



Civil Engineering Division of the American Society for Engineering Education April 2006

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In this issue:

Message from the Chairman	1
CE Division's Activities at the Annual Conference, Chicago	2
Social Events at the 2006 Annual Conference in Chicago	3
Nominations for Newsletter Editor	3
Hands-on Activities & Fun	4
Distinguished Lecture by Dr. Henry Petroski: <i>Engineering and History</i>	5
Spotlight on a Member: <i>Professor Jeffrey Russell</i>	5
A Note on CE Division Elections & Meet the Candidates	8
CE Division's "Publish to Present"	9
Members in Action	10
We need your Participation	11
2006 CE Division Awards	12
ASCE Educational Activities Report	12
New ABET CE Program Criteria	13
Acknowledgements & Reviewers	14
CE Division Officers	16

NOTE: The 2006 Annual Conference will be held June 18-21, 2006 in Chicago, Illinois.

<http://www.asee.org/about/events/conferences/annual/2006/index.cfm>

Message from the Chair of the Division

Jim Hanson, California Polytechnic State University, San Luis Obispo, CA <jahanson@calpoly.edu>

Greetings, Civil Engineering Division membership. I am pleased to provide an update for the Division activities at this exciting time for civil engineering education. I believe the Division can be proud of contributions towards the recent advances in CE Education. Civil engineering educators and practitioners have taken the lead on what is bound to be a fundamental change in the definition of educational requirements for entering the profession. I am pleased to include a second installment of the "Spotlight on a Member" feature in this newsletter. This article (see page 5) highlights an interview I conducted with Dr. Jeffrey Russell, a leader in civil engineering educational reform.

It is exciting to see the relationship of the ASEE Civil Engineering Division and ASCE strengthening. The two organizations have a long and productive history that has spanned from formal ASEE representation on both the Educational Activities Committee and Committee on Curricula and Accreditation, to co-sponsorship of technical and social sessions. Most prominently, the groups contain a common core of active membership dedicated to making contributions for promoting excellence in civil engineering education. Just in the past year, a standing ASCE Liaison Committee has been established within the Civil Engineering Division of ASEE to foster improved coordination, communication, & dissemination of recent developments. I look forward to an improved and continued relationship between the Division and ASCE.

Civil engineering educators generally embrace opportunities with recent technological developments and have been responsible for implementing such technology into the classroom. The enhanced computerized technology has improved analysis and design capabilities. However, the prevalence of technology in our world has modified the outlook of students of this generation. Much has been said about the short attention spans of the "video" generation. As the era of the iPod™ lecture is upon us or just on the horizon, we as educators need to re-evaluate our perspective of this remarkably different paradigm for defining a university learning experience. Two specific challenges that I have observed related to the technologically savvy generation of students is the apparent loss of spatial visualization skills and a decreased ability to develop an advanced sense of engineering judgment. I believe the extensive work of the Civil Engineering Division is well suited to meeting these challenges. I have noticed the membership of the Civil Engineering Division to have an uncanny ability to balance hands-on learning activities, implementation of software and other technology in coursework, and continual assessment of these methodologies on teaching effectiveness.

Dr. Kristen Sanford Bernhardt, as Program Chair of the Division, is completing an extraordinarily busy year in preparing the technical and social program for the Annual Conference in Chicago this June. We can anticipate a wonderful program with some special features that are described elsewhere in this newsletter. I look forward to seeing many of you in Chicago.

CE Division's Activities and Social Events: Annual Conference, Chicago, IL, June 18-21, 2006

Kristen Sanford-Bernhardt, Program Chair, Lafayette College, <sanfordk@lafayette.edu>

I hope many of you are planning to join us for what will be an exciting conference in Chicago! The Civil Engineering Division is sponsoring one workshop, nine technical sessions, three business meetings, and our annual RAP session and banquet. In addition, we are co-sponsoring six technical sessions, a joint RAP session with the Architectural and Construction Divisions, and a distinguished lecture. All officers should plan to attend Monday morning's Executive Board meeting (Session 1115). ASEE is not facilitating ticketed on-site breakfasts this year, so BYO coffee!

Plan to arrive in time for our Sunday afternoon workshop – Incorporating Standards into Capstone Design Courses (Session 0415). Bill Kelly from The Catholic University of America has developed the workshop based on similar workshops conducted at ASEE regional meetings. Everyone should plan to attend Monday's and Tuesday's lunchtime meetings (ASEE is not facilitating ticketed lunches, so BYO lunch). Monday is the Division's annual business meeting (Session 1415), and Tuesday is the planning meeting for next year's conference (Session 2415). Both of these meetings are appropriate venues to bring suggestions about Division operations and the annual conference program. Details of the various sessions follows.

CE Division Activities at the 2006 Annual Conference in Chicago, IL

Kristen Sanford-Bernhardt, Ph.D., Lafayette College, Program Chair (2005-2006)

Sunday afternoon workshop: Incorporating Standards into Capstone Design Courses (Session 0415). Bill Kelly from The Catholic University of America has developed the workshop based on similar workshops conducted at ASEE regional meetings.

Students entering the workforce must have a minimum standards literacy. The ABET criteria for engineering programs require that engineering standards be an aspect of the culminating major design experience. Programs in engineering technology must also include capstone or other integrating experiences. Though consideration of standards is not required, it is appropriate in the development of a product, process and/or service.

In this workshop, panelists from academia, industry and standards-developing organizations will provide insight into the world of voluntary standards and techniques for incorporating standards and conformity assessment-related topics in engineering curricula. Examples of current standardization issues—such as sustainable development; manufacturing and design issues; health and safety requirements; economic, social and political considerations—will be highlighted and discussed from the perspective of design. Educators can expect to gain a better understanding of the importance of standards and some examples of how to incorporate standards materials into their curriculum.

Session 1315, Monday, 10:30 AM-12:00 Noon: *A Serving Profession: Service Learning in Civil Engineering Education*
Did you ever think "Service learning is a great idea for those liberal arts courses, but it won't work in engineering"? Think again! Speakers will describe their efforts and results in integrating service learning into civil engineering classes.

Session 1515, Monday, 2:15-4:00 PM: *Progress on Raising the Bar*

The American Society of Civil Engineers (ASCE) has been working to raise the educational requirements to enter the practice of civil engineering at the professional level. This session highlights key aspects of the effort with respect to the Body of Knowledge (BOK), the new model for levels of achievement and the new civil engineering program criteria. The session will also provide an overview of the overall "raise the bar" initiative – as well as some perspectives on ABET's prohibition on dual-level accreditation of engineering programs.

Session 2115, Tuesday, 7:00-8:15 AM: *Physical Models and Other Interactive Tools*

Students retain 10% of what they hear and 80% of what they do! BYO coffee to this session presenting resources for physical and software modeling

Session 2215, Tuesday, 8:30-10:00 AM: *Achieving the Civil Engineering Body of Knowledge*

ASCE's Civil Engineering Body of Knowledge (BOK) has generated both discussion and action within and among civil engineering programs across the country. This session highlights efforts to meet criteria within the BOK as well as efforts to assess whether a curriculum is successful in those efforts.

Session 2515, Tuesday, 2:15-4:00 PM: *Where are We Going? The Future of Civil Engineering Education*

Papers in this session focus on "big picture" trends with potential consequences civil engineering education. What are the impacts of emerging research trends? What will be the effects of the need for sustainability in civil systems? Who will educate civil engineering students? What degree paths should we offer to students?

Session 2615, Tuesday, 4:30-6:00 PM: *Feedback and IT: Improving Student Learning*

There are many ways to improve students learning. This session brings together papers addressing peer review as a feedback mechanism, IT methods for communication between instructors and students, and communication in a distance learning environment.

Session 3115, Wednesday, 7:00-8:15 AM: *Bridging the Gap: From FE to PE*

Bring your own coffee and come interact with a panel of practitioners! Panel members will discuss what they expect from their new engineering hires and what responsibility employers have for preparing these new hires for licensure. The Civil Engineering Body of Knowledge (BOK) involves obtaining a level of competency prior to licensure. Formal education takes responsibility for a portion of that competency, and professional experience fills in the rest.

Session 3215, Wednesday, 8:30-10:00 AM: *Civil Engineering in the Classroom*

This poster session highlights courses in which instructors are doing something innovative, unique, and/or interesting.

Session 3615, Wednesday, 4:30-6:00 PM: *The Senior Experience: Capstone and Beyond*

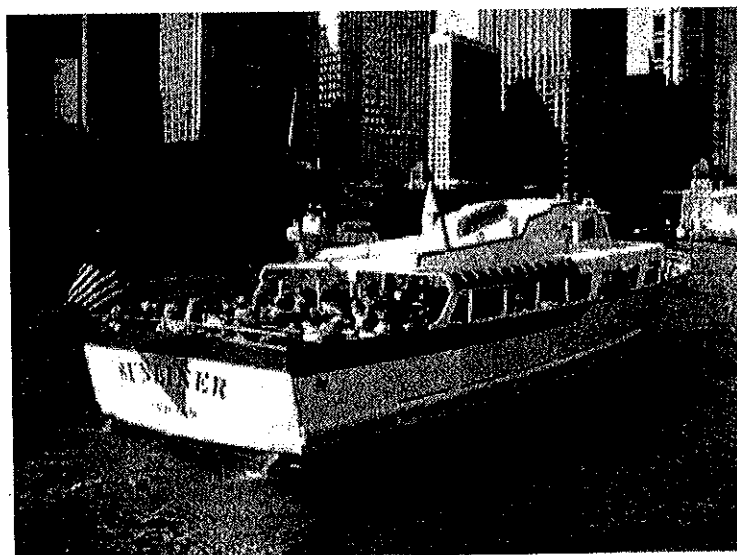
Programs across the country continue to struggle with developing and implementing the "ideal" capstone design course. This session presents descriptions and assessment of several different approaches to providing the capstone experience.

Two exciting social events planned for the Annual conference in Chicago

Our traditional **Monday evening RAP session** (Session 1815) will take place while cruising Chicago's waterways aboard Wendella Boats' *Sunliner*. Join your fellow civil engineers for Chicago-style pizza, drinks and socializing (as well as a guided tour and a bit of discussion about issues in civil engineering education and the profession). The boat will leave at 7:00 p.m. sharp from the docks at the Wrigley Building on the northwest corner of the Michigan Avenue Bridge.

Note: It would be helpful if those planning to attend the RAP session would let Kristen Sanford Bernhardt know in advance – sanfordk@lafayette.edu

Tuesday evening's banquet (Session 2815) will be held at the Greek Islands Restaurant, 200 South Halsted Street. Dinner will feature traditional Greek fare and wines as well as our annual Division awards presentations.

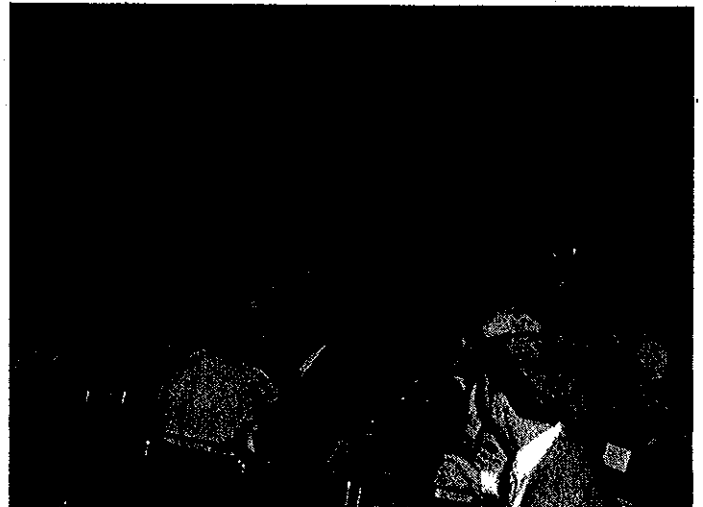
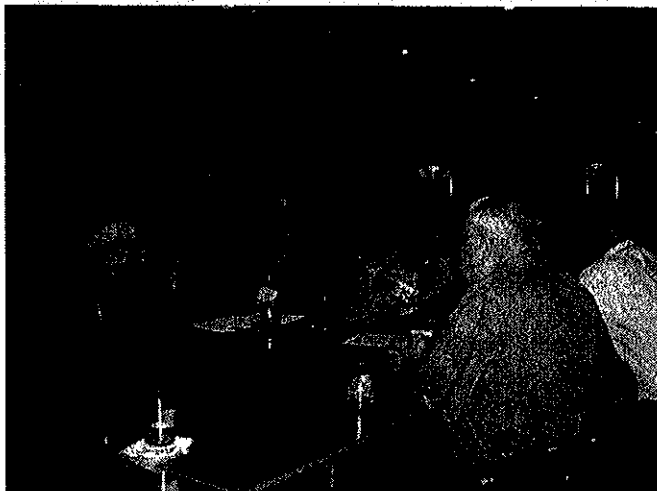
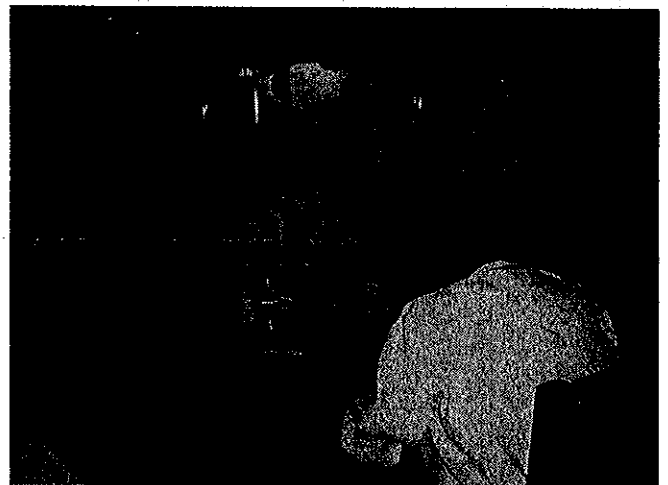
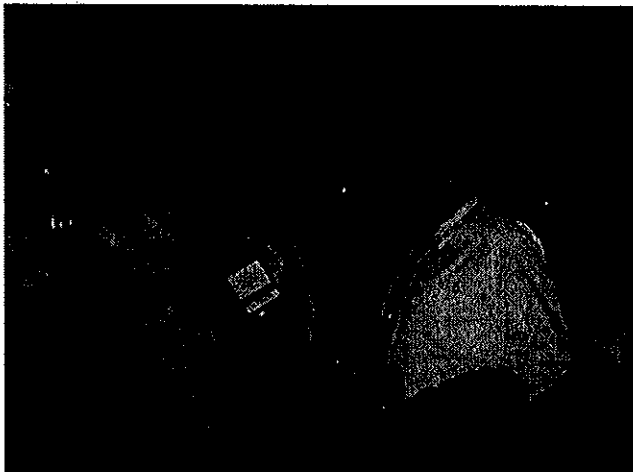
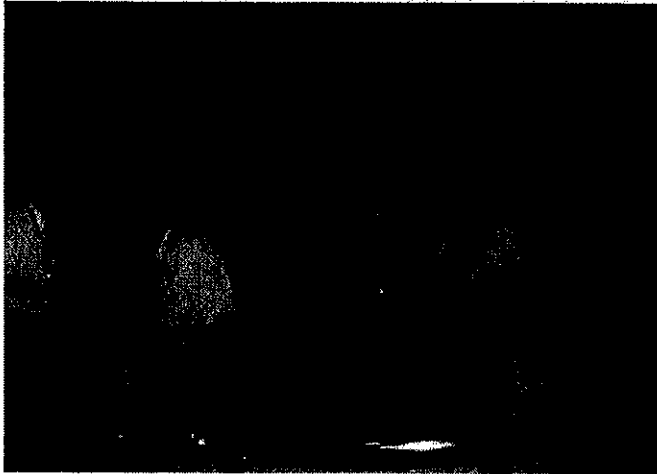


The CE Division is **co-sponsoring** a series of sessions with the **Mechanics and Mechanical Engineering Divisions** on Statics, Dynamics, and Strength of Materials. These three sessions (Sessions 1368, 1466, and 1568) will all take place on Monday. We are also co-sponsoring several events with the **Construction Division** (Sessions 1321, 1421, and 2521) as well as a session on capstone courses (Session 3587).

Call for Nominations for the Newsletter Editor:

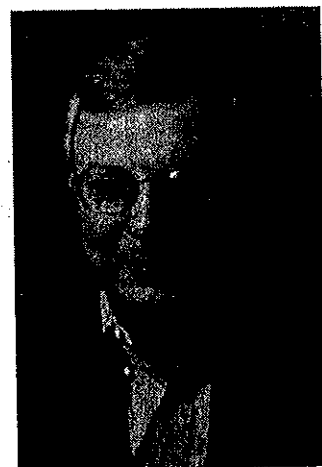
Individuals interested in serving as the Editor of the ASEE Civil Engineering Division's newsletter should contact Jim Hanson, the Division's Chairman <jahanson@calpoly.edu>. The Newsletter Editor is appointed by the Division's Board of Officers, and normally serves a three year term. It is anticipated that the next newsletter editor's term will start in June 2007. The current Editor will help the incoming Editor with the transition during the upcoming year.

The CE Division's sessions not only are enlightening, but they also provide plenty of opportunities for hands-on participation, interaction, discussions, and fun! The following are snap shots from CE Division sessions and activities at recent Annual Conferences



Distinguished Lecture by Dr. Henry Petroski of Duke University

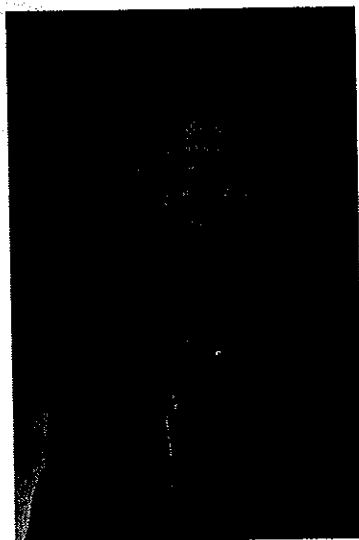
The Civil Engineering is pleased to be co-sponsoring a *Distinguished Lecture by Dr. Henry Petroski of Duke University*. His talk is titled "**Engineering and History**." Henry Petroski is Aleksandar S. Vesic Professor of Civil and Environmental Engineering and a professor of history at Duke University. He is the winner of the 2006 Washington Award, one of the oldest and most prestigious engineering awards in the country, for his accomplishments in making engineering theory and practice understandable to the general public. The Washington Award, presented by a commission of seven engineering societies, is conferred upon an engineer whose professional attainments "preeminently advance the welfare of human kind." The first recipient of the award in 1919 was Herbert Hoover, 31st president of the United States and a successful mining engineer. Subsequent recipients have included Orville Wright (1927); Henry Ford (1944); and astronaut Neil Armstrong (1980).



Petroski has written broadly on the topics of design, success and failure, and the history of engineering and technology. His books on these subjects, which are intended for professional engineers, students and general readers alike, include "To Engineer Is Human," which was adapted for a BBC television documentary, and "Design Paradigms," which was named by the Association of American Publishers as the best general engineering book published in 1994. Petroski has also written books on commonplace objects, including such titles as "The Pencil" and "The Evolution of Useful Things." His books have been translated into Chinese, Finnish, German and Hebrew, among other languages. He recently completed a new book, "Success Through Failure: The Paradox of Design," which is scheduled to be published by Princeton University Press in April. In addition to numerous technical articles in refereed journals, Petroski also has written non-technical articles and essays for newspapers and magazines. He writes the engineering column in the bimonthly magazine *American Scientist* and a column on the engineering profession for *ASEE Prism*. He lectures to both technical and general audiences, in the U.S. and abroad, and has been interviewed on National Public Radio, the Today Show and News Hour with Jim Lehrer.

Spotlight on a Member: Jeffrey S. Russell, Ph.D., P.E.

An interview with Jim Hanson, Chair CE Division <jahanson@calpoly.edu>



Over the past 17 years, Professor Jeffrey S. Russell has established himself as a leader in education, research, and service to the civil engineering profession through championing diversity, leadership, innovation, and enhanced education for future civil engineers. He is a Professor and Chair in the Department of Civil and Environmental Engineering at the University of Wisconsin-Madison. Jeff's research has been recognized by his peers through his selection for over 11 national and regional awards and 4 best paper awards, including some of the most prestigious awards in civil engineering. He is presently Chair of the ASCE Committee on Academic Prerequisites for Professional Practice, the committee charged with defining the future education requirements necessary to practice civil engineering at the professional level. He has published nearly 200 technical papers in the areas of contractor failure, prequalification, surety bonds, constructability, automation, maintainability, warranties, and quality control/quality assurance. He has also published two books and served as editor-in-chief of the *ASCE Journal of Management in Engineering* (1995-2000) and as founding editor-in-chief of the ASCE publication *Leadership and Management in Engineering* (2000-2003). Jeff is simply one of those people that the rest of us have not yet figured out.

I recently spoke with Jeff regarding his important contributions to Civil Engineering education, membership in the ASEE Civil Engineering Division, and his perspective of the education of today's and tomorrow's civil engineers. A summary of his thoughts is provided below:

From an administrator's perspective, do you see the relative importance of teaching and research changing with time (in terms of promotion and tenure decisions)?

We, as a faculty, have to take part in the reshaping of our promotion and tenure processes to recognize, encourage, and embrace the diversity of scholarship. At many universities this process is narrowly defined as "discovery" and measured in terms of research. Earnest Boyer of the Carnegie Foundation provided a blue print to facilitate changes in how scholarship is defined. He proposed in his book, *Scholarship Reconsidered: Priorities of the Professoriate* (1990), that "scholarship"

be defined beyond the traditional emphasis on discovery. The four domains he proposed were: 1. Scholarship of Discovery (whose aim is to acquire knowledge, testing and generation of theory, results add to the body of knowledge), 2. Scholarship of Integration (application that gives new meaning and perspective to isolated facts - overcoming the fragmentation of disciplines, builds bridges across the disciplines, research at the boundaries where fields converge), 3. Scholarship of Application (application of disciplinary knowledge and skill to help address important societal and institutional problems, focuses on utility outside a discipline, practical application), and 4. Scholarship of Teaching (a "scholarly enterprise," a process through which knowledge is acquired). I believe that if we fail to expand the definition of our promotion and tenure process, we will underachieve as a profession because we will lack a diverse faculty.

You have a strong record in promoting mentoring, especially in fostering programs aimed at enhancing experiences for women in engineering. What are your thoughts on the potential for achieving better gender balance for students, academia, and the civil engineering profession?

If we want to have a vibrant, relevant, and attractive profession in the future, then now is the time to become more proactive and inclusive. Engineers understand design and systems and; therefore, should be leading the country in diversity. Everyone can play a role in fostering diversity by learning more about it, dealing with personal biases, and being committed to the long-term process of change. As a profession, we can begin by recruiting, developing, and retaining underrepresented groups in both academia and public and private sectors. Regarding women, I believe we have to achieve gender equity in our profession in the next two decades.

What have been some major changes in civil engineering education initiated by ASCE over the last 10 years?

Education reform and change has been discussed for well over a century. However, ASCE has intensified their efforts since the Civil Engineering Education conference in Denver, Colorado, in June of 1996. There were four recommendations adopted at the conference: incorporate greater teamwork and communication into the curriculum, involve more practitioners in the education process, improve the teaching capability of the faculty, and advocate the Master's degree as the first professional degree. Over the last decade, we have made progress in each of the recommended areas, but need to keep the big picture in view. Curricula change is a long-term, highly human, interactive, and interdependent process. I have been encouraged by increased intellectual exchanges on curricula content, teaching methods, role of technology in instruction, and assessment of teaching effectiveness. Feedback, integration, learning, and continuous improvement will only improve the process and system of civil engineering education and is consistent with ABET's shift from inputs to a program to outcomes. The team working on implementing Policy Statement 465-Academic Prerequisites for Licensure and Professional Practice has received feedback that more attention needs to be focused on the "what," "how," and "who" of the curricula assessment process. This is an opportunity for us to engage in dialog to better frame the issues, facilitate learning, and promote sharing of best practices.

What do you envision to be the greatest hurdle in approaching licensing jurisdictions to consider components of the Body of Knowledge (BOK) in professional licensure?

The greatest hurdle in dealing with licensing jurisdictions is patience with consistent effort to engage them in the dialog and process. Change takes time and we should be mindful of the history behind licensure and the time it takes to make changes on the scale we are proposing. Below is a brief overview of the history of licensure.

The first state to pass a licensure law was Wyoming, in 1907. Wyoming engineers were concerned with water speculators who lacked the qualifications or experience of trained engineers but were nonetheless using the term "engineer." The law was passed so that "all the surveying and engineering pertaining to irrigation works should be properly done." ASCE supported this piece of legislation, but otherwise resisted the notion of state-controlled licensure at that time.

From its inception, ASCE had preferred self-regulation to licensure, arguing that only engineers should pass judgment on other engineers. However, as issues of public safety became a leading cry of the days' reformers, licensure began to appear inevitable. After about 1910, many civil engineers supported the concept of state licensing in order to control what aspects of practice would be regulated and to ensure that restrictions placed on professional practice would not be overly onerous. The Society did not fully endorse the notion of any outside body regulating the practice of professional engineering, but ASCE leaders thought it prudent to develop a model law they found acceptable. Following the passage of the Louisiana law in 1908, and a fierce debate for licensure in New York, ASCE promulgated a model law for licensure in 1910. This shift in attitude also helped civil engineering stay in-line with other professions such as medicine and law, which had already accepted licensure and were beginning to enjoy increased public prestige.

As engineering licensure laws were enacted by state legislatures, the need for communication between state boards soon became acute. Accordingly, around 1920 the National Council of State Boards of Engineering Examiners, currently the National Council of Examiners for Engineering and Surveying (NCEES), was formed to work for fair licensure in every state, help enforce regulations, and ensure appropriate levels of experience and education for professional practice — roles NCEES fulfills to this day. As more and more states adopted regulations for professional practice, NCEES also

became involved in advocating for the standardization of engineering curricula. In cooperation with ASCE and ASEE, NCEES helped create the Engineers' Council for Professional Development in 1932. This body was the first permanent council consisting of multiple engineering societies and was entrusted with the responsibility of the formal accreditation of engineering curricula from 1936 up to the present, albeit under the current name of the Accreditation Board for Engineering and Technology (ABET).

It took nearly 45 years for all 50 states to require licensure for the practice of civil engineering. With the passage of the Montana law in 1947, followed by the District of Columbia in 1950, licensure became a fact of professional engineering practice.

The lesson to learn from the historical account of licensure above is that change occurs slowly. Policy Statement 465, the Body of Knowledge, new accreditation criteria, new educational requirements for licensure are all long-term efforts.

What have you enjoyed most about your position in university administration?

My joy comes from working with the students, faculty, and staff. I enjoy helping students expand their horizons and set higher expectations. They have an unlimited source of ability, passion, drive, and creativity to change the world. I am very optimistic about the potential of young people today and am grateful to be able to, in a very small way, help them achieve their dreams, goals, and full potential. It is also rewarding to work with faculty and staff. I enjoy helping them grow, change, and do things that they do not think can be done.

What methods do you see as effective at better integrating civil engineering practitioners with a classroom environment?

At UW, we have a concerted effort to involve alumni and industry partners in our program. This can occur in several ways including financial support, hiring students in summer internships, co-ops, or full time jobs, guest lecturing, mentoring students in our capstone class, participating in research projects, and serving on our external advisory board. I am optimistic that we can intentionally bridge academia and the practice of civil engineering. There are already a large number of programs that do this very well and we can learn from them.

Knowing that your mantra in relation to BOK developments is "communicate, communicate, communicate", I presume most of the membership of the Civil Engineering Division is well aware of the task force's major developments. Do you have any late-breaking news that you would like to share with the Division in relation to the BOK effort?

The committee continues to move forward in our long-term effort. Specifically we are working on the next edition of the ASCE Body of Knowledge. Richard O. Anderson, P.E. is Chair of the committee, Kenneth J. Fridley is co-chair, and Stuart G. Walesh is the editor. Other committee members include JoAnne Silverstein, John Mason, Anirban De, Manoj Jha, Dan Lynch, Bob Mackey, Tim Lengyel, Melanie Lawrence, Ron Harichandran, David Lange, Decker Hains, and William Knocke. There are over 20 corresponding members who review various work products and offer their input and feedback. They have organized 14 subcommittees to review existing outcomes (technical breadth, communication, specialization, leadership, public policy, and multi-, inter-, cross disciplinary teams) in the BOK as well as some new topics (sustainability, globalization, emerging technologies, history/heritage, attitudes, discovery mode, and risk & uncertainty). A draft of the second edition is expected to be available for broad distribution and comment in August of this year. It is anticipated that the Second Edition of the BOK will be released in conjunction with Engineers' Week on February 21, 2007, at the National Academy of Engineering. If you are interested in details about the committee, please contact Rich Anderson at Roapel@aol.com.

The committee is also working on changes to the basic level civil engineering program criteria and anticipates forwarding them to ABET in June of this year. We continue to work with the NCEES and licensing boards to communicate the need to set higher educational expectations for engineers in the future. We are making progress!

How do recent advances in construction engineering resemble developments in civil engineering education?

The world is moving toward integration, collaboration, and strategic cooperation. I see construction engineering as an integral part of civil and environmental engineering. Educating an engineer in this century will require more agility and flexibility. Integrating design with assembly will serve to better prepare students for tomorrow's challenges, which are global in scale.

How do you feel that typically underrepresented groups in the Civil Engineering Division (e.g., faculty at research universities, students, and practitioners) could benefit from joining ASEE?

Membership in ASEE is a gateway to knowledge, relationships, and learning. I have always gained more than I have contributed. We have so much to learn from each other, and that is what makes being a member of ASEE so exciting. Our colleagues are very passionate about their profession and have good ideas and experiences to share with the broader community.

Do you have any additional thoughts you would like to share with the CE Division?

The world is changing and we have the opportunity to shape the future of our own profession. There is not one cookie cutter approach to curricula design that will prepare future civil engineers for professional practice. I hope more programs will seize the opportunity to migrate from the norm and experiment with new ideas in civil engineering education.

A Note on CE Division Elections

Jim Hanson, California Polytechnic State University, San Luis Obispo, CA <jahanson@calpoly.edu>

Shortly, you will receive an electronic ballot for the 2006-2007 Officer Elections. We provide a preview of the nominees here in the newsletter with short biographical sketches of Dr. Kristen Sanford-Bernhardt (nominee for Chair), Dr. Ronald Welch (nominee for Vice Chair/Program Chair), and Dr. Kevin Sutterer (nominee for freshman Director). Please keep your eye out for the election to be administered by e-mail in the coming weeks. In addition, please be aware that the Division solicits annual nominations in November for the following year's officer positions. The Division is open to broad involvement by the membership in the Executive Board activities. Members interested in becoming further involved in Civil Engineering Division activities are encouraged to pursue possibility for nomination through the Nominations Committee (in addition to attending the Business and Planning Luncheons at the Annual Conference).

ASEE CE Division Candidates for Offices – Meet the Candidates

Dr. Jim Hanson, P.E. Jim received his B.S. in Civil and Environmental Engineering from the University of Wisconsin, Madison in 1990, his M.S. in Geo-Engineering from the University of Minnesota, Minneapolis in 1992, and his Ph.D. in Civil and Environmental Engineering from the University of Wisconsin, Madison in 1996. Jim is an Associate Professor at Cal Poly, San Luis Obispo. Jim's specialization is geotechnical engineering. His research interests include soft ground improvement techniques, nondestructive testing, sustainable infrastructure, the re-use of industrial byproducts, and thermal aspects of landfills and geo-materials. Jim's research has been funded by federal and state agencies as well as private organizations. Much of Jim's research involves field performance and large-scale testing. He served as Chair of the United Engineering Foundation/ASCE Geo-Institute Soft Ground Technology Conference (held in the Netherlands) and was co-editor of the conference proceedings. Jim serves as the current Chairman of the ASEE CE Division. Jim spent his Sabbatical leave during the spring term 2004 at the University of New South Wales in Sydney, Australia. When time can be found, Jim likes to swim, golf, and play acoustic stringed instruments.

Dr. Kristen Sanford Bernhart. Kristen is an Assistant Professor of Civil and Environmental Engineering at Lafayette College in Easton, Pennsylvania. Previously, she held the same position at the University of Missouri-Columbia. She received her MS and PhD from Carnegie Mellon University (in 1994 and 1997) and her BSE from Duke University (in 1992), all in Civil Engineering. She is also a graduate of the ExCEED Teaching Workshop (2002). Kristen's teaching and research interests lie in the areas of transportation systems and management of civil infrastructure assets. More specifically, she regularly teaches an introductory transportation systems course, electives in civil infrastructure systems management and urban transportation planning, and courses in engineering professionalism and ethics. Kristen's research has focused on decision-making, data-related issues, and advanced modeling tools for management of civil infrastructure systems. Her current work applies agent-based modeling to explore the interactions between physical and institutional processes affecting infrastructure performance. In addition to her work for ASEE's Civil Engineering Division (including a three-year term as Director and current position as Program Chair), Kristen is active in the American Society of Civil Engineers as the Vice Chair of the Infrastructure Systems Committee (part of the Transportation and Development Institute) and in the Transportation Research Board as a member of the Committees on Artificial Intelligence and Advanced Computing, Emerging Technology in Design and Construction, and Transportation Asset Management. She also has been a co-organizer of a series of informal workshops for faculty interested in infrastructure management education, and she facilitates the Education Section of the Transportation Asset Management Today web site. Kristen and her husband Bill spend most of their non-working hours with their children, Alex (2 and a half) and Caroline (9 months).

Dr. Norm Dennis, Jr., P.E. Norm is a Professor in the Department of Civil Engineering at the University of Arkansas, Fayetteville. Before joining the U of A faculty in 1996, Norm served in the US Army as an engineer officer for 24 years. During his military career Norm had the unique opportunity to build roads, airfields and other facilities on six different continents and spend over 11 years as a member of the faculty at the US Military Academy. His current research interests include laboratory and field determination of geotechnical material properties for transportation systems and the use of remote sensing techniques to categorize geomaterials. Norm is active in ASEE, is a Fellow of ASCE and a member of TRB. He is the current chair of the Midwest Section of ASEE, the campus representative for ASEE, an associate editor of the ASCE Journal of Professional Issues in Engineering Education and Practice, a member of the Deep Foundations Committee of the Geo-Institute and a member of the Transportation Earthworks and Reliability in Geotechnical Engineering and Pavements Committees of TRB. He is also a member of several NCHRP panels relating to earth retention systems. Norm has been active in faculty development for over 18 years. He is the past chair, and now chair-elect, of the

ASCE Committee on Faculty Development and has been a director for one of ASCE's ExCEED Teaching Workshops since 2000. Based on his faculty development work, he was selected as a Distinguished Lecturer for the NSF/ASEE Visiting Scholars Program in AY1999-2000. Dennis holds BS and MS degrees in Civil Engineering from the University of Missouri-Rolla, an MSBA from Boston College, a Ph.D. from the University of Texas-Austin. He is a registered professional engineer in Arkansas and Colorado.

Colonel Ronald W. Welch, Ph.D., P.E. Ron Welch received his B.S. degree in Engineering Mechanics from the United States Military Academy in 1982. He received his M.S. and Ph.D. degrees in Civil Engineering from the University of Illinois, Champaign-Urbana in 1990 and 1999, respectively. He is currently an Associate Professor of Civil Engineering at the United States Military Academy and Deputy Department Head for the Department of Civil and Mechanical Engineering. Ron has served in the Corps of Engineers for over 23 years including positions from combat engineer platoon leader to Operations Officer and Chief Construction Engineer for a 1000 person Joint Task Force that completed nation building engineering missions in El Salvador, Ecuador and Panama. Ron serves as a Senior Director of the Civil Engineering Division of ASEE, the Chair-Elect of the Middle Atlantic Section of ASEE, the Chair of the ASCE Construction Institute Committee on Temporary Structures during Construction, a member of the SEI/ASCE 37-07 Loads on Temporary Structures during Construction working group, and a member of the ASCE Committee on Faculty Development. His educational interests include project-based learning and teaming skills, while his technical interests include blast effects, concrete design, homeland security solutions, and temporary structures. Ron has been recognized for his teaching as the Department of Civil and Mechanical Engineering senior faculty award winner and the Middle Atlantic Section Outstanding Teaching Award winner. He is one of the program directors of the ASCE sponsored ExCEED Teaching Workshop. He is a registered professional engineer in Virginia. Ron and his wife, Laura, are celebrating 23 years of marriage and have two daughters in college.

Dr. Kevin G. Sutterer, P.E. Kevin Sutterer is an Associate Professor in the Department of Civil Engineering at Rose-Hulman Institute of Technology (RHIT) in Terre Haute, Indiana where he teaches courses in structural and geotechnical engineering. Prior to joining RHIT in 1998, Kevin was an Assistant Professor at University of Kentucky. Kevin worked as a geotechnical consultant in the St. Louis, Missouri area from 1984 to 1989, specializing in landslide remediation, deep foundation systems and geoenvironmental studies. His current research interests include forensic engineering, ground exploration, geomechanics of composite earthwork, and undergraduate civil engineering education, particularly in the area of service learning and project-based learning. Kevin is active in ASEE, a member of ASCE's Curriculum Committee and the ASCE Education Committee of the Technical Council on Forensic Engineering. He recently completed a six-year tenure as chair of TRB Transportation Earthworks' Committee and served three years as chair of NSPE's Student Programs Task Force. Kevin has served as Student Chapter Adviser for RHIT's highly successful Cecil T. Lobo ASCE Student chapter for 4 years. He is a graduate of ASCE ExCEED and subsequently served as an Assistant Mentor in ExCEED. Kevin earned a B.S. and M.S. in Civil Engineering from University of Missouri-Rolla, an M.S. from Purdue University, and a Ph.D. from Georgia Institute of Technology. He was selected as the NSPE Young Engineer of the Year in 1996. Kevin is a registered professional engineer in Missouri. Kevin and his wife, Kathy, have three children. Away from the job, Kevin stays busy with youth ministry, woodworking, and cycling.

CE Division Implements "Publish to Present"

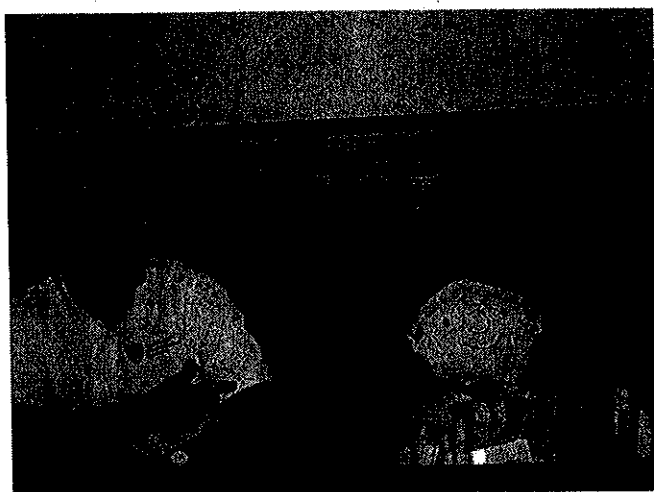
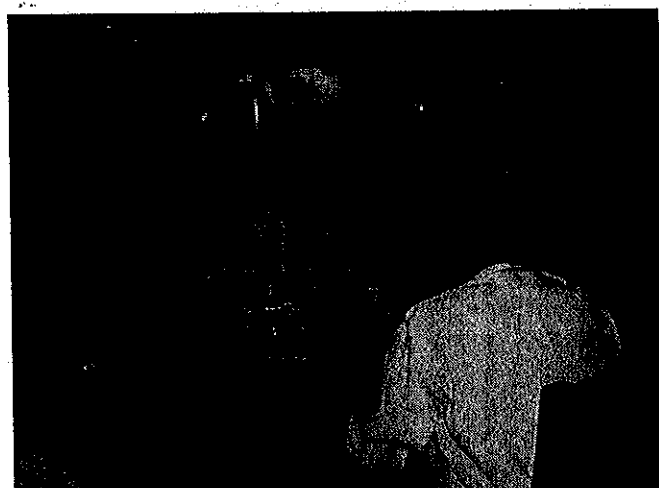
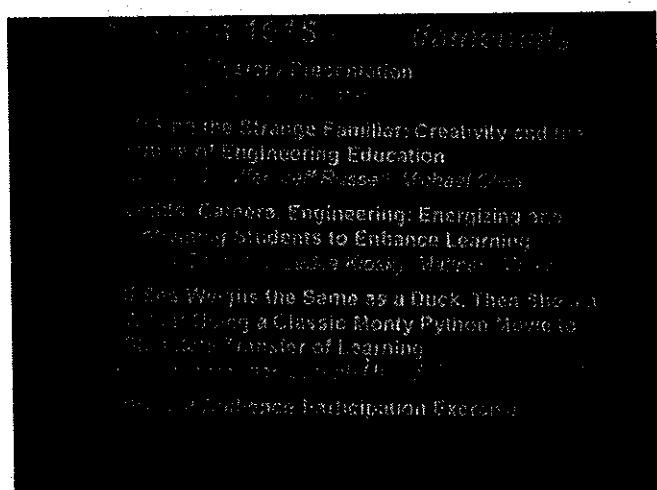
Stephen J. Ressler, U.S. Military Academy <Stephen.Ressler@usma.edu>

At the 2005 ASEE Annual Conference in Portland, the Civil Engineering Division membership voted to adopt a "publish to present" system for future Annual Conference programs. This system, now fully implemented for the 2006 Annual Conference program, has substantially changed the way that abstracts and papers are peer-reviewed and assigned to technical sessions.

In recent years, the number of abstracts submitted for the CE Division program at the Annual Conference has been increasing steadily. Given that ASEE typically limits the Division to eight or nine sessions, large numbers of abstracts typically had to be rejected or reassigned to the ASEE "Emerging Trends" poster session each year.

In the past, the CE Division Program Chair reviewed abstracts and (with the assistance of Session Chairs) decided which abstracts to include in technical sessions, which ones to reassign, and which ones to reject. The decision to accept, reject, or reassign was based entirely on abstracts. And because the quality of an abstract is always difficult to judge, the Program Chair's decision was typically made on the basis of *relevance to the published call for papers*, rather than quality. Once an abstract was accepted, the author was guaranteed a *presentation* at the conference—regardless of whether or not that author actually followed through and wrote a paper for the conference proceedings.

Continued on page 11



Civil Engineers indeed HAVE fun! – Snap shots from recent ASEE Annual Conference CE Division Sessions.

**Come on and join the fun with the Civil Engineering Division's activities!
See you in Chicago June 18-21, 2006!**

... continued from page 9

This system inevitably resulted in anomalies and inconsistencies. Once an abstract was accepted, there was less incentive for the author to write a high-quality proceedings paper. Some (though certainly not all) authors took advantage of this situation and wrote no paper at all or wrote papers of dubious quality. The Program Chair had very little leverage to enforce high standards of scholarship, because a rejected paper could still be presented at the conference. Occasionally, conscientious authors found that their abstracts had been reassigned to the "Emerging Trends" session—even though their papers were superior in quality to ones that had already been accepted for presentation in CE Division sessions.

The CE Division's new publish-to-present system has changed this situation significantly. The system works as follows:

- Acceptance of an abstract only guarantees that the author may submit a paper for review. Unlike the old CE Division system, acceptance of an abstract *does not* guarantee that the author can do a presentation at the conference.
- After the author has submitted a full manuscript, and after that manuscript has been peer-reviewed and accepted, then the paper is allocated to an appropriate session. The quality of the paper itself is a major factor in deciding which papers are assigned for presentation at CE Division sessions.
- Publish-to-present does not apply in special cases like invited speakers, panel discussions, and works in progress, where the Session Chair has determined that proceedings papers are not appropriate or necessary.
- In general, peer-reviewed papers are also required for participation in CE Division poster sessions. Ultimately, this policy will enhance the stature of poster sessions and thus will enhance the CE Division's technical program.
- Although publish-to-present is the default mode for CE Division sessions, the Program Chair has wide latitude in allowing exceptions to the rule whenever appropriate.

Implementation of publish-to-present has greatly strengthened the Program Chair's ability to enforce high standards of scholarship in the CE Division program. Higher standards will inevitably raise the quality of the Division's technical papers, posters, and presentations, thus enhancing the prestige of the Division and attaching greater credibility to the scholarly work of the Division's members.

We Need Your Participation

Dennis J. Fallon, Chair of the membership committee, Dean of Engineering at The Citadel (dennis.fallon@citadel.edu)

In the next decade civil engineering education will be facing numerous challenges in helping to prepare the next generation of engineers. If the premise of intense competition from foreign countries set forth in Thomas Friedman's book, *The World is Flat*, as well as, that of the National Academy of Engineers two reports, *The Engineer of 2020* and *Educating the Engineer of 2020*, is true, the next decade should be an exciting and challenging period for educators as we prepare the next generation of civil engineers in the United States.

Your Civil Engineering Division of ASEE is already working to try to address some of the important issues facing us. For example, working in partnership with ASCE, the Division is looking at the Body of Knowledge for educating engineers and how to best deliver this knowledge in the future. Further, the Division is dealing with accreditation issues and development of faculty to handle this new world. These complex issues need to have as many individuals as possible involved in the process. The bottom line is that **WE NEED YOU to participate in the discussions and conversations about these issues.**

As chairman of the committee on membership, I am tasked to try to increase the membership and, *importantly, increase the involvement in the Division especially at the upcoming summer conference*. First, I would ask that you approach your colleagues and ask them to consider joining ASEE and consider joining the Division. If they have never been a member of ASEE, they can join through the Dean's Program that will essentially get them two years free membership. Second, I wish to **personally invite** you to come to some (if not all) of the Division sessions and business/planning meetings during the conference. You will notice on the schedule that many of the meetings coincide with breakfast or lunch. **YOU DO NOT HAVE TO PURCHASE THE MEALS TO ATTEND—COME ANYWAY** (many of the attendees do not purchase the meal).

If I can provide you any information about the Division or being involved, please contact me. I look forward to seeing you at the conference.

2006 CE Division Awards

Stephen J. Ressler, U.S. Military Academy <Stephen.Ressler@usma.edu>

The Civil Engineering Division Awards Committee is delighted to announce the following awards, which will be presented at the CE Division Banquet at the 2006 Annual Conference in Chicago:

- The **Gerald R. Seeley Fellowship**, our newest CE Division award, is intended to encourage new faculty members to become active members of ASEE. The fellowship consists of partial reimbursement for attendance at the ASEE Annual Conference and a certificate. Civil engineering faculty members with five or fewer years' teaching experience are eligible for the fellowship. The basis for selection is the quality of a paper submitted for publication in the ASEE Annual Conference Proceedings. This year's Gerald R. Seeley Fellowship winner is **Andrea Surovek** from South Dakota School of Mines and Technology, for her paper, *"Beyond the Classroom: Using a Lecture Series Format to Give Engineering Students a Societal and Global Context"* (authored with Jennifer Karlin).
- The **Glen L. Martin Best Paper Award** is presented to the author(s) of the past year's best paper on a topic related to civil engineering education. Eligible papers include, but are not limited to, those published in the ASEE Annual Conference Proceedings. Recipients are awarded ASEE certificates. This year's Glen L. Martin Best Paper Award will be presented to **Andrea Welker, Louise Green, and Barbara Quintiliano** of Villanova University for their paper *"Information Literacy: Skills for Life."*
- The **George K. Wadlin Distinguished Service Award**, the CE Division's most prestigious award, is given for outstanding service in support of civil engineering education. This year's George K. Wadlin Award winner is...well, we can't tell you. *It's a surprise!* Please join us at the CE Division Banquet in Chicago to congratulate the winner.

The members of this year's CE Division Awards Committee are Steve Ressler (Chair), Vince Drnevich, and Wilf Nixon.

A Report on ASCE Educational Activities

Jim O'Brien, ASCE <jo'brien@asce.org>

The New Director of ASCE's Educational Activities is Ping Wei. Congratulations, Ping!

ASCE Student Chapters, Clubs, and International Student Groups

As we look to the future of our civil engineering profession, ASCE continues to play a key role in student development and education.

- 25,000 undergraduate students are currently student members of ASCE.
- To prepare these rising leaders for our profession, the Committee on Student Activities (CSA) of EdAC hosted four Workshops for Student Chapter Leaders (WSCL) in conjunction with the 2006 Zonal Leadership Conferences. 537 students from 132 Chapters and Clubs participated in this year's leader development workshops. Students departed the WSCLs informed, motivated, and energized for the challenges of leading their Chapters and Clubs.
- In addition to other activities, student leaders plan, coordinate, and conduct annual student conferences in 18 geographic regions during the spring 2006. These Regional Student Conferences typically host over 5,000 ASCE student members per year.

ASCE's ExCEED Teaching Workshops 2005 & 2006 and Awards:

- **ExCEED Teaching Workshops (6 day) 2005:** open to all civil engineering faculty; 24 participants graduated from the Univ of Arkansas, Fayetteville site & 24 participants attended at the US Military Academy, West Point, NY. In 7 years, there have been 15 workshops; 331 CE graduates from 181 different colleges & universities.
- Continue to grow a sizeable body of seasoned presenters, mentors, and assistant mentors.
- **ExCEED Teaching Workshops 2006:** Two sites for a total of 48 possible seats. July 9-14 in Fayetteville, AR and July 23-28 at West Point, NY. All seats are currently filled.
- Awards:
 - The 2005 ExCEED Leadership Award was presented to Tom Lenox
 - The 2006 ExCEED New Faculty Excellence in Teaching Awards presented to:
 - Roseanna Neupauer, University of Colorado
 - Giovanna Biscontin, Texas A & M University
 - Audra Morse, Texas Tech University
 - Ahmet Aydilek, University of Maryland

West Point Bridge Design Competition (WPBDC) 2006

- In its fifth year, over 12,000 teams submitted more than 40,000 unique designs. Qualifying round was held from Jan 6-March 22, 2006.
- April 8: semi-final round via the internet to narrow the field from 80 teams to the final five teams.
- May 16, 2006, Finals Round at West Point, NY to celebrate the top 5 virtual bridge designers in the world.
- Local contests: a highlight since 2004 and beyond, allowing anyone to set up a contest to allow students to simultaneously participate in the national & their own local contest. Local scoreboard available, etc.

2006 ASCE/AISC National Student Steel Bridge Competition

- To be held May 27-28, 2006 at University of Utah, Salt Lake City, UT

2006 ASCE National Concrete Canoe Competition

- To be held at Oklahoma State University, Stillwater, OK on June 15-17, 2006

Accreditation

- As a new initiative, the Committee on Curricula and Accreditation (CC&A) offered ABET Program Evaluator Training via webinar in February and March 2005. Recognized as an immediate success, this distance platform effectively trained potential evaluators while minimizing their travel and lodging expenses. Will be repeated on April 14 & 21, 2006 (must "attend" both sessions).
- New program evaluators are always *needed*. Please consider volunteering your service. For more information and to apply to be an evaluator, go to <http://www.asce.org/community/educational/eng.cfm>

National CEE Department Head Meeting

- Galveston, TX, March 5-8, 2006
- ~80 CEE Department Heads in attendance
- Topics: PS465 implementation; research needs, others.
- Will repeat in 2007

Upcoming Activities

Practitioner/Faculty Advisor Training Workshop (PFATW)—Reston, VA, August 11-13, 2006 with 30 ASCE Student Chapter/Club faculty advisors & practitioner advisors to attend. Contact Ping Wei to participate (pwei@asce.org)

2006 ASCE Annual Conference, Chicago, IL, October 19-21, 2006

- New format; no education sessions/few student events
- National meeting & Board Committee meetings

ExCEED Teaching Workshops (6 day) 2007

- Planning to hold 2 workshops for ASCE members only. 48 seats available. Applications due by February 2007. See website at www.asce.org/exceed

New ABET Civil Engineering Program Criteria

Stephen J. Ressler, U.S. Military Academy <Stephen.Ressler@usma.edu>

In conjunction with the implementation of the American Society of Civil Engineers Policy Statement 465, ASCE's Committee on Academic Prerequisites for Professional Practice (CAP³) is currently finalizing a new set of ABET civil engineering accreditation criteria. These criteria will be submitted to ABET for approval in June 2006 and will go into effect for CE programs seeking accreditation during Academic Year 2008-2009.

The new Civil Engineering Program Criteria represent a two-year collaborative effort aimed at translating ASCE's *Civil Engineering Body of Knowledge for the 21st Century* into appropriate accreditation criteria and processes. The CAP³ Accreditation Committee had principal responsibility for developing these criteria; however, the final product was also heavily influenced by civil engineering department heads, CAP³, other CAP³ constituent committees, ASCE's Committee on Curricula and Accreditation, and the professional licensure community. The new CE Program Criteria are as follows:

1. Curriculum: The program must demonstrate that graduates can apply knowledge of mathematics through differential equations, calculus-based physics, chemistry, and at least one additional area of science, consistent with the program educational objectives; can apply knowledge of four technical areas appropriate to civil engineering; can

conduct civil engineering experiments and analyze and interpret the resulting data; can design a system, component, or process in more than one civil engineering context; can explain basic concepts in management, business, public policy, and leadership; and can explain the importance of professional licensure.

2. Faculty: The program must demonstrate that faculty teaching courses that are primarily design in content are qualified to teach the subject matter by virtue of professional licensure, or by education and design experience. The program must demonstrate that it is not critically dependent on one individual.

Four aspects of these criteria are worthy of particular note:

- The criteria reflect three of the major emphasis areas of the Civil Engineering Body of Knowledge—fundamentals of mathematics and science, technical breadth, and professional practice breadth.
- The criteria reflect ASCE's decision to use Bloom's Taxonomy as the basis for defining expected levels of achievement for each of the fifteen outcomes that constitute the Civil Engineering Body of Knowledge. This is accomplished through the use of carefully selected verbs, each of which maps to one of Bloom's six levels of cognitive development. For example, the requirement to "explain basic concepts in management, business, public policy, and leadership" maps to Level 2, Comprehension.
- The criteria have incorporated a number of changes that are specifically intended to correct longstanding problems with the previous CE Program Criteria. For example, the term "proficiency," which has always been subject to differing interpretations, is no longer used in the criteria. The phrase "four technical areas appropriate to civil engineering" has been worded to provide programs with greater flexibility in defining civil engineering technical breadth areas.
- The Faculty section of these criteria is unchanged from the previous criteria.

For more information about these criteria, be sure to attend Session 1515: Progress on Raising the Bar at the 2006 Annual Conference. Questions or comments concerning these criteria should be directed to Steve Ressler.

Editor's Note: Steve Ressler currently serves in the following capacities:

- Member, ASCE Educational Activities Committee
- Member, ASCE Committee on Academic Prerequisites for Professional Practice (CAP^3)
- Vice Chair, ASCE CAP^3 Accreditation Committee
- Member, ASCE Committee on Curricula and Accreditation
- He has previously served ASEE CE Division Liaison to the ASCE Committee on Curricula and Accreditation—the formal interface between ASEE and ASCE on accreditation issues

Acknowledgements

Kristen Sanford-Bernhardt, Ph.D., Lafayette College, Program Chair (2005-2006)

Thanks to everyone who participated in the paper review process. This was the CE Division's first year as a publish-to-present division. More than 50 abstracts were submitted to the Division. 32 papers will be presented in CE Division sessions at the annual conference. Each paper submitted was reviewed by at least three people; 52 people reviewed papers. I would like to particularly thank Ron Welch, Andrew Surovek, Jim Nelson, and Robert Houghtalen for coordinating sessions, and Doug Schmucker and Cynthia Finley for volunteering to perform last-minute reviews in addition to those I had initially requested. Thank you to reviewers whose names are listed next.

List of Reviewers for the Civil Engineering Division (2005 – 2006)

First name	Last Name	Organization
Adjo	Amekudzi	Georgia Institute of Technology
Michael	Barker	University of Wyoming
Wayne	Bergstrom	Wilcox Professional Services, LLC.
M. Asghar	Bhatti	University of Iowa
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Shane	Brown	Washington State University
Peter	Carrato	Bechtel
Norman	Dennis	University of Arkansas
Vincent	Drnevich	Purdue University
H. Chik M.	Erzurumlu	Portland State University

List of Reviewers for the Civil Engineering Division (2005 – 2006)
continued

First name	Last Name	Organization
Allen	Estes	U.S. Military Academy
Dennis	Fallon	The Citadel
Cynthia	Finley	University of Missouri, Columbia
Jon	Fricker	Purdue University
Brett	Gunnink	Montana State University
Decker	Hains	U.S. Military Academy
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Christy	Jeon	Georgia Institute of Technology
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Anant	Kukreti	University of Cincinnati
Stephen	Kurtz	Lafayette College
Thomas	Lenox	American Society of Civil Engineers
Judy	Liu	Purdue University
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Wilfrid	Nixon	University of Iowa
James	O'Brien	American Society of Civil Engineers
David	Pines	University of Hartford
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Doug	Schmucker	Western Kentucky University
Gary	Spring	Merrimack College
Carlos	Sun	University of Missouri, Columbia
Andrea	Surovek	South Dakota School of Mines and Technology
Chris	Swan	Tufts University
Francis	Thomas	University of Kansas-Lawrence
Mark	Virkler	University of Missouri-Columbia
Simon	Washington	University of Arizona
Ronald	Welch	U.S. Military Academy
John	Zaniewski	West Virginia University

Current Officers of the ASEE Civil Engineering Division (2005-2006)

Chair – Jim Hanson, California Polytechnic State University

Vice Chair/Program Chair – Kristen Sanford Bernhardt, Lafayette College

Past Chair – Wilf Nixon, University of Iowa

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Committee on Professional Practice – Dennis Fallon, the Citadel and Robert Houghtalen, Rose Hulman Institute of Technology

Committee on Educational Policy – Jim Nelson, University of Texas - Tyler

Committee on Effective Teaching – Kristen Sanford Bernhardt, Lafayette College

ASCE Liaison Committee – Jim O'Brien, American Society of Civil Engineers

THANK YOU for taking the time to read this newsletter AND for sending me your input / feedback. If you have suggestions, please call me at 702-895-1325 or send an e-mail to: <shashi@ce.unlv.edu>. Shashi Nambisan, Editor.

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