



# Southeastern Section Newsletter

July 2013

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Summer Edition

## Mercer University to Host 2014 Conference

Mercer University will be hosting the 2014 ASEE-SE Annual Section Meeting in Macon, Georgia at the School of Engineering on Mercer's Campus, March 30



classroom, accreditation, capstone design experiences, distance education and virtual classrooms, case histories, K-12 engineering outreach, and other

– April 1, 2014. The theme of the conference will be “Preparing Engineers for The Grand Challenges of The Future”. Other topics that will be addressed are instructional methodologies, curricula issues, outcomes assessment, research and graduate programs, retention, ethics and professional practice, technology in the

topics related to engineering education. Additional information is found in the President’s message and the Call for Papers.

Macon is the cultural center for middle Georgia and was incorporated in 1823. With an exciting musical heritage, pictur-

*(Continued on page 4)*

## President Hill’s Message

Thanks to the hard work and participation by ASEE Southeastern Section (ASEE-SE) members, this section is one of the most active sections in ASEE. The conferences are well attended and the awards banquet is always a highlight of the conference. Thank you to all who participated in the conference in Cookeville last year to continue this tradition. We particularly thank the conference site organizer, Stephen Click, and the effort by the staff at Tennessee Technological University.



*(Continued on page 6)*

### ASEE Vision Statement

“ASEE will serve as the premier multidisciplinary society for individuals and organizations committed to advancing excellence in all aspects of engineering and engineering technology education.”

### In This Issue...

Host for 2014 Conference .....	1
President’s Message .....	1
Call for Papers .....	2
Highlights of 2013 Conference at Cookeville.....	3
Upcoming Conference Locations .....	3
Student Poster Winners .....	4
Awards .....	5
2013-2014 Officers.....	5
More Highlights of Conference at Cookeville.....	6

**SE Section Web Address:**

<http://www.asee-se.org>

# ASEE SOUTHEASTERN SECTION CONFERENCE

MARCH 30-APRIL 1, 2014

MERCER UNIVERSITY  
MACON, GEORGIA

## PREPARING ENGINEERS FOR THE GRAND CHALLENGES OF THE FUTURE

Engineers educated now will be the catalyst of change and will propel society forward through new technologies for decades to come. Thus, it is the responsibility of engineering educators to prepare these engineers to meet the grand challenges facing them currently and in the future. Problems and opportunities will be mastered by those best prepared to learn new skills and adapt. Curricula, courses, and other learning experiences that provide the engineering skills and mindset necessary to meet these future challenges are the focus of this conference.

### CALL FOR PAPERS AND PRESENTATION ABSTRACTS

Authors are invited to submit full-length manuscripts for presentation at the conference and inclusion in its proceedings. Papers addressing the conference theme will have first priority and may include topics related to the following:

- Innovative Curricula or Courses
- First Year Engineering Programs
- Organizational Structures to Promote Interdisciplinary Engineering
- Engineering Common Cores
- Teaching/Learning Practices: Past, Present, and Future
- Distance Learning in Engineering
- Ethics and Professional Practice
- Technologies for Efficient Learning
- Engineering K-12 Outreach Programs
- Engineering Learning Communities
- ABET Accreditation Projects
- Engineering Recruitment and Retention
- Partnerships
- Capstone Design Courses or Projects
- Engineering Professional Development

Authors may also address other topics of interest to the engineering education community. Guidelines for manuscript preparation are available via the Author Instructions at [www.asee-se.org](http://www.asee-se.org) at the Conference page.

Papers will be accepted based on a peer review of manuscripts. Authors are expected to present their papers at the conference to facilitate the transfer of knowledge through discussion and debate. All accepted papers presented by a timely-registered author will be included in the conference proceedings. A limited number of abstracts may be accepted for presentation. These abstracts will be published in the book of abstracts but will neither be peer-reviewed nor included in the conference proceedings.

An author/co-author can be associated with as many papers/presentations as is appropriate, but a registrant can serve as the presenter of record on a maximum of three presentations.

A poster session in which undergraduates discuss their experiences in engineering education (design projects, research, etc.) is anticipated. Information about this session will be available in the fall.

### SCHEDULE FOR SUBMISSION OF PAPERS AND ABSTRACTS

Friday, October 4, 2013	Abstracts submitted by authors for consideration
Friday, October 11, 2013	Authors notified regarding acceptance
Tuesday, December 3, 2013	Manuscripts due from authors for review
Friday, January 10, 2014	Reviewed manuscripts returned to authors
Friday, January 31, 2014	Final manuscript and extended abstract due from authors
Friday, February 21, 2014	Deadline for presenters to register for conference

**Submit a 250-300 word abstract in doc, docx, or pdf file format by October 4, 2013.  
Conference Paper Submission Site will be announced at [www.asee-se.org](http://www.asee-se.org).**

**Contacts:** Jerry Newman, Technical Program Chair, (901) 318-5614, [jdnewman@memphis.edu](mailto:jdnewman@memphis.edu)  
Hodge Jenkins, Conference Site Coordinator, (478) 301-2831, [jenkins\\_he@mercer.edu](mailto:jenkins_he@mercer.edu)

# Highlights of 2013 Conference at Cookeville

Tennessee Tech hosted the 2013 Southeastern Section Meeting in Cookeville, Tennessee on March 10-13. The conference theme was “E<sup>4</sup>: Efficient Effective Engineering Education.” Over 140 conference registrants from 42 schools/organizations attended the conference, which had 65 papers on the program. In addition, the annual student poster competition attracted some 52 students and 31 posters.

A wide variety of workshops beneficial to engineering educators were available on Sunday. Eight workshops were presented, including, *Screen Engineering* and *Screen Engineering - Poster Displays* by Chris ORIordan-Adjah, *Introduction to Arduino* by Tim Wilson, *A Framework to Predict Dissemination Success of STEM Educational Innovations* by Chetan Sankar, *Engineering EFFECTS: Environments for Fostering Effective Critical Thinking* by Charles E. Pierce, *K-12 Engineering Outreach Workshop* by Sally Pardue and Stacy Gardner, *Creating Hands-On Programming Experiences for Engineering Students* by Sheikh Ghafoor; and *Developing the NAE 2020 Engineer* by J. R. Sanders and Pedro Arce.

On Sunday afternoon, conferees boarded buses and traveled to Tennessee Tech’s Appalachian Center for Craft located near Smithville for the Welcome Reception. This is a satellite campus of Tennessee Tech University that offers Bachelor of Fine Arts degree concentrations in clay, fibers, glass, metals and wood. During the evening, conferees



Craft Demonstrations at Welcome Reception

enjoyed hors d’oeuvres in the Redbud Cafe and the gallery and viewed fine art by local and regional artists. Highlighting the evening were the guided tours by Craft Center students and artists, including live craft demonstrations.

The keynote address on Monday was delivered by Dr. Stacy Klein-Gardner, Director of the Center for STEM Education at Harpeth Hall School, a college preparatory school for girls in Nashville, Tennessee. She also serves as an Adjoint Professor of Biomedical Engineering, Teaching and Learning, and Radiological Sciences at Vanderbilt University and serves on the Board of Visitors of Duke University’s Pratt School of Engineering. During 2007-2010 she served as the Associate Dean for Outreach in Vanderbilt’s School of Engineering and in 2010-2011 she established the Metropolitan Nashville Public Schools engineering pathway from K-12 with Race to the Top Funding.



Stacy Klein-Gardner delivers keynote address.

The Thomas C. Evans Instructional Paper Award for the most outstanding paper pertaining to engineering education was delivered by Tanya Kunberger of Florida Gulf Coast University following the Monday luncheon. The title of her paper was “*Experiences from Revising a Course to Promote Significant Learning.*”

The Awards Banquet on Monday evening was held at DelMonaco Winery & Vineyards, and featured hors d’oeuvres, free tasting of specialty wines, and an enjoyable dining experience.

## Upcoming Conference Locations

2014 Mercer University Macon, GA

2015 University of Florida Gainesville, FL

# Student Poster Competition Winners

## 2013 ASEE-SE Conference

### First and Second Year Engineering and/or Engineering Technology Design Teams

First place – Nicholas True, Conner Johnson, Shannon Sharpe, Ryan Seyer, Wes Hutchins (“Serenity’s Toilet Stool”) - University of Tennessee at Chattanooga

Second Place – Saama Davies, Jesse West, Thomas Anderson, Patrick Godfrey, Wesley Ford (“Take A Ride On The Mocs Express”) - University of Tennessee at Chattanooga

Third Place – Matthew Faircloth, Marshall Guillot, David Harris, Tom Mammen, Jeremy Miller (“Grant’s Variable Height Chair”) - University of Tennessee at Chattanooga

### Junior/Senior Engineering and/or Engineering Technology Design Teams

First place – Michael Neil Brown, Hannah Haines (“Systematic Assembly of PSI on Chemically Patterned Substrates”) - University of Tennessee

Second Place – Daulton Cockerell and John Runyon (“Independent 3D Rendering Software for Engineers”) - Western Kentucky University

Second Place – Laura Lopez Sosa, Katie Safford, Paige Sforzo (“Dual Media BioSand Filter”) - Mercer University

Third Place – Martin Ayers, Brett Fluery, Will Lawson, Gerald Stott, Jeremy Hines, Aaron McClure, Jordan Currington (“EPRI Boiling Water Reactor Instrumentation Nozzle Scanner”) - University of North Carolina at Charlotte

Third Place – Matthew Sheen, Devin Tiernan, Patrick Jansen, Maggie Murphy, Hunter Brunner, Curtis Beck, Taylor Giel, Darren Gottschall, Ryan Lemert-Smith (“Increasing 3D Printing Accessibility Through a LowCost, Automated Workstation”) - Clemson University

### Undergraduate Research Individual

First place – Mason Hickman (“Blast and Impact Effect Analysis of Cementitious Armor Panels”) - Vanderbilt University

Second place – Andrea Otero (“Analytics for Theme Park Management”) - University of Central Florida

Third Place – Axel Garcia Burgos (“Examination of the influence of internal structure of Coronal Mass Ejections (CMEs)”) - Embry Riddle Aeronautical University

### Best Overall Student Poster

Mason Hickman, Vanderbilt University

## Mercer to Host 2014 Conference

(Continued from Page 1)

esque architecture, and a rich historical past, many of the best sights and activities in the area may be found in the city itself. As one of the greatest historic cities of the American South, Macon is home to 5,500 National Register historic structures in 11 historic districts. The city has many historic antebellum homes to visit including Cannonball House, Hay House, Woodruff House, and Sidney Lanier Cottage.

The Ocmulgee National Monument, operated by the National Park Service, contains Indian Mounds and artifacts from several Indian cultures dating back to 10,000 B.C. Visitors can hike through the ancient Indian mounds and visit the emergent wetlands via a boardwalk.

Macon has a rich and exciting music heritage and attractions including the home of Allman Brothers Band Museum at The Big House and Otis Redding Museum, and the Grand Opera House. Macon is also the birthplace of Little Richard. Other area attractions include Terminal Station and Welcome Center, Georgia Sports Hall of Fame (nation’s largest state sports museum), Tubman African American Museum (the state’s largest collection of African American history), Museum of Arts and Sciences & Mark Smith Planetarium, and Rose Hill Cemetery. Attractions

in Bibb, and nearby Houston and Monroe Counties include Wesleyan College and Lake Tobesofkee Recreation Area; Museum of Aviation and Robbins Air Force Base; Juliette, Home of “Fried Green Tomatoes;” Jarrell Plantation State Historic Site; and High Falls State Park. Spring is an ideal time to visit Macon since it is the Cherry Blossom Capital of the World.

### Mercer School of Engineering





Elliot Douglas receives Outstanding Teaching Award

## Section Awards for Excellence



Tanya Kunberger receives Thomas Evans Instructional Paper Award

At the 2013 Annual Meeting in Cookeville, a number of awards were given for excellence in engineering education. The list of recipients and the awards are:

Section Outstanding Teaching Award	Elliot Douglas	University of Florida
Section Outstanding Mid-Career Teaching Award	Lisa Bullard	North Carolina State University
Section New Faculty Research Award:First Place	Michael Dickey	North Carolina State University
Section New Faculty Research Award:Second Place	Marian Kennedy	Clemson University
Outstanding Campus Representative Award	Christopher J. Rowe	Vanderbilt University

Thomas Evans Instructional Paper Award: Tanya Kunberger of Florida Gulf Coast University for her paper “*Experiences from Revising a Course to Promote Significant Learning*.”

Outstanding Paper Award for 2013 ASEE-SE Conference: David W. Johnstone and Charles D. Newhouse of Virginia Military Institute; for their paper “*The Use of a Fundamentals of Engineering Course to Enhance the Capstone Experience*.”

## ASEE-SE Selects New Officers

The new officers for the 2013-2014 year are:

President	Priscilla Hill	Mississippi State University	662-325-8249
President Elect	Tulio Sulbaran	University of Southern Mississippi	601-266-6419
Secretary-Treasurer	Daniel Kohn	University of Memphis	901-347-0382
Immediate Past President	Tyson Hall	Southern Adventist University	423-236-2916
Vice Presidents			
Programs Unit	Hodge Jenkins	Mercer University	478-301-2831
Awards and Recognition Unit	Hodge Jenkins	Mercer University	478-301-2831
Publications and Promotion Unit	David Domermuth	Appalachian State University	828-262-6359
Division Chairs			
Administrative Division	Donna Reese	Mississippi State University	662-325-2756
Bioengineering Division	David Domermuth	Appalachian State University	828-262-6359
Chemical Engineering Division	Holly Stretz	Tennessee Tech University	931-372-3495
Civil Engineering Division	Tanya Kunberger	Florida Gulf Coast University	239-590-7644
Computer Engineering and Technology Division	Donald Ekong	Mercer University	478-301-2271
Electrical Engineering Division	Marcos Chu	Capella University	314-814-0124
Engineering Graphics Division	Lulu Sun	Embry Riddle	386-226-6691
Engineering Technology Division	Jerry Newman	University of Memphis	901-318-5614
Industrial Engineering Division	Cecelia Wigal	University of Tennessee at Chattanooga	423-425-4015
Instructional Division	Priya Goeser	Armstrong Atlantic State University	912-344-2874
K-12 Division	Beth Todd	University of Alabama	205-799-6656
Mechanical Engineering Division	Cindy K Waters	NCA&T State University	336-334-7620
Professional Skills Division	Claire McCullough	University of Tennessee at Chattanooga	423-425-4352
Research Division	Zhaoxian Zhou	University of Southern Mississippi	601-266-4482
Software Engineering Division	Donna Reese	Mississippi State University	662-325-2756
Campus Representative Coordinator	John Brocato	Mississippi State University	662-325-1493
Proceedings Editor	Barbara Bernal	Southern Polytechnic State University	678-915-4283
Newsletter Editor	Ken Brannan	The Citadel	843-953-7685

A complete listing of the section officers may be found on the ASEE-SE web site at <http://www.asee-se.org>

# President's Message

*(Continued from page 1)*

With the emphasis in recent years on improving the quality and increasing the number of people trained in STEM fields, we as engineering and engineering technology educators have an opportunity to use our skills to benefit our students as well as the regional and national economies. This can be facilitated by sharing information on the best educational practices and new developments, and by performing educational research to evaluate different approaches. The ASEE Southeastern Section Annual Conference is vital to this effort because it provides a venue for presenting and sharing information through presentations and workshops.

There are a variety of great ways to participate in ASEE-SE:

- Mark your calendars for the upcoming ASEE-SE conference at Mercer University from March 30 – April 1, 2014. Plan on attending and participating in the sessions. Abstract submission deadlines are in this newsletter.
- Volunteer to review papers by contacting the Division Chair for your area of interest.
- Learn new educational approaches at one of the workshops offered during the conference. Most workshops are offered on Sunday before the technical sessions begin.
- Attend the breakfast division meetings at the conference and volunteer to serve as an officer. With 15 divisions, there are many opportunities to serve.
- Nominate one of your meritorious colleagues for one of our awards. See this newsletter for the 2013 awardees. Nomination details will be provided at a later time.
- Bring your undergraduate students to the annual ASEE-SE conference to present posters on their research or design projects. More details will be provided later.
- Invite a colleague to join the national ASEE organization. Many colleges and universities participate in the ASEE Dean's Program where faculty who are new to ASEE can have two years of free ASEE membership.
- Check out the ASEE-SE section website at [www.asee-se.org](http://www.asee-se.org) to learn more about the section and to get updates.

In summary, there are many benefits to becoming active in ASEE-SE including: 1) the opportunity to present peer-reviewed papers that are archived on a conference CD and on the ASEE website, 2) the opportunity to learn about new educational ideas that can be used in the classroom, 3) the opportunity to serve as an officer at a regional level, and 4) the opportunity to network with other engineering faculty.

My thanks go to Tyson Hall, the previous ASEE-SE President, and to all of the officers and active members for keeping the Southeastern Section energized during the past academic year. I look forward to working with you as I serve during this year. If you have any ideas of how the Southeastern Section can better serve its membership, please contact me or John Brocato, the Campus Rep Coordinator.

## More Highlights of Conference at Cookeville

