

OKCHE

Spring 1997



CEMS' YOUNG GUNS

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OkChE

Spring 1997

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Notes from the Director



Greetings from OU! Another calendar year has wound up and a new academic year has been launched. When I look back at the last year and forward to the next, I wish I could remember who is was who said, "The only thing constant is change. " That seems about right to me.

Certainly one of the best "changes" in the last year is that alumnus Sam Wilson of Austin, Texas, has committed to funding a new endowed professorship in the school. At the spring '95 meeting of OkChE, the Board put up \$125,000 toward a new endowed professorship. Sam stepped forward to match that (plus a "little" more), and the College was able to obtain a match for the whole package from the State of Oklahoma. We are looking forward to the search for a scholar of national reputation to fill this new endowed position. Thanks, Sam and his wife, Sonia! This is a gift that will enhance the quality of education for generations of future Sooners.

One big change that happened last year came about from our hiring Miguel Bagajewicz in August of 1995. When Professor Ken Starling retired in 1995, after nearly 30 years at OU, he left a big gap in our faculty, especially in the area of process design. We were fortunate to be able to attract Miguel from California, where he was working for SimSci and teaching at UCLA. Miguel has a passion for design! If you have any doubts, just ask one of last year's seniors! Our undergraduates are

now being trained with both SimSci's ProVision and Aspen; thanks to generous gifts from John and Lou Waller and from Eastman Chemicals we also have a new simulation lab equipped with fast Pentiums in which the senior design students can run their process simulations; and we are now using these simulation packages at all levels of our curriculum, from Fundamentals through Thermodynamics and Separations, before the students even reach the Senior Design sequence.

But these changes aren't even the beginning! This Fall Dean Crynes initiated a test of a program to require every engineering undergraduate to own a notebook computer; it is being tested with 25 freshman. The trial program includes a wireless network, with all of the students connected to the Engineering Computer Network through RF links. Every undergraduate is now required to learn MS Word and Excel as part of their freshman curriculum. If the College of Engineering elects to require all the undergraduates to own notebook computers next year (we still have to figure out the financial part of this), then we have the option of requiring every undergraduate chemical engineer to have ProVision on their notebook computer! And all linked to the World Wide Web through a wireless network! How do you even begin to take full advantage of such powerful tools in the classroom? We don't know the answer to that yet, but we do know

that the undergraduate classroom will never be the same. I expect teaching to change more in the next decade than at any time since the invention of the printing press. We are already seeing the integration of the World Wide Web into the classroom. The Engineering Computer Network now has a server dedicated to class web pages. This semester we have web pages for Kinetics, Design 1, and Advanced Rate Operations. Lance Lobban will spend a semester of sabbatical next Spring developing his expertise in using the web for interactive courseware. Keep you eye on this page for even more changes by next year!

Speaking of the Web, be sure to check out the Alumni Network off the OU College of Engineering homepage at <http://www.coe.ou.edu>. You can leave your current e-mail address and search to see if any of your former classmates have left their addresses. The page has only been up since September 27, so you can be one of the first to leave their names.

Finally, I have to brag about two of our most popular profs, who both received recognition from the University last year. Lance Lobban was named a Regents Professor for his outstanding classroom performance, to which many of you can testify. And Daniel Resasco was named one of the University's first Presidential Professors; many thanks to Janet and Kenneth Smalley for funding this professorship!

Yours truly,

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WANTED



CEMS' YOUNG GUNS

Preparing for the dawn of a new century has brought new challenges to the field of chemical engineering, and with them, a new breed of students who have access to technological advances their predecessors could only have dreamed of. Today's students "shoot the beam", "surf the net", and aggressively grab every opportunity to learn, to discover, to bring ideas to reality. In this issue, OKChE spotlights some of these young guns and their breakthrough research at the University of Oklahoma.

MARTINA DREYER

As a little girl growing up in East Germany, Martina Dreyer dreamed of becoming Jacques Cousteau. For her reality held not oceans, but espionage, betrayal and ultimate triumph over a system that had once tried to keep the Ph.D. student from attending high school.

"I was always scientific oriented. My favorite classes were math, chemistry, biology," she said. Although one of the brightest students in her home town of Gera OR Thuringa, Martina was denied permission to attend high school, a privilege which is reserved for the politically correct. Martina, whose father escaped to the west in 1978, did not fall into that category.

"My mom, though, she was a fighter," Martina said with obvious pride. "She got me out of the regular tenth grade and into the high school.

Classes were regimented and fast-paced. Included in the curriculum of accelerated physics, biology, math, and Russian, was a block for "scientific practical work," where students provided services to industry. Martina's assignment was to streamline operations in a textile plant. Such a task might overwhelm the average high school student, but for East German children, industrial training begins early.

"In elementary school, we produced parts for cassette recorders. Also we made wheel assemblies for tires, three or so hours in the morning," Martina said. "One day we worked in production and one day we were in technical education. They stopped doing that after the reunification. I think it's a pity.

"The education system in East Germany was very political, yes, but in some ways it was better. When I came to West Germany and started

taking class, it was easier for me. Some West Germans hadn't even had basic chemistry. They hadn't wanted to take it, so they didn't. In East Germany, you had no choice."

In many ways, East Germans had "no choice." Martina said it was not difficult to live there if you just did what the government wanted you to do. "You have your apartment, your work, if you just go with the flow, everything's perfect," she said. "But as soon as you start to think, to criticize, you feel the pressure. Because of my father, they threw a few stones my way."

Martina's father was a thinker. A gifted doctor, he displayed all the outward trappings of a loyal party member. He associated with the right people and belonged to the proper organizations. As "socialist brother 8" he was given a six-month tour of duty in Mozambique. It was during this time he planned his escape. His second assignment was to last two years and he was allowed to take his wife (Martina's step-mother). But when the couple got to the airport in Rome, they switched planes.

"He fooled everyone. If he would have come back to East Germany, he would have been arrested immediately," said Martina. "The only way to see him was to meet him in Czechoslovakia, which I did once, and then I was going a second time, but I could not, because

they took my ID away. With my new ID, I could not leave the country."

In 1982, Martina graduated from high school and enrolled in college. That same year she and her family applied for immigration to the West. A few days before classes were to

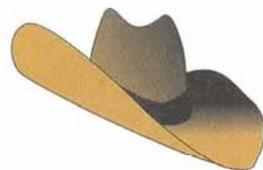


*Martina Dreyer setting up experimental apparatus.
E-mail: midreyer@ou.edu*

start, she was summoned to the office of the university director, who gave her an ultimatum - withdraw her immigration application or withdraw from the university. "They were not going to educate traitors," she said.

Martina chose her bid for freedom and for the next three years, she took odd jobs, delivering mail, or working in her step-father's garage. "If you give me an East

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Berlin Genetti came by his fascination with chemical engineering honestly. His father, William Genetti, a former chair of the ChemE department at the University of Mississippi in Oxford, taught at Ole Miss until the day he died in 1989, of complications from an aneurysm.

Although his father was a champion in his own academic career, the path was not always clear for the young Genetti, who did not do well in high school and left college after one semester. He worked for a grocery chain for awhile, then moved to New Mexico, where he began two years of missionary service through the Church of Jesus Christ of the Latter-day Saints, a course of action that would change his life.

"We took people to the store, cleaned their house, helped them however they needed help. We even offered a free stop-smoking program. Anything that had to do with community service," he explained.

The second year he was there, he was chosen for leadership responsibilities. "I was up in front of people a lot. I learned to organize meetings, etc. Things I never would have picked up on any other way."

Another valuable skill he picked up was that of studying. While a missionary, he was required to study an hour alone each morning and an hour with a group. When he returned home at the age of 21, he was ready to give college another shot.

"When I decided to go into chemical engineering, my dad was thoroughly thrilled," Berlin said. "It made his day." Following his father's counsel, he started with trigonometry, high school equivalent chemistry and algebra.

Berlin maintained a 4.0 in his

ChemE classes and graduated summa cum laude. When it came time to pick a school for graduate work, his wife Bonnie was a big influence. "She likes the Sooners," he said with more than a hint of a smile.

But it was more than team spirit that ultimately lead the pair from William Faulkner's hometown to the Sooner State. The couple first came to OU in March of '94 to meet the faculty and tour the campus. Dr. Brian Grady, who was out of town that weekend, called Berlin as soon as he got home.

Berlin had worked as a cooperative education student and summer intern for a polymer manufacturer while an undergraduate. There he developed an interest in how additives effect the properties of polymers.

Berlin's interest in chemical additives and Grady's desire to experiment with electric conducting materials led the pair to their current project, electrically conducting poly-

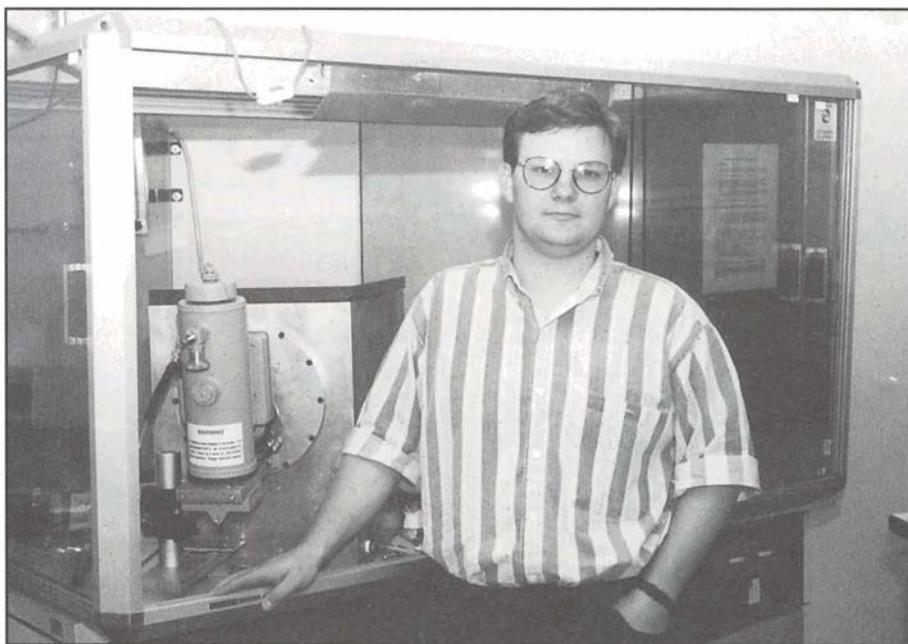
mer composites, which could have a major impact on the way computers are manufactured.

"One of the main drives for the project right now is underfill for use with computer flip chips," said Berlin. "Right now they use an epoxy as the polymer matrix, and that means once you put the flip chip on there, it doesn't come off. It's a permanent fixture.

"But if you were able to use a thermal plastic rather than an epoxy, you could just warm up the mother board, pull the chip off and replace it. Right now if one chip goes out, you have to replace the whole circuit board," he said.

After completion of his dissertation, Berlin will pursue the rest of his dream. "I want to be a professor," he said, "That's why I'm here. I don't want to take anything away from industry, but I want to teach. I really want to teach."

As the saying goes, "Like father, like son." ■



Berlin Genetti with a rotating anode x-ray generator used to study properties of advanced polymer and composite materials.

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BOONYARACH

KITIYANAN



Boonyrach Kitiyanan was one of the first M.S.Ch.E. students to graduate from Chulalongkorn University's Petroleum and Petrochemical College. CEMS director Jeff Harwell and Kitiyanan, in traditional Thai graduation robe, are pictured here from his graduation ceremony in Bangkok last year.

Boonyarach Kitiyanan or Luke, as he is known to faculty and friends, is Chem E's first Thai Ph.D. student since a partnership was formed between the University of Oklahoma and Chulalongkorn University in Bangkok. The association is part of a cooperative agreement with the United States Economic Assistance Mission in Thailand, with members of the OU Chem E faculty advising Thai students while helping Chula professors and administrators set up their own graduate programs.

The youngest faculty member in the Chula Chem E department, Kitiyanan has assisted visiting professors in class and has served as a liaison between professors and students, although he will not take on teaching duties until completion of

his dissertation.

Having received his bachelor's and master's degrees in Chem E from Chulalongkorn, Kitiyanan is currently working with Dr. Jeff Harwell on new methods for decontamination of groundwater using surfactants. His work could have major environmental impact here and abroad.

Kitiyanan has two younger brothers who are also engineering students, one a Chem E and the other studying electrical. He misses his family and his girlfriend "very much," but has no plans to return home till next summer for his brother's graduation.

Being 12,000 miles from home has other disadvantages. "I really miss Thai food," Kitiyanan said. "It's very difficult to find the right ingredients to cook and to eat out is very expensive. I have found the trick is to wait until you are very hungry and then almost anything tastes good."

Kitiyanan has played host to several other Chula students who have come to OU to utilize the Chem E's research facilities and confer with their OU advisers. For the duration of their visit they converge on

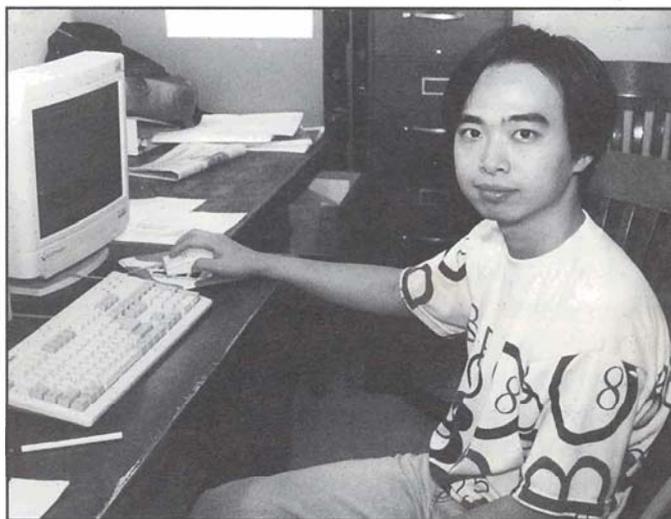
Kitiyanan's apartment with care packages from home, turning it into a temporary Thai restaurant as they

gather for meals and camaraderie, much like they do at home.

Kitiyanan has had to adjust to Oklahoma weather, as well as the food. In Bangkok the cold season means it may get as low as 75 degrees. Many visiting Thais had never owned a winter coat. During his first winter visit here, friends took the group skiing in Colorado. "I fell down a lot, and hit many trees. It was still fun," Kitiyanan said good-naturedly.

Kitiyanan said there were many things he would miss about OU and Oklahoma. "Here it is very convenient to find (research) literature." And there's something else he will miss that a city of 10 million can't provide.

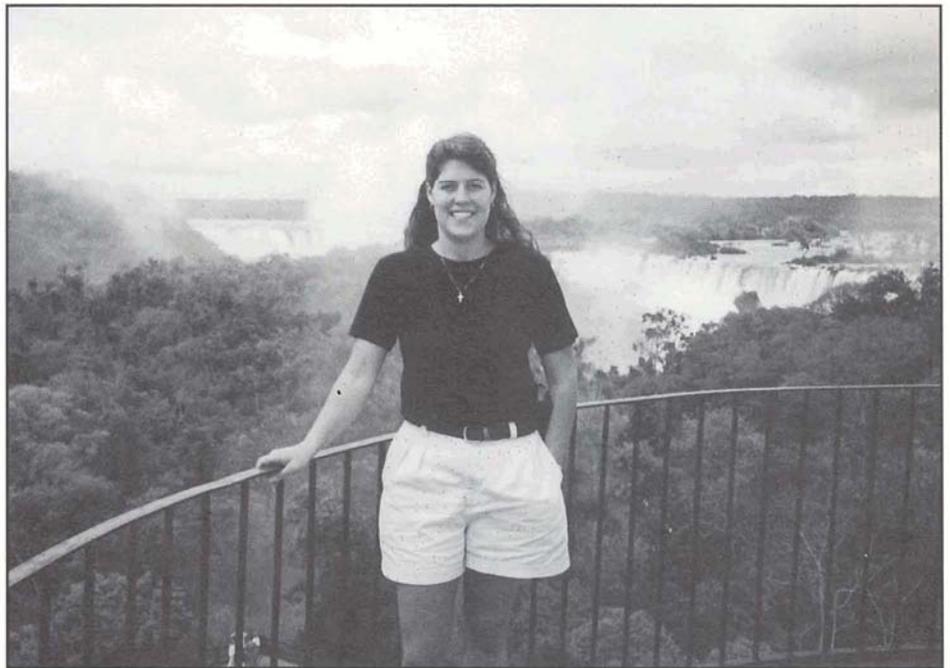
"The fresh air," he said. "And the quiet." ■



*After graduation, Kitiyanan, or "Luke" as he is known by all his American friends, will teach at Chulalongkorn University.
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SUSAN STAGG



*Susan Stagg visited the falls at Iguazú in Argentina during a research exchange visit in 1996.
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When Susan Stagg took an aptitude test in high school, the results came back chemical engineer or social worker. They might have easily included a third vocation - p.r. director for Oklahoma, so great is her enthusiasm for the university and the state she now calls home.

"Love at first sight" is how to Oklahoma when she attended a visitor's weekend for prospective graduate students two years ago.

"I came down from Michigan in mid-March, got off the plane and it was 85 degrees. It was very convincing," she laughs.

But it wasn't only the weather that was in Oklahoma's favor. "The whole atmosphere here was just incredible," she said. "I visited six other schools trying to decide where I'd do graduate work and OU was the only one where the students said, 'We love it here.'"

The clincher came for her when she met Dr. Daniel Resasco. "I'd been told when you pick a school, make sure you can get along with your advising prof for at least four years," she said. At the end of the weekend, she had made up her mind. "I had never been at a school where you can walk in and talk to the professors like you can here. No one ever says 'Sorry, I'm too busy.'"

Susan said she and Resasco have the best working relationship possible. "He is just great," she said. "My friends tell me they can't imagine just walking into a professor's office, let alone going over to their

house. But he'll call me and say 'I've got some new data, why don't you come over and take a look?'"

Susan said she even attends the Resasco children's soccer games with Daniel and his wife, Tesy.

Susan's research for Resasco involves reformulating gasolines to run cleaner and cheaper through the use of catalysts. "Everybody knows catalysts work. We want to find out exactly why they work," Susan explains. Part of this research includes catalytic experimentation utilizing high intensity x-ray beams at the National Synchrotron Light Source of the Brookhaven National Laboratory in Long Island, New York. Susan makes the trip three times a year.

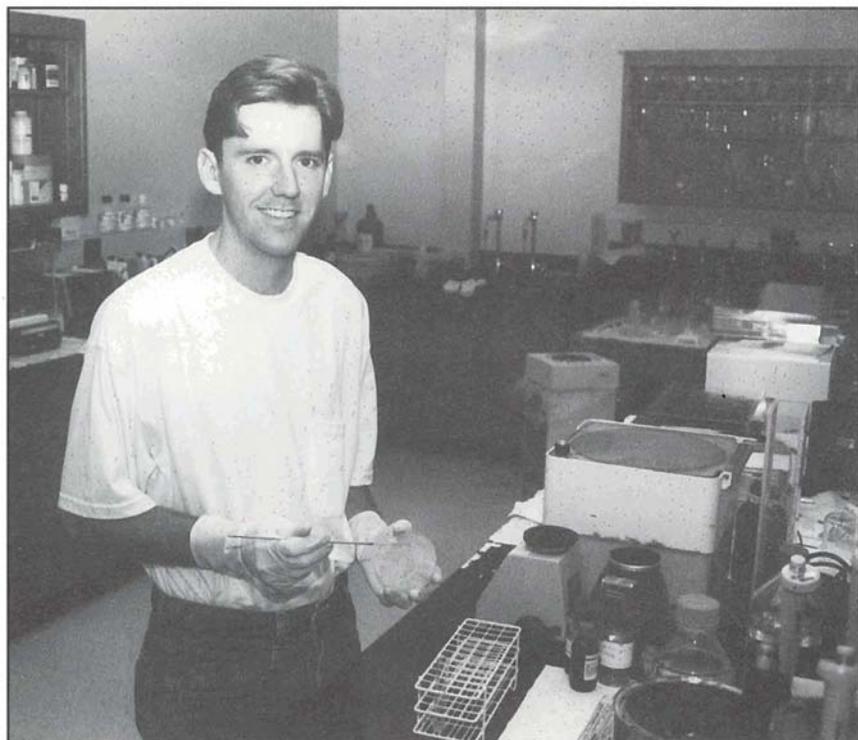
The two and a half day road trip followed by a week of intense research in very close quarters could test the compatibility of Siamese twins. "You basically leave at 7 a.m., buy a really big coffee and drive till 10 or 11 at night, then spend the next five days sharing a

little cubicle with two other people," Susan said.

The Brookhaven National Laboratory boasts the largest two electron storage rings in the nation. One, an x-ray, and the other a vacuum ultraviolet, consist of electrons which are constantly accelerated around the circular synchrotron path, shooting out tangential beams into tiny rooms, where researchers from all across the nation converge to test their wares. "Beam time," the number of hours one has access to the rays, is a precious commodity and researchers work around the clock to get the most of their allotted time. Susan said Resasco likens the experience to that of the astronauts of Apollo 13, who were confined in a small area and also had to make use of whatever resources they could find. (Susan says it's amazing what you can do with duct tape.) And like Apollo 13, things can get pretty stressful.

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GREGG DAVIS



*Greg Davis prepares a culture in the biotechnology lab.
E-mail: gdavis@ou.edu*

It should come as no surprise to Greg Davis's parents that their son feels at home asking questions and looking for answers. Greg's dad, a pharmacist, always displayed a general love of science, and as a child, Greg spent many hours in Austin's Museum of Natural History, where his mother taught pre-schoolers.

"Some of my earliest memories were of these huge dinosaur bones hanging around me. So I guess, yeah, that could have started something," Greg said.

That "something" sparked an inquisitive mind that led to high school honors classes and to the University of Texas where he majored in environmental chemical engineering. As a junior, Greg took part in the coop between the university and IBM, going to work in the company's wastewater treatment facility. He said his work schedule (one semester on, one semester off)

delayed graduation, but the trade-off was well worth it.

"Every time I see an undergrad I tell 'em to get some experience in industry," he said. "It's the most important thing I ever did."

After graduation, Greg came to the University of Oklahoma to pursue his Ph.D. and began working with Dr. Roger Harrison in the field of biochemical engineering, specifically in the purification of proteins produced by microorganisms. Through genetic engineering, or gene-splicing, Greg and Harrison hope to turn the humble E.coli bacteria into a finely tuned manufacturing plant for any desired protein, a biotechnological feat which would lead to the low-cost mass production of proteins for a variety of uses, from cancer treatment to the rejuvenation of polluted water.

The research involves taking a segment of DNA, splicing it into a living organism, such as the E.coli

bacteria, which will cause the E.coli to manufacture a mammalian protein. The trick, Greg said, is not just getting the correct sequence of amino acids, but also the correct three-dimensional shape, which is much less predictable. Greg likens the 21 amino acids to 21 different colored Legos connected in a chain. "You can lay them out in a line in any sequence you wish, but getting the right shape is the catch."

Using terms that sound like little knives and scissors, the "snipping", "splicing" and "chopping" are all controlled chemical reactions. To make each DNA molecule takes three days, the waiting period Greg describes as an "emotional roller coaster."

"When you turn on the light to see results after you've worked three days, and there's nothing there, you go 'Ohhhh,'" Greg groans, "and then you go in and start on another one."

Greg said the entire process from manipulating the genes to expressing the protein takes about a week, but the preliminaries of devising a reliable gene-splicing procedure took months of hard work, made possible, in part, by a grant from the National Science Foundation. "We've got it pretty well streamlined now," he said.

Greg has been greatly encouraged by recent results in the manufacturing of human interleukin -3, a protein which promotes bone marrow growth and has been studied for use in cancer therapy. He is also working with prochymosin, an enzyme used to curdle milk in cheese manufacturing.

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CEMS Alumnus Sam A. Wilson Establishes \$500,000 Endowment for Professorship in Chemical Engineering

The School of Chemical Engineering and Materials Science is pleased to announce the establishment of the Sam A. Wilson professorship of Chemical Engineering by CEMS alumnus Sam A. Wilson. The \$500,000 endowment will assist the department in recruiting and rewarding outstanding faculty and provide necessary funding for research.

In 1990, Wilson established a \$100,000 endowed scholarship in the College of Engineering as a memorial to his father who was employed by the OU Physical Plant from 1932 until his death in 1956.

Wilson, who recently retired as president of Wilson Oxygen and Supply Company, is a 1953 chemical engineering honors graduate. While an OU student, he served as president of the Engineers Club, was active in LKOT, was voted Big Man on Campus, was chosen as one of the top ten senior men, and was named to three engineering honor societies - Tau Beta Pi, Sigma Tau and Alpha Chi Sigma. Following service as an engineering officer in the U.S. Navy, he went on to earn a Masters in Business Administration from Harvard in 1957.

He started Wilson Oxygen and Supply, in Austin, Texas, in 1963, with two employees. Today, the company has more than 100 employees and locations in seven Texas cities. It is currently one of the largest independent industrial gas companies in the United States.

Wilson exemplifies the generosity and commitment of OU's alumni. In addition to the recent professorship and endowed scholarship,



Sam Wilson and wife Sonia visited the Oklahoma Cowboy Hall of Fame after a recent trip to meet with the COE Board of Visitors.

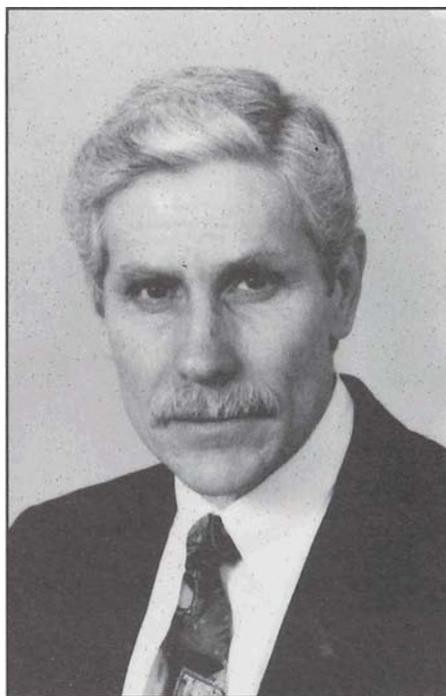
Wilson has freely given his time as chairman and member of the College of Engineering Board of Visitors, as a member of the School of Chemical Engineering and Material Sciences' Advisory Board, and as director of the OU Alumni Association. In 1989, he was honored by the university as a recipient of the Board of Regents' Alumni Award. In 1993, he was named to the college's Distinguished Graduate

Society.

Wilson is active in several Austin civic organizations, including the Austin Symphony Orchestra, and maintains ties with universities through advisory boards of the OU College of Engineering, the Harvard Business School, and the School of Industrial Distribution at Texas A and M. Wilson and his wife, Sonia, have three children, Steven, Sterling and Sharon.

Alumni & Faculty Named

Two alumni and one recently retired faculty member of the School of Chemical Engineering and Materials Science have been named Fellows of the American Institute of Chemical Engineers during the last two years. Alumni G. Ali Mansoori (PhD. '69) and Anthony L. Hines (BSChE '67) and Professor Emeritus Kenneth E Starling were selected by AIChE for one of the highest honors that can be conferred on a chemical engineer. The honor is based on outstanding contributions to both the profession and to the Institute.



Anthony L. Hines was named a fellow of AIChE in 1995. Hines is vice president of Honda of America Manufacturing, Inc. in Marysville, Ohio, and a 1967 BSChE graduate of CEMS. Hines is responsible for environmental, health and safety, engineering development, management and business training, along with TQM training and quality circles. He is also responsible for an advanced technology group that investigates the latest advanced manufacturing technology for Honda's North American operations. Before joining Honda in 1992, Hines held industrial positions for Warren Petroleum and IBM Corporation, and academic positions with the Georgia Institute of Technology, University of Wyoming, Colorado

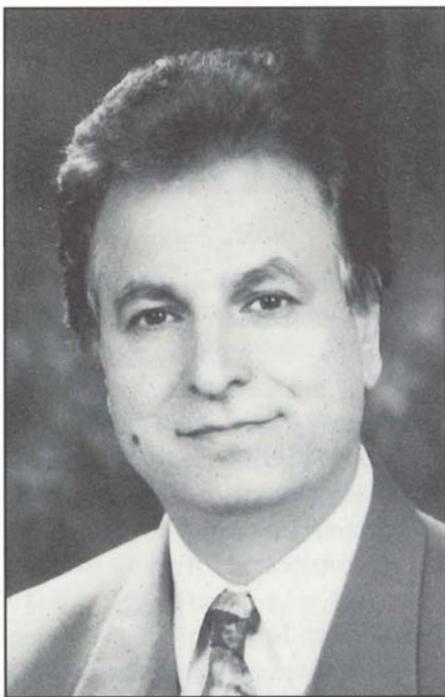
School of Mines, Oklahoma State University and served as dean of engineering at the University of Missouri--Columbia. He has published more than 100 technical papers, 3 books and several widely distributed reports.

Hines was instrumental in developing the Separations Division of AIChE and served as secretary from 1990 to 1993. He is a past chair of the subcommittee on oil shale and tar sands. Hines also edited an AIChE Symposium volume, served as a reviewer for the *AIChE Journal*, served on the review board for *Energy Progress*, and chaired or cochaired 15 technical sessions at national meetings.

Hines serves on the Board of Visitors, the advisory board of the OU College of Engineering.

After completing his bachelor's degree at OU, Hines earned his master's in chemical engineering at Oklahoma State University, and his PhD in mechanical engineering at the University of Texas at Austin.

A registered professional engineer in Texas, Hines is listed in *Who's Who in American Education*, *Who's Who in Engineering*, and *Five Thousand Personalities of the World*. ■



G. Ali Mansoori

began his academic teaching and research career at the University of Illinois at Chicago where he was promoted to full professor in 1977. His research focuses on statistical mechanics, thermodynamics, and applications in petroleum and natural gas systems. Mansoori was director of AIChE's Fuels & Petrochemicals Division and a member of its Career Guidance and Continuing Education Committees. He has chaired 28 symposia and sessions for AIChE since 1980 and is currently a lecturer for AIChE's Continuing Education courses. Mansoori has been a visiting scholar at several research institutions and universities and has been a technical consultant to a dozen organizations. He has organized several regional and international conferences and authored more than 160 papers. Mansoori has served as editor of *Advances in Thermodynamics*, *Energy Sources Journal*, *Fluid Phase Equilibria*, the *Journal of Petroleum and Science Engineering*, *Scientia Iranica* and the journals of the Society of Petroleum Engineers and the AIChE-CHEMI project.

Mansoori received his bachelor's degree from the Univ. of Tehran in 1964, his master's degree from the University of Minnesota in 1967, and his doctorate in chemical engineering from the University of Oklahoma in 1969. ■



Kenneth E. Starling

was named a fellow of AIChE in 1996. Starling retired in January 1995 from CEMS following nearly three decades at the University of Oklahoma.

Starling's most outstanding contributions to the chemical engineering profession to date have included his closed form solution, together with CEMS alumnus Norman Carnahan, of the hard sphere fluid compressibility that is the basis for several extended van der Waals equations; his contributions to development of more accurate equations of state for systems of interest to chemical engineering including the Benedict-Webb-Rubin-Starling Equation; and his dedicated teaching and mentoring of generations of chemical engineers. His hard sphere equation of state has been of prime importance even beyond his profession, to physicists and chemical physicists as a theoretic-

cal tool to separate hard sphere molecular interactions from other short range molecular interactions.

Prior to joining the CEMS faculty, Starling gained considerable industrial and research experience at Republic Pipeline Co., the Institute of Gas Technology in Chicago, Esso Production Research Co. in Houston, and at the Electric Power Research Institute in California.

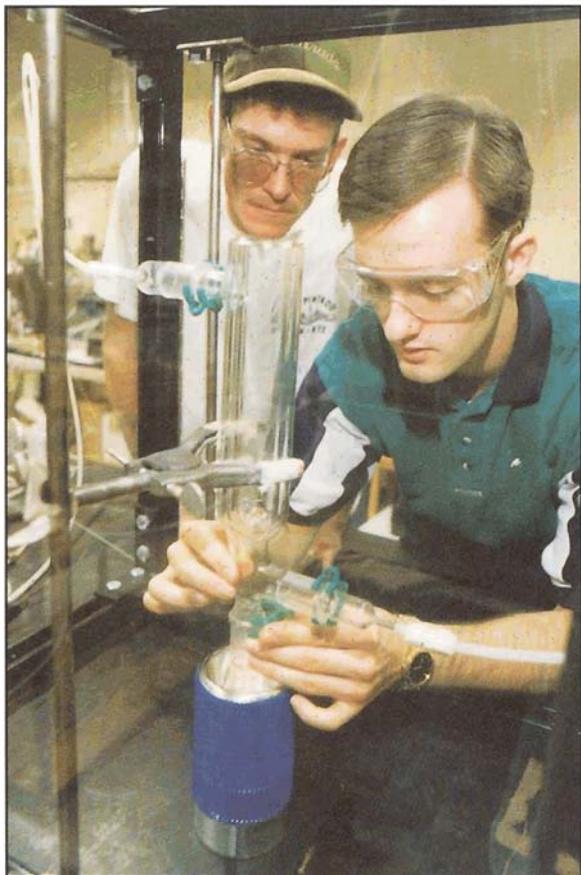
Starling joined the CEMS faculty as an assistant professor in 1966. He was promoted to associate professor in 1969 and served as director in academic year 1974-75. He was promoted to George Lynn Cross Research Professor in 1978 and served as Vice Provost for Research Administration during 1978-79.

Starling's many honors include the MASUA Honor Lectureship during 1977 and 1978 and the OU College of Engineering Award for Outstanding Faculty Achievement in Research in 1981. Starling served on the editorial review board of *Energy Progress*, and as director of the AIChE Fuels and Petrochemicals Division. He has chaired numerous technical sessions at national meetings of AIChE and was a member of the national program committee from 1971 through 1977.

Starling has long been active in continuing education for engineers in the oil and gas industry through affiliation with the John Campbell Co., as chairman of the executive committee of the International School of Hydrocarbon Measurement from 1981 to 1992, and through his own company, Starling Associates Inc., which applies expertise to implementing software into the oil and gas industry's real-time measurement and rapid accounting systems to meet the 1992 industry standards set out in the American Gas Association Reports Numbers 3 and 8.

Starling has published more than 100 papers and a book, *Fluid Thermodynamic Properties for Light Petroleum Systems*. ■

Gaseous Fuels Fellowship Challenge Grant Established



Jeff Clark, recipient of the 1996-97 Laurance S. Reid Scholarship for Natural Gas Processing, and Ph.D. student Terry Caldwell continue CEMS' long tradition of excellence in natural gas research by exploring new technologies for conversion of methane into methanol and ethanol and to ethane and ethylene, and by exploring new approaches for storage of natural gas through use of new porous materials and use of additives to allow gas storage as a liquid at ambient temperatures with pressures lower than required for compressed natural gas.

In order to provide a permanent endowment to fund four-year graduate fellowships in gaseous fuels, a \$125,000 challenge grant has been established by OkChE. Matching funds are needed to establish the \$250,000 Gaseous Fuels Graduate Fellowship Fund.

Graduate students working in CEMS' gaseous fuels research program under the auspices of the

Institute for Gas Utilization and Technologies learn to apply the knowledge they have accumulated during their undergraduate years. The research program sharpens their critical-thinking and problem-solving skills, and allows them to assume a high level of responsibility for the projects on which they work.

These students make a critical contribution to CEMS' research efforts, particularly those who remain for the full four years it takes to complete a Ph.D. Their experience shapes them for a work force capable of competing in a global market.

While CEMS' has benefitted from one-time grants for fellowships in gaseous fuels

research, the short duration of research grants has meant the department can not guarantee funding for graduate students throughout their Ph.D. program. The endowment will enable the department to attract the best and brightest students to its research program.

The Institute for Gas Utilization Technologies is a multidisciplinary research unit of Sarkeys Energy

Center. The Institute, under the direction of CEMS professor Richard G. Mallinson, involves chemical and mechanical engineers and chemists developing technologies that enhance the value and use of natural gas resources. Institute research strives to take advantage of the environmentally friendly nature of natural gas as a source of fuel and chemical feedstocks.

Two of the institute's research areas are the focus for graduate fellowship support, gas conversion and gas storage and separations.

The focus of gas conversion research is the economical conversion of gas to other chemicals that may be used directly or as feedstocks for other processing, including fuel production. Investigations of efficient processes to convert gas include the direct partial oxidation of methane into methanol and ethanol and conversion to higher hydrocarbons such as ethane and ethylene.

Gas storage and separations focuses on two approaches for solving the storage problems associated with natural gas. One approach is directed toward creating new porous materials that provide the desired environment for high-density storage either by interaction with the solid surface or by its structure. Another approach involves the use of additives that allow the gas to be stored as a liquid with high-energy density at room temperature at pressures lower than required for compressed natural gas.

Senior Design Project Dedicated to City of Norman

A senior design group in the class of '96 tackled a problem facing cities worldwide and dedicated their finished process design to the city of Norman in gratitude for the quality life and learning experience they have enjoyed throughout the community while at OU.

The group designed a plant to convert municipal solid waste (MSW) into recovered energy as methane, and useful byproducts for resale via a three-step pyrolysis-biomethanation-cleaning process. With a capacity of processing one million tons of MSW per year, about the average volume for the Oklahoma City/Norman metropolitan area, the design offers savings of \$1.50 to \$3.50 per ton, depending on implementation of designed options, over the current landfill disposal method, while providing the added bonus of a cleaner environment.

The design for the MSW management plant involves processing the solid waste through pyrolysis where the refuse is incinerated under a limited supply of oxygen to produce gases, liquids and solids. The gases, mainly CO₂, CO, H₂ and CH₄, are transferred to a biomethanation process in which they are converted to methane by microorganisms and the product gas upgraded to pipeline quality by removal of CO₂ and H₂S.

The group was one of eleven in Prof. Miguel Bagajewicz' Spring '96 senior design class. The course is the ChE capstone class in which students apply all the knowledge and skills they have learned to perform the type of engineering tasks



The senior design group presented their plan for municipal solid waste conversion to methane in a formal dedication ceremony at Carson Engineering Center on May 8, 1996. Pictured left to right are Norman City Councilman Ron Henderson, Professor Miguel J. Bagajewicz, Swee Quah, Mun Ping Loke, Chew Peck Lim, Roy Branstetter, and Hean-Chin Yeoh.

they will encounter in the workplace. Students involved in the MSW project were Chew Peck Lim, Mun Ping Loke, Swee Sean Quah and Hean Chin Yeoh, all from Malaysia, and Roy Branstetter from Oklahoma.

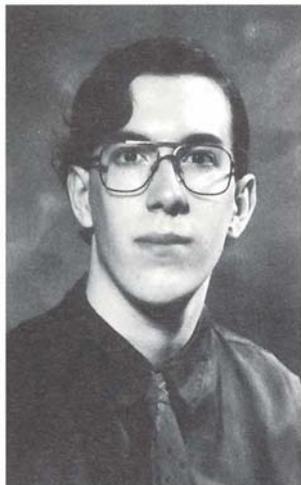
The design was formally given to the city of Norman in a ceremony on May 8 at Carson Engineering Center with Norman City Councilman Ron Henderson attending. The city of Norman adopted a resolution in the City Council Meeting on May 28 signed by Mayor Bill Nations formally accepting the project design.

Senior design students have the benefit of enhanced experience using a wider variety of process simulation software for their work. This new advantage was made possible through the generous gifts of alumnus John Waller and his wife

Lou and from the Texas Eastman Company. Their gifts enabled the purchase of fast Pentium-based Microsoft Windows-NT workstations and process design software for use by the class. This, in addition to the College's networked applications, gives students access to more of the design tools they will encounter in the workplace after graduation.

Phillips Petroleum Company has agreed to sponsor the University of Oklahoma Chemical Engineering Design Contest for the 1996-97 academic year. The company has contributed a \$1,000 prize for the best design project to enhance the learning process in the senior design class.

First Pipkin/Askew Scholarship Awarded



Quincy Von Amen,
*recipient of the first Omer A.
and Marjorie M. Pipkin /
Richard G. Askew
Scholarship in Chemical
Engineering*

The first Omer A. and Marjorie M. Pipkin/Richard G. Askew Scholarship in Chemical Engineering was awarded during 1996-'97 to Quincy Von Amen, a freshman National Merit Scholar from Bartlesville, Oklahoma.

The scholarship was established by CEMS alumnus Omer A. Pipkin (BSCHE '50) and his wife Marjorie and by a match from Richard G. Askew (BSCHE '47, MSChE '48) who established a \$100,000 matching challenge grant in 1992 to encourage development of endowed scholarships in CEMS.

Pipkin, a native of Pittsburg County in Oklahoma, began his career with Cities Service Oil Co. after graduation in 1950. He held various engineering and operations positions there up to the time he completed his PhD in 1965. He then went to work for PASA Petroquimica in Argentina as technical director and was promoted to

vice president and manager of operations. He returned to Cities Service in New York as manager of technology in 1971. In 1976, he returned to South America in 1976 as vice president of marketing and finance for Copebras SA in Brazil, where he was promoted to president in 1978. Now retired and living in Austin, Texas, Pipkin and wife Marjorie enjoy golf and tennis together, and time with their sons Allen and Tom and their grandchildren.

Askew retired as senior vice president of Phillips Petroleum Co. and president of Phillips Chemical Company after a 37 year career in a variety of domestic and international assignments. His contributions to CEMS, the College of Engineering, and to the University have followed a pattern of leadership established while a student at OU. He received the OU Regents' Alumni Award in 1990.

Cheryl Rodriguez Recipient of Akzo Nobel's Potts Memorial Fellowship

Cheryl Haskins Rodriguez, a Ph.D. candidate in the School of Chemical Engineering and Materials Science and research assistant of the Institute for Applied Surfactant Research, was honored at the American Oil Chemists Society's Annual Meeting and Expo in Indianapolis in April, as recipient of the Ralph H. Potts Award. The fellowship is presented annually to a graduate student working in the chemistry of fats and oils and their derivatives. The award which consists of a plaque, a \$1,000 honorarium, and funds to help support the recipient's participation in the meet-

ing, is sponsored by Akzo Nobel to recognize the late Ralph H. Potts, a pioneer in industry research and technology of fatty acids. Ms. Rodriguez presented a paper on precipitation of solutions containing mixtures of synthetic anionic surfactant and soap during the April 30 session of the General Surfactants and Detergents I session of the meeting. Rodriguez is the second Potts recipient from OU IASR in two years. Doctoral candidate Achille E. Riviello was the 1995 recipient of the fellowship for his work in paper deinking.



Cheryl Haskins Rodriguez of OU IASR accepts the Ralph H. Potts Memorial Fellowship from Gerald Szajer of Akzo Nobel, sponsor of the award, during the AOCs annual meeting at Indianapolis in April '96.

CEMS Academic Achievement Awards Spring 1996

Ya-Huei Chin, *F. Mark Townsend Scholarship*

Swee S. Quah, *Pamela Pesek Johnson Award to an Outstanding Senior in Process Design*

Laura M. Worthen, *Robert Vaughan Award for Excellence in Undergraduate Research*

Sam E. Sawaya, *American Institute of Chemical Engineers Award for an Outstanding Junior in ChE*

David G. Larson, *CEMS Outstanding Sophomore Award*

Swee E. Koay, *CEMS Outstanding Senior Award*

Program of Excellence Scholars and Sponsors 1996-1997

Jeffrey Blomgren

Texaco Scholar

Wylie, Texas

Lorna M. Bradley

Texaco Scholar

Tulsa, Oklahoma

Nathan Allen Broom

Texaco Scholar

National Merit Scholar

Anchorage, Alaska

Jason Edward Bryant

W. D. Owsley Scholar

Oklahoma City, Oklahoma

Julio Carlos Cabrera

Laurance S. Reid - Richard G. Askew

Chemical Engineering Alumni Scholar

National Hispanic Scholar

Coral Springs, Florida

Patricia Chung

Phillips Petroleum

Scholar

Tulsa, Oklahoma

Lindsay Marie Dannels

Texaco Scholar

Oologah, Oklahoma

Phillip Joseph Doerpinghaus

Texaco Scholar

Jenks, Oklahoma

Nilanjana "Lynn" Ghose

Texaco Scholar

Tulsa, Oklahoma

Anil Vagish Gollahalli

Texaco Scholar

National Merit Scholar

Norman, Oklahoma

Brandon H. Grissom

W. D. Owsley Scholar

Sulphur, Oklahoma

Alan Charles Hepp

Texaco Scholar, Fall '96

Phillips Petroleum Scholar, Sp. '97

National Merit Scholar

Merrillville, Indiana

Bret Hunter

Sam A. Wilson Memorial Scholar

Altus, Oklahoma

Kathryn Casey Keister

Sam A. Wilson Memorial Scholar

Dallas, Texas

Robert G. Klitzman

Sam A. Wilson Memorial Scholar

Winamac, Indiana

Jennifer Diane Leath

Sam A. Wilson Memorial Scholar

Tulsa, Oklahoma

Tyler J. Mullins

Mobil Scholar, Fall '96

Shell Scholar, Sp. '97

Ada, Oklahoma

Michael Ray Nixon

Texaco Scholar

Antlers, Oklahoma

Nancy Suzanne Perkins

Texaco Scholar

Edmond, Oklahoma

Dirk Aldon Perrin

Sam A. Wilson Memorial Scholar

Snyder, Oklahoma

Katia D. Perry

Phillips Petroleum Scholar

Gorizia, Italy

Mark Robert Powers

Mobil Scholar, Fall '96

Shell Scholar, Spring '97

National Merit Scholar

Lexington, Tennessee

John C. Rasmussen

National Merit Scholar

McAlester, Oklahoma

Ryan Dean Reese

Phillips Petroleum Scholar

Duncan, Oklahoma

David Roberts

Phillips Petroleum Scholar

Oklahoma City, Oklahoma

Yasmine M. Salama

Mobil Scholar, Fall '96

Shell Scholar, Sp. '97

Ponca City, Oklahoma

Sam Elie Sawaya

Mobil Scholar, Fall '96

Shell Scholar, Sp. '97

Yukon, Oklahoma

Sandra Yves Snyder

Phillips Petroleum Scholar

Menomonee Falls, Wisconsin

Steven J. Stewart

Mobil Scholar, Fall '96

Shell Scholar, Sp. '97

National Merit Scholar

Columbus, Mississippi

Jennifer M. Strojny

Phillips Petroleum Scholar

National Merit Scholar

Biloxi, Mississippi

Jeffrey W. Thornton

Sam A. Wilson Memorial Scholar

National Merit Scholar

Harrah, Oklahoma

Quincy Von Amen

Omer A. & Marjorie M. Pipkin -

Richard G. Askew Scholar

National Merit Scholar

Bartlesville, Oklahoma

De Quang Vu

Phillips Petroleum Scholar

National Merit Scholar

Oklahoma City, Oklahoma

James K. Wilson

Richard L. Huntington - Richard G.

Askew Chemical Engineering

Alumni Scholar

National Achievement Scholar

Houston, Texas

German motorbike, to this day, I can repair it” she said.

Martina made the best of the delay in her education, but she was not prepared for the government’s next attack - the arrest and imprisonment of her mother for alleged illegal correspondance with Western officials.

“She wrote letters to my grandparents who lived in West Germany,” Martina explained.

“That was her crime.” Her mother was sentenced to 18 months. “I was really alone then,” Martina recalls. “Who could I trust in East Germany? Who could I tell what I was thinking?”

After serving eight months, West German officials bought her mother’s release. Three months later, Martina and her family were allowed to join her mother in West Germany. After the wall came down in November of 1989, Martina’s mother petitioned for her file from the former East German government and received it.

“It was this thick,” Martina said, holding her thumb and index finger about three inches apart. The file revealed the careful planning and orchestration of her mother’s arrest, conviction and sentencing, two years before it actually took place. “They arrested her in 1985, but by 1983 everything had been set up. They began to plan it as soon as we applied for immigration in ‘82,” she said.

The file contained descriptions of every room in their house, packages of mail never received, transcripts of phone conversations, and even private conversations between family members.

“Our employee was Spy Number One. He would tell them when we were out of the house or out of town. He gave them the key.

He had our complete trust. It made me feel sick,” Martina said. “Now I want to apply and see who was my shadow. My brother applied for his file and found out that one of his best friends was spying on him. It was crazy. How can he go back to my brother and pretend everything’s fine?”

She said the employee who betrayed them was given their house as a bonus. But once again, her determined mother refused to accept the injustice, petitioned the government and won it back.

Martina said one of the hardest things studying abroad is great distance from her mother and mentor, with whom she is very close. One of Dreyer’s greatest wishes was for her mother to see her receive her master’s degree at OU. “For three years I really begged my mom to come. I really wanted her to attend commencement, but about a month before, she said ‘I cannot do it, the doctor told me the stress of flying would be too much,’” Martina explained. “When I realized she wouldn’t be coming, I was really unhappy. I cried all the time.”

When she met her family at the airport, her dad sent her sister to get the rest of their things, including Martina’s birthday present he had promised to bring her on his next visit. “My sister left and when she came back she had my mom. I could not believe it,” Dreyer said. “She was my birthday present... My mom really liked it here, she told me it was a good place to stay.”

Martina came to the University of Oklahoma almost by accident. After graduation from the Technical University in Aachen in 1991, her plans were to go abroad. One of her professors suggested the United States and on his A-list was the University of Oklahoma. She had a job offer in Los Angeles, but after comparing living costs, Norman began “to look good.”

“Initially, I didn’t come here to

study. I came for practical training with Dr. (Edgar) O’Rear. My undergraduate degree was in biomedical engineering and I began investigating the properties of red blood cells after coagulation,” she said. “Then fall of ‘92 I started taking classes, which was not my original plan either, but somebody talked me into it,” she said with a smile. “I really do not regret that at all.”

Martina completed her master’s thesis on the synthesis of aerogels for natural gas storage last spring under Dr. Jeff Harwell and is now working on her Ph.D. with Dr. Lance Lobban. The two are conducting research on developing photocatalytic treatment for purification of indoor air using titania aerogels. Since photocatalysts are activated by sunlight, they could provide a low energy means of converting the contaminants of air-conditioned and recirculated air to harmless CO₂ without the need for activated carbon filters which need periodic replacement or rejuvenation. And with the use of photocatalysts, there are usually no partial oxidation products.

In addition to her research, Martina has been active on with campus activities. Two years ago she started the European Student Organization and as president, has organized activities from sporting events to tours and parties, culminating in European Night, a show and celebration of European culture. Martina plays an active role behind the scenes and on the stage. “I sing, I dance, I talk. I do whatever needs to be done,” she said.

Although Martina sounds like something of an extrovert, she says that hasn’t always been the case. “I became one when they put my mom in prison,” she said. “I was really mom-dependent. I was 21 when I became more mature, not that much, but a little.”

Martina also credits her education at OU with boosting her self-confidence.

"I studied in Germany for three and a half years, and I really didn't feel that I was an engineer, and then after one semester here, during which I took kinetics with Dr. Lobban and fundamentals and I felt 'yes' I know things," she said. "The first time I learned something with real practical application, like how to design a reactor, I was fascinated."

In the summer Martina serves as a counselor for "Camp Crimson," an orientation program for incoming freshmen. The German guide gives campers an insider's view of the OU campus from the football field to the president's office. She is currently helping plan activities for next year's session.

"I really enjoy all kinds of activities on campus," she said. "I really enjoy working with the people here." Faculty and students alike may find a loaf of freshly baked bread or German chocolate on their desk, courtesy of Martina, or at Christmas time, a deliciously decorated gingerbread house.

"There are things I miss. The sausages, the bread. But I have no desire to go back," she said. "I would like to get a job in industry here after I graduate. I like Oklahoma. I love the heat."

From a landlocked state, Martina's dreams of discovery are coming true.

SUSAN STAGG

"We work in shifts, partly because three people don't fit in the room at the same time and also, so someone can take off and get some sleep," she said. "But if my stuff's running I want to be there. On a good night I get about four hours sleep and eat junk food like you wouldn't believe."

The Brookhaven experience has proven to be a great networking tool,

not without a carnival element, as some of the brightest minds of industry and major universities collaborate on finding a way to keep soft drinks iced and the Cheetos coming without leaving their work.

Susan said the experience also has helped her in ways outside collecting data. "If it's the middle of the night and your adviser is gone and a question comes up, you call the shots," she said. "You have to make an executive decision.. It's really good practice. There's not someone holding your hand all the time."

Tackling a job with serious responsibility is not new to Susan. During the summers of her junior and senior years of high school, she worked in the safety office of Ford Motor Company in Detroit, where it was her job to investigate the validity of complaints addressing product safety and put the wheels in motion for recalls, if needed.

"It was a really good experience," she said. "I learned a lot about the inner workings of corporations, how to write corporate memos, things like that."

Susan also has a healthy competitive streak, most apparent on the soccer field, where she has felt at home since kindergarten. In her senior year of high school she was named "Miss Soccer," a title reserved for the most outstanding female player in the state of Michigan. "Anymore I just like to play pick up games, but the guys are like, 'Right, stick the girl in the corner,'" she said. "I remember once playing with this guy from Argentina, Walter (Alvarez), a research associate of Dr. Resasco's. After I scored on him three times, he had to reconsider," she says with a smile.

Susan's athletic ability is a family heirloom. She is a descendant of Amos Alonzo Stagg, the legendary University of Chicago football coach, who holds the longest coach-

ing career -71 years- in the history of the sport. Her father has a respectable record of his own, 32 years as a high school football and wrestling coach.

Susan said the things she has learned at OU will serve her well when she graduates and moves into industry. "Basically, I use a platinum tin catalyst, but the thing that's important is, I'm learning techniques. I could go to another catalyst or another system and make it work. I am really, really pleased with what I'm learning here."

When Susan was a senior in college she was diagnosed with chronic fatigue syndrome, a condition that seems hard to superimpose on the vivacious young woman who beats Argentinian soccer players at their own game and gets by on four hours of sleep a night. But the condition made her think seriously about attending grad school. Now, two years later, she has no doubts she made the right decision.

"I think this (OU) is the best experience I've ever had and the best choice I've ever made," she states emphatically. "I could not be happier."

Susan recently returned from a meeting of the International Congress of Catalysis in Baltimore, an experience she found both humbling and rewarding. "When I first started attending conferences, most of the papers went right over my head. But here I was sitting with the gods of catalysis and I'm listening and understanding and somebody beside me's asking the same question I just thought of. It was really neat," Susan said.

Susan said she'll be returning to the Brookhaven National Lab in October, but this time the group will be flying. "It's a lot faster, but there are some things you miss. You get a whole new perspective of your adviser when you're driving down the road singing ABBA songs." ■

“We chose prochlorperazine primarily because of its size and because it’s notorious for being insoluble in E.coli,” said Greg. “No one has ever made it in soluble form in E.coli and if we can do it, it would be quite a feat.”

Greg also has had the opportunity to mentor undergraduates who work with him in the lab, and has found the experience so rewarding, he would like to teach at a university level upon completion of his Ph.D.

In addition to his research, Greg has linked the OU ChemE department with the worldwide web, an idea which he conceived and executed with the blessings of department

head Dr. Jeff Harwell. Since it’s success, Greg has initiated four more web pages, including ones for the Institute of Applied Surfactant Research, the Institute for Gas Utilization Technologies, a call for papers in the catalytic and reaction engineering division of the American Institute of Chemical Engineers for its annual meeting, and a home page on research resources and information for the College of Engineering.

Now that they’re up and running Greg concedes he will have to turn them over to someone else to maintain and update, so he can devote more time to research.

In his spare time, which he admits is becoming more rare, Greg enjoys the domestic life with his wife Shannon, an OU psychology grad and research analyst for the

Oklahoma State Regents of Higher Education. The couple met at a poker party in the spring of ‘95. It turned out to be a lucky draw for the pair, who were married in October of ‘95. Greg also pursues musical interests, both at home with his guitar and in his church choir. A friend and fellow musician from UT entered the CEMS graduate program at OU in the fall, and Greg said he hopes they can find the time to do some composing.

But for now, Greg is busy in the lab. Harrison said there’s a possibility they will get as many as seven research publications from different aspects of their work. “It just goes to show what you can do with the right research,” he said. “And the right student.”

An Editor's Special “Thanks”

The School of Chemical Engineering and Materials has enjoyed dedicated faculty, students and staff through many years, and often benefitted from the contributions of their spouses. We asked a bit more late in ‘96 from Lynette Lobban, wife of CEMS’ Assoc. Prof. Lance Lobban, when we called on her professional skills to write the major feature for this issue of *OkChE*. With a ready smile and genuine enthusiasm, she said “yes”.

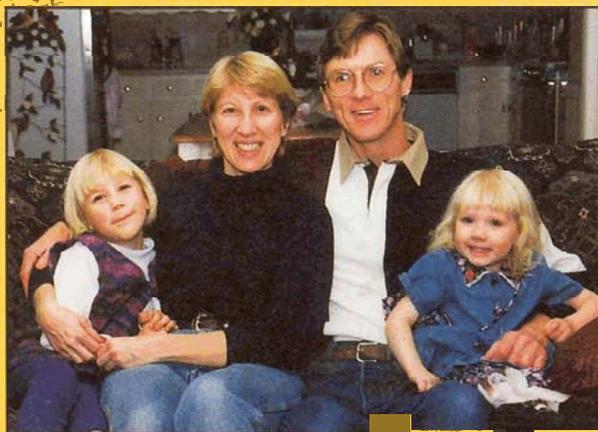
Lynette’s great interview skills are best attested to by the remark of one student about whom she wrote when they said, “It didn’t feel like an interview at all. It was just like talking to a good friend”.

Lynette has worked as a writer, editor and photographer for 20 years, most recently freelancing for a diverse clientele which has grown from local businesses and non-profit organizations to accounts with national advertising agencies. Her work includes everything from photography for newsletters, annual reports and campaign brochures to interviews with nationally recognized celebrities.

Her professional newspaper experience includes positions as staff reporter and photographer for the *Ada Evening News* and as staff photographer and then editor of the lifestyles and entertainment sections of the *Norman Transcript*.

Lynette has worked as a writer for the University in News Services and the Office of Development. She has served the University as a volunteer as publicity director for the OU’s SummerWind arts festival.

She serves the larger Norman community as a member of the Board of Directors and publicity chair for the Norman Ballet Co., as company photographer for Street Players Theatre, as publicity chair for the Norman Blues Festival, as a member of the publicity and production committees for Norman’s Jazz in June festival, and as a community producer for Multimedia Cablevision.



to Lynette Lobban

for adding *OkChE* to her many responsibilities of Prof. Lance Lobban and mother to Sarah and Hannah, as volunteer throughout the Norman and University communities as a professional writer, editor, photographer and publicist.

Friends & Alumni Notes

Texaco Gift



CEMS Director Jeffrey Harwell accepts an \$4,000 gift from Helen Pattison of Texaco. The check represents four \$1,000 scholarships administered under the School's Program of Excellence during 1996-97. Texaco has been one of the strongest supporters of CEMS' undergraduate scholarship program for more than two decades.

Phillip Applegate (BSChE '83), his wife Diane, and their four boys recently moved to Houston. Phil received a promotion to operations supervisor at the LPG storage terminal of Warren Petroleum recently sold by Chevron to Natural Gas Clearinghouse (NGC). They bought a house in Kingwood, northeast of Austin.

Li Peng Chong (BSChE '95) has joined Esso Production Malaysia Inc, an Exxon affiliate. She is a cost and schedule engineer in EPMI's production department at the moment, a task she finds challenging, but is looking forward to using more of her chemical engineering skills after a rotation to design in about a year.

Ralph E. Macy (BSChE '46) wrote recently to inquire about the possibility of a 50 year reunion.

Following graduation as a V-12 student in '46, Macy did a graduate year at the University of Michigan and worked briefly for Standard Oil in California. He then changed fields, taking a theology degree at the Episcopal Theological School in Cambridge, Mass., and did parish work in Sapulpa and Altus, Oklahoma from '50 to '59, and served as campus minister at Texas Tech from '59' to '70 before returning to Massachusetts to parish work and directing secondary continuing education from '70 to '83.

During '75-'77, he again picked up his engineering skills to manage the budget for a research project in MIT's Civil Engineering Dept. He continued his ministry from '83 to '88 in Providence, RI, and from '88 to '94, when he retired, in Pittsboro, NC.

Les Nichols (BSChE '84) was on campus recently recruiting for Koch Engineering where he's been since '92. Les is product manager for Koch's manufacture of ultrafine sulfuric acid for the semiconductor industry and manager for commercial development at Koch Sulfur Products Co. The company's main production facility has been in Wyoming, but just recently they purchased a facility in Tulsa for production there. Les and his wife Liz have three children, Emma, 8, Walt, 6, and Maeve who is 2 years

and 6 months. He brought us up to date on twin brother **Wes (also BSChE '84)** who had been with Williams Pipeline's Vyvix Division, which provides live feeds for television by fiber optics cables run through previously abandoned gas pipelines. Wes has since been promoted to head of Williams' WillTel Group where he is developing Williams' award winning internet World Wide Web presence. Wes and his wife Brenda have two children, Hannah and Conner.

Grover S. Ramsey (BSChE '44) found our last issue about CEMS' partnership with Chulalongkorn University interesting. After retiring from B.F. Goodrich Chemical Co. in late '83, he became a volunteer consultant for the International Executive Service Corp. His first assignment was in Bangkok where he served as a consultant to the Q&Q Rubber Co., a small company making shoe products where he found himself involved in all aspects of managing a small industrial company. Ramsey and his Thai colleagues found the joint project economically successful and personally rewarding through the friendships established. He and his wife found Bangkok exciting and exotic and the people charming and gracious. The Ramsey's reside in Chagrin Falls, Ohio.

Bruce Neal Stevens (BSChE '82, MSChE '83) has enjoyed his return to Oklahoma in '93 when he joined Petrolite in Tulsa. He and his wife Nancy have two children Samuel, aged 7, and Sara who is 3. The family has especially enjoyed renewing old friendships since their return.

Pam Tucker's (BSChE '84) company, Utility Composites, Inc., has introduced a new product, a small staple made of plastic composite. The staple fits existing pneumatic staplers and is used for making upholstery and lumber tacking.

New Alumni '96

B.S.

Kevin W. Alexander
Bader M. Al-Mujkhaizeem
Roy H. Branstetter
Robert Brian Broeker
David Joe Bruton, Jr.
Chu Hiong Chong
Christopher Michael Cohn
Thuy Thi Ngoc Dang
Kevin Lloyd Dean
Vladimir Ronquillo dela Cruz
Narayan Prasad Dhakal
Gregory Michael Fillipi
Edward Brian Fletcher
Kristen Casey Garber
Zane Wallace Gray III
Scott Adam Hagstrom
Yick-Han Heng

Gregory Dale Hicks
Willie Hughes III
Swee Eam Koay
Sian Wei Lau
Kevin Khoi Nguyen Le
Kristie Tokim Mai Le
Beng-Ee Lee
Chin Cheang Lee
IYing Shian Lee
Chew Peck Lim
Brian A. Link
Mun Ping Loke
Eric Daniel Moon
Linh Thanh Nguyen
Steven Earl Oseland
Swee Sean Quah
David Paul Roberts

James Donald Rolston
Gennady Slobodov
April Smith
Gim Seng Soon
Tee Lin Tan
Siew Hie Tie
Donell Quoc Trinh
Katie Thi Thu Truong
Justin Lee Walker
Laura Michelle Worthen
Hean Chin Yeoh
Shibu Zachariah

M.S.

Anthony Stuart Harpham
Gunturi V. S. Bhanumurthy
Carlos Alberto Gonzalez

Stephen Wayne Horstkamp
Caroline Lauron
Justin Van Duine

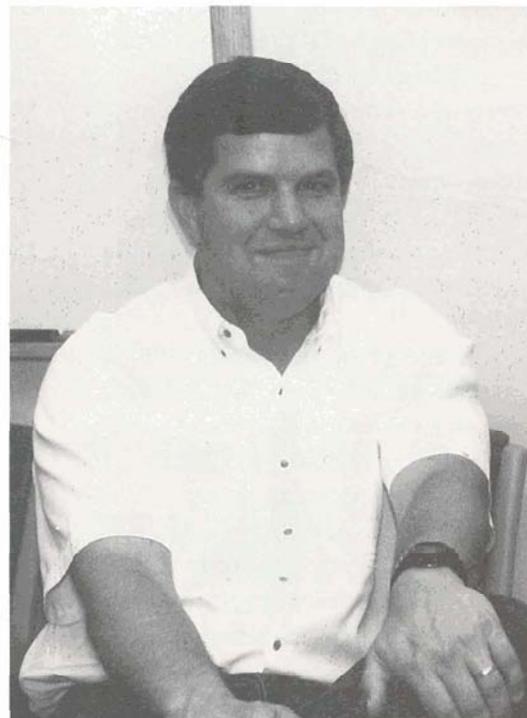
Matthew Rose

Ph.D.

Mariana Andreeva Ioneva
Li-Jun "Bill" Lee

Juan Felix Luongo-Ortiz
Abdulathim M. J. Marafee

The CEMS faculty, staff, and student family will perhaps miss no one more than recent doctoral graduate John O'Haver-- and not only for the fresh bagels and french pastries and fresh-out-of-the-garden produce he so thoughtfully and frequently brought in, but for the ever-present smile and sense of humor, eagerness and sense of leadership with which he approached challenges in his teaching and research contributions to both the department and her sister department in the Petroleum and Petrochemical College at Chulalongkorn University in Bangkok, Thailand. The CEMS family wishes him and his wife Kevie all good things for their future at O'Miss where John is the ChE faculty member.



E-mail: http://sunset.backbone.olemiss.edu/depts/chemical_eng/jhoh.html