

The Voice - CPDD Newsletter

November 2009

From the Editor

Disruptive Innovation in Education

Clayton Christensen of the Harvard Business School has articulated the difference between “sustaining innovation” and “disruptive innovation.” While a disruptive innovation may have initial poor performance when measured by traditional metrics, such a change can result in superior results in the long term. I believe it is time for disruptive transformation in our educational system if our country is to have a workforce capable of meeting the challenges we face. I’d like to offer two disruptive innovations designed to challenge some basic elements of our educational system (or at least get folks riled up enough to take meaningful action).

Disruption 1. Stop teaching math and science in the 5th and 6th grades. These are formative years in children’s lives and we seem to be doing a pretty good job of discouraging large numbers of students from pursuing math, science and technology-based careers at this juncture. These students typically have little or no concept of the reasons they are learning the subject matter and less understanding of how knowledge of math and science can help them do something they consider to be meaningful. Let’s use that block of time and have kids do project-based work on topics that are relevant to society and interesting to this age group. Math, science, technology, design, and problem-solving strategies can be introduced through the projects and connected with what they’ve learned in their earlier grades. They can also be introduced to teamwork and be graded on creativity. We can even call it **Engineering** if we want.

Disruption 2. Don’t teach calculus in high school. When students come to colleges of engineering, even good students with high

AP test scores, we find far too many are not able to apply calculus principles. Many have learned enough to recite answers for a test but have not learned enough to have a working knowledge of the subject. As a result most colleges advise their incoming students to retake calculus so that they have the knowledge required to be successful in the rest of the curriculum. Have you ever helped a high school student or a new freshman with calculus homework? I have and I estimate 90% of students’ troubles are due to a combination of algebra mistakes, sloppiness, and lack of ability to transform a written description into an appropriate calculation. Drop calculus from the high school curriculum and instead require students to take an application of math course where students are taught using a framework of real-world examples.

There are signs that the educational system is ready for these changes. We’ve begun conversations with two local districts regarding a “STEM approach” to teaching in the middle schools – integrating math and science using project-based learning. New Mexico, Minnesota, Ohio and other states are looking at meaningful ways of coupling the first year of college with the last year of high school.

Whether it is these changes or others, I think a disruptive innovation is needed in the engineering education community - working with K-12 - in order to change the culture in our schools to facilitate a robust technical workforce.



Eugene Rutz, Editor
(email comments /
rebuttals / kudos to
eugene.rutz@uc.edu)



Chair's Corner

For the past two years, I have enjoyed being chair of the CPD Division. Working with the division board on strategic planning, hosting the annual fall board planning meetings, participating on various other committees representing CPD have been enlightening, enjoyable and challenging. The CPD board is continually working to implement changes noted in conference evaluations, assessing the needs of the membership in organizing conference sessions and identifying methods to better serve the profession. I have been privileged to lead this group and represent the Division.

At CIEC in February in Palm Springs, CA, Nancy Kruse (Univ. of Tulsa) will be taking over as Chair. It has been a pleasure working with Nancy as she served as chair-elect during these past two years.

I hope you are making plans to attend the upcoming 2010 CIEC Conference, February 3-5 in Palm Springs, CA. This year's conference theme is *"Preparing the Workforce for the Global Marketplace"*. Registration is now open at www.asee.org/conferences/ciec/2010/index.cfm. You will find more detailed information about CPDD sessions later in this newsletter from the CPDD Program Chair, Paul Jewell. In conjunction with registration, you also have the opportunity to renew your ASEE membership.

Julayne Moser, Chair
CPDD Executive Board

Change in CPDD Dues

The CPD Board reviews the membership lists on a regular basis. Based on membership analysis during the past year, the Board agreed to propose a \$5.00 increase in CPDD dues from \$5.00 to \$10.00.

You will be receiving an email message in the next week to ask for your vote on this proposal. We hope to receive results of the vote by the first of December so that the proposal can be reviewed (hopefully ratified) at the next ASEE board meeting. An announcement of the results will be made at the division business meeting at CIEC in Palm Springs.

Honors and Awards

The Honors and Awards Committee of ASEE's Continuing Professional Development Division (CPDD) is requesting nominations for Awards & Honors that will be presented at the Conference for Industry and Education Collaboration (CIEC) 2010 in Palm Springs, February 3-5. This is a time we can recognize and honor those members of our division who have done an outstanding job within the division and the profession.

To nominate someone for the following awards (see below), please send your nominations to nancy-kruse@utulsa.edu **before Monday, November 23, 2009**. Please include the following information when submitting your nomination for any of the awards listed:

- Name and affiliation of person you are nominating
- The award for which you are nominating the individual
- Reasons this person should receive the award

Thank you from the CPDD Honors and Awards Committee:

Nancy Kruse, Chair, University of Tulsa
Lynda Coulson – Rolls-Royce Corporation
Greg Ruff – Auburn University

The Continuing Professional Development Division (CPDD) Honors & Awards include:

Certificate of Merit: This award is presented to a member of CPDD for outstanding and noteworthy contributions to the Division. This could consist of several years or a single unique contribution of major significance.

Outstanding Publication Award: This award is presented to a member of CPDD who has published a book, paper or article on the subject of continuing engineering education during the previous year that is considered noteworthy. Under exceptional circumstances, papers published in previous years may be considered.

Certificate of Appreciation: This award is presented to those who have served CPDD in a leadership role - retiring Executive Board Members, Chairs, and Program Chairs.

Joseph M. Biedenbach Distinguished Service Award

The Honors and Awards Committee of ASEE's Continuing Professional Development Division (CPDD) is requesting nominations for the Joseph M. Biedenbach Distinguished Service Award that will be presented at the Conference for Industry and Education Collaboration (CIEC) 2010 in Palm Springs, February 3-5.

This award is the highest award presented by CPDD. It is given to a member of CPDD who has:

- rendered noteworthy leadership and service within CPDD
- is recognized for providing outstanding service to the continuing professional development of engineers
- and who exemplifies the attributes we associate with Joe Biedenbach

The recipient of this award will receive a check for \$1,000 and a plaque.

To nominate someone for the Joseph M. Biedenbach Distinguished Service Award, please send your nominations to nancy-kruse@utulsa.edu before **Monday, November 23, 2009.**

Joe Biedenbach has been recognized as “the driving force behind an entire era of excellence in continuing engineering education.”



Not only did Joe hold various offices in several professional organizations, he was also a professor of Continuing Engineering Education at the University of South Carolina where he held the only chaired professorship in continuing engineering education in the country.

Joe was instrumental in forming the College Industry Education Conference (CIEC) in 1976 and was the first General Conference Chair.

He was a fellow of IEEE (Institute of Electrical and Electronics Engineers) and ASEE. IEEE awarded him the Centennial Medal in 1984 and the Outstanding Engineering Educator Award in 1987.

In 1976, he received the Distinguished Service Award of the Professional

Development Division. This Service Award was later re-named the Joseph M. Biedenbach Distinguished Service Award in his honor in 1982.

Joe Biedenbach passed away suddenly in April 1990. All who knew Joe noted he was an outstanding individual who brought visibility to the field of continuing engineering education.

“He had a talent for working with people that kept him in a leadership role in both personal and professional activities. He lived his life in high gear generating ideas, molding his students into professional engineers, and inspiring those of us who knew him to work for ideas that were important...”

Those still in the division who remember Joe recall him as the “father of continuing engineering education” and as one of the first to speak to new attendees at conferences. He was someone who knew how to “get things done” and had a strong belief in customer service.

His warmth, laughter, and leadership still inspire us today.

CIEC 2010

The theme for CIEC 2010 is, "Preparing the Workforce for the Global Marketplace", and your colleagues have responded with a broad offering of workshops and sessions that speak to this important issue.



CPD workshops for CIEC 2010, include: “*Building Quality into Online Professional and Technical Degree Programs*”, from the University of Wisconsin, Madison; and “*Web 2.0 Tools, Techniques, and Technology*”, from Rensselaer Polytechnic Institute.

This year’s program offers nine sessions presented by over 15 leading CPD professionals anxious to share and discuss topics vital to our charge of preparing a global engineering workforce. We are proud to welcome several presenters new to CIEC from Johns Hopkins University, The MITRE Corporation, Raytheon Company, University of Strathclyde, Glasgow UK, University of Maryland, and Missouri S&T.

The following is a list of session titles and institutions represented:

- Customizing Course Delivery to Meet the Needs of the Industry Partner, Johns Hopkins University, MITRE Corporation, Raytheon Company
- Preparing Faculty to Teach Continuing Education and Distance Learning Courses, University of Tulsa, The State University of New York (SUNY)
- Meeting the Challenges of Cross-Cultural Virtual Work Teams, New Vistas
- Online Project Management: From Idea to Implementation, University of Maryland
- Technology, Globalization, and Culture, Iowa State University of Science and Technology
- Delivering CPD to Industry Based Students – A Perspective from University of Strathclyde, University of Strathclyde, Glasgow, UK
- Extending International CEE Benchmarking: Progress Through Collaboration, University of Michigan, Georgia Tech, SUNY

- Administrative Leadership Development Program for Administrators within Postsecondary Institutions, Missouri University of Science & Technology (Missouri S&T)
- Best Practices in Establishing and Maintaining Continuing Education Programs, Stanford University, North Carolina State University

Visit the URL for the most complete conference schedule and presenter information.

<http://www.asee.org/conferences/ciec/2010/Program.cfm>.

Please join us in beautiful Palm Springs for CIEC 2010!

Paul Jewell, CPD Program Chair
pjewell@iastate.edu

ASEE Annual Meeting

We are looking to increase the value of our annual program by providing a full and exciting series of sessions and activities for CPDD members.

Nineteen very interesting abstracts were accepted on topics related to innovative teaching methods, adult learning, pedagogy, learning modalities and ground-breaking programs and partnerships. We plan to have technical sessions that cater to a broad selection of continuing and professional development interests.

We have submitted applications for two workshops. The first workshop, “All the World’s a Stage – Part One” will be hands-on workshop focused on helping faculty members transition from the traditional to the digital classroom. A highly interactive approach will allow participants to progressively contextualize their actions

using Jaques’ famous monologue in William Shakespeare’s *As You Like It*, “all the world’s a stage, and all the men and women are merely players...”.

The proposed afternoon workshop, “All the World’s a Stage – Part Two” will also be a hands-on workshop where the participants will be lead through a series of mini presentations, discussions, and activities. As a follow-on the morning workshop, the participants will apply tools and technologies to develop their own digital unit of instruction. Topics will include course design models, learning management systems, Web 2.0 technologies (such as YouTube, podcasting, blogs, wikis, and social networking), synchronous and asynchronous tools, media creation tools, assessment tools, and accessibility tools. Participants are strongly recommended to bring their own laptop.

Of course, I look forward to seeing everyone at the CPDD Business Meeting Luncheon. See you in Louisville in 2010

Keith Plemmons, Program Chair
plemmonsjl@citadel.edu



courtesy Agilent Technologies