

# C I V I L T A L K

The Department  
of Civil &  
Environmental  
Engineering Annual  
Newsletter

Brigham Young  
University  
Summer 2005

Dear Alumni & Friends,

It is a pleasure to greet you and give you an update of the progress and happenings in the Civil & Environmental Engineering department. This past year has been a successful and productive one for our students and faculty. Several accomplishments are noted in the articles within this newsletter. We hope it has been a great year for all of you as well.

We are making some changes in our faculty this year. Dr. LaVere Merritt and Dr. Glen Thurgood (pg. 15) retired after many years of association with the department and university including several years as Department Chair, Assistant Chair, respectively, and on major University committees. Since last fall, Dr. Wayne Downs has been working at Hill Air Force Base as the hazardous water program manager, and is no longer with us in the department. Also, in May, Dr. Warren Lucas left the department to take employment with Cosper, Karren, Roblez (CKR) as a senior design engineer. We sincerely appreciate LaVere's, Glen's, Wayne's and Warren's great service and contributions and wish them well. Dr. Gus Williams (pg. 5) joined the faculty last fall. Gus came from DOE Nevada Test Site and was previously with Argonne National Laboratory. Gus is already contributing to the department in scholarship and mentoring. Dr. Rollin Hotchkiss (pg. 6) joined the faculty this fall. Rollin has been at Washington State University as director of the Albrook Hydraulic Lab and brings a wealth of experiences with him. We look forward to Rollin's contributions in teaching and research. We are presently in the process of searching for a replacement faculty member in the structures area.

It's an honor for me to work with all our outstanding faculty members, past and present. This past year has been very productive. Our faculty had over 44 technical papers published, made 61 scholarly presentations, wrote 36 research proposals, were awarded research grants for over \$2 million, and most importantly, have taught and mentored about 400 undergraduate and 100 graduate students. The articles in this newsletter highlight some of the research being conducted by our faculty and students. Our students continue to be of outstanding quality and it is a pleasure to associate with them. The student chapter was awarded the Certificate of

Commendation. Service and activity are the hallmarks of our student chapter. We're very proud of our students who are academically strong, work hard to prepare themselves for successful careers, and are loyal to the high standards of ethics and spirituality traditional at BYU.



We especially want to thank all of you alumni who have graciously contributed to our student scholarship fund. The students and faculty express our heartfelt gratitude for your donations, some small and some large, and all sincerely appreciated. In the last 12 months we have received \$165,922 from alumni and friends. We have been able to financially assist 83 undergraduate students who are not eligible for university scholarships (many of you know about that). We have also helped 67 graduate students as there are no university graduate scholarships. One hundred percent of your contributions go directly for scholarships. The matching program still exists for donations of \$25 to \$5,000. There are always more students with financial needs than available funding. We promise to use your contributions efficiently and wisely.

You should know that we welcome your suggestions and advice with regard to our department curriculum and direction. We truly want to have the most effective, progressive, and successful civil engineering program. We would very much appreciate your academic and engineering practice contributions and advice, along with your scholarship contributions.

We appreciate your interest and support of the department. Let us know about yourselves and we will pass that along in the next newsletter through our alumni updates. We hope to see many of you again at our annual fish fry this year on October 14th at BYU's Homecoming (pg. 7 for details).

May this coming year be enjoyable and successful both professionally and personally.

Sincerely,  
Wood Miller

# JIM NELSON - BACK TO CAIRO

Most of you know or have read before that as a result of my research at BYU we have developed a program for watershed modeling that is used quite extensively within the US and abroad. Radwan Al-Weshah, who I have collaborated with over the years as a result of a trip Dr.'s Miller, Merritt and Rollins made in the mid 90's, now works for a UN organization as the Arab regional hydrologist. His role is to try and advise, facilitate, and bring together parties in the Middle East on issues related to Water Resources. His influence and recommendations are the primary reasons for trips that I and other students have previously made to Jordan and Egypt. In April of this year he invited Dr. Chris Smemoe and I to come and teach our WMS modeling software to engineers from the Iraqi Water Ministry. My first impression was, WOW, that will be an amazing opportunity and sounds pretty important. So, even though the travel was long and it created a mound of work for me both before and after I decided to try it. As the time drew closer I had a lot of second thoughts because of the work involved and, from all news accounts there was a sense of danger. Of course I am now ashamed that I entertained any such feelings as will be evident when I explain some of what happened during our visit.

We didn't want to go to Baghdad for the training, and frankly the organizers had plenty of concerns about safety and about the ability to organize logistically, so it was agreed to do the training in Cairo. We taught them how to use our watershed modeling program and take advantage of other recent technologies to help them build/renovate dams and other important water resources infrastructure. I think they were every bit as apprehensive about



us and our feelings towards them as we were about them at the beginning of the seven day training program, but as we worked together in an interactive setting the misconceptions soon evaporated and we became good friends. I have yet to teach a group of students that literally "hungered" and "thirsted" after new knowledge, especially with respect to technology. What lack there was with language skills and pre-requisite educational backgrounds was more than compensated for by their hard work and determination.

They shared with us stories of fear and hopelessness that touched our hearts, as did their overwhelming expressions of gratitude that we would take the time to come and share something so valuable to them. Some of their comments about what life has been like for the past thirty years were: "I lived like a miserable beast," "The Iraqi people were aimless wanderers, without purpose or direction," "Peoples hearts were cold like a stone." They told me that even if they could access a computer for learning they felt it pointless, and that education was more dangerous than helpful. You can imagine as they have shed the tyranny of Saddam Hussein's regime that they are like kids in a candy shop of learning. In short, it was one of the most humbling and gratifying experiences of my life. Humbling to be reminded of how much we take for granted, and gratifying to be a small part of improving their ability, and more-

over outlook on a brighter future.

Besides expressing gratitude for our training, they uniformly wanted me to know how grateful they are for the role America has played in bringing a hope for democracy and freedom to their people (they claim that this view is shared by 90% of Iraqis). Many of them were older (past middle age and nearing retirement age – at least here in America), but that didn't stop them from trying to learn as much as they could. It is as if their lives were put on hold thirty years ago and finally they are free to pursue their professional goals.

At one point some of them told me that even though they feared for their lives to come to the training that they desperately wanted to because of the great opportunity, and that if they hadn't come there were many more in line who were willing. I hadn't really thought about the risk they had taken before they shared this with me, but they said traveling to Baghdad from surrounding regions (and they represented all parts of Iraq) was still very scary, especially the trip from Baghdad to the airport. They were also nervous flying out of Baghdad because there are only a limited number of commercial flights in and out. Further, while they were willing to take the risk, they knew that their families would worry even more because of the unknown (I can appreciate this sentiment because I feel the same). That was the point when I felt ashamed for having reservations myself.

We had to leave the airport at midnight the last night, but before we left they made us promise to meet them so they could say good bye and wish us well. Every one of the 17 engineers showed up to say good bye, shake our hands, and kiss our cheek; expressing all over again their gratitude to us. I have been blessed to have some great experiences in my career, but this one ranks right near the top.

# ISOBIKE GAINS RECOGNITION

A new bicycle built by Brigham Young University engineers may soon change the face of cycling. It represents one of the latest applications of a cutting-edge technology developed at BYU.

Made from carbon fiber inter-twined with Kevlar string, the bike's frame employs civil engineering professor David W. Jensen's IsoTruss — a cage-like, open tubular lattice that optimizes the inherent strength of reinforcing pyramids and triangles.

"The team's goal was to shrink the IsoTruss structure, which has been proven to work well for large-scale applications, from between 5 to 18 inches to about 1 inch in diameter," said Jensen. "Everybody involved has done a great job of accomplishing just that." At these smaller diameters, the IsoTruss is an ideal replacement for traditional composite tubes in high-end bikes.

In 2002, the technology was licensed to Brigham City company IsoTruss Structures Inc., which uses it to build structures as strong as steel without the weight, like meteorological



instrumentation towers and self-supporting utility poles.

As IsoTruss Structures works to market the technology, BYU researchers continue to test and develop new ways of applying it.

Tyler Evans, a senior in manufacturing engineering technology who worked on turning the IsoTruss into a bicycle, says the new geometry of the BYU bike frame generates double-takes on the mountainside, but is responsible for a cycle that's as light as, and stronger

and more aerodynamic than some of the best traditional carbon-fiber mountain bikes on the market.

"This frame weighs in at 3 ¼ pounds, and we're confident the next one will be less than 3 pounds," says Tyler, also a mountain bike enthusiast. "That's a big deal in the cycling world."

Bigger yet, the BYU engineers are working to reverse the reality of "light bike, heavy price" by streamlining their manufacturing process to make ultra-light racers — normally priced in the "\$5,000 and over" range — more affordable for cyclists everywhere.

*Adapted from Grant Madsen, YNews, February 4, 2005.*



*Isobike frame, YNews*

## Dr. T. Leslie Youd Recognized



In October 2005, 74 new members, one being Dr. T. Leslie Youd, will be

joining the current 2,121 members of the Nation Academy of Engineering.

Election to the National Academy of Engineering is among the highest professional distinctions accorded an engineer. Academy membership honors those who have made outstanding contributions to "engineering research, practice or education, including where appropriate, significant contributions to the engineering literature" and to the "pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education."

A person can't apply for membership but must be nominated by another member of the academy, with references from at least three other members.

The National Academy of Engineering (NAE) was founded in 1964 and provides expertise to the federal government to "investigate, examine, experiment and report upon any subject of science or art," according to the 1863 law establishing the National Academy of Sciences - the law is also the NAE's charter.

Congratulations Dr. Youd!

# ADVANCE WARNING SIGNAL INSTALLATION

As motorists approach traffic signals on high-speed facilities, they are often faced with split second decisions as green lights turn yellow and subsequently red. Depending on the location, speed, and weather conditions in which this occurs, motorists may be faced with a dilemma – should they stop or should they proceed through the light. Decisions such as this have oftentimes led to red-light-running (RLR) or rear-end collisions, which have become a significant safety concern across the nation. In response to this safety concern, several states have turned to the installation of an advance warning signal (AWS) to aid drivers in avoiding this “dilemma zone.” AWSs provide drivers with information on the status of an approaching signal using either static or dynamic advance warning configurations. The question remains, however, as to the effectiveness of such devices, as well as the criteria for when and where they should be installed. The Utah Department of Transportation (UDOT) recently determined that AWSs will be installed at three locations on Bangerter Highway and at one location on S.R. 201 in Salt Lake County. To determine whether these installations are effective and whether the state should continue to invest in such devices, Dr. Grant G. Schultz was retained as Principal Investigator by the Department to complete a safety analysis at two of the four initial installations.

Dr. Schultz first became aware of the potential benefits of AWS installations during his graduate work at Brigham Young University (BYU). While working on his Master of Science degree in 1994, Dr. Schultz completed an evaluation of AWS installations in Calgary, Alberta, Canada. After evaluating the installations in Calgary, he compared the safety benefits and overall crash history at these installations with those on Bangerter Highway. One of the recommendations from this



initial research was that UDOT consider the installation of such devices to aid in providing advance warning to drivers on high-speed signalized arterials such as Bangerter Highway. Now, 10 years later, this recommendation came to fruition and Dr. Schultz was able to observe the installation of the AWSs on Bangerter Highway and to evaluate the safety impacts of these installations.

Dr. Schultz’s research project is evaluating the safety impacts of the AWS installations at the intersections of Bangerter Highway/Redwood Road and Bangerter Highway/13400 South. Possible positive impacts of AWS installations that are worthy of evaluation at these locations include crash rate reductions and a reduction in RLR violations. Potential negative impacts have also been identified in the literature including increased speeds on intersection approaches following onset of the AWS. These impacts, both positive and negative, will be evaluated in this research.

This installation is especially noteworthy as it will be the first known AWS installation that incorporates a blank out sign as opposed to standard static “signal ahead” signage. This further enhances the research potential and provides an opportunity to evaluate the effectiveness of this installation compared with standard installations.

Dr. Schultz’s research has been featured in the October 2004 edition of *Transportation Management +*

*Engineering* as well as the December 2004/January 2005 edition of *Traffic Technology International*. Dr. Schultz is working with Wavetronix LLC in Lindon, Utah to utilize radar technology for the data collection at one study site. Dr. Schultz is also working with Precision Traffic Systems (PTS) in Austin, Texas to utilize video data collection at the other study site. This will allow the research team to evaluate not only the effectiveness of the overall AWS installation, but the effectiveness of the data collection systems as well. The relationships that have been formed between BYU, Wavetronix, and PTS have allowed Dr. Schultz to collect a large amount of data in a safe and efficient manner for this study.

Dr. Schultz expects to complete his research in the summer of 2006 with recommendations provided to UDOT on the effectiveness of these installations. Dr. Schultz has plans to expand this research with a future project aimed at evaluating alternate locations across the state where such devices may be warranted. He is working closely with UDOT staff to develop guidelines and recommendations for future installation of AWSs.



Dr. Schultz is also the Principal Investigator on three additional research projects for UDOT. One project is aimed at evaluating the commercial motor vehicle weight monitoring program in the state of Utah. A second project is assessing the safety impacts of access management techniques, while the third project is evaluating the economic impacts of transportation improvement projects.

# WELCOME GUS WILLIAMS

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Dr. Gustavious (Gus) Williams attended Brigham Young University as an undergraduate in Civil and Environmental Engineering. He also had an interest in Asian Studies prompted by his missionary service in Seoul, South Korea. He graduated with a dual major in Civil Engineering and Asian Studies before leaving for graduate work at Northwestern University in Evanston, Illinois, near Chicago. Following his Ph.D., he spent 14 years at Argonne National Laboratory and 2 years at the Nevada Test Site before coming back to BYU.

While attending Northwestern, Dr. Williams married Adrienne Breillatt whose family is from Mundelein, Illinois, a short distance from Northwestern. They have 3 children, Thomas (16), Alexandra (11), and Nicholas (9) and are expecting a new arrival in September.

At Northwestern University, Dr. Williams was awarded a Department of Energy (DOE) Graduate Fellowship to perform his Ph.D. research at Argonne National Laboratory. His research involved advanced computing and visualization tools for groundwater and contaminant transport modeling. This included one of the first, full immersion virtual reality environments called the CAVE, developed by Argonne and the University of Illinois, Chicago. The work Dr. Williams did with the CAVE allowed people to physically step “inside” and interact with a groundwater



model to understand the processes and evaluate the results.

After finishing his Ph.D. at Northwestern, Dr. Williams accepted a position at Argonne National Laboratory in the Environmental Assessment Division. While there, Dr. Williams continued his research in advanced computation tools and was involved in a number of large environmental projects. These projects included environmental impact studies on the Green and Colorado rivers to determine the impact of Flaming Gorge Dam and other dams on the downstream resources; work at Rocky Mountain Arsenal near Denver to determine the risk of nerve agents on the natural environment; the lead water quality scientist for a study of alternative methods for chemical weapons destruction; the lead scientist for various studies evaluating the risk of depleted uranium from weapon testing at various Army and Air Force testing ranges; international water quality studies in South Korea and other locations; and a water quality scientist for the

required relicensing of the Alaska Pipeline. This last project required determining and assessing all the potential impacts that pipeline operations could have to water resources along the 800-mile long pipeline, including potential impacts from oil spills in Prince William Sound.

While at Argonne, Dr. Williams held an adjunct faculty position at Northwestern and taught in three separate programs, Environmental Studies, Master of Project Management, and the Civil Engineering Graduate program. He also taught classes at the University of Chicago.

During his time at Argonne, Dr. Williams became a specialist in the potential risks and impacts of chemical and radiological weapons in the environment. This work lead him to accept a position at the Nevada Test Site working for the DOE contractor, Bechtel-Nevada. At the Nevada Test Site Dr. Williams was the project manager for the Test and Evaluation Project which conducted all the chemical and biological testing at the site.

At Brigham Young University, Dr. Williams is focusing on water quality issues, and methods to quantify and understand the risks and environmental impacts from various activities and how to mitigate these risks. In addition, Dr. Williams is working with BYU's Environmental Modeling Research Laboratory (EMRL) to continue his work in the advancing computing field.

# WELCOME ROLLIN HOTCHKISS



My joining BYU is a homecoming in two ways: I graduated from BYU CEE in 1976, and it was at BYU that I joined

the Church four years earlier in 1972. Now being part of such an important team in my life is wonderful. I very much look forward to working with the faculty, staff, students, and alumni of the CEE department for many years to come. I hope that my preparation is adequate!

After graduating in 1976, I served a mission to the Guatemala Quetzaltenango mission. Upon my return, I married Deana Lynn Nelson (BYU 1978), who taught Jr. High School in Logan while I completed my Master's Degree with J. Paul Riley at Utah State University. Deana and I and our brand new baby Adena traveled south in 1979, where I worked for the Tennessee Valley Authority for six years. During that time I had the opportunity to teach a few graduate courses at the University of Tennessee. I found that the challenge of teaching and the reward of seeing the light of understanding come on in students' eyes was life-changing. In 1985, with additional children Samuel and

Amy, our family left Tennessee to go to the University of Minnesota where I could work on my Ph.D. and hopefully enter academics upon completion.

The story is wonderful so far. We had our fourth child, Wesley, while in school in Minnesota. I took a position with the University of Nebraska-Lincoln in 1989 after four long years in Minneapolis. We stayed in Lincoln for nine years, where I enjoyed my association with the department, college, and university. Of course I had kept in touch with BYU.

In 1998 we had an opportunity to move to Pullman, Washington to join the Civil and Environmental Engineering Department there. I assumed the responsibility of running a hydraulic research laboratory in addition to teaching and serving the profession. The phone call from Provo came 6.37 years after arriving in Pullman.

The timing couldn't have been more propitious. Wesley graduated this past June, leaving us as empty nesters. Adena and Amy live in Provo for at least one more year with their husbands and grandchildren Wes (Adena) and Adeline and Isaac (Amy).

*The Hotchkiss Family, L to R: Adena, Jeff, Wes (baby), Rollin, Isaac (baby), Deana, Wes, Amy, Adeline, Scott. Not pictured is Sam, who is serving in the Spain Bilbao mission.*

My research covers both hydrology and hydraulics with specializations in reservoir sedimentation and fish passage at hydraulic structures. I was hooked on hydrology ever since taking a course at BYU with the rookie Wood Miller as the teacher. LaVere Merritt taught me hydraulics. I believe that associating with the great faculty in the department, college, and university will enable me to both broaden and deepen my research progress.



*Rollin with Mark Stone and April Parnell doing ...field work.*

It's an exciting time to be joining the Department. Thank you to all of you for your special contributions to its success. I bring to you my family, my dedication, and my root beer collection (275 different kinds!).



# ALUMNI ACTIVITIES



## Alumni Fish Fry brought to you by the Scholarship Society

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

**When:** Friday, October 14, 2005

**Where:** Clyde Building Student Lounge

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

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



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

Please send us the following information to BYU Civil Engineering., Attn: Janice, 368 CB, Provo, UT 84602. You may also RSVP at (801) 422-2811 or by email [civil@byu.edu](mailto:civil@byu.edu).

Name: Last \_\_\_\_\_ First \_\_\_\_\_ Middle \_\_\_\_\_

Address: \_\_\_\_\_

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Phone: wk ( ) \_\_\_\_\_ hm ( ) \_\_\_\_\_ Fax ( ) \_\_\_\_\_

Is this a new address? \_\_\_\_\_ Coming to Annual Fish Fry: No. attending \_\_\_\_\_ Adults \_\_\_\_\_ Children \_\_\_\_\_

**Please RSVP by Monday, October 10.**

## Scholarship Society

### Board of Directors

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### BYU Civil & Environmental Engineering Scholarship Donations

Please direct my gift to College Annual Fund: 30120438 Eng & Tech

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Please put **BYU only** on the 'pay to the order' of line and do not put anything in the notation line.

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

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# ALUMNI UPDATES

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## **Kirk McLaughlin '83**

Kirk was recently named Chief Engineer for the joint strike fighter (F-35) wing team. This responsibility includes all engineering concerns for the design and production of the wing section for the F-35 aircraft. The F-35 is currently being designed and built by Lockheed Martin Co. in Fort Worth, TX, and is by JSF partners Northrop-Grumman Corp and BAE Systems. On the home front, son Brandon is currently serving a church mission in the Salt Lake City South Mission, and daughter Ashley is a freshman at BYU. Son Matthew is a 7th grade student.

## **Bill Baranowski '89**

Bill is working full-time for the city of West Jordan in a rapidly growing part of Salt Lake County. He is involved promoting roundabout intersections and interchanges and has been involved in the design of over 50 roundabouts constructed since 1995. He has been impressed with the safe operation of roundabouts compared to signalized intersections where there are 32 conflict points versus only 8 conflict points in roundabouts. Travel speeds are also lower, around 20 mph. However, overall delays are reduced. A project he is proud of is a roundabout that includes 2 light rail tracks through the center that he helped design for the University of Utah's hospital TRAX extension. He was inspired by similar designs seen in Melbourne, Australia during a visit of the 2000 Sydney Olympic games. He credits his short stay at BYU for helping him to "think

outside the box" when applying these ideas to solving engineering problems.

## **Annette Kohlert '89**

After graduating from BYU Annette worked for the Parsons Corporation for several years until she and her husband Doug had their third child, and Doug graduated with his PhD in computer science. For the past nine years she has enjoyed staying home full-time with their five children (ages 4-12). They are a challenge that exceeds any that she experienced in the office. In her spare time, her calling as Relief Society President keeps her on her toes. She loves engineering and has taught all the sisters the right-hand rule.

## **Roger Cass '92**

After studying software for engineering, including finite elements and 3D modeling, Roger worked in software development, then in software technical sales, and finally in design of systems in I.T. For the last year, he has been the CIO for MediSync, a management company for primary care physicians in Cincinnati and Dayton. They manage about 100 physicians in 30 offices. No matter the context, engineering is about solving problems better, cheaper, and faster. He continues to enjoy his family (beautiful wife, four children), church service, and Cincinnati.

## **Christy (Jones) Burton '97**

Nearly eight years out of BYU, Christy is still working on a Masters in Civil Engineering from

the University of New Mexico. She plans to finish her thesis soon, and is sitting for the PE Exam this fall. Christy began working as the GIS Manager for the Albuquerque Metropolitan Arroyo Flood Control Authority in 2002 where she handles all the mapping projects, website, and computer network maintenance and is learning to become a project manager using her Civil Engineering background.

She married James R. Burton in Albuquerque earlier this year (2004) and they are expecting a son in December (2004).

Christy occasionally makes it north to visit Utah and encourages all who have the chance to come see the Land of Enchantment, New Mexico.

## **Shannon (Thomas) Griffen '97**

Shannon is currently living in Ankara, Turkey while her husband is on a State Department assignment at the U.S. Embassy. She previously worked for DMJM for three years as a structural engineer. She received her California Professional Civil Engineering license in 2002. Now she is enjoying being a stay-at-home mother to her two children, Emma - four years old and Charlotte - two years old. Although they miss their friends and family, they are enjoying the opportunity to experience another culture and see the sights of Turkey!

## **Joshua D. Jacobson '01**

Joshua hired on with the Idaho Transportation Department (ITD) immediately following his graduation in December 2001. He was

# ALUMNI UPDATES

## Joshua D. Jacobson (cont)

drawn to ITD by the formalized Engineer-In-Training (EIT) program. ITD uses the program to train qualified engineers to meet its technical and managerial needs. Over four years, the program trains the EIT in various areas within transportation. He is currently in his 3rd year of training. He's spent time in the construction, design, traffic, and materials sections. Within these sections, he's been able to take on various leadership responsibilities and be involved with roadway design. ITD also offers a formalized mentoring program for the EITs to allow them to learn from experienced staff engineers.

He and his wife, Katie, have two kids. Heather is four and Tyler is one. Heather is taking a tumbling class and also helps her brother Tyler keep mom on her toes at home. His wife is patiently developing her at home business, while serving as the Young

Women's second counselor in the ward. Joshua is currently serving as the ward clerk. In their spare time, they enjoy spending time together at their home in Twin Falls, Idaho. Now he looks forward to taking Idaho's PE test in April 2006.

## Mary (Gillie) Porter '02

Mary works for J-U-B Engineers and has for the past 2 1/2 years. She is currently an E.I.T. patiently waiting for her four years of work experience to be up so she can take her P.E. Mary works mostly on transportation projects for UDOT, but also does development work for local cities and other clients. She really enjoys her work and is constantly learning. Chris and Mary just had their first child at the end of May 2004. Eli Andrew has been a joy and they really enjoy being parents. They were also able to buy a home in Layton and have been busy making it their own.

## Dr. Benzley Presents Ethics

Dr. Steven Benzley, presented a paper titled "The Small Helm Project - Addressing International Corruption in an Ethics Class for Civil Engineering and Construction Management Students" at the 4th Conference on Ethics, Social Responsibility in Engineering. Dr. Benzley introduced a classroom project developed and implemented at BYU that addresses the issue of international corruption in engineering. His presentation outlined the course objectives and structure.

The conference was held on June 9-10 at the Marina del Ray

Marriott in Los Angeles and was co-hosted by Gonzaga & Loyola Marymount universities with the theme being "Linking Workplace Ethics & Education."

The conference was designed to provide an opportunity for professionals and academics to work together toward two main goals: Ensure students are prepared for the ethical dilemmas they will face upon joining the workforce and to help professionals create and maintain an ethical culture.

Opragen Publishing will publish the papers in a special volume of the Journal of Science and Engineering Ethics in 2006.



## King & Diane Husein Professorship Award

Dr. Steven Benzley received the first King & Diane Husein Professorship award. The purpose of this professorship is to promote and encourage outstanding teaching and research, thus providing a superior education for students. This professorship will provide incentives for teaching, research and other forms of educational and professional achievement among selected outstanding faculty. This Professorship may also provide scholarship help for graduate and undergraduate students.

Criteria for selection includes, but is not limited to, personal integrity, adherence to the standards and values of The Church of Jesus Christ of Latter-day Saints, and a demonstrated commitment to teaching, research, and publication. This award will be for a term of three years.



# FIRST TWO WOMEN GRADUATES,

Nena Menlove and Connie Jensen graduated in December 1977 and were the first women to graduate in Civil Engineering at BYU. It has been over 25 years and the number of women graduating from the Civil Engineering Dept. this year has quadrupled since '77, with some continuing on for a Masters Degree. So, where are the first two women engineering students....

## Connie Jensen Berte

I am currently working for the Bureau of Reclamation in Denver, Colorado. I work in the Design Technical Service Center, which

is the design center for the Bureau of Reclamation under the Department of Interior. The era of large dam building is over, currently our office works on small pumping plants, and fish project maintenance of our existing dams. In the future, large projects will be prohibitive because of cost.

I have two children; a son Adam, and a daughter, Candice. My son is currently at CU in Colorado Springs studying Mechanical Engineering.

The technical world is flat so engineers can do their jobs from anywhere. Employers are getting away from providing retirements and healthcare, so working for yourself may be a better option. The government retirement now is social security



so you can move between the government and private. Also, you have more choices so you don't have to work for the government for your whole career as in the past. So I encourage moving to experience many different opportunities.

## Nena Menlove Brown

I am flattered that you want to do an article on the first two female students to graduate from Civil Engineering, it seems like it was decades ago. Oh, wait a minute, it was! Just about 3 decades ago, since I graduated in December of 1977. I am so glad there are now 68 female students in the program. I remember in 1974 when I felt inspired to declare Civil Engineering as my major; I thought there would be about 20% women in the major. When I entered the general seminar with its theater seating and looked up, I nearly passed out. I was looking at hundreds of men and I could not see another woman. Now you think this would be great but I was shy. I got over my shyness, and succeeded, thanks to the wonderful support of my great professors and accepting classmates. I will always be grateful to the professors who helped me LAUGH AND LEARN.

My first job was at Lowry and Associates in Irvine, CA, working on design of domestic and sewer water including treatment plants. Then I worked for Torkelson-Kellogg in S.L.C., UT, this is where my career shifted and I became involved in



Nena Menlove & Connie Jensen in 1977

Construction Management. I worked on the Gulf States Utilities in Lake Charles, Louisiana. I then worked for Morrison Knudsen in the Chevron Re-



search Shale oil Semi-works in S.L.C., UT. Next I was transferred into Houston, TX to work for H.K. Ferguson on the expansion of the Anheuser-Busch Brewery. Next I was on to the A-B Brewery in Ft. Collins, CO. I then moved to Sunnyvale, CA, where I worked for Lockheed. I received my security clearance and worked on clean rooms and other development facilities for Lockheed.

That is where I met my husband, Dana. Three months later in August of 1988 we were married in the S.L.C. Temple and I quit working soon after the birth of my first child. I worked a total

*cont. on pg. 14*

# IN REMEMBRANCE

Our loving husband, father, grandfather, great-grandfather and brother, Ralph Lowell Rollins passed away Saturday, October 30, 2004 at the age of 85. Ralph was born Aug. 21, 1919 in Greenville, Utah to Perley Freeman and Esther Berthada Morris Rollins. He married Betty Grace Barney on June 1, 1948 in the LDS Manti temple and together they reared three sons and a daughter. They instilled testimony, a strong work ethic, and an optimistic attitude by their examples and established a home full of music and learning.

Ralph received his BS in Civil Engineering from Utah State in 1941 and then served as a Captain in the US Army Corps of Engineers in WWII. Upon his return, his love of learning led him to earn a MS degree from Utah State in 1949 and a Ph.D. from Iowa State in 1954. After teaching at Colorado State University and the University of Utah, Ralph joined the Civil Engineering faculty at BYU in 1958 where he established the geotechnical engineering program. Ralph served as department chairman for two years, 1960-1962. He was honored by an engineering fellowship in his name and retired from BYU in 1987. Ralph received the prestigious BYU Emeritus Alumni Award in 2004.

Ralph founded the consulting firm of Rollins, Brown and Gunnell, Inc. in Provo in 1965 and served as principal until his retirement at the age of 79 in 1999. Licensed in five states, he personally performed soil and foundation investigations for over 5,000 structures throughout the inter-



mountain west including a majority of the high-rise buildings in Salt Lake, several hundred LDS chapels, buildings on every college campus in the state, and numerous bridges and commercial buildings. Ralph performed design work for over 80 earth dams in the intermountain west, and served as a consultant to the World Bank, reviewing design plans and inspecting earth dam construction in Korea for three summers. He was President of the Utah chapter of the American Society of Civil Engineers from 1965-66. In 1972 he received the Outstanding Professional Engineer Award for Technical Competence and was named Utah Engineer of the year in 1988.

Ralph was devoted to the Church of Jesus Christ of Latter Day Saints and served as Bishop of the Cottonwood 2nd Ward in Salt Lake City. He served on high councils in the Cottonwood and

BYU 11th Stakes, was a volunteer consultant to the LDS Church Engineering Department, and received their Outstanding Professional Service Award in 1980. Ralph was a member of Provo Kiwanis, served one term as President, and received the Kiwanis Outstanding Service Award.

Ralph is survived by his wife Betty, his children Craig Rollins (Vancouver, WA), Kevin Rollins (Austin, TX), Kyle Rollins (Provo, UT), and Anita Rollins Blackwood (Austin, TX), his brother Arden Rollins (Salt Lake City, UT), 12 grand children and 9 great-grandchildren.

*Women Grads Cont. from pg. 13*

of 13 years. I now have three children; Cameron 14, Tyler 11, and Christina 9. We attend the Dublin Ward in Ohio where Dana serves in the high priest presidency and I teach the 13 year olds in Sunday School. I never thought I would have worked so long before marriage, or have my children so late, but you do not control everything in your life. The gospel is the steady rock and predictable but other parts of your life are unpredictable. I am grateful I followed the spirit at the time and received my education in Civil Engineering. It has served me well; I was never bored, had fun expanding my mind, broke a few glass ceilings, and made a lot of money for my family's future. Good luck, to all you women, don't give up and if at first you don't succeed in Chemistry drop out and try it in the summer; I did.

# Dr. Thurgood & Dr. Merritt Retire

After over 30 years of dedicated service to BYU, Dr. Glen Thurgood has retired from teaching.

Dr. Thurgood obtained his Bachelors and Masters Degrees from BYU in 1965 and 1967 respectively. He was hired fulltime in the BYU Civil Engineering Dept. in 1967. He later went on and received his Ph.D. at Texas A&M University in 1975. He returned to BYU as an Associate Professor in 1977, became a professor in 1995, and worked in the transportation engineering area until his retirement. He served as Assistant Department Chair, and ITE Student Chapter Advisor.

In addition to his teaching, Dr. Thurgood has been involved in transportation consulting and has



been an active member of Institute of Transportation Engineers (ITE) since 1976. As a member of ITE, Dr. Thurgood received the James L. Pline Distinguished Member Award, the first academic to receive this prestigious award.

He has served on many Institutional and Professional Commit-

tees within ITE and the Transportation Research Board (TRB). He has served as a member of the ITE Intermountain Section Scholarship Committee, ITE Transportation Education Council, OTE Expert Witness Council, ITE District 6 Technical Chair and many others. Dr. Thurgood has been involved in a number of research projects and has published research in the areas of queuing theory for drive-in service facilities, development of a freeway congestion index in the Salt Lake Valley, and numerous other projects.

Dr. Thurgood was a true pioneer in the Department in developing a curriculum in the area of transportation engineering. He continues to attend ITE meetings and to keep up on the lives and careers of his former students.

Dr. LaVere Merritt has had a long and distinguished career at BYU spanning 41 years. He obtained his Bachelors and Master degrees in civil engineering with a business minor at University of Utah, in 1963 and 1966, and his Ph.D. from the University of Washington, Seattle, WA, in 1970. His entire teaching career has been at BYU beginning in 1964. He was the Chair of the Civil & Environmental Engineering department for six years.



tee on Rank and Status for three years.

Dr. Merritt has served on many different boards including; National Board of the Water Environment Federation, National Board of ASCE, Board of Directors for the Provo Metropolitan Water District, and served as an accreditation eval-

uator for the Engineering Accreditation Board.

He is the recipient of several national awards and citations. He received the AWRA Utah Water Resource Educator of the Year (2004) and his favorite award is Utah Engineering Educator of the Year (1987).

Notable among his research and scholarly accomplishments are several design and modeling programs, 70+ major reports, publications, and co-author of a textbook.

Dr. Merritt & his wife, Diane, will be entering the MTC on Sept 5th to serve a 23 month mission in the Singapore Mission, setting up the welfare services in Malaysia.

# ASCE

Greetings from the beautiful Clyde Building! In January we said goodbye to the old ASCE officers and wondered what we had gotten ourselves into. We've had some great activities this year. I learned a valuable lesson from our second annual "ASCE Idol" talent show: not only are engineers good at math, but engineers are *great* at making fools of themselves. During Engineering Week we hosted a Utah section



luncheon, followed by a tour of the new Joseph F. Smith Building led by the structural engineers who designed the building. Over 50 members of our chapter volunteered as judges at the Utah Valley MathCounts competition this year. We also put together hundreds of bridge kits for high school bridge building competitions.

We were lucky to have the Rocky Mountain Conference at the University of Utah this year. We were able to stay close to home without the stress of planning the event ourselves. We participated in the mystery design, pre-design, concrete canoe, technical paper, and non-technical paper competitions. Our concrete "Couganoe" was the only canoe from Utah that never sank. We presented our 500-lb Cadillac-sized canoe dressed as used car salesman (*see picture to left*).

We have enjoyed weekly guest speakers who have enlightened us about the world beyond the Clyde Building. These guest speakers taught us about such exciting fields as engineering forensics and wastewater treatment. Most importantly, we have introduced students to local professionals who offer valuable summer internships.

We would like to thank all of the Alumni who support our chapter. We appreciate the scholarship opportunities and mentoring that you continue to provide.

## 2005 Officers

- President - Brad Singley
- 1st VP - Steve Frost
- 2nd VP - Paul Jensen
- Treasurer - Clark Barlow
- Secretary - Shelly McConnell
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