

CE NEWS

The link from MSU Civil Engineering to our alumni and friends



Partnerships for Student Success • Summer 2006

Italy was their summer classroom

CET faculty member Penny Knoll and CE colleague Anders Larsson traveled with 11 civil engineering students to Italy for two weeks during the summer semester 2005. *CE 480 – Civil Engineering and Construction: First Hand from the Ancient to the Modern* was a special offering put together for the first time by Penny and Anders to bring a different perspective of civil engineering and construction throughout the ages to the department's offerings. And what better place to do so than Italy, where the 2000+ years of engineering marvels spanning from the great Roman empire through the Renaissance are still very much a part of the modern state of Italy's engineering challenges.

The course kicked off in April while the spring semester was still in session. The group met early in the mornings on top of their normal class loads for a suite of introductory lectures. Besides learning about the spread of inventions/technology/

knowledge from the onset of mankind, topics such as "Art and Architecture Appreciation 101" was introduced. (Looking at paintings and sculptures with a critical eye does not come naturally to some [most?] civil engineers.) The group gathered again in mid-May at the Bozeman Airport for the joint flight to Italy – first stop: Venice.

Landing at the Venice airport during a canoe/crew race on the canals of Venice (timing is everything) meant that the "Vaporetto" water taxi was unable to bring the travel-weary crew directly to the hotel – an improvised walk across Venice proper ensued,



Requisite tourist "anti-leaning" photo of the group in Pisa.

adding a sense of "we are truly here" through sleepy eyes. An evening, canal-side lecture followed by a good nights rest sent the group off for the next few

days to learn about the history of the medieval City-State, the environmental/flooding threats to the Lagoon and the proposed solutions, and the role of glass in architecture/engineering/construction throughout the ages.

The group waved goodbye to Venice and jumped the EuroStar train to Florence. Besides viewing

all the requisite galleries/museums in Florence, the group spent a day visiting the nearby towns of Pisa and Lucca, as well as the Tuscan country side with a visit to a family-run vineyard and a "Saturday town-square market" in the village of Greve. Lecture topics included the historical attempts at "straightening" the Leaning Tower of Pisa, with a focus on the success a few years back of finally halting/slightly reversing the lean of the tower. Another lecture topic focused on the design/construction of domed structures, with a "climb" to Brunellschi's grandiose dome in the Florence cathedral – the largest dome of its time, constructed in its entirety without shoring!



May be classified as "difficult construction access"? (From Venice.)

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Dear Alumni and Friends,

2006, what an exciting time to be a new freshman CE or CET

major! We are in the midst of new student registration at MSU and it is rewarding to greet all the eager young students. Over the past year I have observed record participation by employers at MSU's fall career fair, and nearly equal participation at our first spring career fair. I travelled to Reno for the Associated Schools of Construction (ASC) student competition and observed a doubling of participation (80 contractors) in this ASC career fair. The demand for department graduates is extraordinary, as strong as I have ever observed. 2006 is also exciting

because educators and practitioners are discussing, debating and moving forward with initiatives to "raise the bar" with respect to educational requirements necessary to enter the profession of engineering. The combination of increasing demand for graduates coupled with increasing educational requirements of these same graduates will undoubtedly create new challenges for engineering education. To meet these challenges will require strengthening current partnerships and creating new partnerships with the contractors, consulting engineers and government agencies that are in need of our graduates. Over the next few years, I will be working diligently to enhance existing partnerships and create new partnerships that will allow the department to grow and increase the level of excellence of our programs.

As you peruse our newsletter, you will learn more about the students, facilities and faculty of the department. We are building new laboratories, hiring new faculty, and working toward improving our programs in many ways. While all this is well and good, the department's legacy of outstanding education was in no small part built on the success of the alumni of our program. Many alumni are our best unsung ambassadors. For the many ways that alumni and friends of the department support our programs, we are very thankful. Please stop by and see us sometime. I would be delighted to show you around.

—Brett Gunnink, Ph.D., P.E.
Professor and Department Head

Sanks inducted into Engineers Hall of Fame

Robert L. Sanks, a professor emeritus of civil engineering at Montana State University, was inducted into the Montana Professional Engineers Hall of Fame at the 2005 Joint Engineers Conference in Helena on Nov. 4. A plaque honoring the inductee is hosted at the MSU College of Engineering in Bozeman. The Montana Professional Engineers Hall of Fame is sponsored by the Montana Society of Engineers to honor Montana engineers who made significant contributions to the development of Montana and the engineering profession.

Sanks was a professor of civil engineering at MSU from 1966 to 1982. He is editor-in-chief and co-author of *Pumping Station Design*. The first edition won the only 1989 award "Excellence" given for an engineering book by the Professional & Scholarly Division, American Association of Publishers. The book is recognized as the preeminent text on pumping stations for water and wastewater.

The Joint Engineers Conference is an annual gathering of engineers from all disciplines and is sponsored by eleven professional engineering societies.



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

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Focus on Applied Mechanics Engineering PhD Graduate: Dr. Steven M. Jepsen

Steve Jepsen attained BS degrees in Geology & Physics from the California State University in his home town of Fresno. When the time came for his graduate pursuits, he chose MSU-Bozeman where he received an MS in Physics and continued on to complete his PhD in Engineering-Applied Mechanics in 2005 through the Civil Engineering Department. His PhD research capitalized on his diverse academic background, focusing on the physical-chemical properties of the ice overlying a deep Antarctic lake. Lake Vostok is among the world's largest lakes, but its unique intrigue is that it is located 4 km below the surface of the Antarctic ice sheet! The relatively recent recognition of such bodies of water places the topic at the forefront of current scientific investigation, since it has global and extraterrestrial implications.

The research was accomplished in collaboration with his graduate advisor, CE professor Ed Adams. A variety of aspects were covered during the course of the study, ranging from numerical modeling of conditions for melting between ice crystals and the associated implications for a microbial habitat in this exotic niche, to theoretical and experimental simulations of contaminant migration through ice. This important aspect of the study addressed the obligation that environmentally responsible tactics be employed in the scientific exploration of these isolated subglacial lake systems. This facet of the study resulted in a presentation to a National Academy of Sciences committee that is shaping recommendations on the most appropriate manner

in which deep Antarctic lake exploration should proceed.

In regard to his decision to shift into the engineering field, Steve commented that, "The graduate program in Civil Engineering was a great move for me. It provided me with the opportunity to become involved in applied science, work with exceptional people, and broaden my career prospects." Steve is currently extending his low temperature research as he nears completion of a one-year NASA-funded position, working with MSU ecology professor Dr. John Priscu, in which he is investigating the potential biological habitability of Martian permafrost environments. Montana will continue to benefit from this multi-faceted MSU trained engineer. Steve has accepted a position in Billings with Anvil Corporation, a structural/civil engineering firm. In Dr. Jepsen's words, "I like it here, so I think I'll hang around for a while."



Dr. Steven M. Jepsen at work

Classroom in Italy, from p.1

Taking a small bus from Florence to Rome, the group made a stop in Assisi to study its cathedral – actually three different churches of different eras built on top of each other. Of added interest was the impact of a 1990s major earthquake in the area. The four full days in Rome had a focus of Archaeological Rome, the Vatican City, day-trip to Pompeii/Herculaneum, and Hadrian's Villa/Tivoli Gardens. Among the lecture topics during these days was the progression of pozzolans as a building material, as well as "Clean Water – the Foundation of an Empire." The group finally had to say "arrivederci" to their new friend, a great guide for the entire time in Rome, for the return flight home.

Penny and Anders would like to say "thank you" to everybody who made the new course a possibility. In particular:

- The College of Engineering and Office of International Programs for financial assistance with developing the course.
- The Department of Civil Engineering for logistics support.
- "RoadtoItaly" travel services and our customer representative there, Christina.

And foremost: the great group of students who took a leap of faith and joined our inaugural course abroad. Thank you for being such wonderful travel companions, having a strong sense of adventure, and exhibiting flexibility and understanding of the special challenges associated with a first-time course of this nature. The department hopes to be able to offer the course on a repeat basis, perhaps alternating years. Stay tuned for the possibility of alumni/professional engineers being able to join future trips for professional development credit.

Two Join Civil Engineering Faculty

from MSU News Service



...ns the Civil Engineering
College of Engineering at
...ersity.
... professor, spent 26 years with
...ers St. Paul District, where
...nstruction area engineer for
...the upper Mississippi River.
...include the \$300 million
...13 upstream locks and dams
...on the Mississippi River, numerous environmental
restoration projects and several EPA Superfund
projects. Peterson earned his master's degree
in geotechnical engineering from Colorado State
University in 1980.



...rtner in Lutey Construction-
for more than two years.
...ars as an engineer with the
ny Hensel Phelps Construction
...rked on projects valued
...illion. Lutey earned her
er's degrees in construction
ogy from MSU in 1996 and
1997.

Whitney Lutey has joined the Civil Engineering Department as an assistant professor in the College of Engineering at Montana State

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