



NORTHERN ARIZONA UNIVERSITY

College of Engineering, Forestry & Natural Sciences

Department of Civil Engineering, Construction Management, and Environmental Engineering (CECMEE)



"Creating leaders and solutions for the built and natural environments."

### A NOTE FROM THE CHAIR - Spring 2011

Dear Friends,

After 15 years as a member of the NAU faculty in the Civil and Environmental Engineering Department, I left for sabbatical in May 2009 with the promise to return in 2010 to become the Chair of the newly formed Department of Civil Engineering, Construction Management and Environmental Engineering (yes, that is a mouthful; we call it CECMEE and you can find it at: <http://cefns.nau.edu/Academic/CECMENE/>). While I was in Germany, Dr. Steve Mead served as the Interim Chair and thanks to his able leadership, the department thrived during the 2009-2010 academic year. Although I've been at NAU a long time, being a chair is new to me. A quick introduction: I am a chemical engineer by degree (University of Idaho); my graduate work has been in the environmental engineering arena. In the coming year, some of my goals will be to:

- Become more familiar with the Construction Management (CM) program. Dr. Mead has stayed on as the Associate Chair and has been a great mentor, providing valuable leadership in the CM arena, especially with our preparation for the CM accrediting agency's (ACCE) planned visit to our CM program next fall.
- Oversee the development of our Field Station (formally known as "Trotta's Farm" in recognition of Dr. Paul Trotta's creation of the site for his onsite wastewater project work). The Field Station is now home to student projects (such as the concrete canoe) as well as continued onsite wastewater research. New use/access protocols have been developed for site safety, and our CMO and ASCE student groups pitched in for a large-scale cleanup of the site, which looks great!
- Coordinate nationwide searches for TWO new faculty – a tenure-track structural Assistant Professor as well as a Lecturer

position. Despite tight economic times, we are pleased to be adding positions to assist with enrollment increases; current undergraduate enrollments are 250 civil engineering, 150 environmental engineering, and 250 construction management students.

- Strengthen the mission and membership of our civil and environmental engineering (CENE) programs' Department Advisory Council (DAC). We plan to have a new, invigorated CENE DAC by the end of the semester when we showcase our capstone projects.

On the research front, CECMEE faculty are currently working on \$332,000 worth of sponsored projects for the National Park Service, the Hewlett Foundation and the AZ Department of Transportation.

In closing, I am excited by this new opportunity and look forward to working with the CECMEE faculty, our students and the Dean's office to develop this newly expanded department. Recruitment and retention efforts are paying off, and NAU-CECMEE is the first choice of both local Arizona students as well as students from out-of-state and abroad wanting a unique educational experience in the built and natural environments. We of course can't do it alone and look forward to working with each of you to develop our next generation of professionals!

Sincerely Yours,

*Bridget N. Bero*

Bridget N. Bero, Ph.D., P.E.  
Chair and Associate Professor

### NEWS BRIEFS



Professors Steve Mead and Charlie Schlinger prepared a "Best Practices Guide for Water and Energy Usage in Rural Municipalities." Producing, distributing, and treating water uses significant amounts of energy, and this guide provides municipalities with strategies for streamlining energy usage. To obtain a copy of the guide: <http://www.waterenergy.nau.edu/>



Professors Paul Trotta and John Tingerthal are collaborating with NAU Anthropology to offer a 9-day hands-on field course this summer called "Essential Skills for Sustainable Development" for students planning to travel to third-world countries for service projects. NAU Alumnus Dale Gray (1975, Geology) of Patriot Towers (communications, Arizona) has provided our team with both financial and moral support. In other Engineers Without Borders (EWB) activities, the NAU chapter completed work on a solar powered well in Yua, Ghana. Other ongoing NAU Global Partnership Program projects are the design of a constructed wetland in Roatan, Honduras, and an irrigation system for Dakini Ranch in Arizona. John's work on this project will be presented at the annual Associated Schools of Construction conference in Boston.



Photo by Kate Dorrell

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PO Box 15600, Flagstaff, Arizona 86011



A CM Bobcat BBQ!

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Professors Wilbert Odem and Charles Schlinger serve on the Coconino County "Ridgeline to Rio Summit," a gathering of regional experts who are addressing hydrology and flood control issues that communities on Flagstaff's east side now face after last spring's devastating Schultz Fire. The Summit was convened to develop solutions to the severe flooding and debris flow problems that led to the death of one young girl and has destroyed homes, properties, roads and infrastructure.



CM Professor Greg Ohrn completed his doctoral studies at Indiana State University where his work on "job order contracting" was recently cited in the Engineering News Record. Greg is now on sabbatical in Panama, where he is leading the QA team for CH2MHill on the Panama Canal expansion project, focusing on excavation for the new locks structures. He is enjoying working with contractors of all nationalities – and communicating in Spanish!

In October, our 13th annual golf tournament was held at Oak Creek Country Club in Sedona. More than 100 people attended including alumni and industry sponsors. Students were teamed up with industry players and money raised outfitted our new Building Information Modeling Laboratory. We'd like to thank all our sponsors: Rummel Const., Layton Companies, FCI Const., Gilbane Const., Kitchell Const., Hensel Phelps Const., McCarthy Const., Arizona Subcontractors Assoc., Sundt Const., Holder Const., JE Dunn Const., MA Mortenson, Loven Const., Bouw Const., Kiewit Const., Haydon Const., and Adolphson Peterson Const.



Winning golf team McCarthy Construction: from left: Mike Barter, Frank Scopetti, Chris Jacobson, Chris Fletcher

Over 250 people attended the alumni reunion and annual CM banquet and "demolition ball" at the NAU High Country Conference Center on April 30th. We bid farewell to Professor Dave Grider who retired after 27 years.



Dave Grider and CM Alumnus Grey Ayres

Department Chair Bridget Bero returned from sabbatical in Dresden, Germany where she and Computer Science colleague Eck Doerry collaborated on an interdisciplinary design project (a community-scale biodiesel facility) for engineering, business and architecture students at the University of Applied Sciences-Dresden. They will be presenting the results of this project at the upcoming ASEE Annual Conference in Vancouver in June.

Environmental Engineering Professor Paul Gremillion is in his second year of leave working in Vienna, Austria for the United Nations Development Program and the Global Environment Fund. He is managing technical activities on the Nubian Sandstone Aquifer Project and other projects in the Nile River basin. Working with international consultants, he is developing numerical basin models including water balance, routing, stable isotope balances, and devising data-sharing mechanisms.

## STUDENT ACTIVITIES

CENE Senior Capstone Projects 2011 are underway! For full project details, check out: <http://www.cefn.s.nau.edu/Research/D4P/ProjectList.shtml#Civil%20and%20Environmental%20Engineering>

- Mars Hill/Lowell Observatory Truss Bridge
- City of Sedona Shelby Road Improvements
- Pioneer Historical Museum Master Plan and Trail Design
- Sustainable Greenhouse Design
- Schultz Creek Hydrology & Hydraulics Investigation at the Museum of Northern Arizona
- Landscape-scale Treatment for Snowpack Management
- NAU Capital Assets Traffic Signal Evaluation and Redesign
- ASCE Steel Bridge and Concrete Canoe
- Rainwater Harvesting – NAU Buildings
- New Mexico State University's WERC Environmental Engineering Competition: Clean Energy Water Disinfection for Small, Remote Rural Communities

The CM program sent four competition teams to the Associated Schools of Construction student competitions in Reno this year. This year we sent a Heavy and Civil Team, a Building Information Modeling Team, a Preconstruction Team, and a Commercial Team. Over 1200 students attended the event, and the competition was fierce. Our Commercial construction team placed 2nd out of seventeen universities in the Region 6 commercial category.



CM student Alek Herrick builds his solar heat exchanger at NAU Property Surplus.

Alek Herrick, a senior CM major, was awarded a Hooper Undergraduate Research Award for his design of a "Simple Solar Heat Exchanger". The project was installed on the south wall of NAU Property Surplus building. "I want to make a noticeable difference towards reducing our impact on the environment here at NAU. There are projects and new technologies that cost millions of dollars to develop, but what about the small changes we can make in our lives? The "Simple Solar Heat Exchanger" is an example of a small, effective, cost efficient, proven prototype design."

Assembling a bridge



## GRADUATE PROGRAMS

With the "Bachelor's +30" requirement in civil engineering right around the corner, we are gearing up with our two engineering master's programs. Our MS program is a 30-hour thesis-based program and our MEng program is a 30-hour non-thesis or project-based program. Both programs will provide a breadth of civil or environmental engineering courses with a primary focus on sustainable systems. We are also implementing a new "Integrated Bachelors/Masters Program" for exceptional undergrads who want to get started on their master's degree while finishing up their BS degree. For more information, contact [bridget.bero@nau.edu](mailto:bridget.bero@nau.edu).

The CM master's program has 25 students, while the Project Management master's program has almost 100. NAU now has one of the largest online Project Management graduate programs in the United States.

## ALUMNI SHOWCASE

Congratulations to CE alumnus Tim Kinney of Kinney Construction Services (KCS) and CM alumna Kimberly Trotta for their award-winning work on the Museum of Northern Arizona. This project was awarded Engineering News Record's Best of the Best 2009 Award in the Green Building category.



Museum of Northern Arizona Collections Building



Join our LinkedIn social network and connect with more than 140 friends and alumni. If you are not on our LinkedIn email, contact [john.tingerthal@nau.edu](mailto:john.tingerthal@nau.edu) or [stephen.mead@nau.edu](mailto:stephen.mead@nau.edu).

## Giving to CECMEE

Directing a donation to the CECMEE Department is a great way to make sure your dollars directly help the programs you care about. You can specify which program (CM, CE, EnE) or activity (scholarships, lab equipment, student groups, projects, faculty development, etc.) you want to support. Contact Bridget Bero ([bridget.bero@nau.edu](mailto:bridget.bero@nau.edu)), Steve Mead ([stephen.mead@nau.edu](mailto:stephen.mead@nau.edu)) or Elizabeth Daoust, Director of Development for the College ([Elizabeth.daoust@nau.edu](mailto:Elizabeth.daoust@nau.edu)) or online <https://alumni.nau.edu/giving.aspx>.

## Help Keep Us Sustainable!

In our efforts to become a carbon-neutral campus and avoid having to send paper newsletters, we would appreciate receiving your email address! Please email [bridget.bero@nau.edu](mailto:bridget.bero@nau.edu) from your address.