

ASEE Rocky Mountain Section Conference

BYU | IRA A. FULTON COLLEGE
ENGINEERING AND TECHNOLOGY

September 22-23, 2017
Brigham Young University
Provo, UT



Friday, September 22

Welcome Lunch

12:00-12:50 p.m., 2260A

Session 1a

1:00-2:40 p.m., 2265, Reza Kamali Session Chair

["Developing an Introduction to Mechanical Engineering Course at Utah State University Based Upon National Science Foundation-Sponsored Foundation Coalition Findings and Methodologies"](#)

S. Wendel, A. Minichiello, K. Graham, J. Graham, J. Zundel
Utah State University

["Applying Systems Engineering Approach in Undergraduate Electrical and Computer Engineering Capstone Design Course"](#)

J. Guo, K. Kasley, J. Santiago, P. Phillips
Colorado Technical University

["New Perspectives for PLC Curriculum"](#)

J. Proano, D. Swigert
Metropolitan State University of Denver

["Implementing Smart Manufacturing Principles: Merging Operational Technology and Information Technology in Undergraduate and Graduate Curriculum"](#)

Y. Hovanski, B. Russell, J. Rydalch
Brigham Young University/PTC

["Mind Map for Biologically Inspired Covert Visual Systems: A Pilot Study"](#)

M. Anderson, J. Onyechi, T. Yamazaki, K. Wood, D. Jensen
United States Air Force Academy/Singapore University of Technology and Design

Session 1b

1:00-2:40 p.m., 2267, Ning Fang Session Chair

["Effect of Research Opportunities on Undergraduate Students' Self-Efficacy and Professionalism: Initial Qualitative Findings"](#)

A. Litton, W. Goodridge, B. Call, S. Lopez
Utah State University

["Using Competition to Accelerate Student Learning and Improve Student Outcomes: The Beam Break Competition"](#)

E. Bingham, J. Smith
Brigham Young University

["Designing Blended Content Modules as Support to Traditional Face-to-Face Delivery: An application to Simulation Experiments and Inferential Statistics Courses"](#)

Y. Correa-Martinez, L. Bedoya-Valencia
Colorado State University-Pueblo

["Using Open Math Homework Platforms for Online Engineering Homework"](#)

P. Richards
Brigham Young University

["Fostering reflection and metacognition with engineering homework"](#)

M. Roberts
Southern Utah University

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Session 2a

3:00-4:40 p.m., 2265, John Salmon Session Chair

["Enhanced Electro-Magnetic Fields by using MATLAB"](#)

J. Proano, D. Swigert
Metropolitan State University of Denver

["Using EEG and Neural Efficiency to Understand Undergraduate Engineering Spatial Ability"](#)

J. Ruesch, W. Goodridge, B. Call, S. Lopez, N. Wan, K. Jordan
Utah State University/Cincinnati Reds

["Developing collegiate cybersecurity interest through authentic inquiry"](#)

M. Borowczak, A. Burrows
University of Wyoming

["Focusing on Spatial Ability Development"](#)

J. Hansen, W. Goodridge, B. Call
Utah State University

["Using State Machines to Teach a First Course in Embedded Programming"](#)

B. Hutchings
Brigham Young University

Session 2b

3:00-4:40 p.m., 2267, James Smith Session Chair

["Ethics Across the Curriculum? Integrating Ethics and Societal Impact Topics into Core Engineering Courses"](#)

A. Bielefeldt, M. Polmear, D. Knight, C. Swan, N. Canney
University of Boulder/Tufts University/Seattle University

["BYU Civil & Environmental Engineering Capstone Program"](#)

W. Lee, E.J. Nelson, M.B. Borup
Brigham Young University

["Implementing a WOW Factor in STEM to Recruit High School Female Students"](#)

A. Trego
Utah Valley University

["Involving high school students in an engineering fluid mechanics course project"](#)

D. Lignell, M. Memmott, A. Andersen
Brigham Young University/Mountain View High School

["Eliminating the Illusion of Learning from Engineering Courses"](#)

J. Weaver
Brigham Young University

Dinner and Keynote: Brad Agle

6:00-7:30 p.m., 2260A

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Saturday, September 23

Session 3

8:30-10:00 a.m., 2254, Randy Hurd Session Chair

“Work in Progress: An S-STEM Program in the College of Engineering at Utah State University”

N. Fang, L. McNeill, R. Spall, P. Barr
Utah State University

“Real-Time, In-Class Feedback from Computer Programming Exercises”

A. Sellers, J. Salmon
Brigham Young University

“Multidisciplinary AEC Courses: A Case Study on the Challenge to Collaborate”

J. Smith, E. Bingham, C. Farnsworth, J. Weidman
Brigham Young University

“Motivational Project-Based Learning in Engineering Mechanics”

L. Andrusiv, M. Anderson
United States Air Force Academy

“Development of an Applied Data Analysis Course for Undergraduate Engineering Students”

J. Weaver
Brigham Young University

“Evaluation of Outcome Versus Resource Allotment for 2013 ASEE Directory of Engineering Cooperative Education and Intern Program Participants”

S. Wendel
Utah State University

Session 4

10:15-11:55 a.m., 2254, Paul Richards Session Chair

[“Future Time Perspective and Problem-Based Learning in a Senior Thermo-Fluids Engineering Lab”](#)

R. Hurd, D.M. Weiss, J. Graham, T. Truscott
Utah State University

[“Engineering student self-assessment of performance in a team setting: realism versus fantasy”](#)

J. Weidhaas
University of Utah

[“#DiscoverYourLibrary”](#)

M. Deutsch, K. Horn, M. Rosenthal
United States Air Force Academy

[“Virtual Neurophysiology Workbench: An Interactive Learning Tool for Bioelectricity and Neural Engineering Education”](#)

S. Black, C. Butson
University of Utah

[“Engaging Students in Circuit Theory Laboratory Course by Incorporating Advanced Techniques in Fine Image Ink-Jet Printing and Student Based Component Design”](#)

R. Kamali-Sarvestani, J. Laufiso, B. Wright
Utah Valley University

Lunch, Business Meeting, and Awards

12:00-1:00 p.m., 2260A