

ASEE DIVISION OF EXPERIMENTATION & LABORATORY-ORIENTED STUDIES (ELOS)

ASEE ANNUAL MEETING 2025 – MONTREAL, CANADA

ELOS DIVISION INFORMATION

The Experimentation and Laboratory-Oriented Studies Division (ELOS) is concerned with the laboratory component of engineering curricula. Thus, it consists of people who strongly believe in the importance of laboratories at all levels of instruction.

The main activity of the division is the program which it develops for the Annual Conference. Sessions are devoted to innovations in laboratory instruction and each year one of the engineering divisions is highlighted in a separate session.

PROGRAM OVERVIEW FOR EXPERIMENTATION- AND LABORATORY-RELATED PRESENTATIONS OUTSIDE OF ELOS

The following program overview features experimentation- and laboratory-based presentations from other divisions within ASEE but outside of the ELOS technical program. ELOS appreciates all the practical work, research, and other efforts to promote the laboratory as an instructional space, in which students can experience the connection between theory and practice. As the program below shows, this type of instruction is relevant in virtually every field in engineering. The following ASEE divisions are featured in the program below:

- Biomedical Engineering Division
- Chemical Engineering Division
- Computers in Education Division
- Electrical and Computer Engineering Division
- Mechanical Engineering Division
- Engineering Physics and Physics Division
- Aerospace Division
- Energy Conversion, Conservation and Nuclear Engineering Division
- Instrumentation Division
- Mechanics Division
- Engineering Leadership Development Division
- Educational Research and Methods Division
- Computing and Information Technology Division
- Materials Division
- Civil Engineering Division
- Equity, Culture & Social Justice in Education Division
- Engineering Technology Division
- Technological and Engineering Literacy/Philosophy of Engineering Division
- Construction Engineering Division
- Multidisciplinary Engineering Division
- Engineering Libraries Division
- Graduate Studies Division
- Manufacturing Division
- Architectural Engineering Division
- Design in Engineering Education Division
- New Engineering Educators Division
- Liberal Education/Engineering & Society Division

Please also refer to the ASEE online schedule builder for any last-minute changes. The program below was last checked on Friday June 6th, 2025.

MONDAY 06/23 – SECOND CONFERENCE DAY
<i>M204-Biomedical Engineering Division (BED) Poster Session</i> <i>Mon. June 23, 2025 9:15 AM to 10:45 AM - Room: 001 -Exhibit Hall 220 C, Palais des congres de Montreal</i>
BOARD #17: Students Learning Experiences in VR Laboratories Deborah Moyaki (University of Georgia), Dr. Nathaniel Hunsu (University of Georgia), Dr. Dominik May (University of Wuppertal), and Dr. Cheryl T Gomillion (University of Georgia)
BOARD #22: Work in Progress: Building Information and Data Literacy Skills in Biomedical Engineering Laboratory Courses Mr. Alexander James Carroll (Vanderbilt University), Dr. Joshua Daniel Borycz (Vanderbilt University), Sheldon Salo (Vanderbilt University), and Prof. Amanda R. Lowery (Vanderbilt University)
BOARD #34: Work-in-Progress: A Novel Project-Based Molecular Biology Experimentation and Design Laboratory Course Using Participatory Design to Promote Student Engagement Dianne Grayce Hendricks (University of California, Santa Cruz), David James Kelaita (University of Colorado Boulder), and Tanya Ivanov (Affiliation unknown)
<i>M205-Chemical Engineering Division (ChED) Poster Session</i> <i>Mon. June 23, 2025 9:15 AM to 10:45 AM - Room: 001 -Exhibit Hall 220 C, Palais des congres de Montreal</i>
BOARD #42: Re-Engineering Chemical Engineering Education: Making Unit Operations Laboratory More Accessible Through 3D Printing and Self-Guided Learning Prof. Ariel Chan (University of Toronto) and Saad Yasin (University of Toronto)
<i>M208-Computers in Education Division (COED) Poster Session (Track 1.A)</i> <i>Mon. June 23, 2025 9:15 AM to 10:45 AM - Room: 001 -Exhibit Hall 220 C, Palais des congres de Montreal</i>
BOARD #63: AI Chatbot for Enhancing Troubleshooting in Engineering Labs Marshall Ismail (Worcester Polytechnic Institute), Devin Kachadoorian (Worcester Polytechnic Institute), Sahil Mirani (Worcester Polytechnic Institute), Dr. D. Matthew Boyer (Clemson University), Mr. Tim Ransom (Clemson University), and Prof. Ahmet Can Sabuncu (Worcester Polytechnic Institute)
BOARD #99: Work in Progress: AI in online laboratory teaching - A Systematic Literature Review Mr. Johannes Kubasch (University of Wuppertal), Dr. Dominik May (University of Wuppertal), and Doha Meslem (Bergische Universität Wuppertal)
<i>M215-Poster Session-Electrical and Computer Engineering Division (ECE)</i> <i>Mon. June 23, 2025 9:15 AM to 10:45 AM - Room: 001 -Exhibit Hall 220 C, Palais des congres de Montreal</i>
BOARD #131: Brewing Interest in Engineering and Computer Science: A Hands-On Coffee Roasting and Brewing Lab for High School Outreach

Dr. Kumar Yelamarthi (Tennessee Technological University), Dr. Susmit Shannigrahi (Tennessee Technological University), and Sahaya Jestus Lazer (Tennessee Technological University)
<i>M238·Mechanical Engineering Division (MECH) Poster Session</i> <i>Mon. June 23, 2025 9:15 AM to 10:45 AM - Room: 001 -Exhibit Hall 220 C, Palais des congrès de Montreal</i>
BOARD #181: Integrated Wind Turbine Blade Design Education: Combining Theory, Simulation, CAD, and Experimental Testing Dr. Rachmadian Wulandana (State University of New York at New Paltz), Graham Werner (State University of New York at New Paltz), and Brandon Gardner (State University of New York at New Paltz)
BOARD #182: Integrating Impact Experiments and Simulations in a Finite Element Method Course Dr. Yunfeng Wang (The College of New Jersey), Dr. Karen Chang Yan (The College of New Jersey), and Dr. Manish Paliwal (The College of New Jersey)
<i>M245·Engineering Physics and Physics Division (EP2D) Poster Session</i> <i>Mon. June 23, 2025 9:15 AM to 10:45 AM - Room: 001 -Exhibit Hall 220 C, Palais des congrès de Montreal</i>
BOARD #148: Exploring High-Energy Cosmic Particles: Integration into the Advanced Physics and Experiential Learning for Undergraduate Engineering Students using PASCO Apparatus and Software. Dr. Pavel Navitski (Oral Roberts University), Elena Gregg Dr (Oral Roberts University), Wesley David Klehm (Oral Roberts University), and Gabriel Pendell (Oral Roberts University)
BOARD #149: Nanoimprint lithography – a nanotechnology demonstration lab for STEM undergraduate instruction Prof. Daniela Topasna (Virginia Military Institute)
<i>M301·Aerospace Division (AERO) Technical Session 1 - Experiential Learning</i> <i>Aerospace Division (AERO)</i> <i>Mon. June 23, 2025 11:00 AM to 12:30 PM - Room: 523B, Palais des congrès de Montreal</i>
Assessing the Impact of Evidence-based Programming in an Experimentation Course using Aerospace Engineering Applications Dr. Zachary Taillefer (Worcester Polytechnic Institute)
<i>M305B·WiP: Hands-on Learning and Safety</i> <i>Chemical Engineering Division (ChED)</i> <i>Mon. June 23, 2025 11:00 AM to 12:30 PM - Room: 511F, Palais des congrès de Montreal</i>
Work-in-Progress: A Living Laboratory: Inquiry-Based Learning in Chemical Engineering Dr. Francis Ledesma (Cornell University), Dr. Allison Godwin (Cornell University), and Dr. T. Michael Duncan (Cornell University)
<i>M316·ECCNE Technical Session 1 - Nuclear Engineering</i> <i>Energy Conversion, Conservation and Nuclear Engineering Division (ECCNE)</i> <i>Mon. June 23, 2025 11:00 AM to 12:30 PM - Room: 512H, Palais des congrès de Montreal</i>
WIP: Assessing Student Cognitive Engagement in an Interactive Advanced Virtual Radiation Detection and Measurement Lab

Dr. Lily Ranjbar (Oregon State University)
M331-Instrumentation in Engineering Projects Instrumentation Division (INST) Mon. June 23, 2025 11:00 AM to 12:30 PM - Room: 521C, Palais des congrès de Montreal
Development and Success of an Explosive Engineering Instrumentation Lab as a Distance Course Dr. Catherine Johnson (Missouri University of Science and Technology) and Dr. Rachel L Bauer (Missouri University of Science and Technology)
DESIGN BUILD & TEST: A COST-EFFECTIVE & EFFICIENT 2X2 ANTENNA ARRAY - Numerical & Experimental Investigation Dr. Cyril B Okhio P.E. (Kennesaw State University), Dr. Theodore Orrin Grosch (Kennesaw State University), Dr. Austin B. Asgill P.E. (Kennesaw State University), and Saiyda N Bey (Affiliation unknown)
M339A-Mechanics Division (MECHS) Technical Session 1A Mechanics Division (MECHS) Mon. June 23, 2025 11:00 AM to 12:30 PM - Room: Viger, Westin Montreal
Exploring the Capability of Generative AI as an Engineering Lab Report Assessment Assisting Tool Dr. Dave Kim (Washington State University-Vancouver) and Dr. Charles Riley P.E. (Oregon Institute of Technology)
M355-Mentorship in Engineering Leadership Development Engineering Leadership Development Division (LEAD) Mon. June 23, 2025 11:00 AM to 12:30 PM - Room: 520F, Palais des congrès de Montreal
Enhancing Lab Learning and Graduate Aspirations with Multi-Level Mentorship and Vertically Integrated Projects in Research Groups: A Case Study Matthew Nakamura (University of Hawai'i at Mānoa Department of Mechanical Engineering), Corrisa Heyes (University of Hawai'i at Mānoa), and Joseph J. Brown Ph.D. (University of Hawai'i at Mānoa)
M405-WiP: Gen AI, Mixed Reality, and Simulations Chemical Engineering Division (ChED) Mon. June 23, 2025 1:30 PM to 3:00 PM - Room: 511F, Palais des congrès de Montreal
Work-in-Progress: Leveraging ChatGPT to Support Technical Communication Skills (Writing) in a Senior Chemical Engineering Laboratory Course Dr. Gautom Kumar Das (University of Maryland Baltimore County)
Development of AI-Assisted, Immersive Virtual Reality Learning Module to Enhance Operation and Procedural Accuracy for Laboratory Education Xiaoye Michael Wang (Affiliation unknown), Jackie Anjie Liu (University of British Columbia, Vancouver), Timothy Welsh (University of Toronto), and Prof. Ariel Chan (University of Toronto)

Initial Results of Chemical and Electrical & Computer Engineering Mixed Reality Lab Modules – Work in Progress

Dr. Keisha C.A. Antoine (Prairie View A&M University (DUPE)), Dr. Kazeem B Olanrewaju (Prairie View A&M University), Dr. Justin Foreman (Prairie View A&M University), Dr. Penrose Cofie (Prairie View A&M University), Dr. Michael Preuss (Exquiri Consulting, LLC), and Jorge Federico Gabitto (Prairie View A&M University)

M414A-ERM Technical Session: Equity & Accessibility in Engineering Education***Educational Research and Methods Division (ERM)******Mon. June 23, 2025 1:30 PM to 3:00 PM - Room: 517CD - General Session , Palais des congres de Montreal*****Student perspectives on attendance and instructional methods in a combined lecture and laboratory course**

Kara Bocan (University of Pittsburgh) and Gaoxiang Zhou (University of Pittsburgh)

M430-Computing and Information Technology Division (CIT) Technical Session 2***Computing and Information Technology Division (CIT)******Mon. June 23, 2025 1:30 PM to 3:00 PM - Room: 516B, Palais des congres de Montreal*****A Follow-up Study of a Redesigned Cybersecurity Lab Course**

Dr. Peng Li (East Carolina University) and Dr. Sohan Gyawali (East Carolina University)

WIP-Experimentation in control and communication methods for neuron-based adaptable robotics

Dr. Iftekhar Ibne Basith (Sam Houston State University), Syed Hasib Akhter Faruqui (Sam Houston State University), and Michael Tyler Johnson-Moore (Sam Houston State University)

M436-Materials Division (MATS) Technical Session 2: Activities with Impact! Special Session***Materials Division (MATS)******Mon. June 23, 2025 1:30 PM to 3:00 PM - Room: 515B, Palais des congres de Montreal*****Analysis of a Scientific Paper to Scaffold Lab Report Writing Skills**

Prof. Lessa Grunenfelder (University of Southern California)

M504-AI, Technology, and Data-Driven Learning in Biomedical Engineering***Biomedical Engineering Division (BED)******Mon. June 23, 2025 3:15 PM to 4:45 PM - Room: 522B, Palais des congres de Montreal*****Exploring the Efficacy of Generative AI and ChatGPT in BME Instructional Labs: A Case Study on GABA Receptors and Synaptic Potentials**

Dr. Viswajith Siruvallur Vasudevan (Cornell University), Dr. Shivaun D Archer (Cornell University), and Prof. Jonathan T. Butcher (Cornell University)

M506B-Civil Engineering in the Age of AI***Civil Engineering Division (CIVIL)******Mon. June 23, 2025 3:15 PM to 4:45 PM - Room: 519A, Palais des congres de Montreal*****Incorporating AI into a Structural Engineering Computer Lab**

Dr. Allen C Estes (California Polytechnic State University, San Luis Obispo) and Dr. Peter Laursen (California Polytechnic State University, San Luis Obispo)
M515·ECE-Circuit Courses: Instructional Innovations and Student Success Electrical and Computer Engineering Division (ECE) Mon. June 23, 2025 3:15 PM to 4:45 PM - Room: 516E, Palais des congrès de Montreal
Troubleshooting Lab for Circuit Courses in the Electrical and Computer Engineering Program Dr. Federica Aveta (Wentworth Institute of Technology) and Dr. Yugu Yang-Keathley (Affiliation unknown)
M559A·Disability in Engineering Programs (Equity, Culture & Social Justice in Education Division ECSJ Technical Session 3) Equity, Culture & Social Justice in Education Division (EQUITY) Mon. June 23, 2025 3:15 PM to 4:45 PM - Room: 521C, Palais des congrès de Montreal
Peer and self-assessment of teamwork for students with accommodations in a project-based laboratory course. Dr. Bridget M. Smyser (Northeastern University)
TUESDAY 06/24 – THIRD CONFERENCE DAY
T223A·Engineering Technology Division (ETD) Technical Session 2 Engineering Technology Division (ETD) Tue. June 24, 2025 9:15 AM to 10:45 AM - Room: 512C, Palais des congrès de Montreal
Collaborative Online Interactive Laboratory on Software Defined Radio Fundamentals Dr. Otilia Popescu (Old Dominion University), Dimitrie C Popescu (Old Dominion University), and Emanuel PUSCHITA (Affiliation unknown)
T236·Materials Division (MATS) Technical Session 5 Materials Division (MATS) Tue. June 24, 2025 9:15 AM to 10:45 AM - Room: 515B, Palais des congrès de Montreal
Reinventing the Report: Teaching Sustainability and Justice in Materials Labs via Technical Communication Dr. Timothy Chambers (University of Michigan) and Dr. Katie Snyder (University of Michigan)
T238B·ME Division 3: Modern Tools and Methods in Structural Analysis and CAD Mechanical Engineering Division (MECH) Tue. June 24, 2025 9:15 AM to 10:45 AM - Room: 512B, Palais des congrès de Montreal
Design, Manufacturing, Finite Element Analyses and Correlation with Experimental Work of Carbon Fiber – Epoxy Structures Dr. Luis E Monterrubio (Robert Morris University)
T249A·Technological and Engineering Literacy/Philosophy of Engineering Division (TELPhE) Technical Session 4 Technological and Engineering Literacy/Philosophy of Engineering Division (TELPhE) Tue. June 24, 2025 9:15 AM to 10:45 AM - Room: 512E, Palais des congrès de Montreal
Crafting Comprehensive Lab Reports: Techniques for Improved Technical Writing and Data Interpretation Skills

Dr. Albertus Retnanto (Texas A&M University at Qatar), Mohamed Fadlelmula (Texas A&M University at Qatar), and ROMMEL DUAVE YRAC (Affiliation unknown)
<i>T301-Aerospace Division (AERO) Technical Session 4 - Teaching Methodology</i> <i>Aerospace Division (AERO)</i> <i>Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 523B, Palais des congres de Montreal</i>
Laboratory to Assess the Effect of Flow Velocity on Temperature Measurements Smail Guenoun (Ecole Polytechnique de Montreal) and Huu Duc Vo (Ecole Polytechnique de Montreal)
<i>T309-Construction Engineering Division: Innovative Pedagogy annd Student Engagement</i> <i>Construction Engineering Division (CONST)</i> <i>Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 512B, Palais des congres de Montreal</i>
Developing Hands-on Physical Model Labs for Structures in Construction Courses Dr. Anh D. Chau P.E. (Florida Gulf Coast University), Steve Makredes (Florida Gulf Coast University), Dr. Daniel Linares (Florida Gulf Coast University), Dr. Long Duy Nguyen P.E. (Florida Gulf Coast University), and Mr. William Patrick Burke (Florida Gulf Coast University)
<i>T315-ECE-Outreach and Engagement Strategies for Inspiring Future Engineers</i> <i>Electrical and Computer Engineering Division (ECE)</i> <i>Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 511A, Palais des congres de Montreal</i>
Exploring Minority Undergraduate Students' Hands-on and Research Experiences in a Summer QISE Laboratory Course YiXiang Shawn Sun (Virginia Polytechnic Institute and State University), Guannan Shi (Virginia Polytechnic Institute and State University), Prof. Wayne A Scales (Virginia Polytechnic Institute and State University), and Dr. Pamela Leigh-Mack (Virginia State University)
<i>T341-Multidisciplinary Engineering Division (MULTI) Technical Session 5</i> <i>Multidisciplinary Engineering Division (MULTI)</i> <i>Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 511C, Palais des congres de Montreal</i>
"Living" Engineering Laboratory: Enhancing Undergraduate Learning Through Place-Based Education and Lab-Scale Engineering Models Dr. Kushal Adhikari (Juniata College)
Swarm Test Arena for Resilient Systems: an experimental setup to study and test bio-inspired algorithms Ms. Rasika Ravindra Kale (Embry-Riddle Aeronautical University), Bryan Watson (Embry-Riddle Aeronautical University - Daytona Beach), James E Hand (Embry-Riddle Aeronautical University - Daytona Beach), and Matthew Scheinblum-Brewer (Embry-Riddle Aeronautical University - Daytona Beach)
<i>T341B-Multidisciplinary Engineering Division (MULTI) Technical Session 6</i> <i>Multidisciplinary Engineering Division (MULTI)</i> <i>Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 512C, Palais des congres de Montreal</i>
Reinforcing Learning Objectives through Hands-on Labs for University of Michigan's ROB 204: Introduction to Human-Robot Systems Leia Stirling (University of Michigan)

T345-Engineering Physics and Physics Division (EP2D) Technical Session 1 Engineering Physics and Physics Division (EP2D) Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 512F, Palais des congres de Montreal
Integrating 3D Printing and Tracker Software for Enhanced Data Acquisition in Experimental Physics Education Mr. CARLOS PINEIDA (Universidad Andres Bello, Chile.), Prof. Angeles Dominguez (Tecnologico de Monterrey, Monterrey, Mexico (ITESM); Universidad Andres Bello, Santiago, Chile (UNAB)), and Prof. Genaro Zavala (Tecnologico de Monterrey, Monterrey, Mexico; Universidad Andres Bello, Santiago, Chile)
Data Mining Application in an Introductory Engineering Physics Lab Prof. Rodrigo Cutri (Maua Institute of Techonology), Dr. Octavio Mattasoglio Neto (Instituto Mauá de Tecnologia), and Dr. Nair Stem (IMT)
T408A-Computers in Education Division (COED) Track 4.D Computers in Education Division (COED) Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 515B, Palais des congres de Montreal
Vertical lab Integration with myCobot Robotic Arms Dr. Nebojsa I Jaksic P.E. (Colorado State University Pueblo)
T421-Engineering Libraries Division (ELD) Technical Session 3 Engineering Libraries Division (ELD) Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 511C, Palais des congres de Montreal
Creating Artificial Intelligence (AI) Literacy Learning Outcomes for a Quantitative Experimentation Laboratory Course Laurie Borchard (California State University Maritime Academy), Ms. Amber Janssen (California State University Maritime Academy), and Dr. William W. Tsai (California State University Maritime Academy)
T423A-Engineering Technology Division (ETD) Technical Session 3 Engineering Technology Division (ETD) Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 512C, Palais des congres de Montreal
Integrating Theory and Practice in Signals and Systems Education: A Lab-Centered Curriculum Dr. Mahdi Yazdanpour (Northern Kentucky University) and Dr. Morteza Sadat-Hossieny (Northern Kentucky University)
T428-GSD 6: The Graduate School Experience Graduate Studies Division (GSD) Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 514A, Palais des congres de Montreal
Advanced Microfabrication Manufacturing Course Comparison of Online and In-person Teaching with Hands-on Lab Component for Interdisciplinary Graduate Education Prof. Nathan Jackson (University of New Mexico)
T435-Manufacturing Division (MFG) Technical Session 5 Manufacturing Division (MFG) Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 510D, Palais des congres de Montreal

<p>Development of Digital Laboratory Modules Using Computer Simulation For Enhanced Learning Experience in Manufacturing Education Dr. Md Fashiar Rahman (University of Texas at El Paso), Prof. Tzu-liang Bill Tseng (University of Texas at El Paso), Dr. Richard Y Chiou (Drexel University), Jakia Sultana (University of Texas at El Paso), Mr. S M Atikur Rahman (University of Texas at El Paso), and Selim Molla (University of Texas at El Paso)</p>
<p>Integrating Computer-Aided Manufacturing Users with Directed Energy Deposition Guidelines Dr. Kenton Blane Fillingim (Oak Ridge National Laboratory), Dr. Lauren Heinrich (Oak Ridge National Laboratory), Dr. Ashley Gannon (Oak Ridge National Lab), and Dr. Thomas Feldhausen (Oak Ridge National Laboratory)</p>
<p><i>T438B·ME Division 7: Making it Matter: Projects and Communication</i> <i>Mechanical Engineering Division (MECH)</i> <i>Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 512B, Palais des congres de Montreal</i></p>
<p>Integrating Design Projects to Help Students Learning in Mechanical Engineering Lab Dr. Ismail I Orabi (University of New Haven)</p>
<p>Knowledge Transfer from a First-Year, Stand-Alone Technical Communications Course into Second-Year Laboratory and Design-Focused Courses Prof. Jenni Buckley (University of Delaware) and Dr. Alexander John De Rosa (University of Delaware)</p>
<p><i>T439·Mechanics Division (MECHS) Technical Session 6</i> <i>Mechanics Division (MECHS)</i> <i>Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 520B, Palais des congres de Montreal</i></p>
<p>Assessing ABET SO6 through Innovative Labs in Solid Mechanics: A comprehensive guide for Mechanical Engineering Instructors Prof. Kapil Gangwar (Wentworth Institute of Technology) and Dr. Gloria Guohua Ma (Wentworth Institute of Technology)</p>
<p><i>T341·Multidisciplinary Engineering Division (MULTI) Technical Session 5</i> <i>Multidisciplinary Engineering Division (MULTI)</i> <i>Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 511C, Palais des congres de Montreal</i></p>
<p>Swarm Test Arena for Resilient Systems: an experimental setup to study and test bio-inspired algorithms Ms. Rasika Ravindra Kale (Embry-Riddle Aeronautical University), Bryan Watson (Embry-Riddle Aeronautical University - Daytona Beach), James E Hand (Embry-Riddle Aeronautical University - Daytona Beach), and Matthew Scheinblum-Brewer (Embry-Riddle Aeronautical University - Daytona Beach)</p>
<p><i>T345·Engineering Physics and Physics Division (EP2D) Technical Session 1</i> <i>Engineering Physics and Physics Division (EP2D)</i> <i>Tue. June 24, 2025 11:00 AM to 12:30 PM - Room: 512F, Palais des congres de Montreal</i></p>
<p>Integrating 3D Printing and Tracker Software for Enhanced Data Acquisition in Experimental Physics Education</p>

Mr. CARLOS PINEIDA (Universidad Andres Bello, Chile.), Prof. Angeles Dominguez (Tecnologico de Monterrey, Monterrey, Mexico (ITESM); Universidad Andres Bello, Santiago, Chile (UNAB)), and Prof. Genaro Zavala (Tecnologico de Monterrey, Monterrey, Mexico; Universidad Andres Bello, Santiago, Chile)
<i>T421-Engineering Libraries Division (ELD) Technical Session 3</i> <i>Engineering Libraries Division (ELD)</i> <i>Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 511C, Palais des congres de Montreal</i>
Creating Artificial Intelligence (AI) Literacy Learning Outcomes for a Quantitative Experimentation Laboratory Course Laurie Borchard (California State University Maritime Academy), Ms. Amber Janssen (California State University Maritime Academy), and Dr. William W. Tsai (California State University Maritime Academy)
<i>T445-Engineering Physics and Physics Division (EP2D) Technical Session 2</i> <i>Engineering Physics and Physics Division (EP2D)</i> <i>Tue. June 24, 2025 1:30 PM to 3:00 PM - Room: 512F, Palais des congres de Montreal</i>
Leveraging immersive environments in physics labs and flipped classrooms for engineering courses. Prof. Rodrigo Cutri (Maua Institute of Techonology), Dr. Octavio Mattasoglio Neto (Instituto Mauá de Tecnologia), and Dr. Nair Stem (IMT)
<i>T502-Architectural Engineering Division (ARCHE) Technical Session 2</i> <i>Architectural Engineering Division (ARCHE)</i> <i>Tue. June 24, 2025 3:15 PM to 4:45 PM - Room: 510A, Palais des congres de Montreal</i>
The use of digital twins and AR for indoor environmental quality: classroom as a dynamic laboratory for hands-on and applied STEM-based teaching modules Dr. Yumna Kurdi (University of Idaho) and Damon Woods (University of Idaho)
<i>T504-Innovative Approaches to Biomedical Engineering Education</i> <i>Biomedical Engineering Division (BED)</i> <i>Tue. June 24, 2025 3:15 PM to 4:45 PM - Room: 513F, Palais des congres de Montreal</i>
Mobile Bioengineering Lab: A Hands-On Workshop Series to Bring Experiments to 8th Grade Science Classes Katherine Zobus (University of Illinois at Urbana - Champaign) and Prof. Caroline Cvetkovic (University of Illinois Urbana-Champaign)
Development of a Unique Bioengineering Laboratory Curriculum Focused on Material Characterization of Musculoskeletal Tissues Prof. Jenni Buckley (University of Delaware), Aisley Bergdoll (University of Delaware), Kyle Alexander Crawford (University of Delaware), Nikos Demetris Demetriou (University of Delaware), Laura Alison Weinstein (University of Delaware), Chelsea Davis (University of Delaware), Dr. Sarah Ilkhanipour Rooney (University of Delaware), Amy Posch (Pacific Research Labs), Amelia Lanier Knarr (The Perry Initiative), and Elise Corbin (University of Delaware)
<i>T508B-Computers in Education Division (COED) Track 3.E</i> <i>Computers in Education Division (COED)</i> <i>Tue. June 24, 2025 3:15 PM to 4:45 PM - Room: 525B, Palais des congres de Montreal</i>
ECS Web Lab: A Web-Based Solution for Equitable and Engaging Web Development

Mr. Samuel B Mazzone (Marquette University)
<i>T513·Design in Engineering Education Division (DEED) - Best in DEED</i> <i>Design in Engineering Education Division (DEED)</i> <i>Tue. June 24, 2025 3:15 PM to 4:45 PM - Room: 520F, Palais des congrès de Montreal</i>
Design Curriculum in Introductory Circuits Laboratory Assignments and the Influence on Innovation Self-Efficacy Ms. Heather Michelle Phillips (University of Pittsburgh), Mr. Nicholas Anthony Nobile (University of Pittsburgh), Gabriel Azure Antonio Mendez-Sanders (Carnegie Mellon University), Mr. Lee Allen Dosse (University of Pittsburgh), Dr. Ahmed Dallal (University of Pittsburgh), and Mr. Mohamed A. S. Zaghloul ()
<i>T538B·ME Division 9: Enhancing Lab Experiences</i> <i>Mechanical Engineering Division (MECH)</i> <i>Tue. June 24, 2025 3:15 PM to 4:45 PM - Room: 522B, Palais des congrès de Montreal</i>
Thermo-mechatronic Lab — Characterization of Thermoelectric Generators Dr. Camilo Ordonez (Florida A&M University - Florida State University) and Dr. Juan Ordonez (Florida A&M University - Florida State University)
Development of Virtual Labs for Soft Robotics Courses to Enhance Student Learning and Support Faculty Teaching Fahim Dorsey (Kennesaw State University), Connor Joseph Talley (Kennesaw State University), Dr. Razvan Cristian Voicu (Kennesaw State University), and Dr. Ayse Tekes (Kennesaw State University)
Virtual Labs for Undergraduate Engineering: Does Virtual Reality have any advantages over a web-based simulation or traditional homework assignment? David J. Gagnon (Field Day Lab @ University of Wisconsin - Madison), Dr. Arganthaël Berson (University of Wisconsin - Madison), and Prof. John M. Pfotenhauer (University of Wisconsin - Madison)
A multi-course project for mechatronics, system dynamics, and control experimentation courses. Dr. Bo Yu (Utah Valley University) and Dr. Matthew J Jensen (Utah Valley University)
Incorporating Industry-Sponsored Technical Writing into Engineering Laboratories Caleb Levi Head (University of Arkansas at Little Rock), Dr. Lawrence E. Whitman P.E. (Kennesaw State University), and Dr. Srikanth B Pidugu P.E. (University of Arkansas at Little Rock)
<i>T542·New Engineering Educators (NEE) Technical Session 3 - Professional and Faculty Development</i> <i>New Engineering Educators Division (NEE)</i> <i>Tue. June 24, 2025 3:15 PM to 4:45 PM - Room: 523A, Palais des congrès de Montreal</i>
Working effectively with your teaching team: Tips and Tricks from Laboratory and Design Course Instructors

Katherine Ansell (University of Illinois at Urbana - Champaign), Dr. Jessica R TerBush (University of Illinois at Urbana - Champaign), Dr. Caroline Cvetkovic (University of Illinois Urbana-Champaign), Elaine C. Schulte (University of Illinois at Urbana - Champaign), Dr. Christopher D. Schmitz (University of Illinois Urbana-Champaign), Chandrasekhar Radhakrishnan (Affiliation unknown), and Dr. Rebecca Marie Reck (University of Illinois at Urbana - Champaign)
WEDNESDAY 06/25 – LAST CONFERENCE DAY
<i>W105B·WiP: Student Identity, Support, and Success</i> <i>Chemical Engineering Division (ChED)</i> <i>Wed. June 25, 2025 8:00 AM to 9:30 AM - Room:514C, Palais des congres de Montreal</i>
Work-in-Progress: Relevance, Responsibility, and Agency in Laboratory Experiments Predict Engineering Identity Prof. Stephanie G Wettstein (Montana State University - Bozeman), Dr. Jennifer R Brown (Montana State University - Bozeman), Prof. Eva Chi (University of New Mexico), Ms. Catherine Anne Hubka (University of New Mexico), Mx. Madalyn Wilson-Fetrow (University of New Mexico), and Dr. Vanessa Svihla (University of New Mexico)
<i>W106·Effective Teaching Potpourri</i> <i>Civil Engineering Division (CIVIL)</i> <i>Wed. June 25, 2025 8:00 AM to 9:30 AM - Room: 511B, Palais des congres de Montreal</i>
CASE STUDY: Integration of Python programming in a civil engineering laboratory course Prof. John S Popovics P.E. (University of Illinois at Urbana - Champaign), Yiming Niu (Affiliation unknown), Dr. Sotiria Koloutsou-Vakakis (University of Illinois at Urbana - Champaign), Karthik Pattaje (Affiliation unknown), and Prof. Jacob Henschen (University of Illinois Urbana-Champaign)
<i>W135·Manufacturing Division (MFG) Technical Session 6</i> <i>Manufacturing Division (MFG)</i> <i>Wed. June 25, 2025 8:00 AM to 9:30 AM - Room: 518A - Sponsor Tech Room , Palais des congres de Montreal</i>
Application of Phone-Based Robotic Arm Teleoperation in Remote Hands-On Labs for Engineering Education Dr. Ziling Chen (Massachusetts Institute of Technology), Mr. Zhen Zhao (Massachusetts Institute of Technology), and Dr. John Liu (Massachusetts Institute of Technology)
<i>W304·Curriculum Development and Pedagogical Innovations</i> <i>Biomedical Engineering Division (BED)</i> <i>Wed. June 25, 2025 11:30 AM to 1:00 PM - Room: 513E, Palais des congres de Montreal</i>
Technical Writing as a Learning Objective: Implementation of A Diminishing Scaffolding Model in a Lab-Based Biomaterials Course Dr. Sonia Bansal (Duke University), Kat M Lazar (Duke University), Jaron Shoemaker (Rensselaer Polytechnic Institute), and Elizabeth Feeney (Duke University)
<i>W305A·Inclusive and Interdisciplinary Approaches in Labs and Research</i> <i>Chemical Engineering Division (ChED)</i> <i>Wed. June 25, 2025 11:30 AM to 1:00 PM - Room: 510B, Palais des congres de Montreal</i>
Assessing accessibility and challenging ableism in Unit Operations Laboratories

Dr. Jennifer L. Cole (Northwestern University), Dr. Chris Barr (University of Michigan), Jamie Clark (University of Washington), and Dr. Alexis N Prybutok (University of Washington)

Development of a Biochemical & Biomanufacturing Track in the Unit Operations of Chemical Engineering Laboratory Course

Dr. Laila Abu-Lail (Worcester Polytechnic Institute) and Prof. Andrew R Teixeira (Worcester Polytechnic Institute)

W306·The Real World-Project-Based & Experiential Learning

Civil Engineering Division (CIVIL)

Wed. June 25, 2025 11:30 AM to 1:00 PM - Room: 519A, Palais des congres de Montreal

Establishing the ‘Structural Learning Lab’: A Hands-On Approach to Enhancing Engagement and Understanding in Civil Engineering Education (WIP)

Dr. Maria Jose Echeverria (California State University, Sacramento), Dr. Julie Fogarty (California State University, Sacramento), and Dr. Jose E. Garcia (California State University, Sacramento)

Surviving the Storm: An Assessment of Natural Hazards Experiential Learning Activities for Civil Engineering Students Facing a Changing World

Dr. Jose Capa Salinas (University of St. Thomas), Manuel Salmeron (Purdue University), Dr. Herta Montoya (The University of Texas at San Antonio), Dr. Morgan R Broberg (University of Arkansas), Mr. Shivam Sharma (Purdue University at West Lafayette (COE)), Hyewon Hailey Seo (Purdue University at West Lafayette (COE)), and Jorge Rojas (Lyles School of Civil and Construction Engineering, Purdue University, U.S.)

Integrating Smart City Concepts in Civil Engineering Education through Experimental-Centric Pedagogy

Mr. Mojtaba Naseri (Morgan State University), Mr. Pelumi Olaitan Abiodun (Morgan State University), and Dr. Oludare Adegbola Owolabi P.E. (Morgan State University)

W315·Innovative Learning Tools and Visualizations in ECE Curriculum

Electrical and Computer Engineering Division (ECE)

Wed. June 25, 2025 11:30 AM to 1:00 PM - Room: 514B, Palais des congres de Montreal

Work In Progress: Remote FPGA Lab - An Interactive Online Environment for Teaching FPGA Development Fundamentals

Mr. Ze Yang (University Of Toronto) and Dr. Hamid S Timorabadi P.Eng. (University of Toronto)

W345·Engineering Physics and Physics Division (EP2D) Technical Session 3

Engineering Physics and Physics Division (EP2D)

Wed. June 25, 2025 11:30 AM to 1:00 PM – Room: 512G, Palais des congres de Montreal

The use of Engineering laboratories for teaching Physics

Dr. Octavio Mattasoglio Neto (Instituto Mauá de Tecnologia), Dr. Thiago de Assis Augusto (Maua Institute of Technology), and Fabio Sadao Sato (Affiliation unknown)

W405B·Advancing Labs: From VR to Process Control

Chemical Engineering Division (ChED)

Wed. June 25, 2025 2:00 PM to 3:30 PM - Room: 510B, Palais des congrès de Montreal

Implementing a Distributed Process Control System in a Unit Operations Laboratory

Dr. Joachim K. Floess (University of Illinois at Urbana - Champaign) and Jacob Leicht (University of Illinois at Urbana - Champaign)

Introducing Programmable Logic Controllers in Undergraduate Chemical Engineering Process Control Laboratory using a Liquid Level System

Tata Serebryany (University of Washington), Jennafer Marsh (Brigham Young University), Hayden Scott West (Affiliation unknown), and Dr. Stacy K Firth (University of Utah)

Virtual Reality in Chemical Engineering Laboratory Education

Dr. Ronald Carl Hedden (Rensselaer Polytechnic Institute), Prof. Joel L. Plawsky (Rensselaer Polytechnic Institute), Xiatao Sun (Yale University), Alex Joseph Rishty (Rensselaer Polytechnic Institute), Caitlin Gee (Rensselaer Polytechnic Institute), and Jose Alejandro Luchsinger (Rensselaer Polytechnic Institute)

Designing an Industrially-Situated Virtual Laboratory to Support Electrochemistry Learning in Chemical Engineering

Samuel Gavitt (Tufts University), Bertrand Neyhouse (Department of Chemical Engineering & Applied Chemistry, University of Toronto), Shirin Kuppusamy (Tufts Center for Engineering Education and Outreach), Graham Leverick (Tufts University), Fikile Brushett (Massachusetts Institute of Technology), and Dr. Milo Koretsky (Tufts University)

W434-Liberal Education/Engineering & Society Division (LEES) Technical Session 9: Collaboration and Community

Liberal Education/Engineering & Society Division (LEES)

Wed. June 25, 2025 2:00 PM to 3:30 PM - Room: 513B, Palais des congrès de Montreal

Making space to care: A Community Garden for bioengineering labs

Dr. Ahreum Lim (Arizona State University) and Dr. Emma Frow (Arizona State University)