

# CHE NEWS

## FROM THE CHAIRMAN.....

**T**his past year our graduating class matched the largest in the history of our department. In both the 1985-86 and in the 1995-96 school years we awarded 34 BS degrees. Unfortunately both classes graduated at a time of soft job markets. In the early 1980s the demand for chemical engineers soared as the price of petroleum escalated. By the mid 1980s the influence of the OPEC producers lessened and the work on alternative fuels nearly ended. Our large 1986 graduating class saw a declining demand for chemical engineers especially in the petroleum industry.

The job market is more complex today. Job opportunities for chemical engineers have developed in environmental engineering, the electronics industries, and biotechnology as the opportunities have lessened in the petroleum and chemical industries. Perhaps the pulp and paper industry has been the most consistent in hiring chemical engineers over the past decade. In December 1995, job opportunities were excellent in the electronics and pulp and paper industries. However, the conditions for both industries were poor in the spring, and many job opportunities disappeared. The petroleum and chemical industries have still not recovered from domestic downsizing and are investing mostly in Asia. The environmental industries are holding their own, but are keeping a close watch on new legislation such as the Superfund reauthorization.

Nearly everything, but especially demand for chemical engineers, is cyclical. Unfortunately, the cycles of demand and supply are often out of phase. We are already seeing a correction to the supply as we have fewer students in our freshmen through junior classes. I expect that we will return to class sizes of 20 to 25, close to our long term average.

The dedication of our new engineering building took place on October 4. We are fully utilizing the new classrooms in this building this fall. Some of us used these classrooms during the past spring semester, and the students preferred them to our old Buchanan Engineering classroom. The new classrooms are definitely more comfortable.

Two areas where we especially need your support are our student chapter and for new computer hardware and software. Our student chapter relies on your support for field trips and attendance at regional conferences. Approximately half of the equipment in our student study room and in our process control lab has been purchased with alumni contributions. We now have about half the equipment that we need. Also, we are now paying for graduate student health insurance from our development fund. About three years ago an uninsured graduate student developed serious health problems. After one such experience, we decided to force all of our graduate students to be insured by providing this support. Thanks for your past and continuing support.

### **ROGER KORUS, Chair**

This past school year Roger taught Hazardous Waste Management and Integrated Circuit Fabrication. He team taught Hazardous Waste Management with Greg Moller, Director of the University of Idaho Analytical Laboratory. This was an effort to keep this class going while Margrit von Braun was on sabbatical leave. Greg contributed an understanding of analysis, toxicology, environmental regulations, and an understanding of environmental problems. Roger contributed to contaminant transport, process engineering, and remediation alternatives. Recently, this has been our most popular elective course.

Recently the electronics industries have been a major employer of our graduates. Our students work for the producers of silicon-based chemicals such as Advanced Silicon Materials, for wafer manufacturers such as Shin Etsu SEH America, for integrated circuit manufacturers such as Zilog, Micron and Fujitsu, for equipment manufacturers such as Applied Materials, and for printed wafer board manufacturers such as Merix and Electronic Controls Design. Roger thanks our alumni from the above industries who presented guest lectures in his class, and welcomes guest lecturers for next spring semester. Please contact him if you are interested. These lectures were highlights of the class.

Roger has continued his research in applications of bacteria to pollutant degradation. Most of his research is supported by the National Science Foundation. He works closely with microbiologists who identify the soil bacteria capable of degrading chlorinated and nitrated compounds. Together they determine the optimum conditions for degradation, while Roger specializes in the kinetic modeling and reactor design. So far they have worked with soils and ground waters contaminated with chlorinated solvents like carbon tetrachloride, munitions compounds like TNT, and wood treating compounds like pentachlorophenol. They have been successful in finding active soil bacteria in each case.

### **TOM CARLESON**

Tom found himself in China again this summer traveling around and giving seminars at various places (North-eastern University in Shen-yang, Beijing Institute of Light Industry, Tianjin Institute of Chemical Engineering, East China University of Science and Technology in Shanghai, and South China

University of Science and Technology in Guangzhou). Some of the time in Guangzhou was spent doing supercritical fluids research. Owen Li (MS ChE student) joined Brian Preussner, Joyce Lee, and Christian Maupin (ChE undergraduate students) performing stack sampling on the UI wood fired boiler. In February they performed a compliance test for the State of Idaho. Owen's research, supported by the UI Physical Plant, concerns the relationship between opacity and dust concentration.

In April Terry Battisti (PhD ChE student) gave a presentation at the Idaho Academy of Sciences meeting in Moscow. Terry walked away with first prize for his presentation at the session. This summer Ken Swalley (ChE undergraduate) helped Terry prepare the solvent extraction column for residence time distribution tests. Terry's research concerns the removal of lead from high acid sodium waste solution stored at INEL. He is in the third and final year of the LITCO funded project. Earlier in the year, Terry wrote proposals that also resulted in funding his research (Small Business Innovative Research, Department of Energy Summer Fellowship).

Ryan McMurtrey (MS ChE student) completed construction of his supercritical fluid extraction system this year. He and Aaron Newton (ChE undergraduate student) spent some time this summer doing extraction of heavy metals from Coeur d' Alene soil. Ryan's work on the dynamic extraction of metals with ligands in supercritical carbon dioxide was supported by the LITCO-MIT University Research Consortium (a joint project with the Department of Chemistry).

Gary Lowe and Rick Dauven (ChE undergraduates) worked on the ASPEN process simulation program to incorporate a liquid extraction module for simulation of operations at the Idaho Chemical Processing Plant. This work was supported by the LITCO-MIT University Research Consortium.

Jeff Tieg (MS ChE student) is continuing his work on the finite difference and finite element (FIDAP) models of mass transfer to an oscillating droplet. This work is supported by the EPA. The project is a joint one with the Mechanical Engineering Department.

Tom was awarded the 1995-96 Outstanding Faculty Award from the Environmental Science Program. Tom and Professors John Marshall (Forest

Products) and Gundars Rudzitis (Geography) have been jointly teaching the Environmental Science Seminar series (1995 and 1996).

#### **J.J. SCHELDORF**

He has been there, done that, same-o, same-o. He basically spent the year just doing more of what he enjoys most--teaching his favorite courses. There have, of course, been the inevitable twists and turns that he likes to throw in to keep the folks on their toes. All told, it was another fun year.

#### **LOU EDWARDS**

The pulp and paper activities at the University of Idaho continue on an international scale. Dr. Yongxiang Gu and Rocky Smith are working on mill closure issues with Eka Chemicals from Atlanta and Bohus, Sweden, Ahlstrom, Weyerhaeuser, Stora (Sweden), NCASI, DOE, and Louisiana Pacific continue to work with Dr. Edwards, Kirk Lang and the others on the UI pulp and paper team.

The post-doctoral work of Yongxiang Gu has been noteworthy over the past year. He has presented and/or published material on mill simulation and closure, equilibrium calculations in full mill simulations, and VOC emissions.

As usual, Judy Kidd is the glue that holds the pulp and paper activities together. Her administrative and budgetary efforts are essential and greatly appreciated.

#### **DAVE DROWN**

When Dave's mother, Ellen Drown, moved to Moscow in 1995, she established the Lyman and Ellen Drown Chemical Engineering Scholarship Endowment fund in memory of Dave's father. Lyman had been accepted to the University of Idaho in the 1930's but was unable to afford a college education and instead went to work at Lockheed building airplanes. He always wondered "What If" he had been able to attend college instead of 30 years of on-the-job experience to become a manufacturing engineer. Ellen also had hoped to attend college, but during the depression it was not feasible for her, either. It was her hope to give something to young people today to provide them with an easier path to achieving their education goals. Ellen passed away in June, 1996, and the first Lyman and Ellen Drown Scholarship was awarded in August.

Dave has been busy as ever keeping up with his broad range of interests. The ground coil heat pump research has taken him to Lapwai and to the San Juan Islands this past year. Each installation has its own challenges (i.e., unique site layout, soil conditions, climate, and building inspectors, bank loan officers, or contractors who say it can't be done or it won't work), and Dave's original system still gets tweaks and bumps of improvement. The infamous Moscow flood of February '96 saturated the soil and shorted out two of the 48 ground thermocouples. The 2 thermocouples have been repaired and the increased soil moisture improved the heat exchange efficiency; although, Dave doesn't recommend having annual floods to save \$5 in heating bills. The biodiesel research took him to Yellowstone for an NCATT sponsored environmental conference in May; the ethyl ester truck successfully completed a year of operation in the park and the exhaust odor was not the bear attractant some had predicted.

The ChE 454 spring projects evaluated various technical concepts for utilizing wheat straw to make paper. This is now culminating in 3 of those students (Aaron Mosher, Nichole Goeden, and Benjamin Wood) preparing presentations for the October 1996 TAPPI Pulping Conference in Nashville, Tennessee. Lou Edwards, Dave, and the three students will present a technical session panel discussion on the economics of wheat straw pulping.

ChE 123 found itself without a viable computer classroom in the fall of 1995. Thus began a vigorous overhaul of the ChE student reading room/computer lab into an updated departmental PC lab/classroom which is now connected to the world wide web with it's own home page. Barry King and Kirk Lang have been working electronic wonders again (see advertisement for the home-page)

The potato research committee of the Idaho Association of Commerce and Industry (IACI) has funded the first phase of a new research project to determine nutrient release rates for Chemical Oxygen Demand, phosphorus, and nitrogen from potatoes into process waste water. Kristen Lavier (BS '95, MS candidate) is developing an understanding of the variables which affect the release rate which should lead to reduced water effluent

loadings while preserving the quality of your French fries.

#### **MARGRIT VON BRAUN**

Margrit von Braun is back from a busy year's sabbatical connected to the third and final year of her Kellogg fellowship. In the fall, she spent several weeks in Vladivostok, Russia working with Dr. Nadia Khristoforova, Chair of the Environmental Science Institute at Far East University. Together they developed and finalized a student exchange program between the Environmental Science Program at the University of Idaho and Far East University which will begin in the summer of 1997. She also spent a month at the Beijing Normal University in China, giving seminars, reviewing curricula and meeting prospective graduate students. From March through May she was at James Cooke University in Queensland, Australia, teaching Environmental Engineering II and giving seminars, as well as evaluating their environmental engineering curriculum. She also visited lead smelters at Port Pirie and Broken Hill in south Australia, to discuss opportunities for comparison between protocols used there and at the Bunker Hill site in Idaho. Her discussions with Dr. Ian Calder, Director of the Environmental Health Branch of the South Australian Health Commission, led to his offering support for a PhD student or post-doc position.

Margrit has published three articles with Bridget Bero (ChE PhD '94) related to the effects of particle size reduction of fibrous materials on toxic characteristic leaching procedures; x-ray fluorescence as a means of sampling lead contaminated carpeted surfaces; and, the effectiveness of freeze fracture carpet grinding techniques in determining total lead. She has four articles that are currently in progress. They include: an evaluation of vacuum techniques for sampling lead contaminated carpets (with Bridget), a pollution prevention teaching module (with Colette Palamar, EnvS MS '96); a comparison of batch leaching test results on mine wastes (with Matthew Galbraith, ChE MS '92); and, a paper on the similarities and differences in the science behind toxic chemical and radiological risk assessment (with Genevieve Roessler, a University of Florida, emeritus professor of health physics).

**WOODY ADMASSU**

1995-96 was a good year for Woody. He received two distinguished Alumni awards, again, for Faculty Excellence presented at the UI Alumni Awards Banquet in December 1995.

Woody taught four undergraduate and graduate classes that include transport phenomena, material and energy balance and senior and graduate seminars. He was invited lecturer in American studies and Biotechnology class. His research area continued to be in remediation of heavy metal contaminated soils/sludges, modeling of bioreactor for mammalian cells, and the effect of physical and chemical conditions on gas separation using polymeric membranes. Graduate students Bipin Thakur and Tom Breese have finished and successfully defended their theses and have submitted their work for publication. Graduate students Atul Gupta and Anand Sethuraman have finished their work and will defend their thesis in October 1996. Graduate students Bryan Periera, Zhiqiang Yu and Tom Breese will continue work on the aforementioned research areas.

Woody has continued his work with undergraduate students. Under his guidance this year his students won first place in the International Environmental Design Contest. The topics for this year competition were "Remediation of Leaking Underground Storage Tanks," (TASK I) and "Removal and Treatment of Radioactive Vegetation," (TASK III). This year's group consisted of Abbie Parker, Aaron Newton, Jennifer Meehan and Chris Doten, all ChE students. These students competed against 25 universities at the site of the competition, New Mexico State University in Las Cruces, New Mexico. These students as they say "cleaned up". They won seven individual trophies and the over all Rust Geotech traveling trophy. They also won \$15,000. Their winning included for TASK III: "Outstanding Performance", "Best Bench Scale", and "1<sup>st</sup> Place Overall"; for TASK I: "Best Presentation", and "2<sup>nd</sup> Overall". As a team they also won "Outstanding Technical Merit", "Outstanding Overall Quality" and The Traveling Trophy. What an accomplishment by these ChE students!!! Woody plans to continue on returning to New Mexico State University with a brand new group in 1997.

**BRAD ELDREDGE**

The ChE program in Idaho Falls is progressing well. We graduated one MS student - Sherri Lewis and have several others who are working on their theses. We are teaching 5 live courses this semester and look to continue at about the same level next semester. The INEL restructuring is about over and we have "bottomed out" on our enrollments in Idaho Falls. The Fall 1996 semester enrollments are about 9% above the Spring 1996 numbers so we think we have turned the corner.

I am still teaching 3-4 courses/year and working on research. I finished a draft of a paper with Dave Drown this last summer and am working on another paper with Dave Houck. I hope to get both of them done by the end of the year. I have been working with several people at the INEL on getting some research projects for the summer. I advise students also and keep busy with my duties on the city council. So I never have to complain about not enough to do!

#### **JIN Y. PARK**

Jin and his graduate students continue to work on a couple of research frontiers. Mark Sanner is finishing up his dissertation on the development of a dynamic pulsed plasma reactor, or DPPR, and its application to chemical vapor deposition of advanced materials. An article co-authored by Jin and Mark and published in the prestigious Review of Scientific Instruments is anticipated to attract some attention to DPPR as a CVD research instrument. A second article on applications of DPPR is on its way. Rajeev Fedane continues his work on the fluidization of semicohesive Group A powders, a staggering research frontier in fluidization without a major breakthrough in the past two decades. Rajeev thinks, after a year of intense training in math, transport phenomena and powder mechanics with Jin, that he might be ready for one.

Jin's biggest accomplishment this year, exterior to chemical engineering, was that he finally broke the 90-barrier in golf and led his UI Golf Course men's league team (the Third Street market team) to the League's final best ball tournament championship. Jin maintains that golf is the only sport that he truly enjoys playing and probably the only one that he has some natural talent in, if any at all.

**MEL JACKSON**

My 81st year has arrived and I am cleaning out my office so some one else won't have to do it. I think I have written and given my last paper, at Purdue in May, and the US and Canadian patents on the deep tank aeration/flotation system have expired. What will I do now with all this time on my hands? I guess about what I have been doing since "retirement": check up on our children, encourage the grandchildren now that some are en-

tering college with one taking chemical engineering, and continue monitoring some investments. There are still trips to be made, Elderhostels to attend, and books to read. I may even get beyond E-mail on the net although I am not sure that I want to spend all that time roaming around. Anyway, thanks to those of you who have supported the ChE scholarship programs which have grown alot for the ones in my name and that of Dwight Hoffman.

A student saw me in the hall the other day and she thanked me profusely for something. I finally realized that she had been given a scholarship and somehow thought I had been involved directly. Idaho has been and is a great place to be which I know having taught also at Montana State and the Universities of Montana and Colorado. This may sound like a swan song but its just a way of saying its been nice knowing you all.

### Bits 'n Pieces....

UI Alumni Association Treasurer, **Gary McDannel (MS '92)**, is a department manager for Lockheed Martin Idaho Technologies at the Idaho National Engineering Laboratory in Idaho Falls.

**Heather Dawn Johnson (BS '96)** and **Kurt Christian Thorne (BS '96)** were married in an outdoor wedding on Saturday, July 13, 1996 in Springfield, Oregon. Heather works for Boise Cascade and her address is: Boise Cascade - Wallula Mill, PO Box 500, Highway 12, Wallula, WA 99363; 509-545-3248; 509-545-3282 (fax).

**Craig Barrington (BS '82)** reported he was offered a permanent position as a contract engineer at Ames Research Center in Mt. View, CA. Ames Research Center is operated by NASA and he is working for Spherdrup Technology, a contractor for NASA. His work involved computer programming and analysis for the development of 'free flight', a system which will harness GPS in navigation systems (for collision avoidance, for instance). Craig can be reached at **barrington@starship.arc.nasa.gov**

**E. David Houck (MS '93)** is the Chairman of the Idaho Section of the American Institute of Chemical Engineers. He works on the INEL Spent Nuclear Fuel Program.

**Russ Wermers (BS '81)** completed a PhD in Finance at UCLA last fall. He accepted a position at the University of Colorado at Boulder as an Assistant Professor of Finance in the Business School. His research area focuses on several aspects of mutual funds, including how to properly measure performance and whether mutual funds tend to focus on the same stocks. Russ and his wife Johanna have two year old twin girls, and traveled to Idaho this past summer for Russ' 20 year high school reunion. Russ can be reached at **wermers@spot.colorado.edu**

**Pat Ealy (BS '95)** recently reported that he is working as a technical service/sales representative for Callaway Chemical Company (formerly owned by Exxon and now owned by Vulcan). He oversees three accounts that total around a million dollars a year in sales. He can be reached at 4926 SE 30th Avenue 114, Portland, OR 97202.

**Chris Walhof (BS '96)** works for Management Recruiters of Boise, placing professionals in the petrochemical and refinery industry. He enjoys the work very much. Chris can be reached at: Management Recruiters of Boise, 290 Bobwhite Court, Suite 220, Boise, ID 83706-3966; 208-336-6770; 208-336-2499 (fax).

**Teresa Jurgens (BS '91)** reports that she married Andrew Kowal, an Electrical Engineer, on March 12, 1995. At the time of her correspondence, she was wrapping up the research for her PhD and anticipating writing her dissertation. One of her long range goals is to teach at a University, preferably in the Southwest. Theresa can be reached at **jurgens@u.washington.edu**

**Michael J. Killien (BS '61)** is the Plant Manager of the Star Enterprise refinery in Port Arthur, Texas, which is the largest refinery in the Texaco system. Star Enterprises is a joint venture between subsidiaries of Texaco and Saudi Aramco. The company refines and markets Texaco-branded products in 26 East and Gulf Coast states and the District of Columbia. His address: 3385 Shady Hollow Lane, Beaumont, TX 77706.

**Brian Crites (BS '92)** reports his family had a wonderful year. They took a trip to Steamboat Springs, CO, where they had a fantastic time skiing and snowboarding. They also indulged in their other passion, golf, playing over 20 different courses by the end of the season. Brian also journeyed to Wyoming for a successful elk hunt adventure, and they did get in a fair amount of camping. Brian notes that their baby Kilyon is about a year old now, and for an Irish Setter, she is better at digging holes in the back yard than she is playing in the water. Brian and his family can be reached at: 170 E 3rd Street, Soda Springs, ID 83276-1614.

**Jessica Ross (BS '96)** and **Travis Krumsick (BS '96)** currently live in downtown St. Paul, MN. Travis works as a computer programmer for a small company, while Jessica works for Imation, a spinoff of 3M. Jessica works with a team of engineers to increase the production capacity of the White City, OR plant. Jessica can be reached at **jeross@mmm.com**

**Noel Wing (BS '95)** and Janeena Jamison were united in marriage on Saturday, June 29, 1996 in Idaho Falls, ID. Noel and Janeena can be contacted at: 2354 Gail Drive, Pocatello, ID 83201.

**Paul Zimmerman (BS '88, MS '89)** reports he left Unocal and now works for UOP Field Operating Services. His first trip was overseas to Mangalore, India for a checkout and startup of a new hydrocracking unit at Mangalore Refining and Petrochemicals Ltd. Paul's address is: UOP Field Operating Services, 25 E Algonquin Road, Des Plaines, IL 60017-5017.

**Jin Yu (MS '93)** and her husband recently celebrated the birth of their baby daughter, Brenda. The littlest Yu arrived December 1, 1995, and weighed 7lbs, 4oz, and was 21" long. Jin's mother came to stay with them for awhile and assisted in

taking care of Brenda while Jin recuperated. Congratulations can be sent to: 47333 Yucortani Drive, Fremont, CA 94539.

**Steven Edward (BS '85)** works as the senior environmental compliance and engineering coordinator for Merix Corporation (a subsidiary of Tektronix), and is responsible for a three-state area. The Edward's bought a home on 5 acres of land a couple of years ago and have been developing it into a mixture of pasture and woodland. They raise Alpacas, and expect three new babies this year, bringing their herd total to 10. Steven can be reached at [stephen.edward@merix.com](mailto:stephen.edward@merix.com)

**Loren Erich Euhus (BS '94)** and Carla Fay Camp were united in marriage on December 30, 1995 in Moscow, ID.

**Kirk Daehling (BS '82)** and his family had an exciting past year, with several planned-outings, including a skiing trip to Utah over New Year Weekend, and the annual summer vacation trip, destination Canada. Kirk is still with FMC and into racquetball and hunting as his primary extracurricular activities. Brenda is considering entering tennis as more than just a hobby, somehow finding the time amidst her three kids. Mitchell is now 7 and going into the third grade. Adam is 4 and has been learning sign language in preschool at Idaho State University. Kayla is 3 years old and has been learning that its not cool to try Sumo holds on the other kids.

**Michael F. Rousseau (BS '86 , MS '88)** succeeded Mr. Jerry R. Truitt as general manager, marketing and sales, Carbon Products Division of Reynolds Metal Company, located in Lake Charles, LA. He joined Reynolds in 1988 as a process engineer in Longview, WA. He was promoted in 1990 to general production supervisor at the Baton Rouge Calcined Coke Plant and was named plant engineer in 1994.

**Michele Johnson (BS '95)** reports that she is enjoying her graduate studies at the University of Utah. She comments that most of the students are married which gives her a rather unique status amongst her friends. Michele notes that her education at UI made her well-prepared for academia at the University of Utah. Michele can be reached at [mljohnso@cadesm95.eng.utah.edu](mailto:mljohnso@cadesm95.eng.utah.edu)

**Brad Eldredge (PhD '91)** can be reached electronically at [stf1014@decit.if.uidaho.edu](mailto:stf1014@decit.if.uidaho.edu)

**Nancy Milligan (BS '81)** is now Nancy Gilbert. Her address is: 1009 Hemlock Avenue, Lewiston, ID 83501.

### FROM THE CYBER MAILBOX:

"I find the "ChE NEWS" very interesting, although it hard (sic) to picture what is happening. The University of Idaho which I entered almost sixty years ago in the fall of 1938 was so far different from 1995 that to this generation it might seem like a different planet. Harrison Dale was president; Jess Buchanan was the new Dean of Engineering; Professor Gauss was teaching Thermodynamics using the "Steam Tables" as the principal tool (ChE's later learned Thermo basics); Janssen was teaching some Civil course as I recall; There were around 2000 students (80%+ male); There was one female engineering student during my time; Dwight Hoffman was a first year graduate student; and the Vandals hadn't won a football game from Wash. State in living memory.

I was a slow learner in that it took me until 1947 to finally graduate, of course I had a slight excuse related to a little international unpleasantness going on at that time. Our graduating class was interesting to me at least, we had seven members (six were veterans) who divided consistently into three scholastic groups (2 A's, 3 B's and 2 C's). In our senior year the pattern in ChE courses was always the same however we all got A's in courses out in the other world showing the superiority of ChE's. In fact, it was disturbing to some when all the A's went (sic) ChE's in many courses given by other departments. One of two guys who always got the A's went directly into medicine and never pretended to be an engineer and the other got a PhD and became the Director of the University of California, Lawrence Livermore Laboratory supervising a covey of PhD Physicists (the world's greatest intellectual snobs). The rest of us did quite well as far as I know and Dale Dunn became a tycoon of sorts.

It appears that you have been doing a lot of things right in the intervening years, keep up the good work. If the class of '47 has a 50th reunion in '97, I'll probably make it which will make it my first time back since graduation."

-- George F. Emerich,

### MY SOUL FLIES WITH THE WINGS OF EAGLES.....

Karl Regan, a PhD student in Ron Crawford's lab, passed away on December 22, 1995, in his Moscow apartment. He had been undergoing treatment for various health problems. Although a medical examination was completed, it was impossible to determine the exact cause of death. Despite his illness, Karl was always a bright and engaging presence, delighting his co-workers with his wit, his intelligence and his tremendous vitality. He will be deeply missed. A memorial service was held on Sunday, January 14 in the Silver and Gold Room of the SUB. Memorials may be made to the Palouse AIDS Network, 319 East Fifth Street, Moscow, ID 83843.

## CHEMICAL ENGINEERING ENROLLMENT - 1986 - 1995

YEAR	FR	SO	JR	SR	UG	GRAD	TOTAL
1986	27	24	22	29	102	27	129
1987	44	24	16	25	109	29	138
1988	38	32	13	20	103	28	131
1989	31	39	19	25	114	28	142
1990	35	33	29	28	125	21	146
1991	33	26	34	32	125	28	153
1992	51	43	33	48	175	33	208
1993	37	42	46	55	180	27	207
1994	36	32	44	66	178	17	195
1995	39	29	33	84	185	15	200



### Environmental Science Program Update -- Chris Dixon, Program Assistant

Margrit von Braun is starting her third year as chair of the Environmental Science Program. There are 155 undergraduates in the program and 23 graduate students (8 of which are at the Idaho Falls campus). The program's first graduates left in May for jobs with the US Forest Service, the state of Idaho's Department of Environmental Quality, Potlatch Corporation, the Army Corps of Engineers, and an environmental consulting firm. One of the Environmental Science graduates is in law school and another is working on an MS in Hydrogeology.

### More Bits 'n Pieces.....

**Atul Gupta (MS '96)** can be reached at 737 East El Camino Real, Apt #411, Sunnyvale, CA 94087.

**Brian Brazil (BS '89)** and Toni Laine Sparks, both of Clarkston, WA exchanged wedding vows on June 22, 1996 at the Blossom Hill Villa in Clarkston. Brian works as an environmental engineer at Potlatch Corporation at Lewiston and Toni is a preprocessor for the Medical Service Bureau in Lewiston. The couple are making their home in Clarkston.

**Brandi D. Poland (BS '95)** and Mark E. Miller, both of Vancouver, WA, exchanged wedding vows on May 4 at Pioneer Park in Lewiston, ID. The couple are residing in Vancouver, WA.

**Jim Haynes (BS '75, MS '86, PhD '89)** was recently selected as the Vice President of the Palouse Economic Development Council.

**Mavriky Kalugin (BS '96)** was in a serious automobile accident shortly after graduation. He underwent surgery in Portland, Oregon and has been recuperating in Alaska. He hopes to return to Moscow where he has an engineering position with Pacific Simulation. We all wish him the best.

**Dave Kjos (BS '74)** was appointed vice president of operations assessment and strategy with Kaiser Aluminum International. He is currently in Venezuela as part of a team looking to acquire large-scale smelters and refineries from the government.

### SPECIAL FOCUS: China -- Revisited (by Dr. Thomas E. Carleson)

In summer of 1996 my wife, Shirley and I returned to China after being away for several years. We had been there earlier (in 1989-90 for my sabbatical leave and in summer, 1992 when I worked on an NSF-China Cooperative Research project in Guangzhou). We began the summer by spending June in Shenyang with fourteen other Americans (mostly college students) at Northeast China University of Technology learning Chinese. After this Shirley returned to the US and I traveled to Beijing, Tianjin, Shanghai and Guangzhou where I presented seminars and conducted some research.

China is hurtling into the 21st century. Deng Xiaoping's famous cat (black or white) is catching the mice. Everywhere we traveled, we saw more new construction, cars, motorcycles, "beepers" and cellular phones than we had seen earlier. Shanghai has an enormous development called Pudong on the east bank of the Huangpu River. Western style department stores stocked with expensive imported goods are scattered throughout this district. A new subway makes travel from the airport comfortable and fast. Guangzhou is striving to match

Shanghai with developments in several places. The highest building in Asia will be completed this year near Tianhe Stadium in a district that purportedly will become the financial center of Guangzhou, if not south China. Travel in China, although crowded as ever, is somewhat more comfortable with air conditioning in special trains and buses. All the taxis, cars, trucks and motorcycles, however, causes more traffic jams and air pollution. Shenyang is considered the third most polluted city in the world.

Over the years Shirley and I have become good friends with a professor and his family in Guangzhou. Originally living in a small, crowded apartment on campus in 1990, he was able to purchase his own apartment off-campus in 1992 and is now planning to remodel it this fall. In 1990 his family's appliances included a refrigerator and television and the family rode bicycles or took a bus to work. In 1996, they have a telephone, air conditioning, a microwave oven, a computer, CD player, E-mail address and a Moped. His son-in-law is thinking about buying a car to drive to work. Although the two families university income has not changed significantly, through consulting on wastewater treatment plants both families have increased their income by almost a factor of ten. Many other university teachers are taking advantage of China's push for modernization to provide engineering and technical consulting services.

Many Chinese are still searching for life's meaning from a mixture of traditional beliefs and religions. My professor friend saw no contradiction in offering a prayer to Buddha and a desire to know the God of the Bible. His daughter attended church with me and made plans to return. The government has guardedly allowed Christianity, Buddhism, Judaism and Islam to be practiced within the churches and temples. Informal worship and evangelism, however, are discouraged by the government.

Overall it was an interesting and productive summer for both of us. Even so, it was good to get home. As the Chinese say, "Jin gao, yin gao, bu ru cao gao" - "gold is excellent, so is silver, but grass is best", or "East, west, home is best".

## The Best Of The Best:

**A**rthur E. Humphrey, professor of chemical engineering at The Pennsylvania State University - State College, was awarded the American Institute of Chemical Engineers (AIChE) F.J. & Dorothy Van Antwerpen Award at the Institute's Annual Meeting, held November 12-17, 1995 at the Fontaineleau Hilton Hotel in Miami Beach. Dr. Humphrey received his BS and MS degrees in chemical engineering from the University of Idaho, a PhD in chemical engineering from Columbia University and an MS in food technology from the Massachusetts Institute of Technology.

Over the course of his 40+ years, Dr. Humphrey has authored 3 books, written more than 270 research papers and has been granted 4 patents. His research has concentrated on biotechnology, especially the design and control of bioprocesses. One of his first patents concerned the application of computers to the control of processes for producing antibiotics. His textbook, *Biochemical Engineering*, the first edition published in 1965, was

the pioneering text on this subject. He also has held Fulbright Lectureships in Japan and Australia.

Dr. Humphrey assumed his current position in 1992 after retiring from LeHigh University as director of the University's Center for Molecular Bioscience and Biotechnology. He also served as provost and academic vice president during his 12 year career at LeHigh. He began at the University of Pennsylvania, where he spent 27 years as professor of biochemical engineering, chair of the chemical engineering department, dean of engineering and applied science. Dr. Humphrey also stepped down as director of Penn State's Biotechnology Institute.

Dr. Humphrey has served on numerous boards and committees, eventually serving as President of AIChE, as well as a Director and has been active in the Institute's New Technology Committee.

The F.J. & Dorothy Van Antwerpen Award for Service to the Institute is presented to recognize the outstanding contributions by a chemical engineer through service to the Institute. It includes a \$5,000 honorarium which is sponsored by Dow Chemical Company.

**Do you like the format of our newsletter? Any ways to improve it? Articles/items of interest you would like to see included? Feel free to email me at: [jrattey@uidaho.edu](mailto:jrattey@uidaho.edu). I gladly accept all newsletter info, requests for copies of newsletters, etc., via electronic mail.**

## CHE BYTES -- Barry King, Facilities Engineer

On the computing front, things are still moving forward. This past year we have purchased a computer to use as a server for software and user account information. All 9 machines in the computer room are connected to the campus network with the Computer Services division offering disk space on their UNIX machines to all registered students. This allows ChE students to be able to "see" their files from any computer on campus that is connected to the network, which now means almost all computers. Various students are participating in projects in the computer room from writing help manuals to offering individual assistance. Two sections of ChE123, the introductory course, is being taught in our computer room.

The computers in the laboratories will be connected this semester to allow data acquisition files to be transferred from the control and unit operations labs to user accounts for analysis and reports. Computer controls on the distillation experiment have made this unit much more responsive to requested changes and practically immune to drifting. It will be the focus of a project exploring an observer control scheme this coming year.

Your contributions have largely financed these improvements.

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### AICHE NEWS

The Annual Fall Barbeque was held on September 21, and it was a huge success due to the combined efforts of the student sections of AIChE and TAPPI. Over 30 chemical engineering students and faculty enjoyed the food, fun and volleyball at Robinson Park. The weather even cooperated somewhat. We are in the process of planning fall and spring field trips to manufacturing sites in the Northwest region. The companies will be based on student interest and corporate support that is provided.

As part of our commitment to helping our community, we are involved in collecting money, food, clothing, toys, bedding, etc., for a shelter which assists battered and abused women and children. The Sojourn House has been selected as our community project for this year. We hope to provide gifts for the children living in the home, as well as other little 'thinking of you' activities.

### TAPPI NEWS -- E. Steffensen

Our first meeting of the school year was very successful. Due to the active recruiting of freshman and sophomores, the student membership has more than doubled, numbering over 50 members. This year we are planning a variety of activities which will be held jointly with AIChE, including a ski trip (a big crowd pleaser), a spring rafting trip, and a faculty-student Christmas party.. To kick off the semester we sponsored a barbecue and picnic. We are planning on at least two tours this semester, one to Potlatch's kraft pulp mill in Lewiston and one to Spokane's Inland Empire mechanical pulp mill. Other activities include guest speakers and a Christmas party. Plans for paper making demonstrations are also being developed. This program, known as Paper Express, will be taught to the TAPPI members so they can teach local elementary children the basics of paper making. Paper Express is used to show the importance of the pulp and paper industry in our society.

### STUDENT OFFICERS: 1996-1997

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**Please remember, our student groups need your help. Be active! Be supportive!**

## In Remembrance:



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 KEHRER, WILLARD (BS '38), 10/17/94  
 LANGFORD, BENNETT (BS '35), unknown  
 POLLOCK, R. DUANE (BS '52), 4/18/95  
 SCHELOSKE, JOHNNY (BS '55), 8/8/95

**WE ARE on the INTERNET!** You want to correspond with us? find out the latest in our research advancements? or just what's happening? we can be found on <http://www.uidaho.edu/che>. Individually, we can be reached at:

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