



CIVIL TALK

Department of Civil & Environmental Engineering Annual Newsletter

2009 Issue

Reservoir Delta Sediments and Water Quality



Dr. Gus Williams and Dr. Jim Nelson continue to research reservoirs with seasonally or drought exposed sediment deltas, such as Lake Powell or Lake Mead, which seem to have higher biological oxygen demand than can be attributed to inflow sources. The most likely source of these elevated loadings is re-suspended sediments from the exposed deltas. These processes, such as sediment nutrient levels, physical, chemical, and hydrological control, temporal patterns of flow and loading, and other potential issues are not well understood.

Study Methods: The research team collects data and samples twice a week at Deer Creek reservoir located near Brigham Young University. They use advanced in-situ sensors to measure profiles of temperature, depth,

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Please help us update our alumni database with your current contact information and preferences. Return the form on page 11 or visit www.et.byu.edu/ce and click on the "Alumni Update" link.

Surveying in Egypt

Harold Mitchell, a part time faculty member, led a team of engineers and surveyors to Egypt for two weeks in February. Other team members were Alexander Lovett (Senior, Civil Engineering), Dr. Brent Benson (PhD, BYU 2001), and Todd Osborn. The team assisted in the BYU archaeology project at Fag el-Gamous, headed by Dr. C Wilfred Griggs, Professor of Ancient Scripture.

The archeology project is currently focused on excavation of a large cemetery at Fag el-Gamous in the Fayum province of Egypt. The cemetery is believed to be about 300 acres in area. Bodies are buried at several levels and date from both pre-Christian and Christian times. During the 2009 season, the project excavated only one 5x5 meter square and recovered 67 bodies. The remains, as well as wrapping textiles and any grave goods, are carefully examined in the study of the people and how they lived.

Using differential GPS equipment, the engineering team established a grid system covering the cemetery and set permanent monuments that can be used to tie together future excavations. The team also acquired data to make a detailed topographic map of the cemetery



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We would greatly appreciate your help in meeting ABET requirements through participating in our alumni survey. Participation only takes a few minutes and will be of great benefit to our department. The survey will be closing Oct. 1st. You can access this survey by going to www.et.byu.edu/ce and clicking on the "Alumni Survey" link.

Message from the Chair



Dear Alumni and Friends

It has been a very interesting, busy, and successful year for our department. We continue to have the wonderful opportunity to educate students who we know will be the future leaders of our profession. The quality students that study in our department are truly the greatest strength we have.

We have just completed a self assessment of our department in preparation for a routine seven year review by the university. We discovered some interesting things about our programs. The strengths we have identified include:

- High student satisfaction with department programs and faculty as indicated by both exit interview data and the 2008 NSEE survey
- Balanced programs in Water Resources & Environmental, Geotechnical, Structural, and Transportation with highly rated faculty teaching in all disciplines

- Well prepared graduates proven by 92% of our students passing the national FE exam relative to 75% nationwide
- Ability to educate a large number of MS students consistent with requirements of the civil engineering profession
- Opportunity for many students to participate in quality international and mentored research experiences
- Effective, organized, safe laboratory space
- Strong alumni advisory functions and fund raising support
- Nationally ranked student chapter of the American Society of Civil Engineers

One of the major challenges we face at this time is the inability to provide scholarships to undergraduate and graduate students at the level to which we have been accustomed. This situation has resulted because of the effects the recession has had on our endowments. To help mitigate this situation, I strongly support our Scholarship Society's efforts to seek immediate contributions that we can directly grant to students as scholarships. If you are able to contribute to our scholarship funds at this time, our students would be helped immensely.

Our faculty have been extremely busy this past year and this newsletter is able to highlight only a few of their accomplishments. We are very pleased with the success of our two study abroad programs. These classes annually provide approximately 40 of our students the opportunity to either work directly with counterparts in Mexico to help solve water quality issues there, or to study the design, visit, and climb aboard the existing mega structures in China. Students participating in these events continually rate them as the most stimulating and inspiring aspects of their education.

We are very excited about the new laboratories and equipment now available for our programs. In particular, our new transportation laboratory in room 376 of the Clyde Building is now fully operational. It functions as a traffic control observation and research center with connections to all of the traffic cameras currently utilized by the Utah Department of Transportation and the City of Provo. We will also have a connection to an on-campus intersection which camera system we are able to control. Next time you are in Provo, come and visit this lab – you will like it.

As always, the department welcomes your continued interest and support. Please feel free to visit us anytime and provide us with information you think might be important. Most importantly, stay connected with us. I wish you the best in all that you do.

Sincerely,
Steven E. Benzley

Scholarship Society

The Life-Long Learning Conference

The inaugural Life-Long Learning Conference was held October 8-11, 2008 at the Marriott Hotel in Provo, Utah. Initiated by the Civil and Environmental Engineering Department Scholarship Society Board of Directors, this conference was organized to reach out to BYU alumni and the general engineering community to renew acquaintances, keep current on technical developments, provide networking opportunities, and to reconnect with former classmates and Department of Civil and Environmental Engineering faculty and staff. The conference was a great success with 114 practicing engineers, managers, students, and faculty participating in two full days of technical and professional presentations topped with the annual Fish Fry on Friday evening and the Homecoming Football Game on Saturday.

Special thanks to all of the presenters and faculty who volunteered their time and resources to attend the conference and share technical expertise with those in attendance. Topics covered at the conference were designed specifically to provide broad appeal to engineers in all phases of their careers -- a PE refresher course, state of the practice technical subjects, and engineering management/ownership issues. The PE refresher course was taught by BYU Civil and Environmental Engineering faculty volunteering their time to teach subjects in their area of expertise. Presentations for the general assembly were technical subjects such as culvert design for fish passage, seismic design, transportation safety, and hydrology modeling, alternated with engineering management/ownership subjects such as starting an engineering firm, ownership transfer, and forensic case studies. Presenters included faculty, members of the Scholarship Society Board, and guest speakers such as Blaine Leonard, Utah Department of Transportation Research Program Manager and ASCE President Elect, John Njord, Executive Director of the Utah Department of Transportation, and Clint Topham of Parsons Brinkerhoff.

Participants received up to 15.5 professional development hours and the proceeds of the conference went to the BYU Civil and Environmental Engineering Scholarship Society Endowment to support engineering students attending Brigham Young University.

Surveyed feedback from the conference participants commonly indicated a desire to reconnect with fellow alumni at future conferences. The Scholarship Society Board intends to make this conference a new tradition that will be held every other year, with the next conference targeted for October 2010. Make plans now to attend and more information will be available soon at www.et.byu/ce!



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ASCE Rocky Mountain Conference

The BYU ASCE student chapter hosted the annual Rocky Mountain Regional Conference April 2-4, 2009. We appreciate the support of all the judges and volunteers, and the sponsorship of HNTB and the College of Engineering and Technology. The participants and coordinators spent a great amount of time preparing for the events of the competition and the results show it paid off.

The first event of Rocky Mountain Conference was a contest to build a structure of collected canned foods. This year's theme was landmarks and we had more than four times the amount of cans as last year to donate to the local food bank. BYU again received first place in this competition. Some of the buildings included Big Ben, the Coliseum, Washington Monument and Mall, and the Empire State Building.

Some of our coordinators created a new competition called the Killer Weir. This competition challenged schools to build a weir which was tested in our flume by floating a Barbie and Ken down to see if they would get caught or float through. This attracted many observers and we appreciate Dr. Hotchkiss

for his support. All the participating schools had unique designs.



The highly anticipated concrete canoe races were unfortunately cancelled due to freezing conditions and strong winds which caused white caps in the marina. In spite of these conditions, the participants braved the cold and swamped their canoe to prove it floated. It was COLD!!! The top three schools for the concrete canoe were: (1) New Mexico State University, (2) US Air Force Academy, (3) BYU.

The steel bridge event involved every registered school: 14 in total. Only one school's bridge collapsed due to a poor weld. The judges were efficient, and the participants were quick and focused in assembling and building. The final results of the competition were: (1) University of Colorado - Denver, (2) South Dakota School of Mines and Technology, (3) New Mexico Tech.

The overall winners of the Rocky Mountain Conference out of the 14 participating school this year were: (1) South Dakota School of Mines and Technology, (2) US Air Force Academy, (3) New Mexico State University, (4) BYU.

BYU performed successfully at this year's conference, placing first in both the technical and nontechnical paper competitions, same as last year. The steel bridge held three times as much weight as last year, and the concrete canoe team took third overall. Many of the students were able to attend the Rocky Mountain Conference for the first time this year, either as a spectator, volunteer, or participant, and look forward to being more involved when they head down to sunny New Mexico next spring.

ASCE Officers

Fall 2008

President:	Jeremy Dye
1st VP:	Trevor Hawkes
2nd VP:	Bryan Wilson
Secretary:	Sam Lasley
Treasurer:	Cody Kreitel
Publications:	Lisa Larsen

Winter 2009

President:	Bryan Wilson
1st VP:	Sam Lasley
2nd VP:	Gabriel Smith
Secretary:	Taylor King
Treasurer:	Matthew Kelly
Publications:	Jessica Hanson

Faculty Research

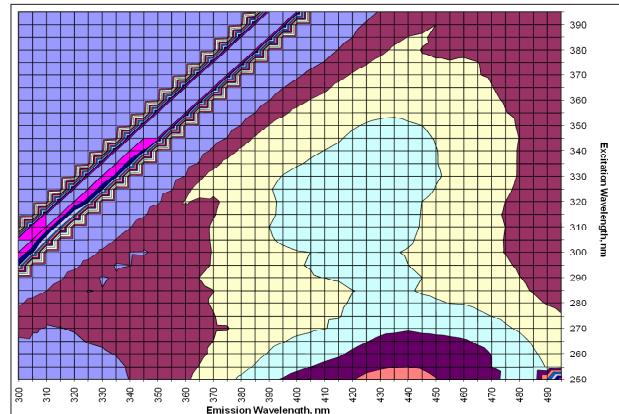
Delta Sediments

Continued from page 1

chlorophyll, nitrates, pH, conductivity, dissolved solids, dissolved oxygen, and turbidity. They also take water samples for later laboratory analysis, including new work using fluorescence measurement techniques. The department recently acquired a high resolution sonar system to develop detailed sediment movement and mass balance data.

Students: A number of students are currently involved in this project. The graduate students are: Oliver Obregon (PhD) - modeling; Warren Casbeer (recently graduated) - sediment studies; Tamara Rabadi - curriculum development; Rushit Hila - data storage and visual analysis methods; Ashley Childers - sonar measurements and techniques; Derek Lounsbury - sediment phosphorus geochemistry. They are assisted by two undergraduates: Caleb Buahin and Reed Chilton. Two other undergraduates, Ron Kent and David Isleman, recently left the project for work and graduate school.

This work is supported by on-going research programs with the Bureau of Reclamation, the Central Utah Water Conservancy District (CUWCD), the Provo Watershed Users Council, and existing research and educational partnerships in Mexico.



Measurement results showing the magnitude of the fluorescence emission at each wavelength. This is used to determine the amount of organic material in the water.

Two other undergraduates, Ron Kent and David Isleman, recently left the project for work and graduate school.

Dr. Jensen's Sabbatical

Dr. David W. Jensen took a sabbatical from BYU this past year to help two sister companies in Spanish Fork, Utah- Spectrum Aeronautical and Rocky Mountain Composites- in their quest to design and produce a highly-innovative, all-composite airplane known as the S.40 Freedom. Powered by two GE Honda HF120 turbofans, the 9-place S.40 will have a maximum takeoff weight of 9,550 pounds, less than half that of the 20,200 pound Cessna Citation XLS+.

To achieve extremely lightweight aircraft structures, Rocky Mountain Composites combines their own proprietary carbon composite material, known as *fibeX®*, with cutting-edge structural design and manufacturing approaches. As the Head of Structures for these companies, Dr. Jensen assisted with the efforts to design, manufacture, test, and certify various structural components on the aircraft, including the wing, fuselage, nacelle, etc. The first major structural accomplishment was the successful demonstration test of the co-cured composite wing box beam. A more recent significant milestone was the completion of the first of a series of Fuselage Manufacturing Demonstrator (FMD) test articles, which are approximately 28 feet long with a maximum diameter slightly greater than six feet. The FMDs are used to validate the production process for the aircraft's all-composite, one-piece co-cured fuselage.



Before Curing



After Trimming

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Faculty Research

Dr. Jensen's Sabbatical

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Co-cured composite structures are inherently safer than traditional secondarily bonded composite structures while avoiding the labor and weight penalties of mechanical fasteners (typical of aluminum aircraft). Due to the proprietary nature of the manufacturing process, the company is not releasing technical details, but this first FMD clearly demonstrates the potential for large, co-cured composite structures. According to Spectrum, the empty fuselage weighs approximately 40 percent less than the equivalent-size aluminum fuselage of a Cessna Citation XLS+.

While supporting the design, manufacturing, and testing of these innovative composite aircraft structural components, Dr. Jensen also prepared the governing structural certification plan for the Spectrum S.40 Freedom aircraft. This plan has been accepted by the FAA, opening the door to streamlined certification of the entire aircraft structure.

Dr. Jensen also prepared and submitted responses to the FAA regarding proposed changes to the FAA advisory circular for certification of composite aircraft structures (FAA AC20-107), including submission of a proposal to consider a novel method for substantially decreasing the time and effort required to obtain accelerated moisture degradation data for composite structures.

Transportation Safety in Utah

Transportation safety has been, and continues to be, a critical component emphasized by the United States Department of Transportation (USDOT). The number of deaths on highways in the United States has remained steady over the past 15 years at approximately 40,000 fatalities per year. Although the total number of fatalities is relatively constant, the fatality rate is dropping slightly due to an increase in the total number of vehicle miles traveled (VMT) in the nation.

The Utah Department of Transportation (UDOT) has placed transportation safety at the forefront of their priorities over the past several years.

One of the more active programs in the state is the "Zero Fatalities: A Goal We Can All Live With™" campaign. Since the inception of the campaign, awareness of the dangers of traffic safety has increased while traffic fatalities have dropped by 27 percent since 2000 in the state of Utah.



Over the past several years, Dr. Grant Schultz and his students have teamed with UDOT to determine the effectiveness of planning practices on transportation safety in an effort to improve safety on the state highways. These projects have included research to assess the safety benefits of access management techniques, to prioritize access management implementation in Utah, and to explore the relationships that exist between access and conflict points in the vicinity of major crossroads that can then be utilized in developing guidelines for intersection setback from these major crossroads. Each of these research projects has generated useful data that can help in the planning and safety analysis processes at UDOT.

Additional research has been conducted on topics specific to the Zero Fatalities campaign. In 2006 and 2007, Dr. Schultz evaluated fatigue and drowsy driving in the state in an effort to identify critical corridors on interstate routes and to evaluate the effectiveness of drowsy driving signage installed in the west desert on I-80. Research has also been conducted at intersections on high-speed arterials to determine the safety benefits of the installation of advance warning signals on these arterials.

Dr. Schultz has enjoyed the opportunity to participate in these projects and to work on identifying ways to improve safety in the state. He looks forward to continuing his safety related research with UDOT in the years to come.

Faculty Research

Lateral Spread Research



Bridge with abutment rotation and displacement due to liquefaction induced lateral spreading in 1991 still functioning in 2009 on major roadway in Costa Rica

In April 2009, Dr. Kyle Rollins returned to the scene of a large earthquake in Costa Rica to obtain available soil boring information and bridge plans. He was accompanied by CE Department Technician, David Anderson and former MS student, Daniel Avila. Avila works for the Utah Department of Transportation and is currently overseeing work to reconstruct I-15 in Utah Valley. Seismic bridge design is an important issue for this work. A native of Argentina, Avila speaks excellent English and Spanish and served as the interpreter for the group.

In 1991, a magnitude 7.5 earthquake in Costa Rica resulted in significant damage to highway and railroad bridges along the Caribbean coast, severely disrupting transportation links and the economy of the country. In many cases, the bridge damage was associated with liquefaction-induced lateral spreading in which large soil blocks riding on a liquefied sand layer moved down slope

and impacted a bridge pier or abutment. Following this event, Dr. Youd and Dr. Rollins, along with two graduate students, traveled to Costa Rica to document damage from liquefaction induced lateral spreading with NSF funding. During this visit, detailed engineering surveys were made at five bridge sites to define the lateral spread displacements of the ground, the resulting movement of the bridge piers and abutments, and damage to the bridges. Although lateral spread displacements of several meters occurred at most sites, surveys indicated that one bridge was able to withstand the forces from the lateral spreading and limit displacements to less than 50 mm. The bridge abutments at this site were supported by four to five rows of piles while failed bridges were typically supported by only one or two rows of piles or large diameter drilled shafts.



Bridge damaged due to liquefaction and lateral spreading in 1991 Costa Rican Earthquake

At the time of this earthquake in 1991, engineers were poorly prepared to evaluate the performance of bridges in liquefaction induced lateral spreads. However, in the intervening 18 years, Dr. Youd and Dr. Rollins have worked to develop methods to determine lateral spread displacements and assess the response of piles and pile caps in liquefied sand during lateral spreading. To gain wider acceptance in engineering practice, these methods need to be verified or calibrated using well-documented case histories. The case histories from the 1991 Costa Rica earthquake provide performance data for a variety of full-scale structures subjected to earthquake induced lateral spreading which can be extremely valuable in this effort. Unfortunately, bridge design plans and soil boring information were not available for many of these case histories.

In an effort to collect this information, Dr. Rollins and his team flew to Costa Rica and met with officials at the Ministry of Public Transportation in San Jose and with researchers at the University of Costa Rica. In addition, the team met with drilling contractors to assess the logistics and costs of additional drilling at these sites. Finally, they visited the bridge sites to evaluate the potential for drill rig access at these locations. Since returning, Dr. Rollins has submitted research proposals to the USGS and NIST to obtain funds for additional geotechnical studies at these sites.



Replacement bridge constructed after earthquake

International Experiences

Surveying Egypt

Continued from page 1

and surrounding area. Local workers from the archaeology project were assigned to assist the engineers, carry equipment, and pound markers. Todd said, "It was the largest survey crew I've ever had. We didn't speak any Arabic and they didn't speak much English, but we got along great." The Egyptians associated with the project have a great respect for engineers (mohandis in Arabic) and treated team members very well. Once they understood what was needed, they were always anxious to help.



Fag al-Gamous is located on the eastern edge of the Fayum oasis south of Cairo. The oasis is lush and green with palm trees and fields of alfalfa, grain, vegetables, and orchards. The area is irrigated by natural sources and by a large canal that brings water from the Nile River. Legend has it that the canal (named the Canal of Joseph) was originally built by Joseph whom we read about in Genesis. Surrounding the oasis, however, is severe desert. It is about a one stride distance from lush green to nothing but sand and rock.

A more challenging assignment for the engineering team was to measure and make virtual reconstructions of two pyramids. It was the first time GPS was used to map the structures.

The Seila Pyramid is located on a ridge about two km southeast of the cemetery. It was virtually unknown until excavated by the BYU team about 20 years ago. Inscriptions revealed that it was constructed by a pharaoh known as Snefru (the predecessor of Cheops who built the Great Pyramid at Giza) about 4,500 years ago. The pyramid was originally constructed as a step pyramid but may have been cased to make a true pyramid. It is no longer entirely complete since many of the stones have been removed and the top has been eroded by windblown sand during the past four-plus millenia. The team made measurements of the remaining faces and interior of the structure to construct a computer model of the pyramid when it was in its completed state.

Meidum Pyramid is a much larger structure located in the Nile Valley, 10 km east of Seila Pyramid. It was built by the same pharaoh. Again, it was originally a step pyramid but was cased to become a true pyramid. It is believed that the outer casing collapsed sometime at or near its completion. There was apparently a structural weakness where the casing blocks did not tie to the step faces. All that remains now is some of the original casing masonry near the base and much of the step pyramid core surrounded by a pile of rubble. The engineering team was allowed, by the Egyptian Supreme Council of Antiquities to take GPS measurements at Meidum to make a virtual reconstruction of the pyramid. Dr. Griggs is wondering if its top was at the same elevation as the top of the Seila pyramid. The answer is not in yet. Stay tuned.

The team stayed in Cairo and traveled some 60 miles to the site each day. Cairo is a traffic engineer's worst nightmare. Lane lines on the highways seem to be for decoration only. Everyone was glad for local drivers each day, for they know the 'rules' and can avoid accidents.

There was also time to tour other places in Egypt. The ancient people must have been excellent engineers to accomplish the remarkable works the team visited. Dr. Griggs' favorite pyramid game goes like this. The Great Pyramid at Giza was built during the reign of Cheops. He was pharaoh for 20 years. The pyramid consists of some 2,500,000 blocks with an average weight of 2.5 tons. If the construction team worked 16 hours per day, seven days a week for 20 years, they would have to place one block every 2.8 minutes. That includes quarrying, cutting, moving and placing the blocks. You figure out how they did it!



International Experiences

Mexico Engineering Study Abroad

For the fifth consecutive year, a group of students participated in collaborative projects with researchers in the central Mexico cities of Guadalajara and Zacatecas. This year, a total of 15 students participated on six different projects. This study abroad is part of a class that runs during winter semester. BYU students are divided into teams of two to four and paired with similar groups in Mexico. Our Mexican counterparts select hydrologic and/or hydraulic problems that are relevant for them. They share ideas and data and together develop solutions using the WMS software developed as part of Dr. Nelson's research here at BYU. One of the problems was modeling water quality of one of the

largest reservoirs in Mexico

that hopefully can serve as a guideline for better management practices. Other projects included flood plain modeling and design of detention basins and channel improvements to mitigate future problems and the development of a water balance in a remote watershed. This year Dr. Saito with a team of transportation students joined the groups led by Dr. Nelson and Dr. Hotchkiss. They developed simulation models for Zacatecas and showed them how simple changes in signaling could greatly improve traffic congestion during peak hours. The projects provided students with an opportunity to apply what they learned in the classroom while lending service and developing lasting friendships with colleagues in Mexico.



China Mega Structures Study Abroad

For the second year in a row, the department was able to send Dr. Balling and a group of 22 students to study the mega structures of China for two weeks. This study abroad is part of a class that runs during the spring term. Each student completed an in-depth case study of the analysis and design of a skyscraper, a bridge, and a complex found in China. Along the way, the students were able to develop leadership skills by communicating and interacting with the engineering professionals on site tours and were exposed to the innovative designs of engineering firms such as Arup. Students gained a global awareness of the culture, politics, and economy of China and were given the opportunity to develop their character through studying the effect engineering has on the community and the environment. The students were able to visit the tallest building in the world, the fastest train in the world, the largest arch bridge in the world, and the largest dam in the world, along with other tourist attractions such as the Great Wall and the world's largest Buddha. Dr. Schultz accompanied this structures trip in hopes of establishing a transportation element in future trips as well. Every participant was able to walk away from this experience with a collection of unforgettable and influential experiences.



Site tour of Stone Cutters Bridge

Awards and Recognitions

Faculty Awards

Rick Balling: Keynote lecture at the International Conference on Modeling, Simulation, Applied Optimization, United Arab Emirates. "Design by Shopping using Multi-Solution Genetic Algorithms."

Spencer Guthrie: BYU Young Scholar Award - This award encourages and acknowledges outstanding promise and contributions by faculty in the early stages of their academic careers.

Rollin Hotchkiss: Elected to leadership of ASCE's Environmental and Water Resources Institute (EWRI): 2009 Vice President, 2010 President Elect, 2011 President.

Kyle Rollins: BYU Maeser Excellence in Research and Creative Arts - This award honors faculty for outstanding research and creative accomplishments; James Cooper Best Paper Award - 6th National Seismic Conference on Bridges, July 2008; Fall 2009 Cross-Canada Geotechnical Lecturer, Canadian Geotechnical Society; Vice Chair of ASCE GeoInstitute Technical Committee on Ground Improvement.

Mitsuru Saito: 2009 ASCE Frank Master's Award - This award recognizes the best example of innovative or noteworthy planning, design, or construction of transportation facilities; Guest Editor of Computer-Aided Civil and Infrastructure Engineering.

Grant Schultz: 2008 Civil Engineering Outstanding Faculty; Chair for the Research Subcommittee of the Transportation Research Board (TRB) Committee on Access Management; Executive Committee Member of the Transportation Education Council, Institute of Transportation Engineers (ITE).

Leslie Youd: Honorary Membership in the Earthquake Engineering Research Institute (EERI).

Student Awards

Caleb Buahin and Rushit Hila: AWRA Utah Section - 1st Place Undergraduate Paper, "Application of Geographic Information System (GIS) in Water Quality Database Management, Analysis and Presentation."

Warren Casbeer: AWRA Utah Section- 1st Place Graduate paper, "Understanding Nutrient Distribution in Delta Sediments: Field Data From Deer Creek Reservoir."

Paul Dixon: ASCE Rocky Mountain Conference - 1st Place Paper - Technical Division.

Kevin Franke: \$3,000 fellowship and travel grant to annual meeting in Orlando from ADSC: The International Foundation Drilling Association.

Charles Hope: \$20,000 fellowship from The Portland Cement Association to research a new economical technology in highway construction.

M. Scott Shea: 2009 Ellis Mathes Scholarship (\$2,000) from the Intermountain Section of the Institute of Transportation Engineers.

Joseph Webb: Best Paper at the 2009 Bonneville Chapter of the American Fisheries Society Annual Conference, "Culvert Rehabilitation and Fish Passage: At Odds?"

Charles Hope is the third BYU student to receive a fellowship from the Portland Cement Association for the third year in a row! The previous recipients were Paul Dixon in 2008 and Ben Reese in 2007. As this award is only given to under ten students nationally, this is a great honor for these BYU students as well as the Civil Engineering Department.



Kirsty Ferrell, member of the BYU Swimming Team and CEE student, was named to the All-Mountain West Conference Team this year. To be placed on this team, Kirsty had to place in the top eight of a women's event. Kirsty comes from a family with great tradition in Civil Engineering and swimming. Her brothers John and Jeff are pursuing an MS and BS in Civil Engineering respectively, and her sister Monica Ferrell received her Civil Engineering MS in April 2005. Her family has civil engineers going back three or four generations, including parents Doug and Nancy Ferrell.

Tell Us About Yourself!

We always enjoy hearing from our alumni! Please take a moment and fill out this short information form. We will compile the responses in future issues of Civil Talk so that your classmates can know what you are doing.

Alumni Update

Name _____ Spouse's name _____ Date of Response _____

BYU Civil Engineering Degree(s) (level, date) _____

Other Following Degree(s) (level, date, institution) _____

Your Employer _____ Job Title _____

Job Function _____

Business Address _____

Is this a new address? Work Phone _____ Fax Number _____

Home Address _____

Is this a new address? Home Phone _____ Cell Phone _____

We invite you to provide us with news of yourself. We are interested in your job description, jobs, new degrees, promotions, research, awards, publications, and news of your family and life outside work. News is welcome even if you do not wish it to be included in our alumni updates section. Also, if possible please attach your business card and a picture of you or your family to this form when you return it.

Please fold in half, tape on the top, and mail

Civil Talk
Brigham Young University
Civil & Environmental Engineering
368 Clyde Building
Provo, UT 84602-4081



Fish Fry and Scholarship Donations

Scholarship Society Annual Alumni Fish/Chicken Fry & Golf Tournament

Don't miss this chance to celebrate and reunite with old BYU friends. Come to the Civil & Environmental Engineering Scholarship Society Alumni Homecoming and Reunion.

When: Homecoming Weekend, Friday, October 23

Where: Clyde Building Student Lounge

Time: Social Hour 5:00 p.m. - 5:30 p.m.

Dinner & Program 5:30 p.m. - 7:15 p.m.

****New this Year!** The First Annual Civil Engineering Golf Tournament will be held Saturday, October 24, 2009 at Fox Hollow Golf Course (formerly Tri-City Golf Course) in conjunction with BYU Homecoming. See back page for more information and RSVP with the Fish Fry!

We will be finished by 7:15 p.m. which will enable you to enjoy other Homecoming activities that evening.

Please RSVP the information listed below in one of the following ways: (1) mail this form to BYU Civil Engineering, Fish Fry, 368 Clyde Building, Provo, UT 84602; (2) Call (801) 422-2811; (3) online at www.et.byu.edu/ce and click on the link for the CE Homecoming Fish Fry.

Golf Tournament Fish Fry Both

Name: Last _____ First _____ M.I. _____

Address _____ City/State/Zip _____

Email _____ Phone: Home _____ Cell _____

Number Attending Fish Fry: Adults _____ Children _____ Number Attending Golf Tournament _____

Names of people attending Golf Tournament _____

Please RSVP by Friday, October 2, 2009

BYU Civil & Environmental Engineering Scholarship Donations

Please direct my gift to College Annual Fund/Civil Engineering: 30120438

Name _____ Date _____

Address _____

City/State/Zip _____

Phone _____ Fax _____ Email _____

Alumni Friends of BYU

Select Amount

\$25 \$50 \$150 \$300 \$1,000 \$2,500 Other _____

Select payment Method

Cash Check

Please make checks payable to BYU with nothing on the notation line. You may also donate via credit card by visiting our department website, www.et.byu.edu/ce and click on the "Contribute to the Department" link.

**If you desire, you may also include a separate letter of explanation regarding this donation.

Scholarship Society
Brigham Young University
Civil & Environmental Engineering
368 Clyde Building
Provo, UT 84602-4081



Alumni Updates

Craig Boren '02

Craig Boren recently moved from Phoenix, Arizona where he was working as an engineer for RBF Consulting. He was offered a position at Ensign Engineering here in Utah and decided to take it. He currently works as a Project Engineer in the Pleasant Grove office where he manages residential and commercial projects of various sizes. In addition, he recently applied for his Utah Professional Engineer's license and hopes to soon become a professional engineer. He is also in charge of his company's planning and urban design color rendering division. Many of his clients request exhibits or site plans done in a colorful rendering and he has had the opportunity of adding that capability to his company's resume.

Dale S. Preece '79

Dr. Dale S. Preece retired from Sandia National Laboratories as a Distinguished Member of Technical Staff in the Explosives Applications Department following 27 years of service. Dr. Preece performed research and development on explosive devices such as conical and linear shaped charges, explosively formed projectiles and Improvised Explosive Devices (IED's). When our soldiers began being injured by IED's, he initiated efforts to develop armor systems for lightweight military vehicles such as Humvee's and studied body armor improvements that have been adopted by the US Military. Dr. Preece developed a significant portion of Sandia's capability for predicting explosive/structure interaction. This capability is crucial for explosive vulnerability studies to assess the effect of large vehicle bombs on structures such as the Murrah building in Oklahoma City. After 9/11, he was deeply involved in US National Security studies on infrastructure vulnerability to explosive attack for the Department of Homeland Security, the Department of Energy, the Department of Defense, and the Nuclear Regulatory Commission. As a Sandian, Dr. Preece has also done research and development on methods to improve rock blasting and has written and applied computer programs for predicting the rock blasting process and aiding in blast design. This work began with oil Shale in the early 1980's and continues with underground and surface coal and metal mines throughout the world. During his Sandia career he authored 118 technical papers and journal articles on a variety of topics. He has also contributed to several books and has been invited to present a number of keynote addresses at conferences over the years. Dr. Preece has been the recipient of many awards including the Sandia award for "Individual Exceptional Service" and the "President's Award" from the International Society of Explosives Engineers. Dr. Preece is now employed as a Senior Research Associate in the Global Technology Development Group of Orica, the largest manufacturer and distributor of commercial explosives in the world. He lives and works in Watkins, CO. He and his wife Shauna are the parents of three grown, educated and married children, and they currently have four grandchildren and two on the way.

Welcome to the Department

Welcome Kerry Hill!

Last October, the Civil and Environmental Engineering Department hired Kerry Hill as the new Department Secretary. Kerry graduated from BYU in 2007, but is back in Provo while her husband, Brad, works toward his undergraduate degree at BYU. Kerry and Brad are originally from the Northwest. Kerry enjoys being in the outdoors, whether that involves hiking, biking, playing tennis, or barbequing. She also loves spending time with her family. Kerry is very grateful for the opportunity to work in the Civil and Environmental Engineering department.



First Annual Civil Engineering Golf Tournament!!

****New this Year!** The First Annual Civil Engineering Golf Tournament will be held Saturday, October 24, 2009 at Fox Hollow Golf Course (formerly Tri-City Golf Course) in conjunction with BYU Homecoming. Meet at the golf course at 8:00 A.M. and there will be a shotgun start at 8:30 A.M. The Golf Tournament is open to all Civil Engineering Alumni and their family and friends. The tournaments will be a 4-man scramble (9 holes). There will be prizes awarded to the first place team, the person with longest drive, and the person closest to the hole. The cost to enter this tournament is \$35.00 per person or \$140 per team. Included in the cost is greens fees, a cart, a sleeve of balls, and lunch. Get your team together or just sign up and be placed on a team. Space is limited to 72 players so RSVP soon to ensure your spot (first come first serve). To RSVP see page 13, call us at (801) 422-2811, or visit our website at www.et.byu.edu/ce and click on the link for the First Annual Civil Engineering Golf Tournament (please let us know your name, e-mail, phone, how many will be playing, and the names of the people that will be playing).

Fox Hollow Golf Course is located at 1400 North 200 East, American Fork, Utah



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