

Chemical Engineering Department

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Please contact us with any change in address. You are important to us and we don't want to lose touch with you.

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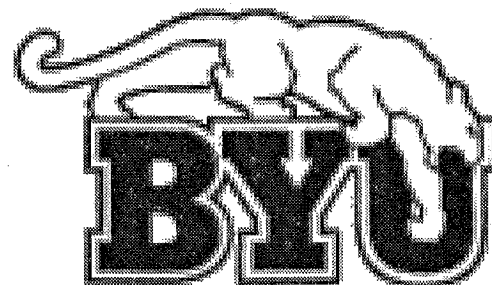
A Very Significant Date: October 8, 1999

Join The ChemE Department for a Fantastic Homecoming Celebration

Please put on your calendar a very significant date for our alumni in 1999: our annual alumni banquet, to be held in conjunction with Homecoming Week at BYU. On October 8, we will have a dinner in the Wilkinson Center. This is your chance to come talk to friends and faculty, enjoy some good BYU food, and then hear an excellent speaker. This year our guest speaker will be Dr. Will Griggs, of the Department of Ancient Scripture at BYU. He is famous for his excavation and studies of Egyptian mummies. He will share some of his experiences and findings with us. It will be a "once-in-a-lifetime" event for our department. Get your plane reservations early so you won't miss it. At the dinner we will also announce our "Alumnus of the Year." If you have nominations for an "Alumnus of the Year," please send them to Bill Pitt by email at "pitt@byu.edu." Thank You.

Homecoming
1999

- Oct. 8th Alumni Homecoming Banquet
- Chemical Engineering Open House
- L. Douglas Smoot "Outstanding Alumnus Award"
- See Friends & Share Ideas
- FOOTBALL! FOOTBALL! FOOTBALL!
- Homecoming Spectacular!!!
- For more info contact:
cheme@byu.edu or (801) 378-2586



Show your "Cougar Pride"

Don't Miss Homecoming Week '99

Brigham Young University

Chemical Engineering Department Newsletter

The Y Output

Volume 13, Issue 2

April 1999

Special points of interest:

- Recent Developments in Catalysis Research.
- New Polymer Research that may save lives
- 1999 Homecoming Preparations
- Undergrad Appreciation
- Annual AIChE Meeting
- International Grad Student Finds More than Scholarship at BYU
- LOST ALUMNI Help us find them!

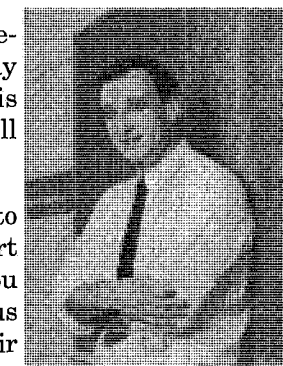
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A View From the Corner Chair

Greetings to all of you from the Chemical Engineering Department at BYU. We wish you the very best. This may sound like one of those trite, empty statements, but there is so much more to this expression than you may know. I'll elaborate a little.

One of my more enjoyable duties as department chair is to interview each of our seniors before they graduate. As part of that interview, I give them a little speech (some of you may remember) in which I ask them to keep in touch with us after they graduate. I ask them to keep us aware of their mailing address, so we can mail them this newsletter (the fact that you are reading this right now means that you have complied). I also request "Send us an email message or a postcard once in a while to tell us when you've had a baby, received a new Church calling, gotten a promotion or a new job, or just to say 'Hi.'" I explain to our seniors that they will always be part of our "family" and will always be important to us. Well, it's true, and that means all of you, whether you graduated last year, 20 years ago, or 40 years ago. So drop us a note and tell us how you



Dr. Kenneth A. Solen

Continued on page 2

Lives of Scholarship, Lives of Service

The Mission of Chemical Engineering at BYU

The Department of Chemical Engineering exists to support the mission of BYU by preparing students for

1. Lives of scholarship and continued learning founded upon principles of science, engineering, and mathematics.
2. Lives of service to family as educated parents, to church as faithful Latter-day Saints, and to community as moral, disciplined, practicing engineers and leaders.
3. Lives of contribution to society and humanity by producing products, processes, and policies that improve the quality of life.

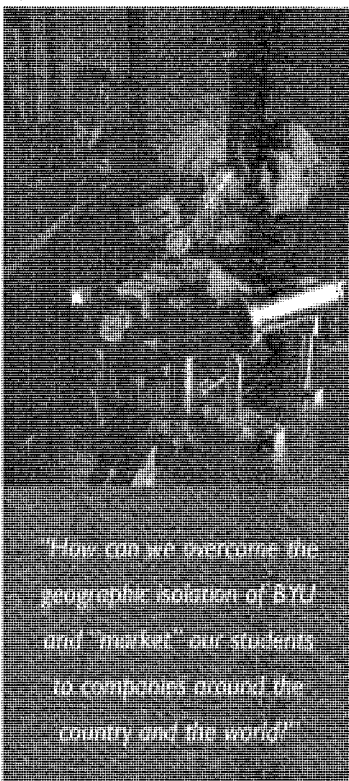
Our curriculum is to help our students develop the capability to solve problems using both quantitative and non-quantitative information and to communicate the solutions effectively. Our personal interaction with the students is to teach them faith, charity, and respect as a basis for a strong testimony of Jesus Christ and a life consistent with that testimony. Finally, our mission is to accomplish these objectives with effectiveness which is far ahead of the world educationally and spiritually, or, in essence, at the level of a relative Mt. Everest.

The Corner Chair

are.

By the way, one of the other things I ask our graduating students to do is to stop in and see us whenever they are in the area. Happily, some actually do it. We have enjoyed the visits of members of our alumni during the past year, because they are back visiting family, taking a ski vacation, or dropping off a son or daughter at BYU or the MTC. These are some fun and rewarding times for us, and when we know that one of you is around, a number of the faculty come out of our offices to say hello and to visit.

Another opportunity for you to travel to BYU is for our annual Chemical Engineering Homecoming Banquet and Program. We are excited to announce the plans for the October 8, 1999 event, when our featured speaker will be Dr. Wilfred Griggs of the BYU Department of Ancient Scripture, who has spent years studying the writings, clothing, and other vestiges found in the tombs of ancient Egypt. Of course, there will also be awards, jokes, good-natured teasing, and fun for all. Come see former teachers and classmates, enjoy the night, and be enthralled by Dr. Griggs. There is also a formal announcement of the activity on the back page of this newsletter.



"How can we overcome the geographic isolation of BYU and 'market' our students to companies around the country and the world?"

We are trying to formally establish another opportunity to see you at the National AIChE meeting. In past years, our faculty who attended the meeting met informally with a few of you for dinner or, when possible, a trip to the temple. This past year at the meeting in Miami, we held a more formal open house in the meeting hotel. The success of that activity encouraged us to hold such an open house on the Monday night of the meeting every year (sort of a department "Family Home Evening") and to attend the temple on Tuesday night, where possible. So, those of you planning to attend the AIChE meeting in Dallas this year, please join us on Monday, November 1 for the Open House and Tuesday, November 2 for the trip to the temple. This event is also announced inside this newsletter.

Speaking of alumni coming to visit, I sometimes talk with them about some of my concerns relating to placing our students in jobs and internships. I mentioned one of those concerns in my newsletter message a couple of years ago, mainly the problem caused by our geographical isolation and the tendency of companies to recruit and hire from universities near their facilities. While a number of you contacted us with some job notifications (we are grateful, so please don't stop), the problem is still a serious one for both internships and permanent hires. So when Ken Atwood ('77), John Ahn ('66), and Brenda (Anderson) Hunter ('95) visited us during the past month, they all had to endure my questions about what we might do. Actually, they all responded very supportively and made some good suggestions. Ken, in particular, thought I should ask you, our alumni, so here is the situation and the question:

tion:

Our students are great young people. They are very talented and capable (remember the unusually-high ACT scores of BYU students in general). Furthermore, many have the unique additional feature of having lived in and spoken the language of another country for 2 years. This latter feature is particularly valuable to companies who need to interface with associates and/or customers in other countries. In many cases, these students (who now come largely from outside the intermountain west) live in areas where chemical engineering companies are located, but being a BYU student puts them at the disadvantage of not studying at one of the "target schools" for those companies. Anyway, the question is: How can we overcome the geographic isolation of BYU and "market" our students to companies around the country and the world?

I look forward to your responses. Meanwhile, very best wishes from your department family.

—Ken Solen

BYU Student Receives Research Fellowship



George Huber, First Mobil fellow from BYU.

The BYU Catalysis Laboratory recently received a \$35,000 grant from the Mobil Technical Company (Dallas) designated for fellowship support of graduate students in research related to conversion of natural gas to middle distillate hydrocarbons via the Fischer-Tropsch synthesis. George Huber, a first-year master's student in chemical engineering, working under the direction of Professor Bartholomew, has been chosen as the first Mobil Fellow and will receive a fellowship stipend of \$15,000 plus \$2,500 in supplies to support his investigation of the kinetics of Fischer-Tropsch synthesis on cobalt/silica catalysts.

Professor Bartholomew, Daniel Bennett, and Thomas Conrad attended the 13th Annual Meeting of the Western States Catalysis Club held February 25th and 26th in Albuquerque, NM. Dan, a senior, and Tom, a junior in chemical engineering, presented a poster paper on "Deactivation of Co/cabosil Catalysts by Support Collapse," and Professor Bartholomew gave an oral presentation treating the "Kinetics of CO Hydrogenation on Co/titania Catalysts."

Polymer Science That May Someday Save Lives

This semester in Dr. Bill Pitt's Polymer Science course, he is trying a wide variety of polymerizations in class. They have made nylon, Plexiglas, polystyrene glue (model airplane cement), polyacrylamide, and more. On the research side, Bill and one of his graduate students, Lori Johnson, Published a very significant paper that has received reprint requests from all over the world. This paper presented their experiments in which they used safe levels of antibiotic and ultrasound to eradicate the infective organisms from a polymer sample covered with bacterial contamination. Although this research was done in the lab, not in animals or people, it proved a technology that may someday be used to eliminate bacterial infections on medical devices in people. Their research with ultrasonic enhanced drug delivery is continuing. Stay tuned.



Graduate Student Highlight: Jian Xu

After receiving a Bachelor's degree in Biochemical Engineering from Chengdu University of Science and Technology, Jian Xu went to work for Beijing Petro-Chemical. After two years, his company sent him to Beijing University of Chemical Technology to get a Master's degree in Industrial Catalysis. After completing his Master's degree, he returned to Beijing Petro-Chemical Corporation for half a year, before moving to the American Orbit Valve Company Asia-Beijing Representative Office.

Jian Xu heard about BYU from his friend Haifeng Zhang, a Ph.D. candidate in our Chemical Engineering Department. After applying to the graduate program in Chemical Engineering at BYU, he waited a year and a half for admittance as a Ph.D. candidate. Enrolling in January 1998, Jian Xu is pursuing an emphasis in Catalysis and is advised by Dr. Calvin Bartholomew. He plans to graduate in the Spring of 2002 and return to Beijing to work in the field of catalysis engineering. One day he hopes to start his own company, as well as help to improve education in China.

During his three years of graduate studies at Beijing University of Chemical Technology, he became acquainted with a student who was also an employee of Beijing Petro-Chemical, Ms. Tian Xue Sun. They were married on August 29, 1996, and now have a fifteen-month old son, Zhao Yu Xu. Following Jian Xu's acceptance, his wife and son remained in Beijing while Jian Xu traveled to Utah in mid-December 1997. Just over a year later, his wife and son received their visas and came to Utah on December 25th 1998. They now live in BYU's Wymount Family Housing.

He has been impressed by both the Honor Code and the people at BYU. He was amazed that no one smokes or drinks alcohol and has found the BYU community very polite and kind.

Graduate School Recruiting Banquet

On January 20, 1999, the Chemical Engineering Department hosted a dinner for 41 of our top undergraduates. The purpose of this dinner was to encourage promising students from the Junior class to consider, and begin preparations for, graduate studies in Chemical Engineering. The student candidates listened as both professors and alumni discussed the advantages of graduate school.

The first speaker, Dr. Merrill W. Beckstead, outlined some of the benefits of a BYU graduate education:

- Graduate school is a confidence builder
- Graduate students learn for the sake of learning. They have a freedom unavailable to undergraduates
- Graduate school is for those interested in research. Industry is looking for researchers and innovators
- Our graduate program is geared toward design

Another professor, Dr. Paul O. Hedman, discussed some of the perceived disadvantages of graduate school. Hedman said students are often concerned about the time it takes to complete the degree. On the average, a masters degree takes two years to obtain, whereas a Ph.D. takes four years to complete. Other students are concerned that graduate school does not significantly increase starting salary. While it is true that there is not much difference initially between the pay for masters or bachelors degrees, a graduate degree will later provide opportunities that are not available to those holding only an undergraduate degree. In the long term, obtaining a higher degree will help your career.

Ph.D. candidate, Daniel Flores of Monterey, Mexico, also addressed the students. In his remarks, he noted that with a Ph.D., you will receive job offers for jobs you *want*. Some of the most interesting and rewarding jobs are not available without a Ph.D.

On a personal note, Flores said he has found his education particularly challenging and fulfilling. "I have experienced a change that I would not have experienced had I gone straight into the industry," he said. "In graduate school, you learn how to utilize *all* of your talents." Flores feels his schooling has given him greater perspective.

Our Chemical Engineering professors feel that the banquet was a success and believe that some of our talented undergraduates will stay for graduate degrees in Chemical Engineering.

Appreciation From Under-Grad Scholarship Recipients

Following are actual excerpts from "Thank You" letters by Undergraduate scholarship recipients:

"Time and money seem to be in large demand for today's student. The time issue can't always be solved, but thanks to companies like yours, part of the financial strain can be lifted from the student's back to lessen the burden. I truly appreciate your contribution to my academic studies."

"As a chemical engineering student, my course load keeps me extremely busy with school work, leaving little time to earn the money I need to pay for school. [Your] kindness will give me the freedom to focus on my studies without the financial concerns that can be so omnipresent in academia."

"I am very appreciative of the fact that you and your organization make available generous contributions to help offset the financial burdens of a technical education. I am confident that these funds in my behalf will be used so that I may, in the near future, be able to perpetuate such gifts."

"This recognition of my academic success provides incentive to maintain a higher work ethic and level of learning."



Dear BYU Alumni:

The AIChE student chapter at Brigham Young University has had an exceptional year. We have a large, outstanding group of new freshmen, and our chapter membership is above the National average. Our student chapter has been recognized for excellence from many quarters, and we have been involved in some great service projects and field trips. Here is our year in review:

Fall Semester 1998

- Ice Cream Social for freshman and returning students
- Resume and Cover-letter workshops
- Resume book. We put together a compilation of resumes from our graduating seniors
- Career Fair. The number of new companies in attendance was record setting
- Fall Banquet. Dr. Brad Wilcox spoke on "Having Humor in Your Life"
- National AIChE conference in Miami, Florida. BYU was awarded national recognition for our outstanding student chapter
- Sub for Santa Auction. We raised over \$2000 for the United Way.

Winter Semester 1999

- BYU Engineering Week. We took 1st place in the Booth Competition
- Rocky Mountain Regional conference at Rapid City, South Dakota. Of the twelve students attending, five will present in the student paper competition
- Spring Banquet
- Graduation and Commencement

Throughout the year we have had field trips to: Intermountain Power Plant (I.P.P.), Geneva Steel, Fairchild Semiconductor, Kennecott mines, and other sites. We have also had exciting speakers at our group meetings—with topics ranging from pursuing a career as a medical doctor to working as a process engineer to working as a patent attorney.

I hope that all of you, wherever you may be, will remember us and continue your support. One of the best ways to show your support is to keep our students updated on jobs and internship opportunities with your respective companies. You can forward employment/internship information to: cheme@byu.edu.

This year has gone by quickly and has been a lot of hard work, but the results have been rewarding. I am excited for next year's students and the legacy they will continue. Serving our AIChE student chapter has been fun and will always be a part of me.

—David G. Anderson

AIChE President 1998-99

BYU Alumni and Friends Reception at National AIChE Meeting

The second significant alumni event of 1999 will be the Reception for BYU Alumni and Friends at the Annual AIChE Meeting in Dallas, TX. The reception will be held Monday evening, November 1, 1999. We will announce the location in the next newsletter. Please plan ahead to attend this special event. We have many friends and alumni, and we expect a fun gathering. We also are planning a trip to the Dallas Temple on Tuesday evening, November 2, 1999. Please mark these events on your calendar, and plan to get to the AIChE meeting by Monday. See you there!

ChemE Trivia Questions

If you can correctly answer the following questions and you will be in attendance at the 1999 Alumni Homecoming Banquet, you could win a prize!!!! Please email your responses to: cheme@byu.edu. Thanks and Have Fun!

1. Which professor has ten children? (It is not Dr. Harb)
2. By his Ray-Bans and leather bomber, which professor can be recognized as the pilot of his own plane? (It is not Dr. Harb)
3. So attached is he to his cowboy boots, which professor will not go running with his colleagues until *pointy* running shoes are invented? (It is not Dr. Harb)
4. Which professor has played the trombone for 12 years? (It is not Dr. Harb)
5. Which professor moonlights as a singer? (It is not Dr. Harb)
6. Which professor played basketball with his students? (It is not Dr. Harb)
7. Which professor played on the BYU basketball team as a student? (It is not Dr. Harb)
8. As the broker for his daughter's Girl Scout cookies, which professor should be made an honorary Girl Scout? (It is not Dr. Harb)
9. Which professor had three sons serving LDS missions at the same time? (It is not Dr. Harb)
10. As an undergraduate in Chemical Engineering at BYU, which professor was ranked second—second only to his wife? (It is not Dr. Harb)
11. Which professor played the trumpet for BYU when he was going to school? (It is not Dr. Harb)
12. Which professor is an avid fisherman? (It is not Dr. Harb)
13. Which professor is a Vietnam War veteran? (It is not Dr. Harb)
14. Which professor goes running every day during his lunch hour? (It is not Dr. Harb)
15. Which professor turned 40 in 1999?

EXTRA QUESTION

Which professor was taught by six of his current colleagues, and who are those six professors? (None of them are Dr. Harb)

REMEMBER: To claim your prize, you must be in attendance at the Homecoming Banquet! Call 801-378-2588 or email cheme@byu.edu to make reservations.

Lost Alumni

Each Alumnus is important to us. Please help us find our missing friends.

- | | | |
|-----------------------------------|-------------------------------|--|
| Scott C. Allen, 1961, B.S. | Homer J. Cook, 1963, B.S. | Karl Miller, 1966, B.S. |
| Thomas Allred, 1988, B.S. | Steve Cottam, 1972, M.S. | Paul Evera Morgan, 1973, B.S. |
| Larry Don Allred, 1973, B.S. | Dean F. Cowley, 1958, B.S. | Harvey H. Neilsen, 1964, B.S. |
| James C. Almond, 1956, B.S. | Gary L. Cox, 1983, B.S. | Mansel A. Nelson |
| Scott E. Anderson, 1984, B.S. | Robert G. Craft, 1959, B.S. | Larry Neubauer |
| Greg Anderson, 1971, M.S. | Bharat Dadia, 1970, B.S. | Howard L. Nielson, 1972, B.S. |
| Paul K. Anderson | John P. Davis, 1967, B.S. | Yuan Pa, 1971, B.S. |
| Ralph Anderson, 1956, B.S. | Dennis N. Day, 1957, B.S. | Charles Pai, 1965, B.S. |
| Robert W. Anderson, 1959, B.S. | Cliff Dedrickson | Glen Palmer, 1981, B.S. |
| David G. Anderson | James D. Dick, 1971, B.S. | Brent Palmer, 1972, M.S. |
| Ronald Arnett, 1968, B.S. | Kiritkumar Doshi, 1970, B.S. | James M. Peterson, 1979, PhD |
| John M. Austin, 1962, B.S. | Erek Erekson, 1975, B.S. | Ralph E. Peterson, 1966, B.S. |
| Ernest W. Barlow, 1969, B.S. | Leslie A. Fort, 1973, B.S. | Kevin Peterson |
| Lyman K. Barney, 1964, B.S. | H. Spencer George, 1970, B.S. | Merritt Phillips, 1984, B.S. |
| Douglas G. Bateman, 1970, B.S. | George Rasmussen | Michael E. Post, 1984, B.S. |
| B. Dan'l Beal, 1970, B.S. | Norman R. Gordon, 1958, B.S. | Gregory S. Poulson, 1987, B.S. |
| Daniel Bedell, 1969, B.S. | Sarah Grover | Richard Lynn Reed, 1972, B.S. |
| David Charles Bell, 1972, B.S. | Lee R. Hansen, 1959, B.S. | Nephi J. Richards, 1959, B.S. |
| Clinton D. Bennett, 1964, B.S. | Michael R. Harper, 1968, B.S. | W. Martin Ruckert, 1987, B.S. |
| William J. Berry, 1970, B.S. | Jerry S. Harris, 1962, B.S. | Gary B. Siommons |
| Satish D. Bhakta, 1989, PhD | Darwin J. Harwood, 1956, B.S. | Lee Smith |
| Cleve L. Bingham, 1970, B.S. | Gerald Reed Hill, 1972, B.S. | Gene S. Smith, 1964, B.S. |
| Floyd E. Bingham, 1965, B.S. | Boyd A. Hill | Dae S. Song, 1966, B.S. |
| Michael Bingham, 1967, B.S. | A. Keith Jameson, 1957 | Lyle B. Spendlove, 1957, B.S. |
| Douglas M. Black, 1972, B.S. | S.Raj A. Jhaveri, 1961, B.S. | Eric Stewart |
| Courtney A. Brown, 1972, B.S. | Gerald A. Johansen, 1960 B.S. | Panno Suttiwiriya, 1972, B.S.,
1974, M.S. |
| Patricia H. Brown, 1974, B.S. | Kamai B. Kapadia, 1970, B.S. | Jeffrey Thockmorton, 1970, B.S. |
| William W. Buchanan, 1964, B.S. | Robert J. Kirkham, 1971, B.S. | Peter M. Tong, 1965, B.S. |
| John A. Bunting, 1968, B.S. | Lisa Larsen | Timothy Tsai, 1967, B.S. |
| Brent Carroll, 1969, B.S. | James E. Larsen, 1973, B.S. | Mahesh Vallah, 1970 B.S. |
| Richard T. Cartwright, 1969, B.S. | Michael S. Layous, 1972, B.S. | Linda Watkins |
| Richard W. Chambers, 1957, B.S. | Tan P. Le, 1976, B.S. | Robert D. West, 1958, B.S. |
| Christopher Cheng, 1988, B.S. | Gordon R. Lesley, 1960, B.S. | Clyde Lester Witham, 1973, B.S. |
| Robert D. Clay, 1963, B.S. | Ravi Liaontikul, 1967, B.S. | Larry Wong |
| Nathan B. Coe, 1958, B.S. | John Mason, 1974, B.S. | Sung Chul Yi, 1987, PhD |
| William K. Condie, 1967, B.S. | Jayendra S. Mehta, 1970, B.S. | |