Civil & Environmental Engineering Newsletter

Spring 2008

Message from the Department Chair

As some of you may already know, this is my last semester as the Chair of Civil and Environmental Engineering (CEE). I am happy to announce that Dr. Kauser Jahan has been elected as the new Chair of CEE.

As the Founding Chair of CEE, I have had the rare and unique opportunity to build a new civil engineering program from the ground up. I am extremely proud of what the CEE faculty and students have accomplished over the last 13 years. I know that the Civil Engineering Program will continue to grow in national prominence under the outstanding leadership of Dr. Kauser Jahan.

As noted elsewhere in this newsletter, I am looking forward to the challenge of building another new program – the Master of Engineering Management (MEM) Program – in the years to come. I am also looking forward to continuing my bridge engineering research as the DRBA Professor of Civil and Environmental Engineering. This summer and fall, I will be working to reestablishing my Bridge Research Laboratory in the new South Jersey Technology Park. If you have a chance to tour the new SJTP, please stop by my new lab and say hello.

I want to thank everyone involved with the CEE Program for making the last 13 years the happiest years of my life. I look forward to many more years as both a CEE and MEM faculty at Rowan University.

Sincerely,

Ralph A. Dusseau, Ph.D., P.E.
DRBA Professor and
Founding Chair

CEE offers Master of Engineering Management (MEM)

CEE is offering a new Master of Engineering Management (MEM) Program under the leadership of Dr. Ralph A. Dusseau. The program formally began in Fall 2007 and we now have more than 15 students enrolled in the program. The MEM courses are taught in 8-week accelerated modules and are taught by engineering and business faculty. Two MEM courses were offered in Fall 2007, two courses are being offered in Spring 2008, and one course will be offered in Summer 2008. The MEM courses for Fall 2007, Spring 2008, and Summer 2008 are hybrid courses, which means that at least half of each course is taught online. Beginning in Fall 2008, however, all of our MEM courses will be taught 100% online. Please visit our website for more information.

(http://www.rowan.edu/colleges/engineering/programs/management/index.html)

Engineers without Borders (EWB)

Engineering undergraduates travelled with Dr. Joshua Wyrick to Senegal, Africa to assist with work needed to bring a water distribution system to the village of Ngonine. EWB student chapters' help poor and struggling communities around the world obtain clean water, treat waste water, produce energy, improve shelter, and develop sustainable industries. Each project is initiated by and completed with the help of those in need.

For more information visit the Rowan EWB website:
http://www.rowan.edu/~EWB

Faculty Highlights

2008 ASEE Mid-Atlantic Distinguished Teaching Award

Dr. Yusuf Mehta received the 2008 ASEE Mid-Atlantic Section's Distinguished Teaching Award. This award recognizes candidates that have demonstrated leadership in engineering education and have motivated and inspired students towards excellence in their coursework and research.

2007 Gary Hunter Excellence in Mentoring Award to Dr. Kauser Jahan

Dr. Kauser Jahan received the 2007 Gary Hunter Excellence in Mentoring Award. This award recognizes AFT unit members who go to extraordinary lengths to mentor students. Gary Hunter, a professor of history at Rowan for 29 years, exemplified the ideals of mentorship.

2007 Best Paper in the International Division for ASEE

Dr. Joshua Wyrick co-authored an award winning paper titled *""Developing Global Engineers: An Integrated Approach to International Projects"* on the EWB student chapter activities at Rowan. This Best Paper Award was awarded by the International Division of ASEE at the 2007 Annual Conference held at Honolulu, Hawaii. The lead author was Dr. Z. O. Gephardt from Chemical Engineering. The paper also was co-authored by students from various engineering disciplines.

Dr. Beena Sukumaran has been active with her research on airport pavements, micromechanics of granular media and granular material crushing. Her funding for these projects includes the FAA, Omega Engineering and NSF. She has also been collaborating on research with several universities here and abroad including University of Western Australia, University of Sydney, American University in Dubai, Université Paul Verlaine in Metz, France, and San Diego State University. Her project with the FAA with Dr. Mehta was recently highlighted on NJN News.

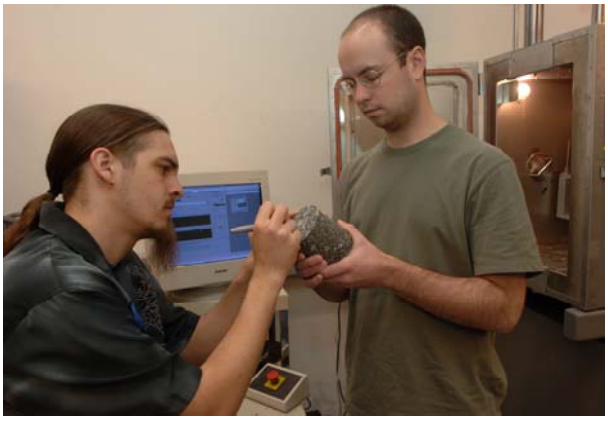
Dr. Sukumaran has also been active in developing a manually operated pedal powered grain crusher to process anything from corn to barley. The students are designing a simple mechanical device that people in developing countries can use. If it's successful, the grain crusher can help produce food for residents of poor countries and enable people to generate an income as they travel from community to community crushing food grain for a price.

Green Engineering

Dr. Jess Everett and Lindsey Conlow, GEO president spearheaded an outstanding event that allowed Rowan University to join more than 1,700 colleges and universities the week of January 28, 2008 in **Focus the Nation** (www.focusthenation.org), a national discussion on global warming and sustainability solutions for America. The week culminated on Thursday, January 31, with teach-ins held throughout the United States. GEO is the RU student environmental organization. Five student groups distributed information about Global Warming and possible solutions at the Teach-in. Carbon Neutral Now, a Rowan student created company, and the Gloucester County Recycling Program also had tables. Twenty six faculty and staff (and one Alumni) gave talks and lead discussion related to Global Warming. Focus the Nation at Rowan was given a President's Award at the conclusion of Thursday's events.

Dr. W. Riddell is involved with the Clean Energy Program. Rowan University students have been assisting farmers and municipalities in New Jersey to assess the potential to generate electricity using wind turbines. Through the anemometer loan program, a 30 meter tall mast with an anemometer and data logger system is erected by Rowan University students on a potential turbine site. The data is collected for a year, and analyzed to predict how much electricity could be generated by a wind turbine. This allows the farmer or municipality to make an informed decision about investing in a clean and renewable source of electricity.

Drs. Y. Mehta and K. Jahan along with a team of students are focusing on the use of sewage sludge ash in hot mix asphalt. Typically incinerated sewage sludge generates ash that does not have much use and ends up in the landfills. This project just received the 2008 CEE Best Clinic Award.



The student team will be presenting their work at the Annual NJWEA conference to be held in May, 2008 in Atlantic City.

Faculty Highlights (Continued)

Dr. Joshua Wyrick is busy working on projects related to dam removal in Southern New jersey. When a dam is installed in a stream, it will trap sediment behind it. When a dam is removed (or fails), that trapped sediment now has the opportunity to be flushed downstream. The volume and timing of this sediment movement is of critical importance to the downstream ecosystem. In 2004, Wadsworth and Sterling Dams on Mantua Creek (Washington Township) were classified as a "high hazard" by the NJDEP and are slated for removal in the near future. The impact of these removals on the water quality and water quantity of downstream flows into Bethel Mill Lake are being assessed by Rowan engineering faculty and clinic students. In Fall 2007, Rowan students analyzed the sediment transport potential in nearby Chestnut Branch as a comparison to Upper Mantua Creek.

Dr. Yusuf Mehta has been active with a number of projects focusing on the needs of the transportation industry. These projects are funded by NJDOT, HHWA, USDOT and RIDOT. Projects include

- Fatal Accident's Analysis,
- Development of a Pavement Design Catalog, and the
- Identification of Source of Rutting in a Flexible Pavement System

Dr. Kauser Jahan along with **Dr. Jess Everett** and faculty from other engineering disciplines received funding from the NSF for a grant titled "Hands on an Aquarium". This grant will allow faculty to partner with the New Jersey Academy for Aquatic Sciences and the Cumberland County College to develop curricula to expose engineering content to K-12 and pre college students/teachers.

Dr. Lisa Axe, Professor of Civil and Environmental Engineering at NJIT is partnering with **Drs. K. Jahan** and K. Ramanujachary (Chemistry) to investigate the presence of heavy metals in glass beads used in highway markings. The project is being funded by NJDOT.

K-12 Outreach

http://www.rowan.edu/colleges/engineering/k-12/

The CEE program has been a leader in K-12 outreach for the South Jersey community. Faculty are involved in the education of teachers and students via various workshops which are described below:

Project Lead the Way

Dr. Douglas Cleary is the Affiliate Director for PLTW in the state of New Jersey. PLTW provides pre-engineering curricula that can be implemented by middle schools and high schools. As the state affiliate for PLTW, Rowan University serves as an important resource for the schools implementing the program including providing teacher training.

Engineering Clinics for Teachers (ECT)

Rowan University's Colleges of Engineering and Education are offering an *Engineering Clinic* experience for middle school teachers. This workshop exposes teachers to various engineering disciplines via hands on activities. Dr. Kauser Jahan is the director of the ECT program.

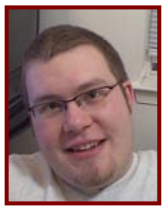
SJ GAMTTEP High School Scholars Program

Dr. Kauser Jahan received funding from the FHA for offering a 4-week workshop to high school students from underrepresented populations. The workshop will allow participants to work with faculty on research related to transportation engineering. Participants will receive a $1,500 stipend on the successful completion of their assigned research.

Attracting Women into Engineering (AWE)

Dr. Kauser Jahan is co-directing the 2008 AWE workshop. This workshop allows middle school girls to be exposed to various engineering disciplines via hands on activities. Participants work on two CEE modules: bridge building with Jenga blocks and chemical treatment of water.

Awards



Matthew Pavelchak (Class of 2008) has won numerous awards for academic excellence. Matt is the proud recipient of the Bernie Langan Scholarship twice, the ACEC Scholarship and the Jerry Kilby Memorial Scholarship. He is also the recipient of the 2008 CEE Highest GPA award. Matt has been on the Dean's list every semester since he started in 2004. Matt is also the President and Founder of the Rowan University NJWEA student chapter and the President of the Rowan University Honor Society.

Ryan Smith (Class of 2008) won two significant awards from the water/ wastewater state organizations. Ryan won the NJWEA Daniel Bigler award and the NJAWWA Drinking water scholarship. He will be pursuing graduate studies at Lehigh University.

Jesse Kidd (Class of 2008) will also be pursuing graduate studies at Lehigh University.

David Santino (Class of 2008) also has multiple offers to pursue graduate studies at Purdue University and the University of Texas, Austen.

Michael Berry (Class of 2008) received the 2008 Delaware Valley Engineers Council Student Scholarship.

Keicha Muriel (Class of 2009) received the SJ ASCE Scholarship ($1,000) and also the Lockheed-Martin Scholarship ($4,000) for academic merit. Keicha is EWB President elect for 2008-2009. She travelled to El Salvador in May 2007 to help the town of La Ceiba develop a water delivery system. She is travelling again this March to continue the project.

Professional Chapter Activities

ASCE: Dr. Douglas Cleary is the student advisor for the Rowan ASCE student chapter. The students have been active in preparing for the annual Metropolitan Region concrete canoe competition. The chapter has also been active in service activities for Habitat for Humanity and campus recycling initiatives.

NJWEA: Dr. K. Jahan is the student advisor for the Rowan NJWEA student chapter. The students have been involved in assisting the Washington Township middle schools volunteer water monitoring events. They also hosted a Rube Goldberg competition for Rowan families and prospective students.

Tau Beta Pi: CEE students (Class of 2009) have an impressive hold on various positions as indicated below:

President: Michael Golias
Corresponding Secretary: Gregory Kuczynski
Treasurer: Ryan Headley
Cataloger: Kyle Denny

Tau Beta Pi is the only engineering honor society representing the entire engineering profession. It was founded in 1885 to recognize students of distinguished scholarship and exemplary character.

Featured Alumni

Danielle Scrivani **(Class of 2007)** is currently Project Engineer at Buchart Horn Inc. at Marlton, New Jersey.

Matthew DeNafo **(Class of 2006)** is an Environmental Engineer at the Atlantic County Utilities Authority. He also obtained an MS in CEE in 2007.

During their student years Matt and Danielle worked on a project using Chinese Brake fern to remove arsenic.

Lea Volturo (Class of 2004) is currently working as for the New Jersey Department of Transportation (NJDOT) in their construction division at the Cherry Hill regional office.