

2017 Joint Conference:

Current and Future Trends in Engineering and Engineering Technology Education

Hosted by the **University at Buffalo**



Davis Hall

University at Buffalo · Buffalo, NY

April 21/22, 2017

Conference Program

Table of Contents

- Exhibitors & Sponsors 2
- Conference Officials 3
- Current Officers, ASEE St. Lawrence Section 5
- Current Officers, NY Cyber Security & ETA 6
- Conference Information 7
- Conference Schedule 9
- Opening Remarks 10
- Keynote Address 10
- ABET Panel 11
- Technical Session 12
- Poster Session 15
- Notes 17

Special thanks to our exhibitors for supporting the Conference and helping defray conference expenses.



Conference Officials

Conference Co-Chairs:



Dr. Kris Schindler, Teaching Assistant Professor
Department of Computer Science & Engineering
University at Buffalo



Mark Voisinet, Professor
Professor, Technology Program Coordinator, Computer Aided Design and Drafting, Program
Coordinator, Welding Technology
Niagara County Community College

Organizing Committee:



Dr. Kathryn Dimiduk, Director
Engineering Teaching Excellence Institute
Cornell University



Jill Powell, Engineering Librarian
Cornell University



Dr. Jan DeWaters, Associate Professor & Engineering Studies Advisor
Wallace H. Coulter School of Engineering
Clarkson University



Michael White, Associate Librarian, Research Services
Liaison Librarian for Chemical Engineering, Chemistry, Engineering Physics & Astronomy
Engineering & Science Library
Queen's University



Zachary Salim, Student
Computer Engineering
University at Buffalo

Special Thanks to the Following Individuals for Their Assistance Organizing the Conference:

Liesl Folks, Dean, School of Engineering and Applied Sciences, University at Buffalo

Christina Escobar, Assistant to the Dean, School of Engineering and Applied Sciences University at Buffalo

Marianne Sullivan, Executive Officer, Computer Science & Engineering Department, University at Buffalo

Kimberly Abram, Catering Sales Manager, Three Pillars Catering

Dr. Andrew Whittaker, Professor/Director of MCEER, SEESL, & the Institute of Bridge Engineering, University at Buffalo

Student Volunteers from the University at Buffalo

Current Officers, ASEE St. Lawrence Section

Chair:

Dr. Kathryn Dimiduk, Director
Engineering Teaching Excellence Institute
Cornell University
E-mail: klc78@cornell.edu

Chair-Elect:

Dr. Kris Schindler, Teaching Associate Professor
Department of Computer Science And Engineering
University at Buffalo, The State University of New York
E-mail: kds@buffalo.edu

Treasurer:

Jill Powell, Engineering Librarian
Acting Director, Science and Technology Libraries
Cornell University
E-mail: jhp1@cornell.edu

Webmaster:

Dr. Kris Schindler, Teaching Associate Professor
Department of Computer Science And Engineering
University at Buffalo, The State University of New York
E-mail: kds@buffalo.edu

Secretary:

Dr. Jan DeWaters, Associate Professor & Engineering Studies
Advisor
Clarkson University
E-mail: jdewater@clarkson.edu

Awards Committee Chair:

Michael White, Associate Librarian, Research Services
Liaison Librarian for Chemical Engineering, Chemistry, Engineering
Physics & Astronomy
Engineering & Science Library
Queen's University
E-mail: michael.white@queensu.ca

Past Chair:

Dr. Tomislav Bujanovic, Associate Professor
Department of Electrical Engineering & Computer Science
Syracuse University
E-mail: tbujanov@syr.edu

Current Officers, NY Cyber Security & ETA

President:

John Campbell

Professor, Engineering Technology Program Coordinator
Cayuga Community College

E-mail: campbell@cayuga-cc.edu

Vice President:

Mark Voisinet

Technology Program Coordinator, Computer Aided Design and Drafting
Program Coordinator, Welding Technology
Niagara Community College

E-mail: mvoisine@niagaracc.suny.edu

Secretary & Newsletter Editor:

Jayne Baran

Professor
SUNYIT

E-mail: Jayne.Baran@sunyit.edu

Treasurer:

Fred Schoenfeld

Professor
Nassau Community College

E-mail: prof.schoenfeld@gmail.com

Website Editor:

James Mallory

Professor
NTID at RIT

E-mail: jrmnet@ntid.rit.edu

Conference Information

Track Themes

- Trends & Innovations in Engineering Education
- Increasing Student Engagement
- Discipline Specific Topics & Materials to Share
- K12 Engagement in STEM Areas
- Beyond the Technical Lecture (Experiential Learning/Engineering Education Beyond the Classroom/Developing the Less-Technical Side of the 21st Century Engineer/Digital Literacy for Engineers)
- Broadening Participation in Engineering & Engineering Technology Education
- Moving Forward Through Collaboration (Projects Seeking Collaborators/Cross Institution Collaborative Endeavors)

Conference Registration

Registration is required for all attendees and presenters. Badges are required for admission to all events. Registration fees include admission to the conference banquet and closing reception. Additional banquet tickets may be purchased for \$40 per person.

Registration Hours

The conference registration desk will be located at the University at Buffalo on the first floor of Davis Hall in the Bansal Atrium and will be open during the following hours:

Friday, April 21: 1:00 p.m. – 5:00 p.m.

Saturday, April 22: 8:00 a.m. – 11:00 a.m.

Hotel Accommodations

Accommodations at a special conference rate are available at the following hotel:

Salvatore's Garden Place Hotel • 6615 Transit Road • Williamsville, New York • (877) 456-6036
Visit <http://salvatoreshospitality.com/garden-place-hotel.html>

Conference Proceedings

Conference proceedings will be published on the ASEE St. Lawrence Section website (<http://stl.asee.org>).

Social Functions

Pre-Banquet Cocktail Reception/Networking Hour

Salvatore's Italian Gardens Restaurant
6461 Transit Road, Lancaster, NY
Friday, April 21, 6:00 – 7:00 p.m.

Conference Banquet (included in registration fee; guests are \$40 per person; students are \$35 per person)

Salvatore's Italian Gardens Restaurant
6461 Transit Road, Lancaster, NY
Friday, April 21, 7:00 – 9:00 p.m.

Closing Reception (included in registration fee; students are welcome to attend)

Davis Hall, 1st Floor Atrium (Bansal Atrium)
Saturday, 4:00 – 5:00 p.m.

Tour of the Structural Engineering & Earthquake Simulation Laboratory at the University at Buffalo

There will be a tour of the Structural Engineering & Earthquake Simulation Laboratory at the University at Buffalo beginning at 3:00 p.m. on Friday, April 21, 2017. The Structural Engineering and Earthquake Simulation Laboratory (SEESL) at the University at Buffalo is the premier facility for earthquake-engineering experimentation in the United States, supporting agency and industry-sponsored research in the Department of Civil, Structural and Environmental Engineering (CSEE) at the University, and services for a wide range of industry clients. The facility includes two high-performance earthquake simulators, a geotechnical laminar box, hybrid-simulation capabilities, and a wide range of high capacity actuators. Professor Andrew Whittaker, a licensed structural engineer in the State of California, will lead the tour and describe the capabilities of the Laboratory.

Conference Schedule

Friday, April 21, 2017

- 1:00 – 5:00** Registration Desk Open (**Bansal Atrium, 1st Floor of Davis Hall**)
- 2:00– 5:00** Poster Session (**Bansal Atrium, 1st Floor of Davis Hall**)
- 3:00 – 4:00** Tour of the Structural Engineering & Earthquake Simulation Laboratory (SEESL) at the University at Buffalo (**Meet in Bansal Atrium, 1st Floor of Davis Hall**)
- 6:00 – 7:00** Pre-Banquet Cocktail Reception / Networking Hour (**Salvatore’s Italian Gardens Restaurant**)
- 7:00 – 9:00** Conference Banquet (**Salvatore’s Italian Gardens Restaurant**)
Keynote: Monica Pellegrino, The Historic Richardson Olmsted Complex

Saturday, April 22, 2017

- 8:00 – 11:00** Registration Desk Open (**Bansal Atrium, 1st Floor of Davis Hall**)
- 8:00 – 8:30** ASEE Board Meeting (**Davis Hall, Room 113A**)
- 8:45 – 9:00** Opening Remarks (**Davis Hall, Room 101**)
- 9:00 – 10:30** ABET Panel (**Davis Hall, Room 101**)
- 10:45 – 3:45** Technical Session
- 10:45 – 3:15** Poster Session
- 10:45 – 3:15** Vendor Exhibits
- 11:15 – 1:15** Lunch
- 4:00 – 5:00** Closing Reception/Social Hour (**Bansal Atrium, 1st Floor of Davis Hall**)
- 5:00 – 6:00** NYSETA Meeting (**Davis Hall, Room 113A**)

Opening Remarks:

Friday, April 21, 2017: 7:00 – 7:10 p.m.

Salvatore's Italian Gardens Restaurant



Dr. Liesl Folks

Dean, School of Engineering and Applied Sciences, University at Buffalo

Keynote Address: *The Historic Richardson Olmsted Complex*

Friday, April 21, 2017: 7:45 – 8:30 p.m.

Salvatore's Italians Garden Restaurant



Monica Pellegrino FAix, AICP

Monica Pellegrino FAix, AICP, is the Executive Director for the Richardson Olmsted Complex. Since 2007 she has worked with the not for profit board overseeing the reuse and rehabilitation of this National Historic Landmark in Buffalo, NY. Monica holds a Masters of Urban Planning degree from the University at Buffalo. Monica will present on her insights, challenges, and construction on the rehabilitation of this Buffalo treasure.

ABET Panel

Saturday, April 22, 2017: 9:00-10:30 a.m.

Davis Hall, Room 101

The panel will discuss the accreditation process and the future direction the accreditation process. Conference attendees will have an opportunity to interact with the panel with a question and answer session.

Charles Hickman

Chief Constituent Relations Officer

Ramalingam Sridhar

ABET Program Evaluator

Ilya Grinberg

ABET Program Evaluator

Technical Sessions

Saturday, April 22, 2017, 10:45 – 3:15 p.m.

Davis Hall, Room 101

- 10:45** Equipping Students for Real World Problem Settings
William Wild, Gary Dargush, Mark Karwan, Jennifer Zirnheld; University at Buffalo
- 11:15** Cooperative Learning in DC Circuits Laboratory for Improved Student Success and Proficiency
Steven Ciccarelli; Rochester Institute of Technology
- 11:45** Developing Capstone Design Projects that Provide Diversification to the Student Experience
Kris Schindler; University at Buffalo
- 12:15** Adding Value to Biomass through Green Chemical Engineering: Getting K-12 Students Excited about Engineering
Mohammad Ghasemi, Paschalis Alexandridis, Marina Tsianou; University at Buffalo
- 12:45** Adaptive Communication Technology for ALS Patients
Zachary Salim, Jeremy Petrotto, Logan Robinson, Samantha Brennen, Sriram Subramanian; University at Buffalo
- 1:15** Electronics Circuit Design with MATLAB
Klaus Wuersig; University of Pittsburgh at Bradford
- 1:45** Robotic Prosthetic Hand
Mohammed Abdallah; SUNY POLY
- 2:15** Design of Formulated Products: A Product Design Course that Integrates Knowledge of Materials Chemistry, Nano Structure and Functional Properties
Paschalis Alexandridis, Andrew M Bodratti, Zhiqi He, Marina Tsianou, Chong Cheng; University at Buffalo, The State University of New York
- 2:45** Testbed for Transactive Energy and Its Effect on the Grid and Protective Devices
Kris Hammerick, Dean Nelipowitz, William Hall, Thomas O'Brien, Bashar Ajwed, Lacy Taylor; SUNY Buffalo State
- 3:15** A Visual Approach to Antenna Theory Using the Dipole
Paul Crilly; United States Coast Guard Academy

Davis Hall, Room 113A

- 10:45** Neutron Shielding Material
Edward Purizhansky; Buffalo State College
- 11:15** Oral Examinations as an Assessment Tool in an Engineering Design Course
James Jensen; University at Buffalo
- 11:45** Enhancing Students' Hands-On Skills of Wireless Technology Using Network Simulators
Te-Shun Chou; East Carolina University
- 12:15** Electrical Engineering Technology Partners with Support Programs for Increasing Underrepresented Populations in the Engineering Field
Stephanie Goldberg; Buffalo State College
- 12:45** Assessing Engineering Technology Students via the Purdue Spatial Visualization Test
William Leonard; Rochester Institute of Technology
- 1:15** Articulation Agreement Lottery
Dino Laury; Rochester Institute of Technology
- 1:45** James Mallory, Ronald Kelly, Andrew B Quagliata, Richard DeMartino, Victor Perotti; Rochester Institute of Technology
- 2:15** Design and Delivery of a 1000online Certificate Program in Quality
John Earshen; SUNY/Buffalo State

Davis 338A

- 11:45** New Nanotechnology Programs and Partnerships in name of the region
Elena Brewer; Erie Community College

- 12:45** Community Engagement Across Disciplines: Engineering Within the Service Learning Environment
Edward Davis, Tony Monahan; Queensborough Community College

- 1:45** Development of Senior Design Sequence with Integration of Undergraduate Research Component
Ilya Grinberg; SUNY Buffalo State

- 2:45** Visual Insights into Object-Oriented and Multi-Threaded Program Execution
Bharat Jayaraman; University at Buffalo

Poster Session

Saturday, April 22, 2017, 10:45 – 3:15 p.m.

Davis Hall, Bansal Atrium, 1st Floor

COBAIN a Low Cost Electronics Prototyping Apparatus

Jon Battison, Jonathan R Rosten, Michael L Aikey, Jason L Keller; Buffalo State College

Eye Tracking: Adaptive Technology at a Glance

Zachary Salim, Jennifer Barker, Megan Yoerg, Jeremy Petrotto, Logan Robinson, Devon Rennoldson, Samantha Brennen, Sriram Subramanian, Olivia Spellicy; University at Buffalo

iLearns: a Kinesthetic-Learning System

Zachary Salim, Nathan Maurer, Andrew Balys, Steven Siwinski, William Martens, June Hah, Ian Wilson, John Fincken, Courtney Porter, Darren Lim; University at Buffalo

Testbed for Transactive Energy

Kris Hammerick, Dean Nelipowitz, William C Hall, Thomas J O'Brien, Lacy A Taylor, Bashar A Ajwed; SUNY Buffalo State College

Lazy Gardener: Automation of Caring for Plants

Maleek Mckenzie, Nathaniel Driskell, Jordan M Tyler Wearing, Tajrian R Arpon; SUNY Buffalo State

The Bait Bike: Reeling in Thieves

Matthew Keough, Seth Pauldine, Gilan A Serrant, Andre R Matthews; SUNY Buffalo State College

Coffee and Convenience: The Automatic French Press

Daniel Wrigglesworth; State University of New York College at Buffalo

PlowTracks: A real time Road conditions reporter.

Richard Addisah, Kevin Dao, Mustapha Barrie, Eric Bigirindavyji; SUNY Buffalo State College

Leak Test Fitting

Eric Suckow, Robert Kozak; Buffalo State College

Equipment Upgrade to Improve Throughput

Michael Passero, Brian Klementowski; SUNY Buffalo State

Three dimensional Assembly of the Semi welded, Gasket plate Type Heat Exchanger

Tyler Hohman, Youssouf Kaba; SUNY Buffalo State College

Targeting the next generation of STEM Students

Melanie Villatoro, Kayla Natal, Joyce Tam; NYC College of Technology

ASHRAE Group

Freddy De la Rosa; SUNY at Buffalo State

Electrostatic Characteristics of Oils

Max Jaworski, Tyler Ford, Mitchell Gangloff, Colton Keen; Buffalo State College

Autonomous People Mover

Abraham Long, William Fanelli, Giovanni Sabato, Ryan Trumpore, Jian Hong Wu; Rochester Institute of Technology

Doppler OCT in Ovarian Cancer Detection

Elizabeth Priolo, Joseph Shahbazian, Shankar Krishnan; Wentworth Institute of Technology

Internet of Things IoT for Microgrid Control and Protection

Matin Meskin, Ilya Grinberg; University at Buffalo

ASHRAE competition

Antonio Ciarfella, Freddy De La Rosa, Zaid Naji; Buffalo State

Design and Construction of a Prototype All-Carbon Vein Valve

Rithwik Jallepalli, Robert Baier; University at Buffalo

A case study of Project Based Learning Focusing on Controls Engineering

Ari Rubinsztejn, Tarunraj Singh; University at Buffalo

Solar Vapor Generation

Daniel Lewandowski, Mercedes Handley, Chris Daucher; University at Buffalo

Design and Implementation of an innovative Sun tracker control system

Andrew Adams, Dale Salmon, Tim Lewis, Maryam Nasri; Alfred State

A Virtual Oscilloscope Activity Designed for Promoting STEM to Young Women

Chinmayee Rane, Jennifer Winkus; University at Buffalo

Design and Implementation of an innovative Sun tracker control system

Andrew Adams, Dale Salmon, Timothy Lewis; Alfred State College

