**2023 ASEE North Central Section Conference**

Presentation Schedule

Morgantown, WV

Saturday, March 25, 2023

**Technical Session 1, 8:45-10:00 a.m.**

*Evansdale Crossing (EVC-E)*

*Media Innovation Center & Morris L. Hayhurst Launch Lab* *(4th Floor)*

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| **Session 1A** | Moderators/Chairs: Diane Peters, Khalid Al-Olimat | **Room: EVC-E 412** |
| 40439 | *Which is better, online or face to face? Comparisons of the same instructor & class taught in 2 modalities* | Todd R. Hamrick |
| 39913 | *Utilizing an Existing College Manufacturing Facility in the Creation of a New Engineering Technology Degree Program* | Dustin Spayde, Robin A.M. Hensel, & Emily Spayde |
| 40368 | *Evolution of a Student Transition and Success Program: Reflections on a 10 Year Journey* | Robin A. M. Hensel |
| 40406 | *Spicing Up the Engineering Classroom* | Craig J. Gunn |
| 40006 | *Impact of Mentoring on Student Success* | Matthew Cavalli & Anetra Grice |

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| **Session 1B** | **Student Papers**  Moderators/Chairs: Paul Penko, Joaquin Rodriguez | **Room: EVC-E 414** |
| 40409 | *Agrivoltaics: A Team-Based Analysis of Solar Energy and Agricultural Modeling* | Dylan Marcus Tobey, Veronica Roth, David V.P. Sanchez, Tony L. Kerzmann, & Robert J. Kerestes |
| 40425 | *Studies of Autonomous UAV-UGV Teams in Construction Applications* | Corodino Naples Colasurd & Ahmed Oun |
| 40433 | *The Accuracy of Pitch Rotation and its Effect to the Surge Movement for Flight Simulation* | Spencer Miller, Xiaoxu Ji, & Davide Piovesan |
| 40443 | *Design and Implementation of a SEPIC Topology DC-DC Converter* | Austin Maverick La Mothe & Qin Hu |
| 40444 | *Geometric Calibration of a Thermal Imaging Camera System for Advanced Driver Assistance* | Osama Salim, Qin Hu, David T. Delisle, Timothy Bonk, Herman Stef Fokou Chendjou, & Suleyman Abdirahman |

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| **Session 1C** | Moderators/Chairs: Soumya Srivastava, Kimberlyn Gray | **Room: EVC-E 421** |
| 40565 | *Teaching Critical Infrastructure Cybersecurity to Undergraduate Students using Real-Time Hardware-in-the-Loop Cyber-Powered Testbed* | Mohammed Mustafa Hussain, Sagnik Basumallik, Anurag K. Srivastava, & Mohamed Hefeida |
| 40400 | *Engineering Application of Artificial Intelligence* | Shahab D. Mohaghegh |
| 40361 | *A New Synthesis Procedure for Designing Digital Filters Based on Optical Fiber Structures* | Mohammed Ferdjallah |
| 40352 | *Case Study: Using AI&ML to Generate Well Logs in Santa-Fe Field, Kansas* | Mehrdad Zamirian & Shahab D. Monaghegh |
| 40419 | *New Labs for Control Courses using Vision Systems – Cognex* | William T. Evans |

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| **Session 1D** | **Workshop** (Moderators: Nassif Rayess, Greg Harstine) | **Room: EVC-E 429** |
| WORKSHOP | ***Entrepreneurship Mindset for Engineering (Technology) Education: Starter Kit*** | Drs. Carmen Cioc, Noela Haughton, & Sorin Cioc |

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**Technical Session 2, 10:15-11:30 a.m.**

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| **Session 2A** | Moderators/Chairs: Junayed Pasha, Haroon Malik | **Room: EVC-E 412** |
| 40429 | *Development of a “Gender in Engineering & Technology Careers” Course* | Leslie Hopkinson |
| 40438 | *Using PBL in a Mechanical Design Course to Enhance Engineering Skills* | Carmen Cioc, Noela A. Haughton, & Sorin Cioc |
| 40414 | Using a *Multidisciplinary Engineering Project in a First-Year Engineering Course for Educationally Disadvantaged Students* | Xinyu Zhang, Jeremy G. Roberts, and Amanda Parrish |
| 37719 | *Engineering Strong Bridges: Review of College Bridge Programs* | Diane L. Peters |
| 40436 | *Redesigning Engineering 101: Promoting Student Wellness in an Introductory Course* | Jonathan Fagert & Jacqueline Rodriguez |

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| **Session 2B** | **Student Papers**  Moderators/Chairs: Derek Breid, Sandra Soto-Caban | **Room: EVC-E 414** |
| 38346 | *Rectangular Dorsal Flap Size Investigation in Web Commissure Reconstruction of Syndactyly Surgery* | Caleb Edward Scheideger, Guang Yang, Kyler Pang, & Hui Shen |
| 39920 | *A Smart Warning System Design Based on Brainwaves to Maintain Attention* | Haylee Haik, Jennifer Meng, & Qin Hu |
| 40374 | Flow Changes of Vestibular System due to Changes in Volume and Ellipticity | Vincent Rodney Sheeler, Lacey Lynn Wernoch, Hui Shen, & Jed E. Marquart |
| 40427 | *Online Software Engineering Graduate Program Case Study: Significant Student Engagement and Career Impact* | Marcela Alexandra Mera Trujillo, Yasser Alshehri, Dale D. Dzielski, & Katerina Goseva-Popstojanova |
| 40455 | *An Evaluation of Remote Co-Op Assignments on Engineering Students* | Grace Hanna, Nicholas Ibegbu, Allison Sherman, Nathaniel Boyar, Nathan Garay, & Nassif E. Rayess |

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| **Session 2C** | Moderators/Chairs: Chris Gioia, Sihe Zhang | **Room: EVC-E 421** |
| 40360 | *Emerging Innovations & Global Challenges on Curriculum Design: Case Study of Teaching Security in Embedded System Design* | Asad Salem & Mohammed Ferdjallah |
| 40420 | *New Labs for Control Courses DC Motor Control* | William T. Evans |
| 40590 | *Learning Thermodynamics Using Display Models and Animation* | Aneesha Gogineni |
| 39494 | *A Colligative Property Experiment using the Solvent Paraffin Wax* | Tarek Rafiq Farhat, Hasan El Rifai, & Rana Mouhamad Jisr |
| 39607 | *Development of Next Generation Column Guard for Storage Rack Protection* | Robert Michael, David Gee, & Mark Keith Kurchena |

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| **Session 2D** | **Panel Discussion** (Chairs: Seyed Ardakani, Chad Korach) | **Room: EVC-E 429** |
| PANEL DISCUSSION | ***Diversity and Cultural Awareness in the Classroom*** | Drs. Cerasela Dinu and Julie Lockman |

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**Technical Session 3, 2:15-3:30 p.m.**

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| **Session 3A** | Moderators/Chairs: Xinyu Zhang, Omar Al-Shebeeb | **Room: EVC-E 412** |
| 40375 | *Innovative Teaching Technique for the Exponential and Logarithmic Functions* | Daniel Blessner |
| 39587 | Designing *Instruction to Promote a Riemann Sum-Based Understanding of the Definite Integral* | Caleb D. Holloway |
| 40435 | *Integration by Gambling* | Murat Tanyel |
| 40448 | *WIP: Towards Designing a Multidisciplinary Big Data Analytics (BDA) Course* | Haroon Malik & David A. Dampier |
| 39746 | *Wireless Sensor Network for Data Mining in Engineering Projects* | Wesley Thomas Noble, Zachary Owen Dickinson, and Ramakrishnan Sundaram |

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| **Session 3B** | Moderators/Chairs: Kimia Mortezaei, Matt Cavalli | **Room: EVC-E 414** |
| 38452 | *The Harry Outen Cole Panama Canal Papers at the West Virginia Regional History Center* | Martin Dunlap |
| 39615 | *Barriers to Engineering Study Abroad in Switzerland* | Nicholas A. Baine |
| 40437 | *WIP: A 3D-Printed Frames and Machines Activity in Statics* | Seyed Monammad Seyed Ardakani & Grace Hattery |
| 40399 | *Chemical Engineering Capstone Course Improved for Broader Impacts* | Joaquin Rodriguez & Robert Enick |
| 40359 | *A Course in Sustainable Power Generation* | Paul F. Penko |

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| **Session 3C** | Moderators/Chairs: Craig Gunn, Stephany Coffman-Wolph | **Room: EVC-E 421** |
| 39465 | *The National Energy Education Dept (NEED) Project Impact on STEM Education in K-12 Schools* | *Fernanda Delduque, Sudipta Chowdhury, and Ammar* Alzarrad |
| 39616 | *WIP: Exploring Female Representation Issues in Computing by Writing Interactive Fiction* | John K. Estell & Stephany Coffman-Wolph |
| 40405 | *Creativity and the Engineering Student* | Craig J. Gunn |
| 40449 | *An Interdisciplinary General Education Capstone Course Intersecting Art and Engineering Design* | Chad S. Korach and Margo Miller |
| 40408 | *Sociocultural and Sociopolitical Challenges for STEM Education in the Current Era* | Sudipta Chowdhury & Ammar Alzarrad |

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| **Session 3D** | **Workshop** (Chairs: Tarek Farhat, Aneesha Gogineni) | **Room: EVC-E 429** |
| WORKSHOP | ***Tale of Two Engineering Classrooms: Overcoming the Invisible Disadvantage.*** | Dr. Shehla Arif |