UMass EWB Works With Brazil

From the Massachusetts Online Edition Daily Collegian of 9/10/07
By Charlie Creekmore

Members of the University of Massachusetts Engineers Without Borders (EWB) have returned from an assessment trip aiding in the set up of a safe and reliable clean water source for rubber trappers of the Brazilian Amazon.

According to the University, the 2-million-acre parcel of land known as the Chico Mendes Extractivist Reserve accumulates plenty of water, but is often contaminated with parasites and biological pollutants. Students with the UMass chapter of EWB plan to present ideas and possible engineering solutions to Brazilian non-governmental organizations, university contacts, and local communities and organizations.

"Our purpose is to make their lives easier so they can stay there is a viable way," said EWB Amazon team member Marc Santos in a press release. "Our goal is to give them safe water sources, health sanitation facilities, and possibly electricity so they can survive and thrive in their forest environment." Using feedback from the local community and Brazilian organizations the students will design a culturally inexpensive, sustainable and culturally acceptable engineering solution to the unhealthy water supply in the reserve.

The UMass chapter of EWB will begin looking at the problems with the water supply over the next several months and plan have a prototype in place in the rubber tapping reserve next summer, according to the University. "We will discuss these water problems, and the culture surrounding them, with the whole UMass chapter of EWB in the coming months," said Marina Pereira, a graduate student from Quincy in environmental engineering born in Brazil. "Then we'll come up with what we think are sustainable solutions that can be carried out by the communities themselves."

According to Santos the team is working hard to educate themselves on the local community and tailor their designs on the needs and considerations of
the people who live there. "An important component of the process is to work with the community to develop a design that the community itself has chosen and wants to implement," he said. "When we give the workshop we'll not only be educating them about basic water and sanitation engineering principles to improve their water quality, but we'll also be learning from the residents how best to incorporate local materials, address local environmental conditions, and respond to local cultural concerns."

The rubber-tapping community began when new automobile companies needed rubber for tires at the beginning of the 20th century, according to the University. The government tapper reserve system followed the assassination of Mendes in 1998 after he had organized Brazilian tappers resisting the destruction of the forest.

### Dean’s List-Spring 2007

- Kane C. Bennett
- Andrew L. Berthaume
- Lukas B. Bradley
- Adam P. Butler
- Jesse J. Conklin
- Jocelyn S. Dewire
- Weihua Dong
- Eric M. Feeley
- Jorge E. Fuentes
- Samuel W. Gregorio
- Matthew R. Hart
- Elsbeth Nolan Hearn
- Robert D. House
- Ryan Y. James
- Elena K. Janice
- Erik W. Jensen
- Meghan T. Krupka
- Ryan S. Lambert
- Yesher Larsen
- Jason M. Lavelly
- Jun Jie Li
- Cameron J. Lovell
- Nicole M. Lussier
- Elaine H. Maniscalchi
- Scott T. Munroe
- Rachael A. Nealer
- Michelle C. Nolte
- Noam D. Perlmutter
- Ryan J. Pothering
- Thomas M. Renaud
- Brent M. Richard
- Adam N. Rochon
- Matthew J. Rozin
- Kimberly A. Rudy
- Kelly M. Shanahan
- Christina Lynn Stauber
- Matthew M. Styckiewicz
- Matthew P. Sullivan
- Thomas M. Suski
- Omar A. Swei
- Steven M. Tupper
- Morgan R. Welch
- Russell S. Winans
- Kaiyin Yip
- Shelby J. Zeigler
2007 Feng Lecture

The Tsuan Hua Feng Distinguished Lecture Series was established to honor the memory of "Tom" Feng, who served on the faculty at the University of Massachusetts for 31 years.

This year's speaker is Dr. Dick Luthy, Professor and Chair of Civil and Environmental Engineering at Stanford University. Dr. Luthy's research interests include physicochemical processes with application to sustainable technologies for environmental protection, waste reduction and treatment, and remediation of contaminated soil and sediment. His work addresses phase partitioning and the treatment and fate of hydrophobic organic compounds, and interdisciplinary approaches to understand the behavior and availability of organic contaminants and the application of these approaches to bioavailability and environmental quality criteria.

The 2007 Feng Lecture is Thursday September 27, 2007 at 3:00 pm in the UMass Campus Center.

Student Information

Schedule Announcements – Fall 2007

- CEE 296: See Dr. Chajes in 232 Marston Hall to arrange a lab time.
- CEE 370 will be taught by Dr. Park.
- CEE 486 will be taught by Dr. Black.

December Graduates

If you are planning to graduate at the end of this semester, please review your Degree Progress on SPIRE to be sure that all College and University requirements have been satisfied. If you have any questions or problems, please contact Jodi Ozdarski in 226 Marston or Dr. Lardner in 234A Marston.

Undergrad Student Handbooks

Copies of the CEE Undergraduate Student Handbook will be available in October online at:
http://www.ecs.umass.edu/public/cee_docs/cee_student hb.doc.

Save The Date...Spring 2008 Pre-Registration Advising

Spring 2008 pre-registration advising for CEE majors and ENGIN students will be held on Thursday, November 1 from 4:00-7:00 pm in the Gunness Engineering Student Center. Pizza and soda will be served. Additional details will be available in the next issue of THE BRIDGE.

FUNDAMENTALS OF ENGINEERING EXAM (EIT)

For information about the FE exam, you may access the Professional Credential Services, Inc. website at www.pcsq.com. The fall exam will be held on October 27th; however, the application deadline was September 1st. The spring exam is scheduled for April 12, 2008 with an application deadline of March 1st. You may download applicant information and applications on-line, or you may telephone 1-877-ENG-EXAM.
Spring 2008 Electives

Below is a tentative list of electives that will be offered in the spring '08 semester. As you plan for next semester, please keep in mind that you must include 2.5 credits of Engineering Science and 3.5 credits of Engineering Design components. Additionally, your choice of electives must include at least one Transportation and one Geotechnical Engineering course.

CEE 275 Introduction to AutoCAD
CEE 290T Thermodynamics
CEE 423 Engineering Geology (4 cr)
CEE 433 Concrete Design
CEE 450 Highway Location and Geometric Design
CEE 462 Water Resources Engineering and Sustainability
CEE 490A Sustainable Aspects of CE
CEE 509 Transportation System Analysis
CEE 516 Transportation Design
CEE 518 Intelligent Transportation Systems
CEE 541 Structural Dynamics
CEE 542 Advanced Topics in Steel Design
CEE 577 Surface Water Quality
CEE 579 Air Quality
CEE 590T Traffic Flow Theory

Faculty News

New Faculty

Dr. Song Gao holds a B.S. in Civil Engineering from Tsinghua University (China), and M.S. and Ph.D. degrees in Transportation from MIT. Since 2005, she has been a Transportation Engineer for Caliper Corporation in Newton, MA. Professor Gao’s research knowledge in stochastic modeling of transportation systems and network optimization, coupled with her practical experience with travel demand forecasting and traffic assignment models allows her to fill a critical need within the Transportation group at UMass Amherst. Her dissertation research was on optimal adaptive routing and traffic assignment in stochastic time-dependent networks. Among her future research topics, the integration of GPS data and variable message signs into adaptive route choice models is especially exciting.

Dr. Chul Park Chul Park received a B.S. in Environmental Engineering from Yeungnam University (Korea) in 2000 and a M.S. degree in Environmental Engineering from Virginia Tech in 2002. In early August he successfully defended his Ph.D. dissertation at Virginia Tech. His M.S. research was an investigation of the impact of wastewater cations on activated sludge performance and anaerobic and aerobic digestion. His dissertation research continued in this line of research and also investigated the impact of wastewater cations on exocellular proteins in activated sludge flocs. He has developed several methods to characterize proteins in activated sludge including the use of sodium dodecylsulfate polyacrylamide gel electrophoresis (SDS-PAGE). Professor Park comes with teaching experience from Virginia Tech. He will be teaching CEE 370 this fall.
Dr. Erik Rosenfeldt earned a B.S. in Chemical Engineering (minor in Environmental Engineering) at Washington University and then worked as a consulting engineer for two years before enrolling at Duke University where he earned his M.S. in Environmental Engineering in 2003. He completed his PhD at Duke this spring with a dissertation entitled “UV and UV/H2O2 Advanced Oxidation – A theoretical, practical and comparative examination of UV processes used to treat emerging contaminants in drinking water”. In recognition of Mr. Rosenfeldt’s academic excellence he was awarded two prestigious fellowships for doctoral research. Professor Rosenfeldt has also had considerable teaching experience, including his service as an Adjunct instructor at North Carolina State University where he taught a graduate course on the environmental behavior of organic contaminants this past spring. Professor Rosenfeldt will be teaching CEE 672 this fall.

Awards

Dr. John Collura Receives Joseph M. Sussman Leadership Award
Article provided courtesy of ITS Massachusetts – May 18, 2007

At its 12th annual meeting and conference on May 1st, 2007, ITS Massachusetts presented the Joseph M. Sussman Leadership Award to Professor John Collura, Director of the University of Massachusetts Transportation Center in Amherst, Massachusetts. The Joseph M. Sussman Leadership Award is presented annually by the Intelligent Transportation Society of Massachusetts (ITS Massachusetts) to an outstanding individual who has demonstrated uncommon professional contributions in the field of intelligent transportation in the Commonwealth. The award is named in honor of Dr. Joseph M. Sussman, who is the JR East Professor in the Department of Civil and Environmental Engineering and Engineering Systems at the Massachusetts Institute of Technology (MIT), a founding member of both ITS America and ITS Massachusetts, and a mentor for emerging transportation professionals for over 38 years.

This year’s recipient of the award, Professor John Collura, has been involved in transportation education and research for over 25 years and is a noted champion of Intelligent Transportation Systems (ITS). He has held numerous leadership roles in ITS Massachusetts, ITS America, and ITS Virginia, including his current service as a member of the ITS Massachusetts Board of Directors. Dr. Collura recently served as Chair of the National Research and Education Forum at ITS America and in 1993 represented ITS America as a Faculty Fellow in Europe with the Autostrade, Italy largest toll road agency. Dr. Collura’s current research focuses on electronic payment systems, transit signal priority, and vehicle infrastructure integration. He has taught courses in ITS, transportation engineering, transportation systems analysis, and public transportation planning and operations. Dr. Collura is also the author of several book chapters as well as many articles and technical reports. In presenting the award, John Colangelo, Chair of the ITS Massachusetts Board of Directors, declared, “I cannot imagine a more deserving candidate than John Collura.”
News from Student Engineering Groups

**ITE (Institute of Transportation Engineers)**

Faculty Advisor: Dr. Mike Knodler

President: Heather Rothenberg

ITE articles submitted by Heather Rothenberg

**ITE International Annual Meeting:** Members of the UMass ITE Student Chapter attended the ITE International Annual Meeting in Pittsburgh, PA in August, 2007. In addition to attending sessions and committee meetings, they presented papers prepared by students and Faculty Advisor Dr. Knodler on topics including the relationship between aggressive driving and roadway design elements, traffic impact analysis for site development, and transportation workforce development.

**ITE District 1 Annual Meeting:** In May, members of the UMass ITE Student Chapter attended the ITE District 1 Annual Meeting in Providence, RI. At this meeting, student chapter members David Hurwitz and Heather Rothenberg each presented. At this meeting, the UMass ITE Student Chapter was awarded the District 1 Outstanding Student Chapter award and Heather Rothenberg was awarded the Stantec Student Paper award. In addition, the student team, comprised of 2 UMass Students, 1 Northeastern Student and 1 UMass alumnus won the District Traffic Bowl Competition; they beat out the 3 other teams of professionals! All students attending had the opportunity to attend sessions on a variety of transportation engineering topics and network with professionals.

**Berger Seminar:** The 2007 Bertram Berger Seminar, held on May 3rd, was sponsored by the Boston Society of Civil Engineers (BSCES). The program featured a panel of experts who examined the conditions at the Commonwealth's ports and plans for future development. It was another great networking opportunity for the chapter members to get to know the BSCES professionals.

**UMass ITE Website:** The UMass ITE website continues to be updated regularly. The website includes information and photos on past events, announcements of upcoming events, PDF versions of the Chapter’s newsletter and more. Check it out at www.ecs.umass.edu/ite.

**Locate and Name This Bridge!**

*This Bridge-Tunnel project is a four-lane 20-mile-long vehicular toll crossing. The crossing consists of a series of low-level trestles interrupted by two approximately one-mile-long tunnels. The manmade islands, each approximately 5.25 acres in size, are located at each end of the two tunnels. There are also high-level bridges over two other navigation channels.*

April’s bridge was the Bollman Truss Bridge. Congratulations to Kimberly Rudy who was April’s winner!