CE NEWS

MONTANA STATE UNIVERSITY | College of ENGINEERING

Promoting student success during tough economic times

Dear Alumni and Friends,

Hello from good old MSU. Another year has passed and I find myself in a different role. I remain the Civil Engineering department head, but I am now also the parent of an MSU student. My oldest daughter is a freshman at MSU this year and while still deciding definitively on a major, she has told me that she is seriously considering studying Civil Engineering. This is much to my amazement as she has seemingly been totally disinterested in engineering until this summer. Who knows, maybe our children have actually been listening, on occasion, when we as parents thought we were being totally ignored.

My other "kids", the students in the department, continue to succeed at high levels. In this newsletter, you'll read about our heavy/civil team that placed second in the nation in the ASC/AGC competition. You will also read about how one of our PhD students, Andrew Slaughter, is extending his talents to help 5th graders learn about engineering.

You will also get to meet two new faculty members, Lauren Evans, and Dan Miller. Both have joined us this fall with Lauren teaching construction courses and Dan teaching engineering mechanics courses.

We recently completed construction of our new Sub-zero Science and Engineering Facility. This facility includes six sub-zero environmental chambers and gives us unique research capabilities.

The facility and faculty continue to build on the legacy of snow and ice mechanics related research that dates back to MSU faculty who were WWII veterans of the 10th Mountain Division. It is a beautiful facility.

The next time that you are in or near Bozeman, stop in to see it, I would love to see you and show you around.

So why is Gunnink's letter front and center on page 1 of the department newsletter? As we all know, times are tough and these tough economic times are affecting students and their families, too. The recent precipitous drop in the stock market has had a very adverse effect on the department's endowment, which provides the dollars we use for student support. Thus during a time when students are in even more need of assistance, funds are limited. Therefore, I am asking you to consider making a gift to help fund *current* scholarships (instead of building the endowment) this year. If you choose to do so, these dollars will not be invested, but rather awarded directly as support to our students. How to give is the easy part: you may have received a reminder in the mail from the MSU Foundation (our fund raising arm at MSU). If you do not have that at your fingertips, the easiest way to give to the department is through MSU's giving website @ www.montana.edu/wwwulf. You can click "I Want to Give Now," to download a paper form or you can give on-line with a credit card. Be sure to say "scholarships for current CE/CET students," if that is what you would like to support.

In these tough times, the continuing assistance the department receives from alumni and friends is even more critical to the success of our students. Thank you for all you do to support us.

Doctoral student and fifth graders present at Snow Science Workshop

Andrew Slaughter (center) and fifth graders Micah Robin (left) and Isabella Sarmiento pose in the Ophir School library. (MSU photo by Kelly Gorham)

When Andrew Slaughter presented at the International Snow Science Workshop held at Whistler, British Columbia in September 2008, he was accompanied by fifth-graders Micah Robin and Isabella Sarmiento from Ophir School, an elementary school near Big Sky. The trio gave a presentation on avalanche safety and snow science that was written by fifth-graders at Ophir School.

Slaughter, a doctoral student in MSU's civil engineering department, spent the past school year helping teach science at the school, an experience made possible by the MSU chapter of the national GK-12 program.

Funded by the National Science Foundation, GK-12 partners graduate students with teachers at rural schools like Ophir. This year marked the fourth for the program, which is coordinated by MSU's Big Sky Institute.

“The program as a whole gives the selected graduate students an opportunity to hone their teaching and communication skills in science and helps them get K-12 students interested in science," said GK-12 program manager Lisa Rew.

Slaughter was one of seven teaching fellows sent to schools around the Gallatin Valley, as well as to one school in Wyoming. All the fellows came from either science or engineering departments; and most, like Slaughter, went without any classroom experience.

"I've always had a desire to teach and was hoping to show the students that math, science and engineering is exciting," Slaughter said.

Slaughter worked with the Ophir science teacher to develop a lesson plan that took advantage of Slaughter's expertise in snow science.

The goal was to present the students with more in-depth science than the average elementary school curriculum. Many of Slaughter's lessons took advantage of Ophir's mountain locale and involved activities like outings with the area ski patrol and finding a buried avalanche beacon.

"I was often surprised by the students' excitement level," Slaughter said. "Also, it was comfortable for me and felt natural; I enjoyed the challenge of taking my Ph.D. level of looking at snow and making it accessible for fifth graders."

Slaughter's time at Ophir also pushed him to teach basic science, not just snow and engineering. He said that once he got used to being in charge of the class, it was easy to transition from one science lesson to another throughout the year.

"It's a continuum," he said. "One topic might be very specific, but it's related to other topics as well."

Slaughter hopes to become an engineering professor and researcher after he finishes his doctorate next year so that he can continue studying cold environments.

Student awards and recognition

The student chapter of **Institute of Transportation Engineers** recently earned an honorable mention for the “Student Chapter Award for Best Student Chapter Report”, from the District 6 ITE. In addition, **Sarah Karjala** won 1st Place in Design in the James H. Kell Student Competition. Sarah earned her MS Civil Engineering degree, summer 2008.

The **LEED Team** won second place in the DPR Inc. “Team Olympics” at the 2008 Region 6 Associated Schools of Construction competition at Reno, Nevada. The contest was a timed obstacle course in which team members had to complete a variety of tasks. The second place finish earned them a $2000 award. The LEED team members were **Daniel Anderson**, **Jay Shroyer**, **Derrick Whitby**, **Aaron Noble**, **Rachel Haugen** and **Danielle Petter**.

At the 2008 Pacific Northwest Conference, the **American Society of Civil Engineers (ASCE)** student chapter was awarded first place in aesthetics in the steel bridge competition. The competition was sponsored by the American Institute of Steel Construction in conjunction with ASCE.

Remembering Bob Smith

The CE Department sadly reports that retired Professor Robert C. (Bob) Smith passed away on January 5, 2009.

Smith saw active duty with the U.S. Army Reserve during and after WWII. He came to MSC in 1960, after teaching at West Virginia University and the U.S. Military Academy and conducting research at the U.S. Naval Research Laboratory. Former students will remember Professor Smith as a caring and extremely effective teacher of engineering mechanics.

Upon Bob’s retirement in 1981, the ASCE Student Chapter and the AGC Student Chapter initiated a scholarship that continues to be awarded annually to students in the department. Faculty and staff are honoring Bob Smith’s memory and distinguished service by contributing to this fund. We encourage our alumni and friends who have fond memories of Bob to contribute as well.

MSU Heavy/Civil Construction Engineering Team places second at national competition

The Montana State University Heavy Civil Construction Engineering Team placed second at the 2008 Associated General Contractor's - Associated Schools of Construction national competition held in Las Vegas on March 8-10. The Heavy Civil team had qualified for the national competition by winning the Region 6 competition where they bested 11 other universities from the Rocky Mountain States including Colorado State, Arizona State, Boise State, and BYU.

The competition requires the competing teams to analyze a complete set of construction contract documents (plans and specifications) and prepare a detailed bid package in a 16-hour period, receiving the information at 6:00 A.M. and submitting their bid at 10:00 P.M. that evening. On the second day, the teams make a half hour presentation to a team of judges who have previously evaluated their bid package submission. During their presentation, the team members explain how they analyzed the project and computed their contract pricing, answering detailed questions from the team of judges. The Region 6 competition project required the team to analyze and bid the $60 million Bolsa Chica Wetlands Restoration project on the California coastline near Los Angeles, where the project included two concrete highway bridges, several miles of earthen levee, dredging, and derrick stone erosion protection.

There were approximately 75 university teams from across the United States that competed in the Heavy Civil competition. At the AGC-ASC National Competition in Las Vegas, the MSU Heavy Civil team competed against the six other regional champions from across the USA, including Kansas State, Oklahoma, Clemson, Michigan Tech, and the winning school - California Polytechnic State University (Cal Poly).

MSU Heavy Civil team members, clockwise from top left: Mike Tonn, Miles City, MT; Bryce Hove, Circle, MT; Nick Grout, Minneapolis, MN; Adam Beck, Deer Lodge, MT; Chad Welborn –team captain, Lima, MT; and Tyler Schmidt, Wasilla, AK. Not pictured: Dean Peterson, faculty coach.

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CE News is produced annually by the Montana State University Civil Engineering Department.

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News Flash!

Congratulations to all our participants at the 2009 ASC Annual Student Competition in Reno, Nevada.

Our teams' results:

- Preconstruction Services – 3rd place (national)
- Heavy Civil Problem – 2nd place (region 6)
- Commercial Team – 3rd place (region 6)

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New faculty members join Civil Engineering department

Air Force Lt. Col. (ret.) **Dan Miller** has joined Montana State University's Department of Civil Engineering as associate professor.

Before coming to MSU, Dr. Miller commanded the 718th Test Squadron at the Arnold Engineering Development Center in Tennessee, the country's largest flight simulation facility.

Throughout his 20-plus-year career in the Air Force, Miller worked with space-and ground-based missiles, high-altitude rockets and spacecraft systems. He also taught for seven years at the Air Force Academy's Department of Astronautics as an instructor, lab director, division chief and deputy department head.

Dr. Miller, a native of Libby, Mont., graduated from MSU with a bachelor's degree in mechanical engineering in 1987. He earned his master's degree in aeronautical engineering from the Air Force Institute of Technology in 1993 and returned to MSU to earn his doctorate in engineering and applied mechanics in 2002.

Miller is teaching EM 251 Statics and Particle Dynamics and EM252 Rigid Body Mechanics. He will be utilizing the department's new Sub-zero Science and Engineering Research Facility for his research that focuses on snow and ice mechanics.

Lauren Evans comes to the Civil Engineering Department as adjunct instructor. Evans received her bachelor's degree in construction science from Texas A&M University. She was nominated for the Outstanding Construction Science Graduate and awarded the Buck Wierus Award, this highlighted her accomplishments for outstanding leadership. She has also been certified by the American Institute of Constructors.

Evans' previous work experience includes serving as project manager for C Construction Company, a Texas based government contractor. Her duties included coordinating litigation review, directing the establishment of a web-based network of national offices and the continual assessment of corporate decisions with year-end financial accounting as the frame of reference. She was also the Market Analyst and Client Service Coordinator for Clark Construction Group, a Bethesda, Maryland, based national construction firm. She was responsible for the review of owner contracts, risk assessment and research of federal and state statutes regarding the same.

Evans' duties at MSU include teaching CE404 Heavy Construction Equipment Methods and CE405 Construction Projects Planning and Scheduling.