

# ASEE MIDWEST SECTION

Arkansas, Kansas, Missouri, Nebraska, and Oklahoma

## WELCOME TO MISSOURI S&T

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Second Floor, Havener Center

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### CONFERENCE PROGRAM DETAILS

*Wednesday, 19 September 2012*

**6:00-8:00 pm**      **Meramec/Gasconade Rooms, Havener Student Center**  
Welcoming Reception

*Thursday, 20 September 2012*

**8:00-9:00 am**      **St. Pat's A Room, Havener Student Center**  
Welcome by Dr. W. Kent Wray, Provost, Missouri S&T  
Plenary: *A Two-Year Experience to ABET Accreditation*  
Thomas A. McGovern (St. Louis Community College)

**9:10-10:00 am**      **Track I K-12 Outreach St. Pat's A Room**  
Session Moderator: TBD

9:10 am              *Robotics Outreach Programs in a College of Engineering*  
Eric Mead, Karen Reynolds, & Lawrence Whitman (Wichita State U.)

9:35 am              *Roller Coaster Tycoon 3 as a Performance Based Learning Tool under Common Core State Standards for Middle School and High School*  
Melissa Miller, Randall Reynolds, & Ed Pohl (U. of Arkansas)

**9:10-10:00 am**      **Track II No Session Missouri Room**  
Setup Time for Student Design Poster Session

**9:10-10:00 am**      **Track III Course Design Silver & Gold Room**  
Session Moderator: TBD

9:10 am              *A Comparison of Student Performance in an Online, Hybrid, and Traditionally Delivered Numerical Methods Course*  
Michael Reynolds (U. of Arkansas – Fort Smith)

9:35 am              *Software Education for Changing Computing Technology*  
Benjamin Cooper (CMC Technologies Limited LLC) & Steve E. Watkins (Missouri S&T)

**10:00-10:30 am**      **Break Meramec/Gasconade Rooms**

10:00-11:45 am

**Track II Student Design Poster Session Missouri Room**

Session Moderator: Douglas Carroll (Missouri S&T/ Missouri State U.)

- \* *Application of Inquiry-Based Learning in Summer Engineering Programs: Acid Hydrolysis of Sugars from Biomass*  
Amy McGraw, Edgar C. Clausen, Jamie A. Hestekin, & Ralph E. Martin (U. of Arkansas)
- \* *Synthesis of New Derivatives of Rhodanine Dyes for Dye-Sensitized Solar Cells (DSSCS)*  
Boufarer Tahar, Rahmouni Mostapha, Mir-Kasmi Souad, Djillali Karim (Saad Dahleb University of Blida, Algeria)
- \* *Selective Source AC/DC Power Supply*  
Charles Wright, Reza Ahmadi, Amshumaan Raghunatha Kashyap, Anagha Rayachoti, Alberto Berrueta Irigoyen, & Jonathan W. Kimball (Missouri S&T)
- \* *Design of a Motor Control Board for the NASA Lunabotics Mining Competition*  
Chris Farnell, Brett Sparkman, & Scott C. Smith (U. of Arkansas)
- \* *A Novel Electric Vehicle Drive System*  
Christopher C. Arnold & Kevin T. Tran (U. of Arkansas – Fort Smith)
- \* *Weight Reduction Methods for the SAE Aero Design Competition*  
Christopher James, & B. Terry Beck (Kansas State U.)
- \* *Design of an Antipodal Vivaldi Antenna for use in a Bi-Static Linear Array*  
Sarah Hatfield, Daniel Schultz, Kristen M. Donnell, & Mohammad Tayeb Ghasr (Missouri S&T)
- \* *Solar-Powered Game Camera Support System*  
David C. Macke Jr., Adam Reab, Tyler Allen, Jeffrey Keener, & Steve E. Watkins (Missouri S&T)
- \* *Laboratory Experiments for Introductory and Advanced VLSI Courses*  
Hui Geng, Daryl G. Beetner, & Yiyu Shi (Missouri S&T)
- \* *MMDAvatar – An Online Voice Chat Robot with 3D Avatar and Artificial Intelligence*  
Jianming Liu & Steven L. Grant (Missouri S&T)
- \* *Demonstration of the Benefits of Asynchronous vs. Synchronous Circuits*  
Justin Roark & Scott C. Smith (U. of Arkansas)
- \* *Testing the Susceptibility of a High-Speed Integrated Circuit*  
Ludovic V. Grivault, Matthew J. Gualdoni, & Daryl G. Beetner (Missouri S&T)
- \* *A New Approach to Student Design (Mars Rover Design Team)*  
Michael Bouchard & Kristen M. Donnell (Missouri S&T)
- \* *Electron Beam Coupling Efficiency in EBF*  
Rodney M. Clayton (Missouri S&T)
- \* *Energy Gathering Autonomous Mobile Robot*  
Taylor Clonts, Stephen Moerer, & Steve E. Watkins (Missouri S&T)
- \* *Pump Cavitation Demonstration Device*  
J. Brighter, W. Childs, D. Mobbs, & Z. Ross (Arkansas Tech U.)

- 10:30-11:45 am Track I Electronic Resources St. Pat's A Room**  
Session Moderator: TBD
- 10:30 am *Enhancing the Distant Classroom Experience using NUVIEW*  
Brett Meyer, Timothy Wei, David Jones, & Stuart Bernstein (U. of Nebraska-Lincoln)
- 10:55 am *On Demand Lecture Content for Online Courses using Boogie Board Rip™ and Jing™ Screen and Audio Capture*  
Ronny Galloway (Pittsburg State U.)
- 11:20 am *Possible Extension for Electronic Media in the Revised Applications*  
Takao Ichiko (Yamagata National U., Japan)
- 10:30-11:45 am Track III Course Projects Silver & Gold Room**  
Session Moderator: TBD
- 10:30 am *A Transient Experiment to Determine the Heat Transfer Characteristics of a 100W Incandescent Light Bulb, Operating at 48W*  
Ed Clausen, Lauren Cole, Lindsay Hoggatt, Jamie Sterrenberg, David Suttmiller, & Roy Penney (U. of Arkansas)
- 10:55 am *Design and Testing of Wireless Power Transmission*  
Andrew Matthews, Cagatay Mital, Byron Okine, Derek Marzolf, & W. J. Wilson (U. of Central Oklahoma)
- 11:20 am *An Incremental Measurements and Data Acquisition Project*  
Lawrence Boyer (St. Louis U.)
- 12:00 noon-1:30 pm Luncheon Meramec/Gasconade Rooms**  
Section Chair Theresa Swift (Missouri S&T)
- 1:45-3:00 pm Track I Faculty Issues St. Pat's Room**  
Session Moderator: TBD
- 1:45 pm *Establishing a Faculty Development Focus at a Public Technological Research University*  
Diane Hagni & Harvest Collier (Missouri S&T)
- 2:10 pm *How a Sabbatical can be used to improve Course(s) Instruction*  
Kevin Lewelling (U. of Arkansas - Fort Smith)
- 2:35 pm *Student Satisfaction with ASEE Activities and its Impact on ASEE Student Membership*  
Adam R. Carberry (Arizona State U.), Dan Bumblauskas (U. of Missouri-Columbia), Alexandra Coso (Georgia Tech), & Ana Torres-Ayala (U. of South Florida)
- 1:45-3:00 pm Track II Curricula Missouri Room**  
Session Moderator: TBD
- 1:45 pm *Learning by Engagement and Empowerment – A Pragmatic Approach to Enhance Student Engagement in a Service Course and Developing Relevance of such a Course to their own Majors*  
Bijaya Shrestha (Missouri S&T)
- 2:10 pm *Designing a Theme-based Introduction to Engineering Course Sequence*  
Kellie Schneider, Heath Schluterman, & Richard Cassady (U. of Arkansas)

- 2:35 pm *Applying a Structured Development Process to an Entrepreneurial-based Capstone Design Course*  
Clark Shaver, Crayton Caldwell, & James Lookadoo (Pittsburg State U.)
- 1:45-3:00 pm Track III Methodologies Silver & Gold Room**  
Session Moderator: TBD
- 1:45 pm *Multimedia Cone of Abstraction – Process Burners Case Study*  
Charles Baukal, Jr. (John Zink Institute), Floyd Ausburn, & Lynna Ausburn (Oklahoma State U.)
- 2:10 pm *Assessment Practices for Team-based Learning in Sophomore-level Courses*  
Robert M. O’Connell (U. of Missouri-Columbia)
- 2:45 pm *A Reverse Case Study of Mechanical Failures*  
Jeffrey Thomas (Missouri S&T)
- 3:00-3:30 pm Break Meramec/Gasconade Rooms**
- 3:30-4:20 pm Track I Distance Learning St. Pat’s A Room**  
Session Moderator: TBD
- 3:30 pm *A Look Back – The First Four Years of the MST/MSU Cooperative Engineering Program*  
Robert Egbert (Missouri State U.) & Douglas Carroll (Missouri S&T)
- 3:55 pm *Distance Education allows Small Liberal Arts Colleges to Offer ABET-Accredited Degrees in Chemical, Civil, Electrical, and Mechanical Engineering*  
Darrin Muggli (Benedictine College) & Brian Tande (U. of North Dakota)
- 3:30-4:20 pm Track II eLearning Missouri Room**  
Session Moderator: TBD
- 3:30 pm *Assessment of an Individualized, Self-Contained System in Electrical Circuits Laboratory*  
Edward Carl Greco, Jr. & Jim Reasoner (Arkansas Tech U.)
- 3:55 pm *Incorporating Inquiry-based Projects into the Early Lab Experience*  
Ed Clausen & Shannon Servoss (U. of Arkansas)
- 6:00-6:30 pm Banquet Reception Miner Lounge, Havener Student Center**
- 6:30 pm Banquet St. Pat’s A Room Havener Student Center**  
Conference General Chair Steve E. Watkins (Missouri S&T)
- 9:00 pm Midwest Section Executive Committee**  
**Silver & Gold Room Havener Student Center**  
Section Chair Theresa Swift (Missouri S&T)

*Friday, 21 September 2012*

- 7:30-8:00 am**            **Midwest Section Campus Representatives Meeting**  
**Missouri Room Havener Student Center**  
Section Campus Representative Chair  
Clark Shaver (Pittsburg State U.)
- 8:00-9:20 am**            **Carver/Turner Rooms, Havener Student Center**  
Plenary: *First things first. First an engineering student; then an engineer*  
Dr. Raymond B. Landis (Dean Emeritus, California State University, Los Angeles)
- 9:30-10:20 am**           **Track I Learning with Video Carver/Turner Rooms**  
Session Moderator: TBD
- 9:30 am                    *Video Surveillance Analysis as a Context for Embedded Systems and Artificial Intelligence Education*  
M. Ryan Bales (Georgia Tech Research Institute) & Steve E. Watkins (Missouri S&T)
- 9:55 am                    *Using Student-Produced Videos to Enhance Learning Engagement in a Chemical Engineering Thermodynamics Course*  
Douglas Ludlow (Missouri S&T)
- 9:30-10:20 am**           **Track II Grading Missouri Room**  
Session Moderator: TBD
- 9:30 am                    *Using Moodle for Algorithmic Grading of Homework Assignments*  
R. Fithen (Arkansas Tech U.)
- 9:55 am                    *My War on Cheating*  
Christi Patton Luks (U. of Tulsa)
- 10:20-10:40 am**           **Break Meramec/Gasconade Rooms**
- 10:20-11:55 am**           **UAV Student Poster Session Meramec/Gasconade Rooms**  
\*                            *Missouri S&T UAV Team*  
David C. Macke Jr. & Steve E. Watkins (Missouri S&T)  
\*                            *University of Kansas Aerospace Engineering Flight Systems Research*  
Alec Bowman, Chris Hedden, Gonzalo Garcia, & Ryan Lykins (U. of Kansas)
- 10:40-11:55 am**           **Track I Global Learning Carver/Turner Rooms**  
Session Moderator: TBD
- 10:40 am                    *Solar Water Heaters for Showers and Sinks: An EWB-USA Project*  
Christi Patton Luks, Laura Ford, & Weston Kightlinger (U. of Tulsa)
- 11:05 am                    *Teaching Pre-Engineering Education in the Global Environment using Professional Engineering Process*  
Marcus Chu & Ruth-Miriam Garnett (Capella U.)
- 11:30 am                    *Global Engineering Program Mission Statement Development*  
Lisa Anneberg & Harold Josephs (Lawrence Technological U.)

- 10:40-11:55 am**      **Track II Nanotechnology Missouri Room**  
Session Moderator: TBD
- 10:40 am              *Teaching an Undergraduate Nanotechnology Course Online*  
Alexey Yamilov (Missouri S&T)
- 11:05 am              *Sustainability of Nanotechnology and Engineering Education*  
R. Asmatulu, W.S. Khan, M. Ceylan, & B. Zhang (Wichita State U.)
- 11:30 am              *Effects of Nanotechnology on Global Warming*  
R. Asmatulu, W.S. Khan, M. Ceylan, & E. Asmatulu (Wichita State U.)
- 12:00 noon-1:30 pm**      **Business Luncheon and Elections Meramec/Gasconade Rooms**  
Section Chair Theresa Swift (Missouri S&T)
- 2:00-3:30 pm**              **UAV Student Workshop Carver/Turner Rooms**  
*Radio-Controlled (R/C) Model Airplanes*  
John Woods, Instructor (Tri-Lakes R/C Flying Club)