



The Pittsburgh Professional Engineer
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Published by:
The Pittsburgh Chapter of the Pennsylvania Society of
Professional Engineers
337 Fourth Avenue, Pittsburgh, PA 15222
P. 412-391-0615 F. 412-261-1606

September 2008

PRESIDENT'S MESSAGE

by Thomas P. Weber, P.E.

I can't believe that the time has finally arrived for me to start my year of service to the Pittsburgh Chapter of PSPE as your president. Naturally there is a little fear and trepidation after sitting back in the cheap seats for 30 years, watching all of the other stellar officers who have gone on before me. How can I fill the shoes of Fred Graham, Jon Drosendahl, Virginia Dailey or so many others whose shoes I feel unworthy to untie. All I can do is promise you that I will do my best to make the Pittsburgh Chapter one of the best in the state or the country under my watch. I have all the confidence in the world, because I know that like any good organization, it is not the officers who make the organization what it is. It is the people in the background, each doing his part whether it is large or small, that makes any organization what it is. Having "been there, done that" with this chapter, I know that there are dozens of members out there who will support this chapter this year just as they have done in the past. They will make me look good in spite of my foibles. All I ask is that if there are any of you out there who are on the fence and not sure whether to jump in and take the plunge, now is your time. Just call me or email me any time, and I will find a small job for you to handle to get your feet wet and see what PSPE is all about.

Some engineers may wonder just what PSPE does. Any PSPE member should stand ready to answer that question in no uncertain terms. We are not a social club, although we do have nice dinners to celebrate Christmas and Engineers Week. We are a professional organization with a goal of protecting and enhancing the image and the role of professional engineers in the world. This chapter has at least three activities that contribute to that goal. We offer a **P.E. Refresher Course** to assist unlicensed engineers toward taking and passing their EIT and PE exams. This is a tremendous help to the engineering community in general, because such refresher courses are becoming harder to find. Our chapter sponsors an **Apprenticeship Program** for high schoolers through the Allegheny Intermediate Unit to help expose interested students to the real world of engineering through field trips to local engineering firms, manufacturing facilities and construction projects. Our chapter's largest project is the sponsoring and conducting of the **MathCounts** program where seventh and eighth grade students compete in math and science for scholarships. We also have occasional dinner meetings with programs and site visits of interest, like last year's presentation of American Bridge's New River Gorge Bridge project, and a site visit to Pittsburgh's "Big Dig" tunnels under the Allegheny River. We need you and we want you to join us in these activities.

Just to give those of you who work in the transportation industry a heads up, mark your calendars for Thursday evening, October 9, 2008. Our chapter will host a dinner meeting at the ESWP open to the Pittsburgh engineering community. Our speaker will be a real hometown favorite, none other than the State Secretary of Transportation, the Honorable Allen Biehler, P.E. Al attended college and worked in the City of Pittsburgh during most of his career. Details of the meeting and a reservation form are included in this newsletter. We hope to see all of you there for this noteworthy event. If any of you have suggestions for other programs of interest, please contact me or one of our officers and we will do our best to make it happen.



Thank you in advance for your time and participation in our Pittsburgh chapter's activities this coming year.

Tom Weber, President

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Canadian Oil Project to Run on Treated Wastewater

The [Financial Times](#) (6/30, Simon) reports that a part of Edmonton, Canada's sewage "finds its way to a...plant north-east of the city that converts bitumen-like oil sands into crude oil." The company, "Petro-Canada, has promised that the first phase of the Fort Hills Sturgeon upgrader, consuming 15.8 million liters of water a day, will not only run entirely on treated wastewater, but will then send the used water back to Edmonton for further recycling." The "initiative is one of many environmentally friendly processes companies are trumpeting in response to a widening chorus of concern about the damage caused by oil sands extraction and upgrading on water supplies, wildlife habitat, and the atmosphere." But the Pembina Institute "warned in a recent report that Petro-Canada's upgrader and eight others planned for the same area over the next 12 years will consume 10 times as much fresh water as Edmonton's 750,000 residents, use more electricity than all the homes in Alberta, and spew out the same volume of greenhouse gases as 10 million motor vehicles." The environmental group "and other activists have urged the Alberta and federal governments to impose far stricter conditions before approving new oil sands projects." (Copied by permission from the NSPE: Dailey Designs)

Oil Companies Competing for Engineering Talent

The [Houston Chronicle](#) (7/7, Hays) reports that Oklahoma-based Devon Energy "hopes to entice...future engineers and geoscientists to sign on with" the company "after graduation -- even as competitors seeking the same talent come calling." The competition "is on to replace the industry's graying workforce as retirements increase in the next decade, prompting companies to ramp up recruitment efforts." Meanwhile, "pressure mounts to find new oil and gas deposits while squeezing more from current operations amid record prices and tight supply." As a result, "[t]he shortage of new talent was the top concern among human resources executives at 22 top international oil and gas companies surveyed earlier this year by Rice University and the accounting firm Ernst & Young." The Chronicle notes, "The industry essentially lost a generation of workers during the oil bust of the 1980s and 1990s when prices plunged and companies slashed headcounts." In the meantime, "college students had little incentive to get into a business racked with layoffs, particularly when they saw more attractive and lucrative opportunities in technology and finance."

Oil companies begin drilling off Florida coast. The [AP](#) (7/5, Nelson) reported that "drilling in the deep waters off Florida" was once seen "as cost prohibitive" by oil companies, yet preparations were being made "even before President Bush called on Congress last month to lift a federal moratorium that's barred new offshore drilling." This early activity in the region "stems from a 2006 Congressional compromise that allows drilling on 8.3 million acres more than 125 miles off the Panhandle." If companies succeed in finding oil or natural gas deposits "in the newly opened region, experts say it could further the push to explore other once-protected areas everywhere." With gas reaching "\$4 a gallon, recent polls show Americans, Floridians included, more supportive of drilling in protected areas." Also, "oil companies, driven by the record energy price, are more willing to risk \$100 million or more to begin exploring new regions." According to Department of the Interior estimates, "there could be 18 billion barrels of oil and 77 trillion cubic feet of natural gas beneath the 574 million acres of federal coastal waters that are now off-limits." Last March, BHP, Anadarko E&P Co., Shell Offshore Inc., and Eni SpA bought "leases on 36 Gulf of Mexico tracts under the 2006 compromise." (Copied by permission from the NSPE: Daily Designs)

**PENNSYLVANIA SOCIETY OF PROFESSIONAL ENGINEERS
PITTSBURGH CHAPTER**



Invites all current and prospective members to the

OCTOBER 9, 2008 Meeting

***Presentation by Allen D. Biehler, P.E.,
Secretary of Transportation***



On Thursday, October 9, 2008, the Pittsburgh Chapter is proudly sponsoring a meeting at the Engineer's Society of Western Pennsylvania featuring Pennsylvania's Secretary of Transportation, Allen D. Biehler, P.E. Mr. Biehler will be presenting information on the state of the transportation infrastructure in Pennsylvania. Pennsylvania has the nation's fifth largest state-maintained highway system and third largest state-maintained bridge network. Strategies for addressing transportation maintenance and preservation needs, and other current topics will be discussed by Secretary Biehler.

Cocktails: 6:00 PM Social (Cash Bar)

Dinner: 6:30 PM

Presentation by Secretary Biehler: 7:30pm

Dinner Choice : Choose one of the following (if more than one attendee, indicate the number of each choice):

___ **Virginia Spots**, English Style, with Lemon Butter Cream Sauce

___ **Chicken Baradi**, Tomato Basil Vinaigrette, Peppered Bacon and Boursin Cheese Sauce

___ **Tornadoes of Filet Mignon**, with Boursin Cheese and Port Wine Reduction

You may make your reservation by filling in the form below and mailing or faxing it to Dave Teorsky, ESWP. You may also phone in all of this information to ESWP. If you choose to make your reservation via e-mail, do not e-mail your credit card info. Payment may be made by calling in your credit card info, faxing this filled in form, or mailing this form with credit card info or enclosing a check.

Phone: (412) 391-0615 **Fax (412-261-1606)** e-mail: ddengr@city-net.com

U.S. Mail; PSPE Pittsburgh Chapter, 337 Fourth Ave., Pittsburgh, PA 15222

Name : _____ Contact Info: _____

Name : _____ Contact Info: _____

Reservations including payment must be received by October 3, 2008. Cost per attendee \$35.00

Payment Options:

Credit Card: ___ MASTERCARD ___ VISA, Card Number: _____

Name (as it appears on the credit card): _____

Billing Zip Code : _____ Expiration Date: _____

___ Check enclosed payable to PSPE Pittsburgh Chapter & mailed to 337 Fourth Ave., Pittsburgh, PA 15222



Engineering Beyond the BS?

Virtually all practicing engineers who look up from the trees of their work long enough to see the forest of their profession feel a variety of forces pulling them back to school.

Engineering licensing boards are adopting policies that encourage (or mandate) continuing education as a condition for maintaining professional registration.

William Wulf, former president of the National Academy of Engineering, (and former Pittsburgher) notes that unlike most professionals (lawyers, doctors and even business managers), engineers consider a bachelor's degree a professional degree, which places employers in the position of investing heavily in new-hire training. Nearly seven years ago the American Society of Civil Engineers (ASCE) adopted a policy that supports the need for a master's degree as a "prerequisite for licensure and the practice of civil engineering at a professional level". Clearly, there are institutional forces at work which make graduate education attractive.



At a personal level, many recently graduated engineers observe that their typical work day is focused less on *them* solving technical problems and more on the management of *other* people and resources to get the job done. They realize that the courses completed in undergraduate school did not really prepare them for the position they find themselves in today (or the position they wish they were in). That is not surprising, says Dr. Wulf, since

"social and management sciences *needed* by the modern engineer" have been "squeezed out" of the contemporary engineering undergraduate curriculum. They may also see that co-workers with advanced degrees are compensated better and climb faster in the organization. Certainly, there are personal reasons to consider graduate education.

If you have entered the engineering workforce over the last 10 to 15 years, and have contemplated going back to school you probably have confronted two concerns. First, how do you obtain the graduate degree without significant changes to your professional and personal lifestyle? You are on a career path you don't want to leave and the job permits you to enjoy life beyond the work environment.

The second issue you face is what to study. Should you specialize in a technical area within your profession or should you focus on those management sciences that Wulf notes that you need, but did not learn about during your undergrad days? You are torn between improving technical depth or managerial breadth. Perhaps you have even thought about an MBA, but still get a great kick out of technical problem-solving, which attracted you to engineering in the first place.

Engineers practicing in Pittsburgh have many options for pursuing advanced degrees thanks to the vibrant educational community that has existed here for many years. The region is blessed with a variety of graduate engineering programs offered in traditional and non-traditional formats. Traditional programs at the University of Pittsburgh, Carnegie Mellon University, and West Virginia University have recently been joined by online or e-learning programs offered by universities with campuses many thousands of miles away.

It was against this backdrop of regional educational need and graduate school opportunity that Robert Morris University launched a program to grant master-of-science degrees in Engineering Management. The program began quietly seven years ago, but RMU has now conferred more than 100 M.S. in Engineering Management degrees to talented technical individuals employed here in Western Pennsylvania.

The program was designed to appeal to working engineers who want a curriculum that satisfies their personal learning objectives. Most classes are offered in eight-week sessions and meet one night per week, enabling students to finish the degree within two years by taking one course per session. Classes are led by faculty members who have significant engineering experience. They encourage you to bring your work into the classroom by adapting your specific problems for class discussion, class projects, or term papers. The project work needed for the degree can complement to your career

demands. The classroom lecture topics are also directly applicable to your career. One graduate has said, "I've used many techniques that I've been able to put to use almost immediately at my place of work."

The degree requirements are flexible enough to allow students to tailor a program to fit their specific educational needs for technical depth and/or managerial breadth. Seven of the 10 required courses can be chosen from a menu of engineering, business, or information systems topics, enabling each individual to pursue a unique emphasis. Program participants can select from either a thesis or non-thesis option. This flexibility makes the program equally attractive both to students who wish to learn about robotics, lean manufacturing concepts, as well as discrete event simulation modeling and to those for those who want to learn about managerial accounting, group dynamics and developing strategies for technical organizations.

MASTER OF SCIENCE IN ENGINEERING MANAGEMENT

With more than 100 graduates currently employed in the Pittsburgh region, the RMU Engineering Management program is beginning to make a noticeable contribution to the educational needs of our community. You may be surprised to learn that the colleague you meet at the next association meeting may tell you that while working at FedEx, Bombardier, PPG, First Energy, Northrop Grumman, CTC, Siemens, Michael Baker, Bettis Labs, Eaton, or Bechtel, he earned his engineering graduate degree from Robert Morris University.

Contact Dr. John C. Hayward, P.E., Director of Graduate Engineering Programs at hayward@rmu.edu or 412-397-2209 if you are interested in learning more about the program.



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Associate Professor of Engineering
Robert Morris University

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412-397-2209

2007-2008 Chapter Officers

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|--|--|
| President – Tom Weber, P.E. | Executive Secretary – Jon Drosendahl, P.E. |
| President Elect – Dave Samek, P.E. | Treasurer - John A. Broschious, P.E. |
| Vice President – Joe Garlicki, P.E. | Financial Secretary - Reyman Branting, P.E. |
| State Director - David Briskey, P.E. 2005-2008 | Immediate Past President – Virginia Dailey, P.E. |

2007-2008 Chapter Directors

| | |
|-----------------------------|---------------------------------|
| Jeff Mazza, P.E. 2005-2008 | Brian Schull, P.E. 2006 - 2009 |
| Vacant Position 2005-2008 | Kirk Thompson, P.E. 2007 – 2010 |
| Vacant Position 2006 - 2009 | Joe Garlicki, P.E. 2007 - 2010 |

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2007-2008 CALENDAR

MEMBERSHIP EVENTS & MEETINGS

| Date | Time | Description | Location |
|--------------|--------|---|----------|
| Oct. 9, 2008 | 6:00pm | October Chapter Mtg. – Al Biehler | ESWP |
| Nov., 2008 | 6:30pm | Monthly Meeting | TBD |
| Dec., 2008 | 6:30pm | Christmas Celebration | ESWP |
| Jan., 2009 | 6:30pm | Monthly Meeting | ESWP |
| Feb., 2009 | 6:30pm | Engineers' Week Banquet | TBD |
| Mar., 2009 | 6:30pm | Monthly Meeting | ESWP |
| April, 2009 | 6:30pm | Monthly Meeting | ESWP |
| May, 2009 | 6:30pm | Monthly Meeting | ESWP |
| June 2008 | TBD | Installation of Chapter Officers, & Recognition of Apprenticeship Participants | TBD |

BOARD OF DIRECTORS MEETINGS WILL BE HELD ON: Sept. 11, 2008, Oct. 9, 2008, Nov. 13, 2008, Dec. 11, 2008, Jan. 8, 2009, Feb. 12, 2009, Mar. 12, 2009, April 9, 2009, May 14, 2009 and June 11, 2009

All BOD meeting are to held @ 5:30PM @ the ESWP Building pending further notice.