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Civil Engineering Department
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CIVIL ECHOES

ROSE-HULMAN INSTITUTE OF TECHNOLOGY

Chairman's Perspective By Dr. Robert J. Houghtalen

Well, the fall quarter of another academic year is history. As I get older they seem to pass more quickly, but with just as much enjoyment. In the early fall, we found out that Rose-Hulman was once again rated the top undergraduate engineering school in the country (10th year in a row). Our department was rated the top civil engineering program for the 9th straight year. However, this has not kept us from striving for excellence through institutional strategic planning and complimentary departmental efforts. Five different alumni classes were recently asked to help in these efforts through an on-line survey. It takes engaged alumni, a quality faculty, and terrific students to maintain high standards.

The Civil Engineering Department continues to perform international senior design projects. Last year, a group of seniors designed Nile Valley Academy, an international school, in Khartoum. Since I was in Sudan on sabbatical, I was able to obtain a client's perspective. Our students (Matt Trowbridge, Rachel Howser, Jeff Gauthier, Nate Bloss, and J. David Fields) did a terrific job. This year we have two international projects; a cocoa export warehouse facility in Ghana and a water supply system in Pakistan. This international initiative seems timely since a number of our alumni are beginning to work overseas.



**Members of the CE Class of 2003
at Homecoming 2008**

It was great to see so many of you at homecoming and at the fall career fair. We had approximately **95** alumni attend our CE open house during homecoming. This was not a record, but nonetheless a terrific turnout. Eating and visiting continued long after the scheduled ending time. The career fair is becoming a pseudo homecoming event. We had approximately 40 civil engineering alumni at this event interviewing our students for permanent jobs and internships. Despite the bad economy, the job outlook appears to be strong so far. Fortunately, we only have 29 seniors to place this year and many already have offers or pending offers. Next year we will have 42 graduates; like you, we hope the economy will improve long before that time.

Thanks To Our Donors

Civil Engineering alumni continue to be generous with their gifts to Rose-Hulman. Those alumni who have donated during the past three months to the Institute and designated that their gift should go to the Civil Engineering Department include:

Leon Goble (1971)

John Lueken (1987)

Matt Warstler (1993)

Joel Anderson (2007) who donated to Engineer's Without Borders

Note: If we missed your name, email kathy.nicoson@rose-hulman.edu and we will include you in our next CE Echoes.

Dr. Thomas To Retire

By Dr. Robert J. Houghtalen



Martin & Jody Thomas
Cruising in 2008

Dr. Martin Thomas has announced he will retire at the end of the academic year. Marty will complete his 34th year at Rose-Hulman prior to retiring. It has been a long run. He has worked with 15 different civil engineering faculty members, taught 22 different courses (including his new favorite, Climate Change Assessment), actively engaged in the education of almost 1000 civil engineering graduates, and witnessed the comings and goings of three civil engineering department heads and four Rose-Hulman presidents. Just thinking about it makes me tired, echoing his sentiments completely.

Marty is looking forward to retirement. He plans on spending more time with his wife, children, and four grandchildren. Additional time will be spent at Notre Dame football games (or at least the first half of the games until they begin fielding a better team—sorry Marty I couldn't resist) or cruising different ports of call. In addition, he is now a hobby farmer/forester, having purchased 36 acres in Putnam County. If you don't catch him on the golf course (even when he is playing, he is not necessarily ON the course), you might catch him clearing, plowing, planting, harvesting, etc. in an eco-friendly, sustainable manner. Who knows, he might join Green Peace with all the free time he will have.

Kidding aside, Marty has been a capable educator and wonderful colleague to me. When I came in 1988, I was assigned the task of teaching graphical communications. I had never taught this before, so I signed up for Marty's section. I sat in on his class on Monday, and taught it on Wednesday. Almost immediately I came to appreciate his teaching skills, his considerable intelligence, and his (very dry) sense of humor. I sat in on many other classes of his, and asked him to help me on selected topics in senior design, like Myers-Briggs temperament testing. I just could not believe his versatility, and as department head found this to be a great asset.

The Rose-Hulman Civil Engineering Department will not be quite the same without Marty. I speak for the whole department in saying that he will be missed. We will find other faculty members to teach his classes, but we will never replace Dr. Martin Thomas.

Calendar of Events

December 3, 2008—CE Board of Advisors Meeting

December 3, 2008—ASCE Winter Banquet

May 16, 2009—ASCE Golf Tournament (Tentative) Rea Park Course

KEEP IN TOUCH

We are always interested in how our alumni are doing. Let us know about you! Keep in touch by e-mailing us at kathy.nicoson@rose-hulman.edu with your current contact information and what you are doing.

Dr. Houghtalen To Retire

By Dr. Robert J. Houghtalen

If you have heard the rumor that I am taking an early retirement, it is true. But let me squelch some of the other rumors. It is not true that I am retiring because I can't imagine working without Dr. Thomas in the department. (See the article on his retirement in this issue of the CE Echoes.) It is not true that the department ran much smoother while I was on sabbatical, or at least not completely true. It is definitely not true that all of the new and much more capable faculty members we have hired in the last seven years participated in a mutiny of older and less capable faculty members. They have too much compassion to jettison Dr. Thomas and myself.

In all seriousness, it is with mixed emotions that I convey to you my intent to retire early from my position as Professor and Head of the Department of Civil Engineering. My 20+ years at Rose-Hulman have been truly enjoyable and fulfilling. I have always appreciated the mission of this school, and in harmony with that mission I have invested myself into my students with joy and vigor. They are a delight to work with displaying talent, character, and perseverance each and every day. I will miss them and the environment that molds them into technical innovators, managers, and leaders. I will miss you, our loyal and dedicated alumni who prove to be the fruit of that labor as I witness your personal growth, career achievements, and societal impact.

It has been my privilege serving in the Department of Civil Engineering since I came in 1988, and as the Department Head since 2001. The faculty and staff in this department possess a rare combination of aptitude, collegiality, and dedication that is a microcosm of the school in general. This is a reflection of the unique environment that we call Rose-Hulman, and it is the reason why so few of us leave. It is also what makes this decision a particularly difficult one. I can't imagine working with a finer group of people.

However, it is with excitement that I can share with you the news that Judy and I will be heading back to Sudan next summer. In response to the great love shown to us by our Lord and Savior, Jesus Christ, and the many blessings He has bestowed upon us, we would like to show our love to the people of that nation who have so very little. In addition, I would like to keep in contact with as many of you as I can. If you have any interest in that, please drop me an email at your earliest convenience and I will respond in kind.

Environmental Engineering Update

By Dr. Michael Robinson

Recently, the American Academy of Environmental Engineers (AAEE) sponsored a Body of Knowledge Working Group (BOKWG) to define the knowledge, skills and abilities needed to practice environmental engineering at the professional level. This effort follows in the footsteps of ASCE and its body of knowledge (BOK) as related to ASCE Policy 465. The historical path into the environmental engineering field has been a BS in Civil Engineering followed at some point by a MS in Environmental Engineering. The BOKWG estimates that as many as 35 percent of environmental engineers earn their MS degree immediately after or within several years of their BS degree. Although an increasing number of programs have started to offer a BS Environmental Engineering degree, the number of graduates is less than 10% of the number of civil engineering graduates annually.

The profession of the environmental engineer has broadened significantly since the days of the sanitary engineer. The BOKWG adopted the following definition of environmental engineering: it is the branch of engineering concerned with the application of scientific and engineering principles for: 1) Protection of human populations from the effects of adverse environmental factors; 2) Protection of environments, both local and global from the potentially deleterious effects of natural and human activities; and 3) Improvement of environmental quality. The EnvE BOK will provide the foundation for the education of environmental engineers for many years to come. As educators and practitioners in the environmental engineering field we should all consider what it means to be an environmental engineer and the educational requirements of the profession. For further information on the EnvE BOK you can download a summary report at: <http://www.aee.net/Downloads/TheEEJournalV6P1.pdf>.

Professional Development of the Faculty

Life long learning is one of the goals we establish for our students. To set an example, the Civil Engineering faculty continues to maintain a high level of professional competence through teaching, professional development, and service. Some of the professional development activities that our faculty participated in last year include:

- Dr. Aidoo received a \$100k grant from the Lilly Foundation to establish a Structures and Computational Mechanics Laboratory at Rose-Hulman. This will provide some of our students with undergraduate research opportunities in collaboration with Dr. Kent Harries (University of Pittsburg) and Dr. Richard Onyancha from the ME Department.
- Dr. Hanson has ongoing research on an NSF funded project “Using Metacognition to Teach Evaluation of Results in Structural Analysis Courses” which has led to many publications over the last few years including a 2008 ASCE outstanding paper award.
- Dr. Robinson was the co-recipient of a small grant to work on sustainable agriculture.
- Dr. McKinney continues to coordinate the very popular INDOT/RHIT Hot Mix Asphalt Quality Assurance Program and the less popular (campus) FE exam.
- Dr. Sutterer co-authored articles for the Journal of Professional Issues in Engineering Education and Practice and the Journal of Performance of Constructed Facilities.
- Dr. Hanson had an article published in the ACI Structural Journal on code provisions for shear design of reinforced concrete beams.
- Dr. Niezgoda continues her research on monitoring/assessment protocols for urban stream restoration leading to publications in the Journal of Hydraulic Engineering and the ASCE World Water and Environmental Resource Congress Proceedings.
- Dr. Robinson continues his interdisciplinary work on the RHIT Ecological Systems Lab which led to many papers/presentations with other faculty members and students.
- Drs. Aidoo, Hanson, Houghtalen, and Sutterer participated in a number of papers and presentations on international senior design projects with many student authors.
- Dr. Hanson created 50 video example problems for Pearson Pub. to accompany the *Structural Analysis* textbook by Hibbeler (29 hours available to students world-wide).
- Dr. Houghtalen recently submitted a copy of “Fundamentals of Hydraulic Engineering Systems, 4th Edition” to Pearson/Prentice Hall for publication in early 2009.
- Dr. Sutterer continues his ground-breaking work using tablet PCs in the classroom.
- Drs. Aidoo and Robinson attended ExCEED, ASCE’s premier teaching workshop.
- Dr. Niezgoda is a member of NCEES and writes FE Exam questions.
- Dr. Houghtalen established a 3-day training seminar for Sudanese humanitarian field personnel on bio-sand water filters (education, construction, and maintenance).
- Dr. McKinney gave invited testimony on the Terre Haute Parks Department Master Plan.
- Dr. Houghtalen continues to teach ASCE continuing education courses in hydrologic and hydraulic modeling for practicing engineers around the country.
- Dr. Sutterer continues as Director of the Engineering Forensics Research Institute; he is seeking NSF funding for another three years of REU undergraduate research.
- Dr. McKinney continues to consult with city, county, and state governments about transportation safety, trail designs, and pavement improvements.
- Dr. Thomas continues as chairman of the Vigo County Air Pollution Control Board.

Faculty Spotlight—Dr. Kevin Sutterer

- Education:** BS/MS - Civil Engineering (Missouri University of Science & Technology)
MS - Civil Engineering (Purdue University)
PhD - Civil Engineering (Georgia Tech)
- Years at Rose:** 10 years, started at Rose in August 1998
- Family:** Wife - Kathy; 3 Children (Kimberly, Brian, Jonathon)
- Hobbies:** Biking, triathlons (recently), and watching Jonathon play soccer.
- Specialty Courses:** Soil Mechanics, Foundations, and Engineering Forensics.
- Professional Development:** Directed a very successful, NSF-sponsored, forensics research program for undergraduates for three summers and performs educational research on using tablet PCs in the classroom.
- Professional Activity:** Associate Editor, ASCE Journal of Professional Issues in Engineering Education and Practice and Director, American Society for Engineering Education, Civil Engineering Division, 2006-2010.
- Chairman Appreciation Comment:** “Kevin has done an outstanding job as the faculty advisor to ASCE student chapter, which has won the Ridgway Award as the nation’s best chapter in three of the last four years.”

Alumni Highlights

CHARLES SPIVEY (1997) reports that he loves the work he does as Technology Officer at the National Center for Family Literacy in Louisville, Kentucky.

MICHAEL PHILLIPS (2003) passed the April 2008 Florida PE exam and will soon obtain his Georgia PE as well. Congratulations Michael!

DAVE HONAN (2005) was notified that one of the six photos that he submitted will appear in the American Public Transportation Association’s 2009 wall calendars. The publication is distributed to transportation industry professionals across the country. Congratulations Dave!

JASON LANGE (2005) has been working with TerHorst, Lamson & Fisk Engineers for about a year and a half after graduating from Purdue in December 2006. He and his wife Stephanie welcomed son Connor into their family on March 28, 2008. Congratulations to the Lange family!

CHRIS DYER (2006) and his wife Krystal welcomed their son Avery Wayne Dyer into their family at 8:09 pm on October 29, 2008. He weighed 8 lbs. 7 oz. and was 20 inches long. Congratulation to the Dyer family!

MIKE REEVES (2006) moved from Columbus to Cincinnati the end of September to assist in changing company demands at Kleingers & Associates. His job role will be somewhat similar with the addition that he will be assisting their hydrology expert prepare flood studies and perform hydrologic analysis along with continued work in land development.

NATE BLOSS (2008) left on November 4th for two years and a couple of months to work for the Peace Corps. When he left he didn’t know where he would be going in Namibia. He will be teaching high school Math. Before he left he was working for Moffatt and Nichol in Long Beach, California.

ASCE Student Chapter Update

The fall of 2008 has been a productive time for the Cecil T. Lobo Chapter of ASCE. The first quarter of the school year has brought new faces to the chapter, as well as many familiar ones. We have received hard work and dedication from so many of our chapter members, and we hope to continue our success throughout the year.

Hosting the 2008 HEC-RAS workshops proved to be another successful event for our chapter. The three sessions were held in August 28th, October 16th, and November 20th. Sessions were taught by department head and hydraulics expert, Dr. Houghtalen, and assisted by faculty advisor, Dr. Sutterer, and several student chapter members. The purpose of the workshops is to teach working Civil Engineers how to understand and use HEC-RAS modeling software at a reasonable price. The registration fee for each participant was \$600, and all proceeds will be used by our chapter for various community service activities throughout the year. These workshops have been held in years past, and our chapter hopes to continue them in the future.

The fall has been a busy time for job hunting, and there is no better place to do so than here at Rose-Hulman. A record 208 companies and 554 recruiters were present at this year's fall career fair, with the majority representing civil engineering firms. Students representing each class came out to talk to companies, hand out resumes, and set up interviews. Employers also conducted additional information sessions and discussions, through our ASCE monthly meetings, on topics that are relevant to their area of focus.

Rose-Hulman's 2008 homecoming festivities brought back several familiar faces on campus. The Civil Engineering department hosted its annual CE Open House in the soils laboratory of Olin Hall. Many CE professors, students, alumni, and their families came together to eat lunch and talk about their memories at Rose, current projects, and hopes for the future. Alumni also had the opportunity to purchase civil pride clothing from past years' ASCE chapters. The event was truly enjoyed by all.

Three monthly meetings have been held so far this quarter, including presentations on graduate school, summer internships and coastal engineering. Our student chapter arranged a panel discussion concerning the in-and-outs of graduate school and how to best prepare for it. CE professors each shared their experiences and offered their advice to prospective students. The University of Florida also presented on programs and incentives associated with their graduate school. To further our options, students attended a meeting on summer internships, presented by both current students and alumni in various fields of civil engineering construction and design. The chapter also invited Moffat and Nichol to present on coastal resources, urban waterfronts, water resources, and marinas. Coastal engineering is not specifically taught in our classes, making this a very beneficial meeting for our students.

Our chapter has many more meetings and community service activities lined up for the next few months. We are looking forward to ending the fall quarter and moving on with our future events!