103rd Conference

Mississippi Valley Technology Teacher Education Conference

Holiday Inn Express & Suites, Rosemont, IL
November 10-11, 2016

Thursday, November 10, 2016

9:00 a.m. **Welcome, Introductions, and Announcements**

9:30 a.m. **SESSION I: The Role and Impact of Engineering Design**

Presiding: Richard Seymour, Ball State University
Session Chairs: Paul Post, The Ohio State University

1. ***Is the engineering design process as impactful as the rhetoric suggests in the engineering and technology education classroom?*** There are numerous claims, inside and outside of the engineering and technology education field, implying that engineering design methodologies and instructional strategies lead to greater content understanding, more creativity, and more STEM interest among participating students. Does the research support these assertions?
    - **Jenny Daugherty,** Louisiana State University

2. ***Are the engineering design processes used in engineering and technology education classrooms an accurate reflection of the practices used in industry and other technical fields?*** Are the common engineering design practices used in the engineering and technology education classroom an accurate reflection of the practices used by practicing engineers and scientists in the field?
    - **Edward Reeve,** Utah State University

3. ***Is engineering design being effectively used in the engineering and technology education classroom?*** To what extent are engineering and technology education students effectively using the engineering design process to learn important STEM content. What engineering design models are working? What techniques are effective?
    - **Raymond A. Dixon**, University of Idaho

4. ***Proven strategies for utilizing the engineering design problem solving methodology within a distance education classroom?*** What research and/or proven strategies are available that address how the engineering design process is used in non-traditional and on-line classes? How have on-line programs addressed engineering design? What strategies have institutions used, and what does the research say about engineering design, inquiry, and problem solving at a distance?
    - **K. Peder Gjovik,** Valley City State University

Noon - 1:15 p.m. **Lunch (on your own)**

1:15 p.m. **SESSION II: Does the Rhetoric Emulate Reality?**

Presiding: Josh Brown, Illinois State University
Session Chairs: Steve Fardo, Eastern Kentucky University
Ken Welty, University of Wisconsin--Stout

1. ***To what extent are technology and engineering teacher preparation programs preparing elementary preservice teachers to deliver technology and engineering experiences in elementary classrooms?*** What models of elementary teacher preparation are evident? What is the nature of these courses and programs? How successful are these programs? How common are these programs? What strategies/suggestions might be useful for the future?
    - **Mary Annette Rose,** Ball State University

2. ***Accessing and building upon the research base established by the National Center for Engineering and Technology Education.*** The National Center for Engineering and Technology Education (NCETE) was a collaborative network of scholars with backgrounds in technology education, engineering, and related fields at nine universities. The NCETE mission was to build capacity in technology education and to improve the understanding of the learning and teaching of high school students and teachers as they apply engineering design processes to technological problems. This presentation will review the work of NCETE during the period of NSF funding (2004-2012), highlight continuing research and development efforts that have built upon the NCETE base, and encourage intensive programmatic research efforts in engineering and technology education.
    - **Daniel L. Householder,** National Center for Engineering and Technology Education

3. ***In what ways can engineering and technology education professional associations cause teachers to update what they deliver in the classroom: Proven strategies from the research?*** How do engineering and technology education professional associations and educational agencies encourage teachers to update and change what they deliver in the classroom? What has proven to work and what has not worked?
    - **Mark Crenshaw,** Georgia Department of Education

4. ***What curriculum is driving engineering and technology education in the United States?*** To what extent is engineering design is being delivered in ETE? What curriculum is being used in ETE (EbD, PLTW, EiE, local curriculum, etc.)? Where are ETE teachers obtaining the resources needed to deliver ETE and STEM content? Are ETE teachers developing the curriculum themselves? Are they purchasing the curriculum? Are they joining curriculum consortiums, or are they obtaining the curriculum from other sources?
    - **Steve Barbato,** International Technology and Engineering Educators Association
    - **Tanner Huffman,** The College of New Jersey

4:30 p.m. **SESSION III: MVTTEC Business Meeting**

Presiding: **Michael Daugherty**, University of Arkansas

1. Report of the Membership Committee
    a. **Jenny Daugherty**, Louisiana State University
3. Consideration of nominations for membership
4. Other Business

Friday, November 11, 2016

8:30 a.m. **Installation of New Members, Mississippi Valley Conference**
Ray Diez, Western Illinois University

9:30 a.m. **SESSION IV: Trends, Issues, and Opportunities**

Presiding: Scott Greenhalgh, University of Northern Iowa
Session Chairs: Gary Mahoney, Berea College
Tom Bell, Millersville University of Pennsylvania

1. ***What current trends are shaping engineering and technology education in the United States?*** What current research, curriculum, teaching/instructional methods, and political initiatives are driving what is delivered in engineering and technology education classrooms across the United States.
    - **Chris Merrill,** Illinois State University

2. ***What can secondary engineering and technology educators do to support elementary STEM?*** Engineering and technology education is primarily made-up of secondary educators, however most research suggests that students make decisions about their future in the STEM disciplines before they depart elementary school. How can the secondary ETE teacher engage in local elementary schools, provide professional development, and engage secondary students with elementary students toward the promotion of STEM. What does the literature and research say? What are some suggestions for improved collaboration?
    - **Laura J. Hummell,** California University of Pennsylvania

3. ***Ten unique STEM programs that we could all learn from.*** This presentation will identify ten unusual or unique STEM programs (nationally or internationally) that offer an unusual or different approach to teaching STEM education—programs that engineering and technology education can learn from. A synopsis of the common programmatic attributes will be offered as suggestions for widespread adoption in ETE.
    - **Andy Klenke,** Pittsburg State University

4. ***The Wilbur Project.*** Currently in its pilot phase, the Wilbur Project is a program designed to bring engineering and technology education into the K-5 classroom. The pilot

project involves working with a local elementary school in their 2nd grade classroom. Curriculum and materials for an underwater robot project that the students will design and build, and test has been created. The Wilbur Project will build on the lessons learned in the pilot and focus on bringing more technology and resources to the classroom while expanding the reach of the program.

- **Michael Walach,** Eastern Kentucky University

11:45 a.m. **Conference Wrap-Up**
Submit Topics for the 104th Conference
Adjournment of the 103rd Mississippi Valley Conference

Future Mississippi Valley Conferences:
104th Conference, November, 2017, St. Louis, MO
105th Conference, November, 2018, Nashville, TN

Other Conferences:
ITEEA Conference, March 16-18, 2017, Dallas, TX