

Support BYU ChEn!

Here is a great opportunity to obtain compost for gardening while contributing to the Chemical Engineering Department. Dr. Sheldon Murphy, a BYU Chemical Engineering alumnus, has developed a simple, easy to use, inexpensive backyard composter. The "Build Your Unique Composter" can be built for less than \$25 and will provide compost within 4-6 weeks. There are no offensive smells and it is easy to operate without any electricity. Plans to build the composter can be purchased from Dr. Murphy for only \$7.50. Dr. Murphy has kindly offered to donate the sales proceeds to the BYU Chemical Engineering Department Scholarship Fund. Scholarships are greatly appreciated by our outstanding students.

Please go to www.buocomposter.org to view the composter. Information for purchasing the plans is available on the website. Please feel free to forward this information to friends and family.

You can also donate to the Alumni Scholarship Fund at <http://give.byu.edu/engineer>.

BYU ChEn is dedicated to keeping in touch with our alumni. If you have moved recently or changed any of your contact information, please email us at chemesec@byu.edu to let 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 ChEn website <http://chemicalengineering.byu.edu>

BYU ChEn

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Introducing Our New Chair:

Greetings from the ChEn Department!



I hope you have had a great year and that you have taken the opportunity to enjoy life without "neglecting the more weighty matters" (D&C 117:8). As the new Department Chair, I look forward to the opportunity of interacting with faculty, staff, students, and alumni to continually strengthen the student educational experience. I extend my appreciation to Dr. Richard Rowley for his excellent service and dedication while serving as Department Chair. It's a great experience to be at BYU and to interact with such outstanding and dedicated individuals. I have truly been enriched as I have learned from all those with whom I have interacted.

As I have only been on the BYU faculty since 2005, a short introduction may be appropriate. I completed my BS in Chemical Engineering in April 1989 at BYU. I was fortunate to meet my wife, Cynthia, in the sophomore Chemical Process Principles course prior to her serving a mission. Upon her return, we were married during our senior year and had the opportunity of taking Chemical Engineering classes together. One memorable experience was doing our Reaction Engineering homework at the top of Bridal Veil Falls—I had to think of creative dates as an engineering student. Cynthia completed her BS in Chemical Engineering in December 1989 and we moved to Boston for graduate school. Following graduation, I was on the faculty at Oklahoma State University for 11 years prior to moving to BYU. We have nine children of which the oldest is on a mission and the second oldest just received his mission call.

As many of you know, the students in Chemical Engineering are outstanding. To highlight a few achievements, the AIChE Student Chapter won another Outstanding Student Chapter Award given to the top 15 chapters in the nation. Many of our recent graduates have been accepted into premiere graduate and professional schools while others have accepted employment with a wide range of companies. Of recent graduates, 75% have participated in mentored activities. Students have also had the opportunity to take new chemical engineering electives including nuclear engineering, biochemical engineering, and molecular modeling. Interest has also increased in the program with 124 freshmen students enrolled in the fall Introduction to Chemical Engineering course (with additional students taking the course in the winter semester). Although an increase in students brings some challenges, it's great to see a large interest in the chemical engineering discipline.

As we move forward, President Spencer W. Kimball stated in his "Second Century of BYU" address (1975) that we should work towards achieving an "educational Everest". He further stated "It ought to be obvious to you, as it is to me, that some of the things the Lord would have occur in the second century of the BYU are hidden from our immediate view. Until we have climbed the hill just before us, we are not apt to be given a glimpse of what lies beyond. The hills ahead are higher than we think. This means that accomplishments and further direction must occur in proper order, after we have done our part. We will not be transported from point A to point Z without having to pass through the developmental and demanding experiences of all the points of achievement and all the milestone markers that lie between!" To "climb the hill", we are focusing on the following four priorities: (1) Foster an enthusiastic environment that provides quality learning; (2) Develop graduates with wisdom; (3) Produce excellent scholarship; and (4) Be a light to the world. Two key components of these priorities that I would like to highlight include developing the Unit Operations (UO) Laboratory as a world-class facility and increasing the ChE endowment for student needs. Great efforts have resulted in many changes to the UO lab and I look forward to carrying the momentum towards a world-class facility. The ChE endowment has received considerable support from many of you and our goal is to continually strengthen this endowment to bless the lives of the students. I encourage all of you to help the department in moving forward on our priorities. Though you may be near or far, your insights, professional contacts, experiences, and support are greatly welcomed and appreciated. When you are in the area, please feel free to stop by the department. Additionally, if you are available, please come to the chemical engineering alumni banquet on Friday, October 8 to renew acquaintances.

I wish you the best during the upcoming year and may you always remember the great experiences of being part of the department.

Sincerely,

Randy S. Lewis

BYU ChEn 2010

BYU Chemical Engineering 2010

<http://chemicalengineering.byu.edu>

Meet Our 2010 Industrial Advisory Board

Paul Horton
Intel Corp.
Greg Bond
Dow Chemical
Ty Carlson
Valero
Tom Mildenhall
Kimberly-Clark
Travis Sessions
Utah Plastics
Seth Summerlin
Celanese
Todd Blake
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Trevor Bee
IM Flash
Troy Ness
3M
Raymond Wagner
IBM
Katie Shepard
Procter and Gamble
Paul Goodman
W.L. Gore
Alan Tree
Oklahoma State
University

Faculty Awards



Dr. Larry Baxter received the Karl G. Maeser Excellence in Research Award during University Conference at BYU on August 24, 2010. He joined the ChEn faculty in October 2000, already recognized internationally for research in sustainable energy. Since then he has been awarded over \$10 million in research funds, serving as advisor to 21 graduate students that have completed degrees. These and many other students have enjoyed Prof. Baxter's humor, upbeat personality, and creative ideas while working on difficult problems related to sustainable energy, energy from low grade fuels such as biomass and coal, and recovering CO₂ from power plant exhaust streams to help preserve the environment. His cryogenic CO₂ capture process has been estimated by two major companies to be 50% less costly than any other known process. His love for learning and innovation inspires students in the classroom. Congratulations, Dr. Baxter!



Dr. Dean Wheeler received a Young Scholar Award at the BYU University Conference on August 24, 2010. This award encourages and acknowledges outstanding promise and contributions by faculty in the early stages of their careers. Congratulations, Dr. Wheeler!

Homecoming 2009:



The 2009 Homecoming banquet was a huge success as we welcomed alumni from all around. The honored alumnus was Dr. Calvin H. Bartholomew.



Alumni President:

Jeffrey Dean Lindsay, Chair of the BYU Chemical Engineering Alumni Society

In spite of widely touted signs of recovery, there are clouds looming on the economic horizon that call for all of us to prepare well for whatever lies ahead. This is the time to strengthen our faith, our families, and our career skills. More than ever, BYU alumni need to become better networked to assist and learn from one another. Keeping your contact and career information up to date with BYU and the Chemical Engineering Department can help. Joining our LinkedIn group for BYU ChemE alumni can also help. A shortcut to the group is <http://tinyurl.com/yalumni>. Please join us there and help us network, mentor, and share information. Working together is one way we can keep moving up in a down economy.

Networking can be most effective when it's in person. That's one reason why I hope you will attend the Department's Annual Alumni Dinner on Oct. 8, the Friday night of Homecoming weekend at BYU. This year we won't be on campus, but instead will meet at Le Chateau, located in the Village Green in Provo (1675 North Freedom Blvd. #10G). Directions are at <http://www.utaheventcenter.com/directions.shtml>. We'll begin at 5:30 pm. We'll have two keynote speakers that evening. Early in the evening we'll hear from Dr. Walter Reade of Kimberly-Clark Corporation giving a brief and entertaining discussion of lean manufacturing and lessons from Japan, and later we'll hear from Dr. Ken Soren of BYU discussing the significance of the technology explosion that has followed the time of the Restoration. We'll also get a state-of-the-department update from Dr. Randy Lewis, Dept. Chair, and we'll have the presentation of the Outstanding Alumnus of 2010 Award, which will go to Wayne Jones of Palo Alto, California. Wayne has some inspiring and impressive accomplishments in the legal arena and other areas we wish to recognize and we look forward to presenting this award. The event is free to alumni and their guests, but please RSVP with the Department.

BYU's ChemE alumni have a purpose and vision that can help us to keep moving up, no matter where the economy heads. Maybe not necessarily moving up financially, but always moving up in terms of service to our fellow men and to God. If we paid attention while at BYU and absorbed the spirit behind the University, we may share a vision of the importance of service and sacrifice to help others. It is by moving others forward that we truly move up ourselves.

In terms of serving others, do not overlook the new generation of students coming through the Department now. There are opportunities for mentoring and assistance with BYU's Global Engineering Outreach (see Randy Lewis for details). There is also an immediate need for your financial generosity to help the Department have funds for scholarships to give more students a chance to get the blessings of a chemical engineering education at a great university. Last year our alumni were remarkably generous, contributing \$85,000 in spite of economic challenges, a large gain over 2008. The need for funds has kept moving up, though, and we're asking you now to keep moving up in terms of generosity. More students need your support.

Making a donation is easier than ever now thanks to an online service that has been established. By going to <http://give.byu.edu/engineer>, you can make a donation on the spot by credit card, or make a pledge and then receive a follow-up letter shortly thereafter to help you send in your check. If you can donate even a few dollars, it will help. A few hundred will help more, and please don't stop there if you can give more. Sacrifices bring blessings in our lives, and most certainly in the lives of the students you will be helping.

Whatever you can afford, your gift will make a difference for the rising generation of students from all over the world.

My term as Chair of the Alumni Society is coming to end in October. Dr. Tom Mildenhall of Kimberly-Clark Corporation in Roswell, Georgia will take over and work to advance networking, fundraising, and alumni events. Both of us are open to your suggestions.

Thank you for being part of the community of BYU ChemE alumni. Let's keep working together, growing together, and moving up.

Global Engineering Outreach



Boiling eggs is super-easy at home. Unless your home is an island floating on a lake 12,500 feet above sea level with no electricity or gas.

That's why 19 BYU student engineers traveled to Peru's fabled high mountain Lake Titicaca to deliver a special solar cooker as part of their course on sustainable engineering projects that help improve local people's standard of living.

"This was the most helpful class I've taken at BYU," said Tyler Carr, a senior mechanical engineering major who lead the solar oven project. "It was an engineering class, but I learned a lot more than engineering. This was a big eye-opener about working with other cultures."

The students worked with the people of the Uros islands, who were discussed in a [talk](#) by Elder Ronald Rasband in the April 2008 LDS General Conference. The islands are constructed from floating beds of reeds and soil about 9 feet thick, anchored to the lakebed with boulders. Obviously, power is tough to come by, so the Uros cook fish, fowl and homegrown potatoes with expensive kerosene stoves or time-consuming, reed-fed fires.

The students sought to develop a solar cooker that would be easy to construct and maintain using only local materials. Two parabolic "wings" focus the rays of the sun, which burns bright nine months out of the year at the high elevation. With some pluck and persistence, the students discovered on their last day that silver wrapping paper purchased from a shop on the mainland reflected light just as effectively as the Mylar they had brought from Utah.



A highlight of the experience for Corinne Olsen, a senior chemical engineering major, was a 90-minute conversation, through an interpreter, with a local woman about life on Utama island.

"I was impressed with how engineering and technology shapes a community," said Olsen's classmate, Jasmine Fullmer, "and how as an engineer you can have an influence in that role of building a community."



The students, who paid much of their own way, left behind the mold used to make the "wings" out of fiberglass and a working cooker that boils 12 eggs in 30 minutes. They brought home feedback they'll implement to make improvements during next year's class and return trip.

And there's still plenty of work to be done. The planned enhancements to the solar cooker will make it easier for the islanders to use the mold to build more. The students also selected a new project to fulfill a need the islanders identified – an inexpensive system of cups and pulleys to feed a water tower that can purify and heat water for drinking and bathing. And they strengthened their relationships and lines of communication with the island residents – a local team leader has been identified for each project next year's class will pursue.

"This was an experience that allowed the students to take a step outside themselves and look at problems from someone else's perspective," said Randy Lewis, a professor of chemical engineering who teaches the Global Engineering Outreach Projects course. "That's a skill they are going to need in their careers."

BYU engineering faculty Spencer and Stephanie Magleby and Matt Jones also accompanied the students.

Order your ChEn memorabilia today! Go to byubookstore.com and look under eStores to order a ChEn t-shirt, pen, and/or water bottle!

Bio Medical Engineering Club:

One of the crowning moments of our organization this year was when 2ft Prosthetics won the BYU Social Venture Competition. Thanks to this win, we have been awarded \$10,000 in funding so far, and are working to complete the necessary tasks to receive an additional \$12,000. We are very grateful to Kay Boayke-Yiadom and all of our team members for their dedication and effort to make our organization viable. We also appreciate the guidance of Dee Williams (CFO - Deseret Book), Roland Radack (VP - DMC), and Marguerith Evans (Director of Research - Franklin Covey), in helping our technically-minded team comprehend the business world.

Trip to El Salvador

We were able to have our first in-country experience this July in El Salvador. The group consisted of Carl Ellingson, Chantelle Ledingham, Will Van Wagenen, David Chinn, and David Williams. Mary Goodrich, who has been in El Salvador all summer serving with Help International, also helped with the project. We teamed up with Francisco Serrano, a local prosthetist, and FUNTER, the largest prosthetics organization in El Salvador. With their help, we were able to fit three amputees with our PVC prosthetic leg. Under the direction of Francisco, the three amputees will wear the prosthetic leg for a month and provide feedback on its performance. We trained Francisco how to make our prosthetic leg so that he can continue to fit amputees with it in the future. Victor, one of the amputees we worked with, lives two hours outside of San Salvador, in a rural/jungle area. The day before we left El Salvador, we visited him at his house to see how his leg was functioning. He showed us how he is fully capable of playing futbol, a.k.a. soccer, with his new 2ft Prosthetics below-the knee prosthetic leg. Much preparation was put into this trip. We are grateful to everyone on the team for helping prepare for El Salvador. Specifically, Mary Goodrich did an amazing job compiling the instruction manual that describes how to make the leg. Chantelle Ledingham had good looking shirts made for the group. Also, David Chinn was an extraordinary Spanish translator on the trip. Without his help, the group would likely be lost in some remote El Salvadoran village with no way to get home. 2ft Prosthetics is on the edge of really breaking through and becoming a powerful influence in prosthetics technology and distribution around the globe. Thanks to the generous help of everyone involved in our cause, we have been able to come this far. Thanks to the relentless devotion of everyone involved, we will be able to help thousands of amputees worldwide.

Women in Chemical Engineering

What do princesses, pirates, superheroes, and detectives have in common? Chemical Engineering Women! Beginning this year, Kari Cook (PhD ChEn), Sarah Purcell (PhD ChEn), and Joy Cannon (ACERC Secretary) started monthly ChEn Women activities to help build unity. Though designed to last for only the summer, these parties will continue this fall due to their large success.



AIChE

Our AIChE Chapter was busy this year with fun activities. Below are pictures of the Spring Golf Tournament (sponsored by Dow Chemical) and the Spring Banquet.

