

2026 ASEE North Central Section Conference

Transformative Engineering

March 27-28, 2026

University of Mount Union

Brenton School of Engineering

Alliance, OH

Friday, March 27, 2026

- 5:00 – 8:00pm Registration and Welcome Table (Outside Oak 144)
- 5:00 – 8:00pm Welcome Reception with Appetizers (Oak 144)
- 6:30 – 8:00pm ASEE NCS Executive Board Meeting (Oak 200)

Saturday, March 28, 2026

- 8:00 – 11:00am Registration (Oak Lobby)
- 8:00 – 8:45am Light Continental Breakfast (Oak Lobby)
- 8:45 – 10:00am **Technical Session 1**
- 10:00 – 10:15am Break with Drinks and Snacks
- 10:15 – 11:30am **Technical Session 2**
- 11:30 - 11:45am Break
- 11:45 – 1:15pm Conference Lunch and **Keynote with Dr. Caroline Baillie** (HPPC – Kresge Solarium)
- 1:30 – 2:00pm **Poster Session** (Oak and T&H 1st Floor Hallway)
- 2:15 – 3:30pm **Technical Session 3**
- 3:30 – 3:45pm Break with Drinks and Snacks
- 3:45 – 5:00pm **Technical Session 4**
- 5:00 - 5:30pm Break
- 5:30 – 7:00pm Awards Dinner (HPPC – Newbold Room)

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Conference Schedule: Saturday, March 28, 2026

Technical Session 1 – 8:45am-10:00am

Session 1A, T&H 201	Session 1B, Oak 203	Session 1C, Oak 206	Session 1D, T&H 230
54074. Integrating AI-Enabled, Student-Created Design Projects in Fluid Mechanics and Mechanical Design Courses. <i>Carmen Cioc, Sorin Cioc, Noela A. Haughton</i>	54174. GRID Flowcharting: An Algorithmic Approach to Generating Pedagogical Flowcharts. <i>Torsten Maier, Andrew Lawrence Watchorn</i>	54058. Learning by Measurement: Student Experiences in Quantifying Video Streaming Quality from High-Altitude Balloon Payloads. <i>Isaiah D Yoder, Connor J Angiel, Wookwon Lee, Nicholas B Conklin</i>	54089. A Finite Element Analysis Comparing the Biomechanical Stability of Fascia-Wrapped versus PRF-Embedded Diced Cartilage Grafts in Dorsal Augmentation Rhinoplasty. <i>Yewon Jang, Colleen H Kottmyer, Hui Shen</i>
54202. An Educational Comparison of Classical and Modern Controllers on Truss Structures with Stress-Based Sizing Constraints. <i>Charles Richard DiCanio, Arjumand Ali</i>	54195. Integrating the Indy Autonomous Challenge into Scalable Coursework, Research, and Outreach at a Land-Grant Public University. <i>Josh Siegel, Daniel Morris, Shaunak D. Bopardikar, Pragyan Dahal, Judson Herzer</i>	54205. Reimagining Engineering Education Through Arts-Based Research: Centering the Social in our Social Science. <i>Elizabeth Meintel, Whitney Gaskins</i>	54190. Biomechanical Analysis of Lumbar Spine Forces During Two-Person Patient Lifting in Healthcare Settings. <i>Eileen Cui, Xiaoxu Ji, Xin Gao, Paige Johnson</i>
54239. Challenges and Opportunities in Launching and Accrediting a New Civil Engineering Program. <i>Emad Y Tanbour, Suleiman A. Ashur, Raed Jarrah, Asmaa Radwan</i>	54196. Leading Educational Transformation: How One Secondary School Pioneered University Research Integration to Inspire STEM Exploration. <i>Josh Siegel, Kieren Reynolds, Gregory C Miller, Katherine Sinclair, Pragyan Dahal</i>	54244. The Importance of Language Arts in Early Engineering Education: A Look into the Boys in Engineering Academy. <i>Christopher Thomas Frontiero</i>	54071. Development of a Method for Measuring Human Skin Mechanical Properties for Surgical Applications. <i>Anna Dillenbeck, Arilanto Randy Ramanase, Hui Shen</i>
54252. A Study on the Fundamental Metrics Impacting Ranking of Engineering Schools. <i>Asmaa Radwan, Mohamad S. Qatu</i>	54207. Teaching Showcase: Recognizing and Encouraging Teaching Faculty Innovation. <i>Robin A.M. Hensel, Susie A. Huggins, Todd R Hamrick, Lizzie Santiago</i>	54281. Employer Expectations and Student Self-Perceptions of Employability Skills in Construction Management: A Quantitative Analysis. <i>Rachana Bekkem, Salem k Alrosan, Franklin Kwame Owusu Acheaw, Raed Jarrah</i>	54240. Bridging the Gap in Undergraduate Engineering Education through a Semester-Long Transformer- and LLM-Based Cancer Cell Image Classification Project. <i>Ashish Kharel, Bhaavya Srivastava, Thien Quy Pham, Arjun Raj Rajesh, Anita Esmaeilian, Shirin Kazemi Varnamkhasti, Bhaigyashree Hazarika</i>
54213. Superpixel-Based Semantic Segmentation of Hyperspectral Strawberry Images Using Perceiver-Style Cross-Attention. <i>Aniruddha Maiti, Kartha Veerya Reddy Jammuladinne, Ayesha Sarker</i>	54229. Building a Closed-Loop Bioprinting System Through Multi-Level Mentorship: Integrating High School, Undergraduate, and Graduate Students in Interdisciplinary Research. <i>Abishek Balsamy-Kamaraj, John Chibueze Chikwe, Ethan Moon</i>		

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Technical Session 2 – 10:15am-11:30am

Session 2A, T&H 201	Session 2B, Oak 203	Session 2C, Oak 206	Session 2D, T&H 200A
54255. Development of A Low-Cost Rotational Motion Test System Through Interdisciplinary Senior Design. <i>Zhijun Wu, Yin-ping Chang, Daniel Llamocca</i>	53729. Little Squaw Creek Historical Runoff Analysis, Stream and Bank Reconfiguration: A Project-Based Engineering Technology Case Study. <i>Robert J. Korenic</i>	54173. A Capstone Software Project for Teaching Engineering Economics: Design of an Interactive Cash Flow Diagram Tool. <i>Ryan Fehn, Torsten Maier</i>	<p><i>WORKSHOP</i></p> <p>54531. Transformative Engineering: Learning from Nature. <i>Shehla Arif, Caroline Baillie, Ananda Lee Tan</i></p>
54273. Developing a Structured Curriculum for Building Energy Modeling: Process, Challenges, and Initial Outcomes. <i>Baye Alioune Ndiogou, Fatima Kebe, Nassif E Rayess</i>	54180. Understanding Construction Standards Through ACI Field Testing Technician Certification Program. <i>Sujan Subedi, Luis A Mata</i>	54222. A Capstone Design Project based on requirements of a Community-Based Organization. <i>Demetrios N Svingos, Brian D. Woerner, Andrew C. Nix</i>	
54274. The accuracy and robustness of a student-developed pin-ball machine compared to a commercial projectile launcher apparatus. <i>Yin-ping Chang, Zhijun Wu</i>	54284. Factors Influencing Women’s Pathways into Construction Management Careers: A Quantitative Comparative Study. <i>Tehetna Suraphel Hailu, Adam Joseph Bogedain, Suleiman A. Ashur</i>	54265. Are Lightweight Vision Transformers Enough for Deepfake Face Detection? Performance, Scalability, and Explainability Study. <i>Omar Al Babele, Pingping Zhu, Trevor Bihl, Wook-sung Yoo, Haroon Malik</i>	
54278. Experiential Learning in Online Engineering Education: A Pilot Study in Fluid Mechanics. <i>Carmen Cioc, Sorin Cioc, Noela A. Haughton</i>	54184. STATLER CONNECT: A Structured Alumni-Student Mentorship and Networking Model for Engineering Education. <i>Omar Ahmed Al-Shebeeb, Cerasela Zoica Dinu, Philomena Krosmico</i>	54078. Intelligent Cat Toy Capstone: A Case Study in Data-Driven Product Development. <i>Macy Jayne August, Julia Ann DeVore, Jonathan Heinlein, Max Watercutter</i>	
50434. The West Virginia Bridge Design and Build Contest: Engaging K–12 Students through Hands-on Engineering. <i>Cameron Robert Rusnak, Brian Dickman, Kase Poling</i>	54283. From Duty to Mentorship: Strategies for Strengthening Faculty Advising in Engineering Education. <i>Isaac W Wait, Greg Michaelson, Justin Fleming</i>	54263. Predicting Injury Severity in Highway Construction Zones Using Descriptive Frequency Analytics and Multinomial Logistic Regression. <i>Tehetna Suraphel Hailu, Suleiman A. Ashur</i>	

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Technical Session 3 – 2:15pm-3:30pm

Session 3A, T&H 201	Session 3B, Oak 203	Session 3C, Oak 206	Session 3D, T&H 200A
54060. Stratasys FDM Additive Manufacturing Certification Program: University Implementation and Lessons Learned. <i>Philip Rufe</i>	54081. Towards the Safety of Autonomous Vehicles: Measuring Friction for Roadway Contaminants. <i>Thiyapa Sriprom, Diane L Peters</i>	54083. Developing and Benchmarking Control Algorithms for Automated Driving with MRC Track Data. <i>Leah Burdette, Jeanne Kim, Diane L Peters</i>	<p><i>WORKSHOP</i></p> <p>54185. Collaborative Makerspace-to-Classroom and Manufacturing Integration: Low-Cost Virtual Learning and Production Labs. <i>Omar Ahmed Al-Shebeeb</i></p>
54235. Six Years of Insights: Integrating Exit Survey and FE Topic Coverage for Continuous Improvement in Mechanical Engineering. <i>Emad Y Tanbour, Asmaa Radwan Suleiman A. Ashur</i>	54243. Advancing Bridge Inspection Practices with Laser Scanning: Feasibility Assessment Using the I-75 River Rouge Bridge Case Study. <i>William M Noles, Suleiman A. Ashur, Mohammad Heilat, Salem k Alrosan</i>	54192. Examining the Reliability of ChatGPT: A Quantitative Comparison of Human and LLM Emotion Classification. <i>Torsten Maier, Saemi Mendez, Amanyani Daniella Gonzales, Samantha Grace Kneebone</i>	
5423. Beyond the Classroom: The Impact of Project-Based Learning on Mechanical Engineering Student Outcomes. <i>Emad Y Tanbour, Asmaa Radwan, Suleiman A. Ashur</i>	54245. Investigation of Localized Electrochemical Deposition Using a Modified FDM Platform with a Titanium Cathode for Micro-Scale Metal Additive Manufacturing. <i>Vamsi Madhavchowdary Madamanchi, Abishek Balsamy-Kamaraj</i>	54223. Evaluating Vision-Language Models for Trust Feedback in an Autonomous Vehicle Simulation. <i>Cassandra Lanza, Giuseppe Turini, Marcela Mera Trujillo, Reem Alzahabi, M Gandy</i>	
54247. Integrating Course Projects into Mastery-Based Grading. <i>Derek Breid</i>	54224. Monocrystalline Solar Cell Encapsulation. <i>Musa Sillah, Pratima Parajuli, Heidi Jiao</i>	54277. Physical and Virtual Model of High Voltage Power Transmission Systems. <i>Dylan Wolf, Trevor Bihl</i>	
54253. Integrating Enterprise Resource Planning (ERP) Systems into the Engineering education to make engineering student employable. <i>Vaibhav Mishra, Manish Kumar Garg</i>		54226. Brushstroke: Capturing Artistic Nuance Through Domain Adaptive Diffusion. <i>Baylee Senator, Ananya Jana, Satya Sri Rajiteswari Nimmagadda, Anastasiia Sukhanova</i>	

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Technical Session 4 – 3:45pm-5:00pm

Session 4A, T&H 201	Session 4B, Oak 203	Session 4C, Oak 206	Session 2D, T&H 200A
54197. Using Generative Artificial Intelligence to support Undergraduate Learning in Computing in Chemical Engineering Course. <i>Sihe Zhang, Torsten Maier, Susan Farhat</i>	54064. West Virginia Robotics (Exploring the Role of After-School Robotics Programs in Rural STEM Education). <i>Susie A. Huggins, Robin A.M. Hensel, Manar Yamany, Jeffrey Scott Carver</i>	54088. Design & Implementation of Smart-Following Suitcase. <i>Michael Christian Litogot, Leonardo Oliveira, Rodney Perry, Hussein J Ahmad, Anna Patricia Nanteza, Travis Jay Kurth, Darius Sebastian Pelean, Qin Hu</i>	<p><i>WORKSHOP</i> 54493. GRID Flowcharting: A New Approach to Teaching Python Programming with Flowcharts. <i>Torsten Maier</i></p>
54200. Investigating Engineering Judgment Through the AIR Model of Epistemic Cognition. <i>Michael Robinson</i>	54189. Pathways to STEM Equity: Addressing Socioeconomic and Regional Gaps in Appalachian Education. <i>Manar Yamany, Jeffrey Scott Carver</i>	54218. Project BOREALIS: A Mixed-Signal, Beginner-Focused Music Synthesizer. <i>Alexander Burkholder, Ethan Berei, Cindy Durliat</i>	
54201. A Scoping Review of Generative AI Literacy Interventions: Shaping Undergraduate Students' Awareness of Ethical Use and Misuse in Academic Writing. <i>Haoyong Lan, Sanjitha Govindan, Yuhan Deng, Qingyuan Zhu, Dema Al-Shirawi</i>	54230. Enhancing Workforce Readiness for Adults with Intellectual and Developmental Disabilities via Virtual Reality. <i>Maria Kay Lyons, Farha Jahan, Cal Grantham, Lillie Kacir, Domenic Pilla, Chase Michael Collert</i>	54285. WIP: SVD-Guided Microcontrol for Obstacle-Aware Very-Large-Scale Robotic Swarms. <i>Jacob Colby Lee, Samuel Ray Sutphin, Pingping Zhu, Haroon Malik</i>	
54216. Text to Automata Diagrams: Comparing TikZ Code Generation with Direct Image Synthesis. <i>Ethan Young, Aniruddha Maiti, Ananya Jana, Zichun Wang, Satya Sri Rajiteswari Nimmagadda</i>	54232. WIP: Examining Motivation of Engineering Doctoral Students: Insights from the Rising Doctoral Institute. <i>Shuyu Wang, Jordan Peyton, Mayra S Artilles</i>	54199. Pick-and-Place Robot Simulation Using UR3 in Simumatik and URSim. <i>Lydia Slippe, Robert L. Williams, Jesus M. Pagan, Trevor Bihl</i>	
54210. Integrating AI into Introductory Programming: A Structured Framework for Learning and Assessment. <i>Wassnaa Al-Mawee</i>	54272. When the Grid Goes Dark: Pop Culture, Public Perception, and the Fear of Energy Collapse. <i>Ta'than Gray, Trevor Bihl, Haroon Malik</i>	54294. Hands-On Approach to Motor Control Using Raspberry Pi Pico and a Semikron AC-DC-AC Converter. <i>Rasoul Milasi, Joseph Stoner</i>	