ITEEA’s STEM CTL Launches Spring 2017 Integrative STEM Education PLC

ITEEA’s STEM CTL Center for Teaching and Learning recently launched a professional development series focused on building and supporting an Integrative STEM Education approach towards delivering Technology and Engineering education. The PD program is designed for practicing teachers, preservice teachers, graduate students, and other stakeholders seeking a community of practice for successful implementation of Integrative STEM Education. The PLC program content will be housed in the Engineering by Design™ Learning Management System (LMS), EbD-BUZZ. There are five monthly interactive online sessions scheduled during the Spring 2017 semester. The I-STEM Education PLC is comprised of presentations, discussions, networking, and Q&A opportunities.

The initial PLC session is scheduled for Tuesday, January 31 at 8 PM EST via an interactive WebEx. This session topic is “The Nature and Definition of Integrative STEM Education.” The January session will be hosted by ITEEA President-Elect and Utah State University Professor, Dr. Edward Reeve, and Virginia Tech Professor and Integrative STEM Education expert, Dr. John Wells.

We NEED YOUR HELP in getting the word out about upcoming PD webinar opportunities. To learn more or to register go to: www.iteea.org/STEMCenter/EbD-PD/STEMCTL_I-STEM-Ed-PLC.aspx#tabs.

Additional STEM CTL News

• On December 2, a proposal was submitted for the National Science Foundation (NSF) DRL - DISCOVERY RESEARCH K-12 grant through Purdue University. The Discovery Research PreK-12 program division (DRK-12) seeks to significantly enhance the learning and teaching of science, technology, engineering, and mathematics (STEM) by PreK-12 students and teachers, through research and development of STEM education innovations and approaches. The project leadership team combines design education researchers from Purdue, directors from the International Technology and Engineering Education Association’s STEM CTL Center for Teaching and Learning, and a Career, Technical, and Agricultural Education Instructional Coordinator for the DeKalb County School District (Georgia). The three-year study will focus on diverse 9th grade students learning design, a key standard of Science (Next Generation Science Standards), Technology and Engineering (Standards for Technological Literacy) and an integrator of STEM (Science, Technology Engineering and Mathematics) education and create a sustainable, scalable model for formative design assessment, pilot and refine the model, and investigate impacts on learning. Our specific responsibilities are to assist in disseminating the results of the study; integrate the results of the proposed assessment project into the curriculum, teacher professional development, and revision schedule; and provide conference session space for presentations at our conference. If this proposal is successful in acquiring NSF funding, ITEEA’s project involvement will be directed through the efforts and leadership of Dr. Anita Deck, STEM CTL Director of Innovation, Assessment, and Research.

• On July 1st, ITEEA’s STEM CTL converted all EbD Network Schools from the EbD Portal to EbD-BUZZ. The advantages of the changeover are many, including single-user sign on synchronized with ITEEA’s new website as well as enabling the use of the platform for professional development. As is typical with any changeover has come the need for individualized Technical Support. As part of the new initiative, Dr. Jennifer Buelin has been instrumental in creating and supervising a support team to address tech support issues in less than 24 hours. To that end, EbD-BUZZ Tech Support now has its own direct phone line. In addition to contacting Tech Support at ebdbuzzsupport@iteea.org, users can call 703-429-1222. Also coming online for the Spring is a new web-based system where users will be able to track their tech support tickets.
Fall Leadership Forum (September 2016): Engineering by Design (EbD) Consortium directors and STEM CTL leadership convened to discuss and develop action plans that reflected current research on teaching and learning to incorporate integrated STEM curriculum, instruction, and assessments for all students in their respective states. Key research-based strategies for implementing STEM instruction at Grades K-12 were identified. Participants also developed action plans for strategic issues in technology and engineering for Grades K-12 and for positioning their states, STEM CTL, and the profession for the Common Core, Next Generation Science Standards and the NAEP TEL Assessment. Consortium directors provided input about products and services that envision the future of the profession.

Curriculum Leadership Institute (January 2017): The National Teacher Effectiveness Coaches (NTECs), I-TEEA and STEM CTL leadership, and Hofstra University faculty were introduced to and trained in implementing the Engineering for All (EfA) project, developed by Hofstra University in collaboration with ITEEA and funded by the National Science Foundation, consists of two units—Vertical Farms: Fresh Food for Cities and Water: The World in Crisis. The purpose of these units is to enable students to develop predispositions to forge a sustainable future and learn that engineering is a route to engage in socially significant work. Upon release, the EfA modules will become part of the ITEEA’s flagship Engineering by Design (EbD) program.

Registration is open for the 2017 I-TEEA I-STEM Education PLC. Designed for practicing teachers, preservice teachers, graduate students, and other stakeholders seeking a community of practice for successful implementation of Integrative STEM Education. Housed in ITEEA’s LMS, EbD-BUZZ, and grounded in 5 monthly interactive online sessions during the Spring 2017 semester, the I-STEM Ed PLC is comprised of presentations, discussions, networking, and Q&A opportunities. PLC sessions address topics critical to the successful implementation of I-STEM Education.

ITEEA Represented on NSTA’s “Best STEM Books” Panel
STEM is more than a concept diagram with connections among four (or more) subject areas. It’s a unique way of knowing and exploring the world. The first draft of a new set of criteria came from J. Carrie Launius at the University of Missouri. In her research, Launius proposed that redefining the STEM literature genre would not only improve teachers’ understanding of the approach but would raise the level of understanding among students. To represent the philosophy of STEM, NSTA invited a unique collaboration with three other groups, the American Association of Engineering Educators, the International Technology and Engineering Educators Association, and the mathematics reps from Society of Elementary Presidential Awardees. Through almost a year of study, the group came up with specific criteria for the best STEM literature for young readers. The 2016 selection committee included I-TEEA members Sharon Brusic of Millersville University and Thomas Roberts, a Doctoral candidate in STEM Education at the University of Kentucky.

ITEEA Disseminates Updated Marketing Materials
The “ITEEA in a Box” materials continue to be an excellent resource to share with colleagues, as well as those new to our profession. The materials reside within a glossy branded folder with pockets that include, among other materials, professionally printed “stair step” pages that highlight I-TEEA. I-TEEA Senior Fellow, Dr. William Dugger, shared his expertise in reviewing and developing these materials. Dr. Dugger’s knowledge of technological literacy is certainly unparalleled and his edits have made the piece even more effective. This document, and subsequent informational folder, provides an excellent high-level definition and explanation and overview of technological and engineering education and why it is important for ALL students to be engaged in this learning.

ITEEA has recently released a completed “E-Reader” version that can be shared in presentations and digitally with our various audiences as well. This digital and hard copy material is designed to be dynamic and easily edited in sections so that it can be updated as needed on a regular basis.

Safety Collaboration with NSTA
ITEEA has been benefitting from ongoing collaboration with NSTA in terms of laboratory safety since the publication of I-TEEA’s completely rewritten Safety Guide by I-TEEA Safety Expert, Tyler Love and NSTA Safety Expert, Dr. Ken Roy. Recently, Tyler asked I-TEEA to share a notification regarding Dr. Roy’s latest lab safety podcast installment on “Lab Out Loud.”
Dr. Roy was grateful for the additional dissemination and shared the ITEEA post with NSTA’s Public Relations office as well as NSTA Publisher, David Beacom, in an effort to demonstrate the fruit of our efforts at collaboration. The blog can be accessed at http://nstacommunities.org/blog/2016/06/13/welcome-to-the-nsta-safety-blog/

**Engineers Week 2017 Collaboration with DiscoverE**

ITEEA is once again partnering with DiscoverE to provide FREE classroom posters for every print subscriber of *Technology and Engineering Teacher*. We have developed a great working relationship with DiscoverE in which we help to promote their upcoming events and they provide materials for our teachers, including finding sponsors to cover poster cost. The 2017 poster “Dream Big: Volunteer and inspire the next generation of engineers” was inserted into the February issue of *TET*, to coincide with Engineers Week, which is scheduled for February 19-25, 2017. The poster will be accompanied by supplemental materials at the elementary, middle school, and high school levels, provided by ITEEA STEM±CTL. Additional E-Week information shared from DiscoverE this week includes:

- Dream Big for Engineers Week 2017 Webcast
- Dream Big: Engineering Our World is a HUGE film. Literally. A new IMAX® and giant screen film, Dream Big will show viewers how engineers push the limits of ingenuity and innovation in unexpected, imaginative, and amazing ways. This fall DiscoverE is launching an outreach campaign you can use to engage children and their families in engineering. This will include hands-on activities, programming ideas, and trainings you can use to incorporate Dream Big into your classrooms, museums, and outreach efforts.

**ITEEA Awards First Veterans Scholarship**

ITEEA was very proud to award U.S. Navy Veteran, David Gazeley, an undergraduate student at Valley City State University, a $3,000 Veterans Scholarship. Mastercam, an ITEEA corporate member, was the exclusive sponsor of the 2016 Veterans Scholarship. David served five years in the USN before retiring in 1990. The training he received from his NAVY technical schools was instrumental in his post-NAVY career as he built a successful microbrewery and operated a Polaris dealership for 16 years. His desire to teach came as a result of these experiences as well as the positive experience he received as a BEST Robotics mentor at a local high school. David emphatically believes that students need a STEM-based education to best prepare them for the future. He chose to become a Technology and Engineering teacher so he could “promote, teach, and practice responsible technology and its uses.” David will also be recognized at the 2017 Conference. Mastercam has agreed to continue supporting this worthwhile scholarship for 2017.

**ITEEA Election Results Complete**

ITEEA’s professional and life members have completed a balloting process to elect a new President-Elect and Directors for Regions I and III.

Joining the ITEEA Board of Directors in March 2017 are:

- Yvonne Spicer, DTE (President Elect). Yvonne is Vice President of Advocacy and Educational Partnerships at the National Center for Technological Literacy in Boston, MA.
- Debra E. Shapiro (Region I Director). Debra is a Technology and Engineering Educator at Forest Glen Middle School in Suffolk, VA.
- Kurt R. Helgeson (Region III Director). Kurt is a Professor and Department Chair at St. Cloud State University in St. Cloud, MN.

Also joining the ITEEA Board of Directors are Mark Crenshaw and Scott Greenhalgh. Mark is CTAE Director and CEO of Hart College and Career Academy in Hartwell, GA. He will represent the Council for Supervision and Leadership (CSL). Scott is an Assistant Professor and Program Coordinator of Technology and Engineering Education at the University of Northern Iowa in Cedar Falls, IA. Scott will represent the Technology and Engineering Education Collegiate Association (TEECA).
ITEEA Member Published in ACTE Journal

Congratulations to ITEEA member Jason Hlavacs (ITEEA Region 2 Board of Director) for his recent article published in ACTE's journal. Jason does an excellent job of connecting his instruction to the Maker Movement and taking it much further! The open ended problem solving infused with the real-world context is exactly what our students need to be exposed to for future success. You can download and read the article at www.dropbox.com/s/znay46p4u90gqd5/161004_Hlavacs_ACTE%20Techniques%20Article%20Oct%202016.pdf?dl=0

ITEEA’s STEM Professional Development Webinar Series Continues

This specially designed professional development webinar series is focused on Technology and Engineering Education best practices for leading Integrative STEM Education (I-STEM Education) in your school through Technology and Engineering Education programs. The goal of each online PD Webinar is to provide proven instructional strategies and ideas that educators can use to support your efforts in delivering the best possible instruction for ALL students to become technologically and engineering literate! Participation in this webinar series is FREE for ITEEA members. The fee for non-members is $49/session. Please share with your Elementary, Middle, High School, and higher education colleagues.

The next webinar in the series is “Getting STEAMed UP!” presented by Georgette Yakman on February 2, 2017 at 3:00pm. The description is: “What does STEAM mean to you and for options for your future? Understand a little more about STEAM, the future and you in this webinar! Have fun exploring how to go forward with what you are interested in and what you are good at and also how to better deal with the things that are less interesting or difficult. Work smarter, play harder, get STEAMed up!” Registration is now open at www.iteea.org/STEMCenter/EbD-PD/STEMWebinars.aspx#tabs

ITEEA Received Anonymous Donation to Support College Student Memberships

ITEEA received a donation from an anonymous donor to sponsor up to 20 new college student memberships. The scholarships were in honor of the following: Jack Wescott and Donald Smith at Ball State; Michael Neden at Pittsburg State; Perry Gemmill at Millersville; and Gerry Day at UMES. The donor also requested that professors at these universities task their students with assignments or activities to familiarize them with the various benefits of an ITEEA membership. Several ITEEA teacher educators have already agreed to follow through with this request. Possible suggestions from these university professors/ITEEA Members included: access the ITEEA publications database and select a TET article with a classroom activity; utilize STL and AETL documents throughout the course; purchase liability insurance from FTJ prior to student teaching; participate in TEECA EAST 2016; sign up for social media updates from ITEEA, etc. The donor was pleased with the outcome and enthusiasm from the professors to honor these students and mentor the next generation of leaders

Input Requested for ITEEA’s “Learning Better by Doing Project”

The Foundation for Technology and Engineering Education (FTEE) - Dugger/Gerrish Endowment, in partnership with the International Technology and Engineering Educators Association (ITEEA) has commissioned a study to determine to what extent students in United States public schools use a tactile hands-on process of problem solving involving “doing” in their elementary, middle, and high school courses. ITEEA is conducting the fourth and final round of this study and is seeking participants - even those have participated before.

Elementary School Teachers Click Here: www.surveymonkey.com/r/DoingProjectElem
Middle School Teachers Click Here: www.surveymonkey.com/s/DoingProjectMS
High School Teachers Click Here: www.surveymonkey.com/s/DoingProjectHS

ITEEA MEMBERSHIP

ITEEA is always on the lookout for new members to join us. We need YOU to make it happen! Please direct anyone who is interested to the Membership area of the ITEEA website at www.iteea.org.
OUTREACH INITIATIVES

ITEEA Participated as ISMTEC 2016
ITEEA President-Elect, Ed Reeve, and Executive Director, Steve Barbato, attended and presented at the 3rd International Science, Mathematics, and Technology Education Conference (ISMTEC 2016) in Thailand. The theme was “STEM Education: Preparing a Workforce for the Future.” Ed is part of the Thailand “Institute for the Promotion of Science and Technology” (IPST) organizing committee and ITEEA was invited to present and all travel and lodging were fully funded for the conference. Executive Director Barbato was afforded the opportunity to bring keynote greetings from ITEEA and share the International Center webpage for Thailand. ITEEA seemed to be well received from the international attendees. ITEEA gained great insights into the Thailand STEM programs and also from other countries around the world. We added about 20 international members from this program to date.

ITEEA at PATT-32 International Conference
Executive Director Steve Barbato joined Dr. Len Litowitz (Millersville University) and Dr. John Ritz (Old Dominion University) from the United States at the 32nd PATT conference held in the Netherlands last fall. PATT has a strong history with ITEEA over the past two decades and plans to assist Dr. Litowitz to host next year’s PATT International Research conference in Philadelphia on July 10-14, 2017. The 2016 PATT 32 program theme was “Technology Education for 21st Century Skills.” The research papers and presentations focused on current debates on the future of education and how 21st Century skills are often central to this topic. The PATT 32 conference identified Technology Education as one of the subjects that can be particularly attractive to develop such skills.

Barbato was invited to speak to the group about ITEEA at the opening general session. He encouraged ITEEA membership and active participation and shared current initiatives identified in ITEEA’s Strategic Plan. He also invited participants to ITEEA’s 2017 conference, which will have a distinctive PATT strand and dedicated luncheon and reception for all international attendees. Barbato was impressed with the excellent research presentations throughout the program and was able to learn about our field from a broader lens.

CONFERENCE NEWS

Updated 2017 Conference Information Posted
ITEEA posted updated 2017 conference information in two forms this week. The At a Glance document (www.iteea.org/File.aspx?id=101075&v=d50dc2c3) provides a quick one-page overview of each day’s major events. The Preconference Booklet (www.iteea.org/File.aspx?id=90376&v=8dccc9b2) provides a more detailed view of each day’s events. Please reach out and share these links along with the Behind the Scenes Conference Tour (www.youtube.com/watch?time_continue=3&v=zNnopkA2sj0) and be sure to encourage all to Register Today at www.iteea.org/Activities/Conference/ITEEA_Conference_2017.aspx!