentation, the next presenter should come up and ready their presentation. The moderator will introduce the next presenter.

Maintain the Presentation Schedule

Schedule management is the primary responsibility of the moderator; all presenters should begin and finish their presentations on time, as shown in the Technical Session schedules on the following pages. If a presenter is not in the room or has canceled, please wait to begin the next paper at the scheduled time so that all who planned to attend the remaining paper(s) can do so. The moderator has the authority to respectfully stop a presentation that is about to run over time.

WORKSHOPS

Integrating Generative AI in Engineering Education: Policies, Assignments, and Ethical Considerations

Facilitator: Dr. Asim Ali, Executive Director of the Biggio Center for the Enhancement of Teaching and Learning at Auburn University; DeElla Wiley, Educational Development Specialist, Biggio Center; Katelyn Nelson, Biggio Center GA and Ph.D. candidate in Higher Education Administration; and Shuqi Du, Biggio Center GA and Ph.D. candidate in Educational Psychology

Location: The Mill, Cleveland Gallery

Description: This interactive workshop explores the role of generative AI in engineering education, focusing on how faculty can effectively integrate AI tools into their courses while maintaining academic integrity and fostering transparency. Participants will engage in discussions and hands-on activities to explore AI-related syllabus policies, refine AI-enhanced assignments, and explore best practices for responsible AI use in student learning.

Through guided exercises, attendees will:

- Discuss ethical considerations, responsible AI usage, and AI-use transparency statements in syllabuses.
- Identify different levels of AI integration in coursework using the SAMR model.
- Explore strategies to redesign assignments to incorporate AI while maintaining learning objectives.
- Participants will leave with actionable strategies and concrete examples to implement AI effectively in their course.

What's the Big DEAL? Applications of the DEAL Model for Critical Reflection

Facilitator: Charlie Pierce, University of South Carolina

Location: The Mill, Dunn Room

Description: By the end of this workshop, participants will:

- Gain a comprehensive understanding of the DEAL Model for Critical Reflection, based on the work of Patti Clayton; be able to articulate its components and theoretical foundation; and explain its purpose and benefits in educational settings.
- Identify at least two practical examples of how the DEAL Model can be integrated into their engineering courses and develop an initial plan to implement the model in at least one course within the next semester.
- Explore strategies for applying the DEAL Model to experiential learning opportunities beyond the classroom.

ROUNDTABLES

Academic Controversy: Derivations have no place in undergraduate classes. Prove me wrong.

Moderator: Anna Howard, North Carolina State University

Location: The Mill, McDaniel Room

Description: Are you using class time effectively? Come to this roundtable to clarify in your own mind whether or not you're spending time in class on what you feel is most important.

Engaging Our Colleagues in Methods for Improving Engineering Instruction

Moderator: Morgan Green, Mississippi State University

Location: The Mill, Room 1302

Description: We come to the annual ASEE-SE conference to present and share what we are doing in our classrooms and departments that promotes effective pedagogy. How do we encourage our colleagues back home to try out a new teaching practice in the classroom? Come to this roundtable to share your experience and learn from the successes of others.

Problem-Based Learning in First-Year Engineering Education

Moderator: Mohammad Heshmati and Bill Elmore, Mississippi State University

Location: The Mill, Room 1303

Description: In this roundtable, you'll discuss the benefits and challenges of adding hands-on projects to first-year engineering courses. What does the implementation process look like, and how do you reflect on the strengths and weaknesses of each project and its implementation?

THOMAS C. EVANS ENGINEERING EDUCATION PAPER AWARD

Title: Guiding Students in Determining Fluid Velocity Profiles: A Practitioner Research Study Exploring the Role of Kinematics of Fluid Flow in a Foundry-Guided Lesson

Authors:

Hoda Ghassab, Tennessee Technological University

Priyanka Mahajan, Tennessee Technological University

Dr. Pedro E. Arce, Tennessee Technological University

Andrea Arce-Trigatti, Tallahassee Community College

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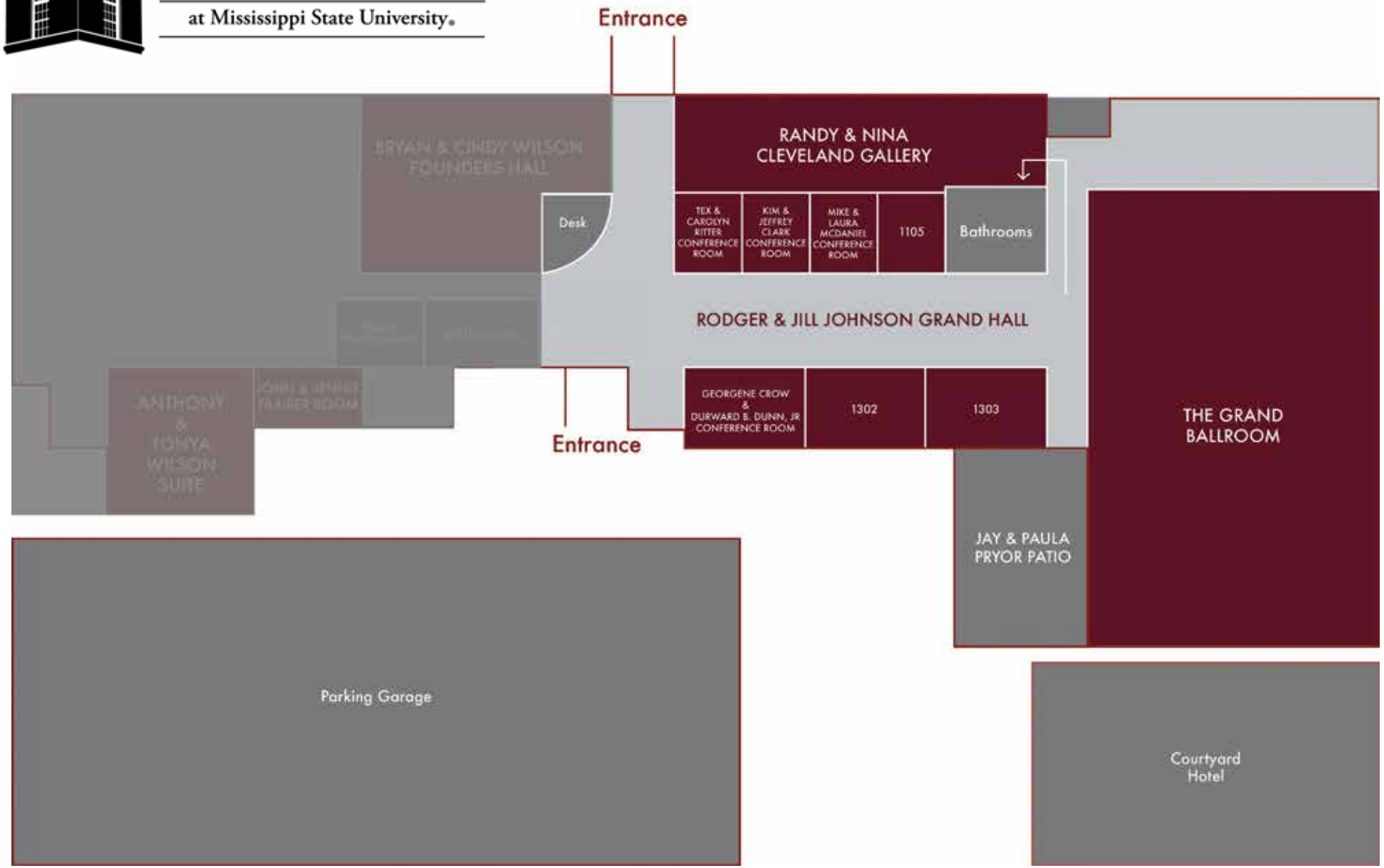
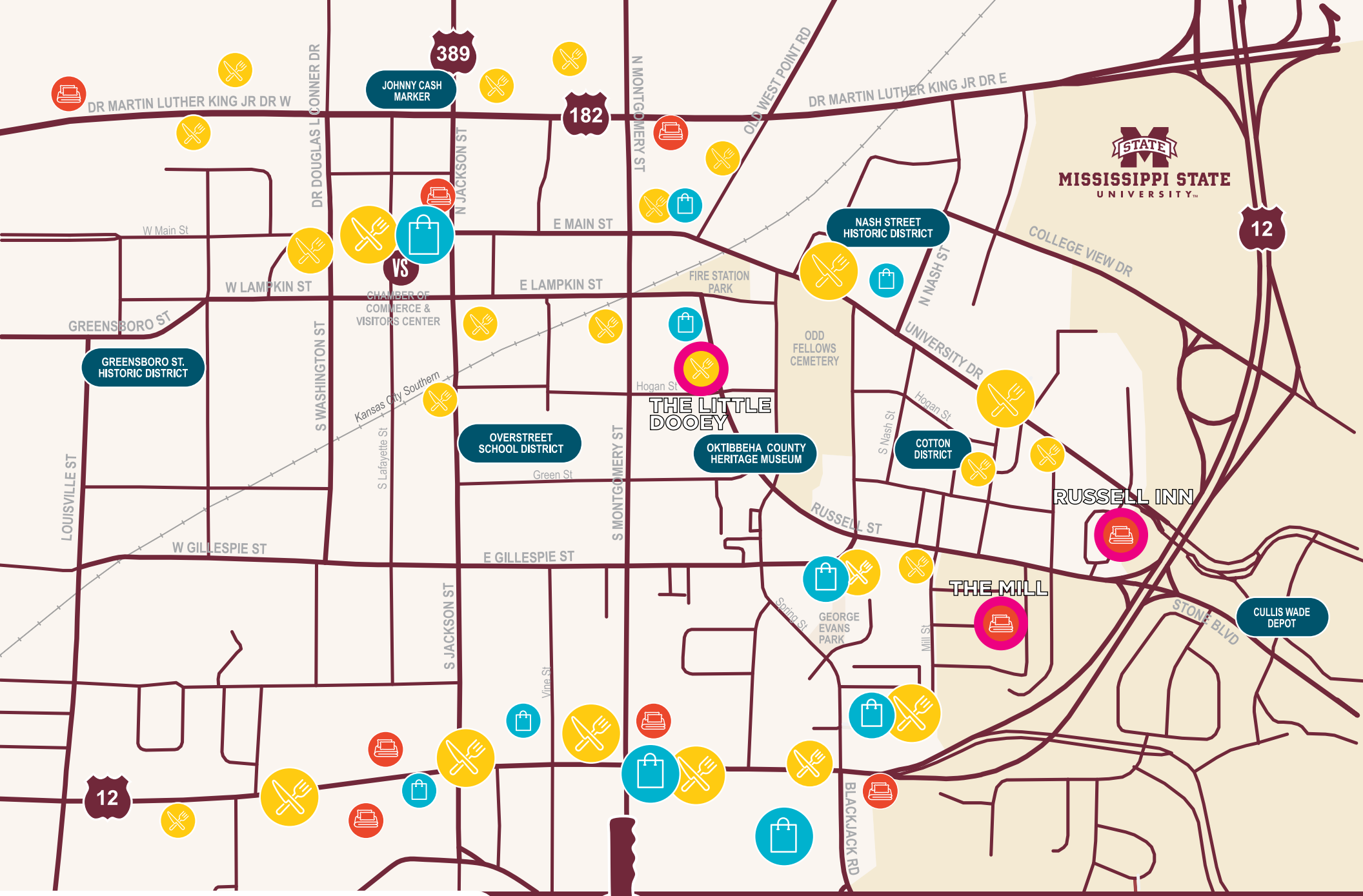
at Mississippi State University.





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ACKNOWLEDGEMENTS

We would like to acknowledge the many people and groups who contributed their time and talents to creating an enjoyable, productive conference experience:

- The ASEE-SE Executive Board for coordinating the conference schedule, paper presentations, and student poster competition.
- The Bagley College of Engineering Local Arrangements Committee for coordinating all host site details: Dr. Morgan Green (Co-Chair), Dr. Maryam Mirabolghasemi (Co-Chair), Alexis Nordin (MSU's ASEE Campus Representative), Amy Barton, Madison Butler, Dr. Seamus Freyne, Aaron Grimes, Dr. Jenna Johnson, Michael Lane, Ben Moore, Kristen Polk, Shelly Sanders, and Dr. Haifeng Wang.
- Dr. Robert Green, Interim Dean of the Bagley College of Engineering at Mississippi State University, for supporting the Local Arrangements Committee's work, welcoming attendees, and providing floral arrangements.
- The staff of the Office of the Dean of Engineering at Mississippi State University for support and assistance with conference arrangements and publicity
- All of the workshop facilitators, roundtable moderators, and session moderators.
- Hagan Walker, Co-founder and CEO of Glo®, for delivering the keynote address.
- The following organizations and groups for hosting informational booths: Daphne Knox, Manager of Graduate and Distance Education for the Bagley College of Engineering, and Anna Marie Clay, Assistant Director of Student Success and Thrive in Five for the Bagley College of Engineering; The MSU Graduate School; Embry-Riddle Aeronautical University; McCullough Engineering Services; and Mississippi Engineering Society.
- Claire Wilson, Marketing and Communications Director, Raspet Flight Laboratory, for providing the Sunday afternoon tour.
- Bridgett Harding and Harding Catering for providing the meals on Monday and Tuesday.
- Bart Wood for helping arrange the Sunday welcome dinner at The Little Dooey.
- Lisa Sanders for coordinating the use and set-up of The Mill Conference Center.
- Maggie Lucas for arranging and monitoring the hotel blocks.
- Dr. Cliff Taylor, Associate Director of Bands at MSU, and the student musicians playing during the Monday dinner: Horns — Dr. Cliff Taylor, Kyler Colip, Jeremiah Clermont; Rhythm Section — Wade Parker, Carson May, Garrison Walker.
- The Judy and Bobby Shackouls Honors College for providing easels and foam boards for the Undergraduate Student Poster Competition.
- The Starkville-MSU Rapid Transit System (SMART Bus) for transportation between The Mill Conference Center, Raspet Flight Research Laboratory, and The Little Dooey.
- MSU Athletics for donating table centerpieces.
- The Kennesaw State University 2024 conference committee for its assistance during this process.
- The ASEE National Office Marketing Team for donating ASEE promotional items.

NOTES

NOTES

Thank you to

MR. RICHARD CANNON

for his contribution to the ASEE-SE 2025 conference!

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