

## Welcome from the Chair



As I have contemplated this "Welcome" on behalf of the Chemical Engineering Department, faculty, and staff, I have thought of so many of you who spent four (or perhaps a few more) years here deepening your learning abilities and strengthening your analysis skills. It is a pleasure to greet you through this Newsletter, though it is a poor substitute for visiting with you personally and hearing of your challenges and successes. Few realize it at the time, but each student, quiet or outspoken, contributes to the BYU experience and touches the lives of fellow students and individual faculty members. Years may blur the memory of individual names, but they wizen us as to what actually takes place at this remarkable school in Zion.

We express our congratulations to the newest 59 department alumni who graduated this past year. The job market was strong and these students were highly recruited. The average starting salary was around \$62,000/year. A statistical look at the class shows an average graduation time of 9.3 semesters, and 88% of the students had a TA or RA experience. But, the real story is told in the impact that these alumni will now make: 40 at industrial positions and 19 at different graduate and professional schools.



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We are trying to broaden and deepen our students' educational experiences under a set of five college initiatives: technical excellence, character development, leadership, innovation, and global awareness. These initiatives are part of the college's Engineering for the 21st Century (<http://www.et.byu.edu/21stcentury>). Exciting new opportunities and challenges face today's—and tomorrow's—chemical engineers, and our department is in a unique position to provide what the engineering field needs: engineers of high character possessing innovative leadership skills for an increasingly global work environment. A chapter of Engineers Without Borders (EWB) was established this past year, allowing many students to participate and help organize a service project to Tonga. You can read more about it in this newsletter. Additionally, three of our students are studying chemical engineering this summer in Metz, France under an international cooperative arrangement with Georgia Tech (<http://www.et.byu.edu/features/2006/france/>). One of our students, with other BYU engineering students, helped arrange international ethics projects in Romania. We are striving to develop better project-based learning experiences in several of our classes to enhance creativity and innovation, and we are currently designing new space in the UO lab area for innovation projects associated both with courses and special EWB-type experiences. Our students were key participants in the college's Ethics Symposium entitled "Moral Character in a Professional Life," held early this spring – a first of many future joint symposia between the religion department and the engineering college. As we continue to develop ethical, innovative, and international experiences for our students, we encourage alumni who wish to be involved in promoting these strategic initiatives within the department to help out either with their time as advisors, with their own ideas of projects, or with donations to help fund the activities.



I hope that you will enjoy reading this Newsletter and catching up with some of the department's activities. It is unfortunate that Newsletters only provide one-way communication; I hope that you will remedy that by sending us some feedback on what you read here. I encourage your involvement in alumni activities, in promoting our students, and supporting our initiatives that will further enrich the educational experience of our students. But, I will end where I began. I hope that you will consider personally letting us know of your challenges and successes because you continue to be an important part of what the BYU Department of Chemical Engineering is all about.

Richard L. Rowley, Department Chair

# Faculty and Department News



We would like to express our appreciation to Dr. Vincent Wilding, who completed six years of service as department chair. It seems he has a new smile on his face as his administrative load has been lightened to allow additional engagement in teaching and research. Thanks again, Dr. Wilding!



We express our congratulations to Dr. L. Douglas Smoot, former dean and professor of Chemical Engineering, who received a Distinguished Service Award during the 2006 Homecoming week. The award honors alumni who have made a significant impact on the lives of others through outstanding service. Thank you for all you do!



Dr. Larry L. Baxter is on professional development leave this year, spending a great deal of time in Denmark, Idaho, and other exotic places. He is helping to further combustion research worldwide, and we wish him well in his endeavors.



The department will be welcoming some part-time help this fall from Dr. Neil Giles, who will be replacing Dr. Yan Yang as the DIPPR Project Coordinator and teaching the UO lab, and Mary Rasband (MS 1988), who will teach ChEn 170.



Dr. Thomas H. Fletcher, along with Dr. Bons of the Mechanical Engineering Department, received two Best Paper Awards from the Heat Transfer Committee. The awards were presented in May at the 2007 Turbo Expo in Montreal, Canada. Keep up the good work!



We say goodbye to Dr. Ronald E. Terry this year as he transitions to his new position in the Teacher Technology Education program in the School of Technology. He is excited to serve in this new position and we wish him the best.



Dr. Merrill Beckstead, professor emeritus, received the Governor's Medal for Science and Technology in 2006. This award was presented by Gov. Jon M. Huntsman, Jr., for distinguished work in scientific and technological fields. We congratulate him for this honor.



Dr. Thomas A. Knotts joined the faculty in Fall 2006. His research area is molecular modeling and DNA hybridization. We are pleased to have him as part of our department.

## AIChE: American Institute of Chemical Engineers

The American Institute of Chemical Engineers (AIChE) Brigham Young University Student Chapter had a magnificent 06-07 year. Not only did we have multiple opportunities to learn about our future careers, but we had a fun time, too.

Every month we are privileged to have guest speakers come and instruct us in their vocational field. One of my favorite memories is of Don Peay, who graduated from BYU in Chemical Engineering, started his own business, and became involved in politics. He inspired me with many new ideas about using my chemical engineering degree to better the place I live. AIChE also provides students with the leisure to interact on a social level with each other outside of the classroom. Last year we had monthly BBQs, a great service activity, and two golf tournaments. Through these activities, students were able to build lasting friendships.

Last fall, students went to San Francisco to attend the AIChE National Conference, and in the spring, they went to Tempe, Arizona for the Regional Conference. At both conferences, students were able to gather ideas about how to run AIChE meetings more effectively. At the Tempe Conference, BYU competed in a ChemE Car Competition. The ChemE Car is the size of shoe box and must be propelled by a chemical means other than combustion. BYU designed a car that used a zinc air fuel cell. After working out a few bugs, next year's team hopes to come away with a first place finish.

This coming November, we are honored to co-host the AIChE National Conference in Salt Lake City with the University of Utah. Our student chapter had the opportunity to help plan the activities for this upcoming event. The collaboration between the students and the faculty will help maximize the effectiveness of the conference. Through hard work and dedication, the BYU Student Chapter will hope to continue its tradition of excellence.

-Lincoln Sarager, 2007-2008 BYU AIChE President



The BYU AIChE Student Chapter won the Outstanding Student Chapter Award at the National Conference in San Francisco, November 2006. Congratulations on a job well done!



AIChE students in Muir Woods, just north of San Francisco, in 2006.



# Engineers Without Borders

Largely due to the tenacity and energy of two of our students (Allyson White Frankman, B.S. 2003, current Ph.D. candidate, and Jacob Jones, B.S. 2007) a chapter of Engineers without Borders (EWB) was established at BYU in 2006. This organization is patterned after Doctors without Borders and has both professional and student chapters. It seeks to "partner with developing communities worldwide in order to improve their quality of life. This partnership involves the implementation of sustainable engineering projects, while involving and training internationally responsible engineers and engineering students." (<http://ewb-usa.org>) The BYU chapter is under the direction of Randy Lewis and Vincent Wilding, both professors in the Chemical Engineering Department.



The first year's project (which was not an official EWB project due to timing constraints in getting approvals from the national organization) involved demonstrating the production of biodiesel from coconuts in Tonga. Tonga is a small country which relies almost exclusively on imported diesel for its energy needs. Due to the cost of imported diesel and the abundance of coconuts in Tonga, biodiesel makes sense for some of their energy needs.

A technical elective class, called Global Projects in Engineering and Technology, was taught winter semester 2007 in which about 30 students worked on multidisciplinary teams to solve the technical, socio-cultural, and economic problems associated with coconut biodiesel production in Tonga. These teams dealt with everything from supply chain set-up to waste disposal. By the end of the semester we were ready to travel to Tonga to implement the program.

Twenty-six students and the two faculty directors spent two weeks in Tonga during May 2007 demonstrating the production of biodiesel and educating high school students, government officials, and the public about the potential of biodiesel in Tonga. A series of setbacks threatened the success of the trip, including poor purity of supply chemicals that had been shipped to Tonga from other south Pacific countries and agonizingly slow delivery of needed supplies. In the end, however, the process came together in superb fashion as we were able to demonstrate to several government ministers the successful operation of a diesel engine on biodiesel made from coconuts.



Students learned about working in multidisciplinary teams and about the challenges inherent in international engineering work. They developed confidence as they solved both anticipated and unanticipated problems. All of the students considered the class and trip a highlight in their educational experience.

Next year we are planning a similar trip to a village in the highlands of Peru. We anticipate projects dealing with energy and water resources. It is our hope and dream that this program will continue to be a blessing to the people of the developing world and to our excellent students. (See [http://www.et.byu.edu/groups/global/gallery2/main.php?g2\\_itemId=17](http://www.et.byu.edu/groups/global/gallery2/main.php?g2_itemId=17) for pictures from Tonga.)

## Homecoming Banquet 2006

Last year, the Chemical Engineering Department sponsored and hosted a very fine award and dinner banquet. It was the first such event that I had attended since my graduation. Not only can you plan on me attending again this year, but you can also plan on my endorsement and recommendation that you all need to make the necessary arrangements to attend. My wife and I drove from Phoenix to Provo for the occasion (11 hours). I am also aware that many came from farther away than that. Please plan on attending and invite at least one other of your 'school buds' with you.

Before the dinner begins, there is time for socializing and mingling with friends and associates. There is also a good chance to see a previous professor that you took a class from. Many of them are still there teaching the next generation of students. Some of them look the same and some look a little more seasoned with wisdom (a.k.a. they're older). This is also a chance for you to share with your professor something that you had learned in a class that you are now using in the industry. The dinner last year was enjoyable and very well prepared.



After dinner, we had the privilege of listening to Richard Bushman (see left), author of the biography Joseph Smith: Rough Stone Rolling. It was very educational for me to listen to someone speak about Joseph Smith as not just the Prophet, but as a regular man and member of the community. It gave me a more personal understanding of some of the things that he faced in his day. We also had the opportunity to honor one of our outstanding alumni. Last year we honored Vincent J. Memmott (see right) for his work and accomplishments.



To conclude, I can't say it any more simply than to plan on attending: bring your spouse (it is an easy date) and invite another chemical engineering friend to attend!

~David Anderson, ChEAS Board Member

# Alumni Board Chairman's Corner

Greetings from the Chemical Engineering Alumni Society!

Over the past year, the Chemical Engineering Alumni Society (ChEAS) board has been working to improve our efforts towards fulfilling the society's three key objectives: (1) Provide department support, (2) Facilitate alumni networking, and (3) Offer service to others. Because we represent you, we began by asking for your input via an electronic survey. We wanted to know your thoughts about what is important to you. This is what we heard.

When asked about a preferred emphasis area for the society, the greatest number of respondents (~17%) supported alumni networking. Second (~16%) was student-employer networking, and third (~14%) was student scholarships. Furthermore, you indicated that you would be much more likely to attend an event sponsored by the Society if it were held in or near your state of residence.

We also asked about the quality of our homecoming banquet. Although the majority of you (~67%) indicated that you have had a very positive experience at the banquet, there were a number of good suggestions for ways we could improve. Chief among the recommendations was to enhance interactions between alumni before and during the event.

We want you to know that we are listening. As a consequence of your input, we are moving forward with several immediate initiatives.

First, we are planning to bring an alumni social event to a location near you. Approximately 20% of our alumni live in Utah, 11% in Texas, and 9% in California. We will continue with our yearly homecoming banquet on campus, and we hope that all alumni who are able to attend will join us for this event. In addition, we are in the process of planning an event for the Houston, Texas area. James Nuttall (BS '02) and Mark Spencer (BS '02, MS '03) will be leading that effort. We will also plan an event for our alumni in California. If successful, we will expand these remote events in the future.

Second, given the high degree of interest in student scholarships, board members voted to create two (2) full-tuition ChEAS-sponsored scholarships per year and to establish an endowment to fund one (1) permanent ChEAS scholarship. We also want to create a small number of travel scholarships to assist students in professional activities (meetings, humanitarian projects, etc.). Over the next five years, we are looking to raise approximately \$145,000. This amount may seem ambitious, but it represents a contribution of less than \$15 per alumnus per year.

We are very excited about this opportunity to give back to our wonderful students. Over 70% of our survey respondents indicated that they had received some type of scholarship support while at BYU. We hope that you will thoughtfully consider returning that blessing to others. More details on how to contribute will be sent to you in the near future.

Finally, we are actively planning to improve alumni-alumni and alumni-student interaction at the yearly homecoming banquet. We hope that you will see a difference when you join us this year in Provo.

In addition to the immediate efforts mentioned above, we also have a plan that maps out our strategy over the next 3-5 years. This strategic plan will enable the board to continue improving our efforts to support you, our honored alumni. We are very grateful to all of you for your participation in our survey and for your ongoing cooperation.

Warmest regards,  
Aaron M. Bujnowski  
2006-2007 ChEAS Chair



Alumni and Faculty mingle prior to the 2006 Homecoming Banquet.

**Make sure you don't miss this year's Chemical Engineering Homecoming Banquet, which will be held on Friday, September 21st. Reserve your plate by calling (801) 422-2586 or emailing [cheme@byu.edu](mailto:cheme@byu.edu). We look forward to seeing you there!**



# Special Message from ChEAS

Dear Fellow BYU Chemical Engineering Grads,

We hope this letter finds you well and enjoying the significant benefits from our education and experiences in the Chemical Engineering Department at BYU. We have much to be grateful for.

One of the goals of the Chemical Engineering Alumni Society (ChEAS) is to provide financial support for ChE students and the society is proud to announce the launching of the ChEAS scholarship program, with the following goals:

- Two full-tuition scholarships per year (\$8,000/yr)
- Development of an endowed scholarship (\$16,000/yr)
- Travel scholarships for students (to make presentations at professional meetings, to participate in humanitarian projects such as Engineers Without Borders, etc.) (\$5,000/yr)

With this announcement, we are asking your help to make this happen.

As ambitious as that goal may sound, when you consider that we have nearly 2,000 living ChE alumni, you can see that, if we all participate, all donations, from \$10 to \$10,000, can help. In addition, we have the opportunity to take advantage of the following significant matching funds:

1. Many of you work for companies that provide employer matching funds
2. This calendar year only, donations earmarked for the Engineering and Technology Annual Fund will be matched with university matching funds up to \$5,000 per donation.
3. Also, this calendar year only, an anonymous donor has kindly offered to match donations to the ChEAS full-tuition scholarships up to \$4,000 and to the first \$20,000 toward the ChEAS endowed scholarship

This means that \$1 donated by December 31, 2007 can turn into at least \$3, and as much as \$6 depending on the employer match rate.

Rather than trying to run a separate campaign to raise these funds, we want to take advantage of BYU's Annual Fund to accomplish our goal. The University solicits contributions each fall (University wide campaign) and spring (individual college campaigns – in our case, the Ira A. Fulton College of Engineering and Technology).

If you have already contributed in this way, thank you! If you haven't, please give it serious consideration. Your donation can be directed to the ChEAS Scholarship Program no matter when you donate. The College has agreed that donations you make in the 2007 calendar year will go back to the Chemical Engineering Department, and the department chair has agreed to apply those donations to the ChEAS Scholarship Program. You can do that in two ways:

- If you use the reply card that comes with the Annual Fund mailing, check "College Annual Fund" on that card and write in Engineering and Technology in the blank. Then write ChEAS Scholarship Program anywhere on the card and mail the card and contribution directly to the Fulton College of Engineering & Technology, 270 CB, BYU, Provo, UT 84602.
- Give online at any time by going to [www.byu.edu/giving/engtech](http://www.byu.edu/giving/engtech) (the College will recognize you as a ChE alumnus and will direct your donation accordingly).

You will soon receive a phone call from a fellow BYU ChE alumnus to discuss these options.

We will report to you regularly concerning our progress with this campaign and the names of all recipients of the ChEAS scholarships, along with brief descriptions of those recipients and their expressions of gratitude.

Please join us in this campaign – you can make a difference. Many lives will be enriched by your generosity – including your own.

Sincerely,  
Your ChEAS Board Members



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The Department of Chemical Engineering is dedicated to keeping in touch with our alumni.

If you have moved recently or changed any of your contact information, we would appreciate an email to us at [cheme@byu.edu](mailto:cheme@byu.edu) letting us know. Please include your full name, mailing address, phone number, email, and year of graduation.

You may also update this information yourself at the ChemE website: <http://www.et.byu.edu/cheme/>.