

OkChE

Spring 1994



2000

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OKChE

Spring 1994

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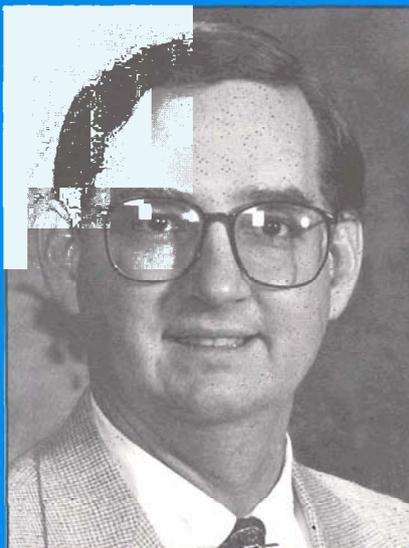
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Notes from the Director



Greetings from Norman!

I think you are going to enjoy this issue of *OKChE*. A recent survey of OU College of Engineering alumni showed that they like reading most about students and alumni. We have filled this issue with student and alumni news and activities.

One thing you will notice about this issue of *OkChE* is that there is no envelope for you to use for making a contribution in support of *OkChE* and its activities. This doesn't mean we no longer want your financial support! In fact, as you look at the student profiles on pages 4-7 and pages 10-15, remember that these are all students whose education is being at least partially supported by alumni and corporate funds. Your alma mater could not attract the quality of students it has enrolled without your help. In fact, the School of Chemical Engineering and Materials Science, CEMS, has recently embarked on the most ambitious development plan in its history, Plan 2000. This plan has been developed in consultation with Dean Don Geis of the College of Engineering and has the support of the faculty of the School of Chemical Engineering and Materials Science and the members of the *OkChE* Board.

Because of this new plan we will no longer be asking you to support the School by making a contribution directly to *OkChE*. Of course, if you wish to continue to support *OkChE* directly, you may continue to do so; just send your contribution to the School of Chemical Engineering, designated for *OkChE*, and we will deposit it in *OkChE*'s account in the OU Foundation. This money is used almost exclusively for publishing *OkChE* magazine and providing undergraduate scholarships. From now on, however, you will only be receiving one request each year for continuing support of the School, in the form of a solicitation to participate in the College of Engineering "Keys to Success" program. Please read the article describing the Keys program found on page 24 of this issue. This annual request to join the Keys program has now replaced our request for *OKChE* that used to come with *OkChE* magazine.

Please note, though, that in order for CEMS students to be assured of directly benefitting from your gifts to Keys, it will be necessary for you to designate your Keys gifts either to CEMS or to *OkChE*. Undesignated gifts to Keys will go into a pool to fund the activities of the Dean's

office and may or may not be used in CEMS, depending on the priorities of the College of Engineering. Many of our Program of Excellence Scholars, especially those who are National Scholars, do receive support from Keys through the Dean's pool of Keys funds.

We are very pleased to participate in the Keys program; it has already resulted in a major increase in alumni involvement in activities of the School. However, this last year many of our alumni did not designate their gifts to CEMS. Please help us out by doing so this next year.

The rest of this issue of *OkChE* presents faculty and student news as it relates to areas of our new development program, Plan 2000. The goal of Plan 2000 is to strengthen the financial base under the whole program of Chemical Engineering and Materials Science at OU, whether in the area of faculty, students, graduate assistants, or research and teaching laboratories.

One of our most pressing needs is the need for additional undergraduate scholarship support. There is no question that our student body is one of the best in the nation. With the dramatic increase in the number of outstanding students coming to CEMS, we have been hard pressed to find sufficient scholarship funds for them. But even more distressing to our faculty and staff is our current inability to provide support for many students whose promise and achievements would have qualified them for a scholarship from *OkChE*'s Program of Excellence just a few years ago. Our number of great students has skyrocketed but our amount of scholarship money has not! There are now many truly deserving students in our program who would have been supported in the past but who now go wanting because of our

Continued on page 28

PLAN 2000

The School of Chemical Engineering and Materials Science has a rich tradition and heritage. In 1955, our school began its strong emphasis on research, and that dedication has turned it into one of the finest programs of its size at any public U.S. university.

We take extreme pride in our outstanding reputation for quality in teaching and research. Professor Emeritus Cedomir Sliepcevich in 1974 became the first faculty member in the history of the University of Oklahoma to become a member of the National Academy of Engineering and, in 1991, our program ranked among the top ten chemical engineering programs in the U.S. in research dollars per faculty member.

However, as we approach the 21st century, we see a need to move from a focus on what has been to one of what we can become. Our vision is "to be considered a model state university program and to take CEMS into the vanguard of chemical engineering programs of any size, public or private." This means we must be empowered to continue the progressive growth of the quality education we provide young engineers while expanding our leadership role in research at strategic frontiers of the discipline.

This can only be accomplished through a partnership of those who will benefit from the fulfillment of our vision: the College of Engineering and The University; the school's faculty, staff and students; our alumni and friends; the companies that make up the worldwide chemical and related industries; and the State of Oklahoma.

What follows is the plan to make our vision a reality: The CEMS PLAN 2000.

To protect our future successes from the ever changing pressures of a global economy, we must seek a financial base that blends annual private gifts and permanent endowments with state funding and externally sponsored research grants.

We believe a comprehensive endowment program would complement the state financial base, inspire a broader base of annual giving, and encourage expanded major gifts by individuals and corporations.

Although this is an ambitious goal, it is one that we can achieve with the support of our loyal alumni and friends and the industries of the state and region.

Already, significant steps have been taken with the endowments of the Asahi Chair, provided by the Asahi Glass Co.; the Conoco/Du Pont Professorship, provided by E. I.

Du Pont De Nemours & Company; the Sliepcevich Professorship, provided in the name of noted research professor C. M. Sliepcevich and funded by school alumni and corporate supporters, and the Askew Scholarship, provided by alumnus Richard G. Askew of Bartlesville, Oklahoma.

In developing our plan for the future, we have focused on five basic areas:

- *Undergraduate Programs*
- *Graduate Programs*
- *Faculty Growth and Development*
- *Research Centers of Excellence*
- *Teaching and Research Laboratories*

UNDERGRADUATE PROGRAMS

Of 407 students enrolled in chemical engineering during 1993-1994, 65 are National Scholars.

153 have grade point averages of 3.25 or better.

143 are Black, Native American or Hispanic and 118 are women.

The 2nd largest number of graduating seniors in any single major in the OU Honors Program is in Chemical Engineering.

The strength of our undergraduate program can best be exemplified by the number of National Merit and National Achievement Scholars enrolled in chemical engineering. With 40 national scholars currently enrolled in the school, our curriculum has proven to be near the top choice for these students in the university. Twenty percent of our entering freshmen were National Merit or National Achievement Scholars in 1993.

Also at the heart of our quality undergraduate program is the Program of Excellence, which recognizes students who in high school ranked in the top 5 percent academically, have shown outstanding leadership potential and are interested in careers in chemical engineering. The program provides four-year merit scholarships to students who remain academically qualified, and since it was established in 1968, has been sponsored by corporations and alumni.

Our School is dedicated to an atmosphere of learning for

students and faculty with efforts at the highest creative levels. But if those efforts are to continue and we are to remain on the cutting edge, we must continue to attract the most gifted students in the nation to study chemical engineering at OU.

CEMS' PLAN 2000 calls for increasing the contributions to the Program of Excellence and designing undergraduate scholarship endowments to attract the nation's top students. This goal will allow those alumni and corporations who traditionally look to OU to provide the best-trained engineers in the nation to help those students achieve that level of education.

We believe that one of the best ways to accomplish the goal is through a Distinguished Benefactor Scholarship Program. This donor/benefactor will provide funds which will match endowed gifts by individuals and/or corporations for undergraduate scholarships. This means the tax-deductible gifts actually will generate two or more times the dollars for the undergraduate scholarship program.

Our PLAN 2000 for undergraduate programs includes:

- Establish a Distinguished Benefactor Program to provide \$100,000 in matching funds for undergraduate scholarships
- Add named endowed undergraduate scholarships of \$100,000 to fulfill the Distinguished Benefactor match
- Increase annual scholarship support to \$40,000

The average composite ACT score of all entering freshmen in chemical engineering in 1993-'94 is 28.

The average for incoming Program of Excellence freshmen is 31.

Exemplary Program of Excellence Scholars

Representative of Remarkable Undergraduate Quality

Meggan Baker, a National Merit Scholar and president of the OU student chapter of A.I.Ch.E., has narrowed her choice among the many career options of a chemical engineer to a job in the natural gas processing industry with a focus on environmental concerns. The Boise, Idaho native interned last summer at Mobil's Chitwood Gas Plant in Ninnekah, Oklahoma where she was responsible for setting up a secondary heating system allowing her to apply her knowledge of heat transfer and fluid dynamics and skills in economic analysis to a real operation. Meggan has accepted another internship for summer '94, again for Mobil Exploration & Production U.S. in their Houston operations division where she'll be involved in various projects related to recovery of natural gas.

After graduation, Meggan plans to work in natural gas processing for a few years to help focus her interests and define her objectives for graduate school and an advanced degree. Eventually, she would like to specialize in the subject of environmental regulation within the natural gas industry and work as a liaison between the industry and the government to determine regulatory guidelines.

As an Undergraduate Research Scholar working with Professor Robert Shambaugh, Meggan presented results of her work at the fall '93 meeting of the Center for Polymer Fiber Research.

As A.I.Ch.E. president, she has been responsible recruiting industrial speakers and organizing trips to national meetings, student plant trips to companies that hire chemical engineers, and planning the annual A.I.Ch.E. banquet.



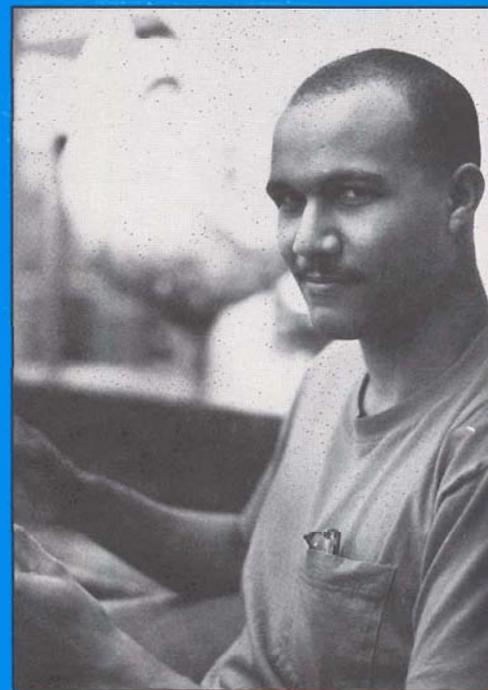
Kevin Blakley is both a National Merit and a National Achievement Scholar recruited out of Paw Paw, Michigan, midway between Detroit and Chicago, to the University of Oklahoma by OU's highly successful National Scholars Program.

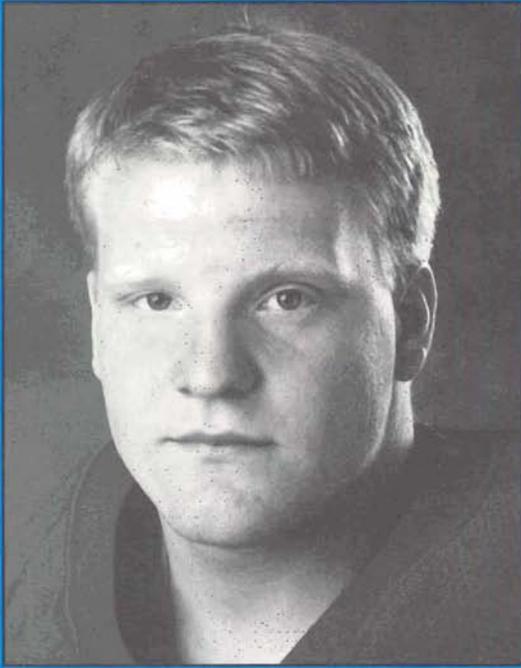
Though he was initially attracted to CEMS' pre-med curriculum, Kevin has since decided to pursue a more traditional chemical engineering occupation after graduation in December '94. He will be interning in New Orleans this summer with Shell Development Company collecting data on oil and gas wells.

The prospect of an interesting job and a good income and the encouragement of his Michigan high school teachers recognized his talent in math and the sciences motivated him to opt for an engineering major.

Kevin readily acknowledges that the attractive package of scholarships provided by OU's National Scholars Program in conjunction with the College of Engineering, the Minority Engineering Program and the Program of Excellence convinced him to pursue his degree at OU.

Kevin plans to work for a few years to gain experience and focus his interests before pursuing a graduate degree in chemical engineering.





David Bullard is proof positive that an individual can be characterized by both brains *and* brawn. The walk-on OU Sooner Football player and sophomore in chemical engineering had already compiled 44 hours of college credit *before* enrolling at OU through a combination of advanced standing examinations and concurrent enrollment at Murray State College while still in high school—all while working part time.

For his outstanding academic achievements since coming to OU, the Tishomingo, Oklahoma native was selected by Texas Eastman (formerly a division of Kodak) to receive a three-year scholarship in chemical engineering to pay full tuition, fees and books. The scholarship includes an opportunity for David to intern at Texas Eastman's Longview facilities later during the summer between his junior and senior years.

In addition to the Program of Excellence and Kodak Scholarships, David's efforts have earned for him support from the College of Engineering's Distinguished Alumni Scholarship, OU's Honors Program and Lt. W. J. Scott Merit Scholarships, and support from the Wal-Mart Foundation and the Elks Foundation for Eagle Scouts. He was a member of the Alpha Lambda Delta honorary fraternity for freshmen during 1992-'93.

David is still considering the many varied opportunities beyond undergraduate chemical engineering education

including the possibilities of pursuing a doctoral degree and eventual chemical or petroleum company management or pursuit of a medical degree.

Since 1988, David has worked part time as a counselor for primary school-aged children at OU's Oklahoma Aerospace Academy.

David is a member of the Crimson Club and the Fellowship of Christian Athletes.



Tanya Hurst, a senior in the Program of Excellence, was selected for the additional honor as Laurance Reid Scholar for 1993-1994. The Reid Scholarship was established in 1988 in the College of Engineering as a living memorial to the late OU faculty member to support students in chemical and petroleum engineering with demonstrated interest in natural gas conditioning and processing.

As an undergraduate, Tanya has earned opportunities to gain valuable experience in the oil and gas industry. During 1992, she worked as a summer engineer for Amoco Production Co. working out of Denver, Colorado, doing calculations of oil and gas reserves for 12 major Amoco-operated fields and evaluating decline rates and computation of remaining reserves for each field using exponential, hyperbolic and harmonic decline analysis. During 1993, Tanya worked for ARCO Alaska in Prudhoe Bay creating a model to predict H_2S levels in flowlines and separation facilities.

Tanya has helped encourage young Oklahomans to become interested in the sciences and engineering through an outreach program of the OU Department of Chemistry and Biochemistry. Through the program, she conducted science experiments for more than 300 children in the Oklahoma City public schools to help pique their interest.

Tanya's interests beyond natural gas cracking and thermodynamics, include a devotion to music. As a clarinet player, she was a member of the Oklahoma All-State Band during high school for three years, of the Oklahoma Youth Orchestra for two years, and a participant in the Oklahoma Summer Arts Institute Orchestra for one summer. She was a member of OU's marching band during 1990.

Tanya received the Rita H. Lottinville Prize for high academic achievement and student involvement at OU during 1990-'91, and an R. Boyd Gunning Scholarship as one of OU's 10 most outstanding freshmen that year. She is a member of the OU Honors Program and Tau Beta Pi.

David Kendrick, as University of Oklahoma Student Association president and a junior in chemical engineering, has had a unique opportunity to learn skills in time, resource and personnel management.

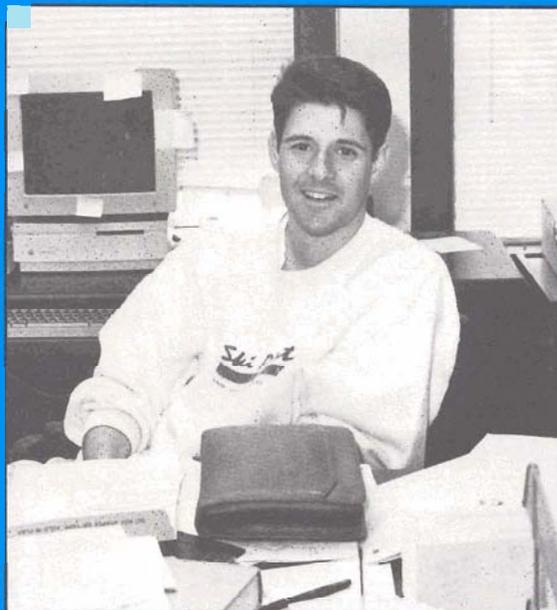
Support from the National Merit Scholars Program and CEMS' Program of Excellence, among others, have allowed him to excel in the tough chemical engineering curriculum and at the same time serve the needs of more than 20,000 students who depend on UOSA for their voice in campus policy making. His job as president has required 60-80 hours of his time each week. His dedication to both his scholastic and extracurricular responsibilities earned him "Big Man on Campus" honors for 1993-'94.

During his tenure as president, David has been faced with tough management decisions necessitated by strains placed on student organizational funding by the burden of retiring new 20-year bonds on recent Oklahoma Memorial Union renovations. He has presented a proposal to return proceeds from campus vending machines to students for allocation and another to restructure the student organizational hierarchy to enable the body to address individual program funding as opposed to omnibus funding.

A highlight of his term has been a trip to Russia to a conference to help his Russian peers organize democratic student government bodies to provide them with a voice in their own student affairs.

David plans to remain politically active by helping create a larger role for student organizations state-wide to participate in the higher education budgeting process in the Oklahoma state legislature and to encourage placement of a higher priority on higher education funding.

After graduation, David plans to enter medical school to obtain an M.D./Ph.D. degree and hopes to establish a practice with a 50/50 clinical/laboratory split in genetic engineering research and medical application.



Program of Excellence Scholars 1993-1994

Tiffany Avance
Newcastle, Okla.

Dawn M. Bacon
Owasso, Okla.

Meggan Baker
Boise, Idaho
National Merit Scholar

Eric S. Bell
Broken Arrow, Okla.
National Merit Scholar

Kevin L. Blakley
Paw Paw, Mich.

Elizabeth K. Breutzman
Anchorage, Alaska
National Merit Scholar

Raymond E. Bristol
Shawnee, Okla.

David J. Bullard
Tishomingo, Okla.

Stephen M. Carlton
Plano, Texas

Mary K. Couch
Muskogee, Okla.

Eric R. Ding
Pasco, Washington
National Merit Scholar

Phillip J. Doerpinghaus
Jenks, Okla.

Anil Gollahalli
Norman, Okla.
National Merit Scholar

Marcus S. Groenig
Annandale, Virginia
National Merit Scholar

Scott A. Hagstrom
Del City, Okla.
National Merit Scholar

Michael E. Helm
Bartlesville, Okla.

Russel Hooper
Del City, Okla.

Tanya A. Hurst
Tecumseh, Okla.

David C. Kendrick
Duncan, Okla.
National Merit Scholar

Yiling Shian Lee
Malaysia

Paul E. Lindgren
Tulsa, Okla.
National Merit Scholar

Brian Link
Moore, Okla.
National Merit Scholar

John B. Madden
Noble, Okla.

James H. Martin
Norman, Okla.

Adam D. Minyard
Oklahoma City, Okla.

Jeffrey J. Nadeau
Littleton, Colorado
National Merit Scholar

Michael R. Nixon
Antlers, Okla.

Jeff Northcutt
Ponca City, Okla.

Karolina Oetman
Medan, Indonesia

Toby D. Owen
Phoenix, Arizona
National Merit Scholar

J. Brett Pate
Oklahoma City, Okla.

Jon M. Poglitsch
Dallas, Texas

Benjamin B. Pool
Moore, Okla.

Amy L. Portz
Littleton, Colorado
National Merit Scholar

James D. Rolston
Rosharon, Texas
National Merit Scholar

Evan L. Russell
Oklahoma City, Okla.

Yasmine Salama
Ponca City, Okla.

Sam E. Sawaya
Yukon, Okla.

Chin L. Sim
Malaysia

Darin S. Sixkiller
Oklahoma City, Okla.

Brandon S. Skidgel
Perry, Okla.

Gennady Slobodov
Ponca City, Okla.

Sandra Y. Snyder
Menomonee Falls, Wis.

Kyle C. Sparks
Fort Smith, Arkansas

Michael C. Sterling
Waco, Texas

Jennifer Strojny
Biloxi, Mississippi
National Merit Scholar

Monica J. Tillman
Colorado Springs, Colo.

Ashley D. Ukens
Hooker, Okla.

Kelly Vincent
Tulsa, Okla.

De Q. Vu
Oklahoma City, Okla.
National Merit Scholar

Michael D. Wheelock
Oklahoma City, Okla.

D. Douglas Wick
Richardson, Texas
National Merit Scholar

Si C. Wong
Malaysia

David R. Zarlino
Parma Heights, Ohio
National Merit Scholar

ASKEW FUND MATCHES CORPORATE AND ALUMNI GIFTS FOR SCHOLARSHIPS ENDOWMENT



Richard G. Askew

CEMS alumnus Richard G. Askew has established a fund of \$100,000 to be used to encourage contributions to support a program of endowed undergraduate scholarships in the School of Chemical Engineering and Materials Science through a benefactor matching program.

Under the program, scholarship gifts of \$10,000 or more by individuals, including corporate matching funds, will be matched on a 1:1 basis, and the resultant endowment fund will bear the name of both the donor and the benefactor.

Endowed gifts of \$10,000 or more by a corporation or foundation will be matched on a 1/2:1 basis and the resultant endowment fund and awards will bear the name of both the donor and the benefactor.

Endowed gifts of less than \$10,000 will become part of a "pooled fund" until the total principal reaches \$20,000, at which

time the endowment will be matched on a 1:1 and/or 1/2:1 basis, based on whether the respective donors were individual or corporate. The resultant endowment fund and awards will bear the name of the Richard G. Askew Chemical Engineering Alumni Scholarship.

In order to attract and encourage well rounded students, selection of recipients will be based on the dual criteria of academic performance and evidence of significant participation in extra-curricular student activities. Incoming freshman candidates whose ACT scores fall within the upper 25 percent range of the freshman class of the previous year, and all chemical engineering students with a 3.0 or better grade point average will be eligible for consideration. Students selected for an award may be considered for subsequent awards as long as they maintain the required g.p.a. and make satisfactory progress toward graduation, and continue to show evidence of significant student activities.

Awards may range between \$1000 and \$2000 per student per year.

The selection committee for this new program will be composed of members of the scholarship committee of the School of Chemical Engineering and Materials Science.

The names, addresses and pertinent information regarding academic status and student activities of all scholarship recipients will be furnished to donors annually by the selection committee.

Richard G. Askew received a B.S. and M.S. in Chemical Engineering in 1947 and 1948 respectively. After a thirty-seven year

career in a variety of domestic and international assignments, he retired as Senior Vice President of Phillips Petroleum Company and President of Phillips Chemical Company, with responsibility for the company's worldwide chemical operations.

His contributions to the University, College of Engineering, and the School of Chemical Engineering and Materials Science have been many and significant following a pattern of leadership and participation established while a student at the University. He has been very supportive of all of the work of the College of Engineering Board of Visitors, including serving a term as the Chairman of the Board. He is a former Chairman and current Honorary Director of the OkChE Chemical Engineering Advisory Board. In addition to his many contributions to Engineering, he is an Energy Center Sponsor and is an active supporter of numerous OU academic and athletic programs, serving as Tournament Director for the 1991 NCAA Regional Golf Tournament.

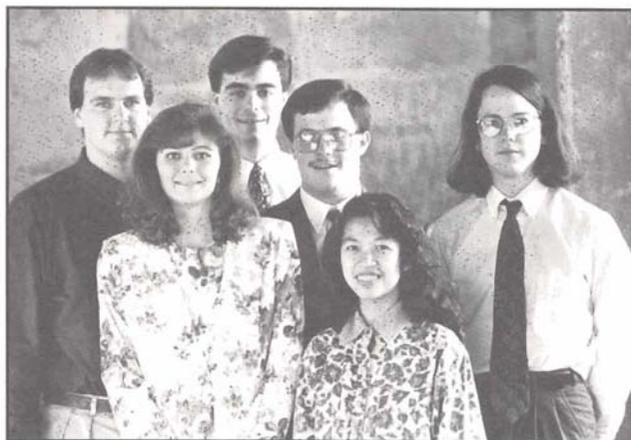
Askew has always given generously of his time and abilities to numerous industrial, civic and governmental associations. He has served on the Board of Directors of the Chemical Manufacturers Association, the Chemical Industry Institute of Technology and the American Institute of Chemical Engineers, and is past Director of the Bartlesville Chamber of Commerce, President of the Bartlesville Jaycees and Secretary of the Oklahoma Jaycees. He is currently a Director, a member of the Executive Committee and Chairman of the Budget Review Committee of the Regional United Way.

He received the OU Regents' Alumni Award in 1990.

CEMS Academic Achievement Award Recipients

Spring 1993

As pictured left to right,
James G. Keen, Pamela Pesek Johnson Award to an Outstanding Senior in Process Design
Haley Miles Keen, Phillips Petroleum Company Award to an Outstanding Senior in ChE
Scott Lynch, F. Mark Townsend Scholarship
Russel W. Hooper, American Institute of Chemical Engineers Award to an Outstanding Junior in ChE and Robert Vaughan Award for Excellence in Undergraduate Research
Thuy T. Vu, CEMS Outstanding Sophomore Award
Rustin T. Hauge, American Institute of Chemists Award for an Outstanding Senior in ChE
Gary L. Skidmore, (not pictured) Dow Chemical Company Award to an Outstanding Junior in ChE



Spring 1994

As pictured left to right,
Darrell Reynard, F. Mark Townsend Scholarship
Tanya Hurst, Pamela Pesek Johnson Award to an Outstanding Senior in Process Design and Laurance Reid Scholarship for 1993-1994
Thuy Vu, Dow Chemical Company Award to an Outstanding Junior in ChE
Russel W. Hooper, Robert Vaughan Award for Excellence in Undergraduate Research
Meggan Baker, American Institute of Chemical Engineers Award for an Outstanding Junior in ChE
Gennady Slobodov, CEMS Outstanding Sophomore Award
Evan Russell, (not pictured) Phillips Petroleum Company Award to an Outstanding Senior in ChE



Michael Helm Named G.P.A. Scholar for '94-'95



Michael Helm

Michael E. Helm, a junior in the School of Chemical Engineering and Materials Science, was selected by the Gas Processors Association Tulsa/Oklahoma City Chapter to receive a \$1000 scholarship which has been matched with another \$1000 from the Gas Processors Supply Association.

The scholarship award was presented to Helm on April 14 in the company of Kenneth E. Starling, C.M. Sliepcevic Professor of Chemical Engineering, at the 1994 Oklahoma City regional meeting of the society.

The scholarship is awarded to American citizens on the basis of academic achievement, student professional society activity and leadership.

Vladimir dela Cruz is Laurance Reid Scholar for 1994-95

Vladimir R. dela Cruz, a Lawton, Okla. junior in chemical engineering, has been selected to receive the Laurance Reid Scholarship for 1994-'95.

Dela Cruz is a member of the University Achievement Class, OU Scholars, the Engineering Club, OU chapter of AIChE and the National Forensic League.

The Laurance Reid Scholarship was endowed as a living memorial to the late OU faculty member by his widow, Mrs. Mary A. Reid. The scholarship is awarded annually to a student in chemical or petroleum engineering with a demonstrated interest in natural gas conditioning and processing.

GRADUATE PROGRAMS

The strength of our graduate program reflects the vigor of our school as a whole. But to maintain this level of excellence, we believe there is an urgent need to make our graduate program less dependent on external grants which are very competitive and serve as an unpredictable source of support.

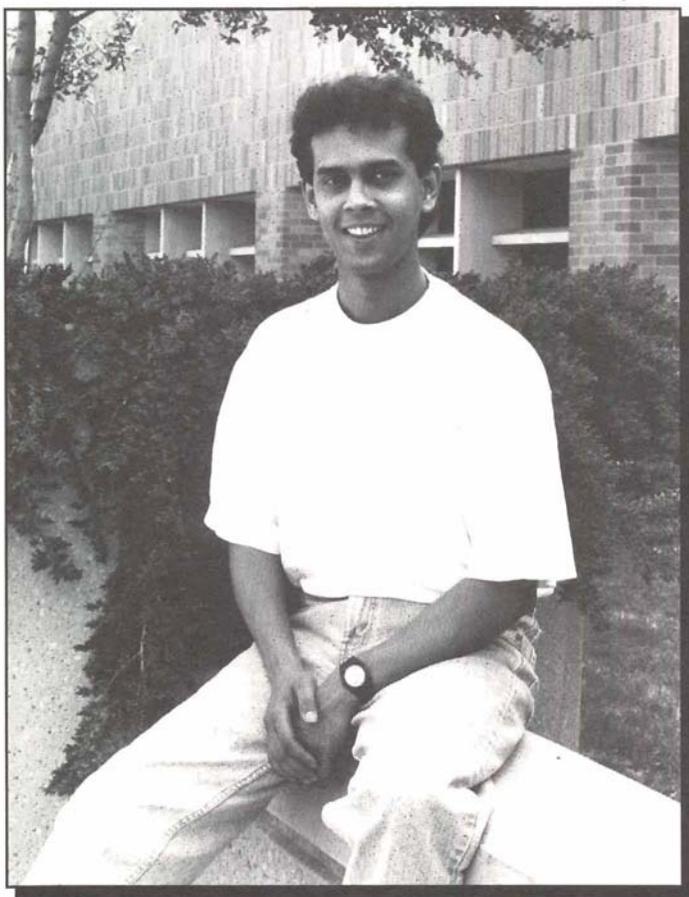
Our plan is based on the goal of being able to support all first-year graduate students with endowed graduate fellowships and assistantships. This kind of

support is needed to enable CEMS to have truly great graduate and research programs.

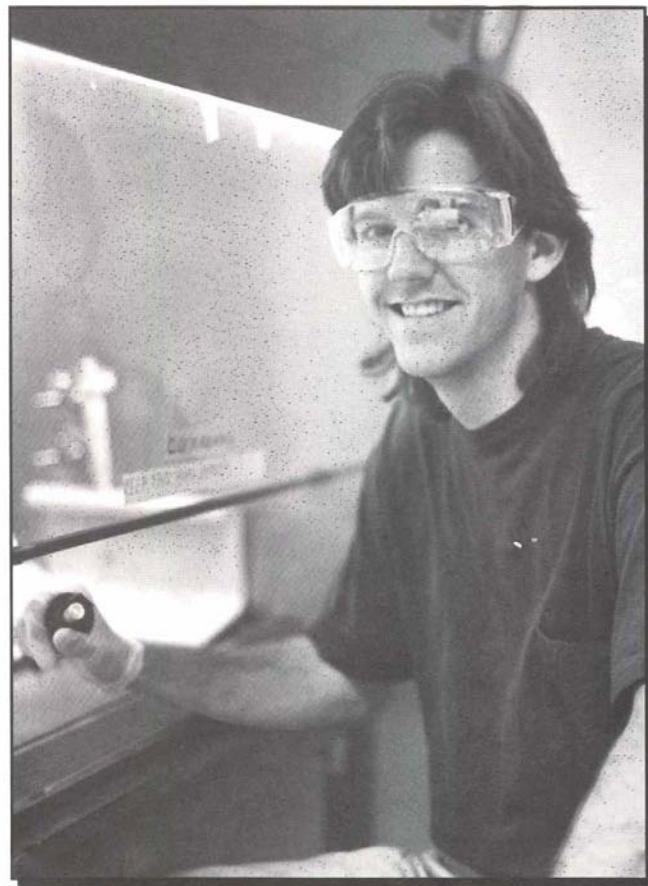
This goal also plays hand-in-hand with another key element of our future success - the ability to compete for the first tier of nationally recruited graduate students. Recruiting top quality graduate students is considered to be among the most important considerations in our planning for the future.

Our specific goals in the area of our graduate program are to:

- Establish a Distinguished Benefactor Fellowship Program to provide \$1.5 million in matching funds for graduate fellowships
- Add \$1.5 million in endowed graduate fellowships to fulfill the Distinguished Benefactor match by:
 - Establishing the Graduate Fellowship Endowment Fund of \$600,000
 - Adding \$300,000 in named endowed graduate assistantships
 - Adding \$600,000 in named endowed graduate fellowships
- Increase graduate program annual support to \$120,000
- Endow a graduate student seminar program at \$50,000

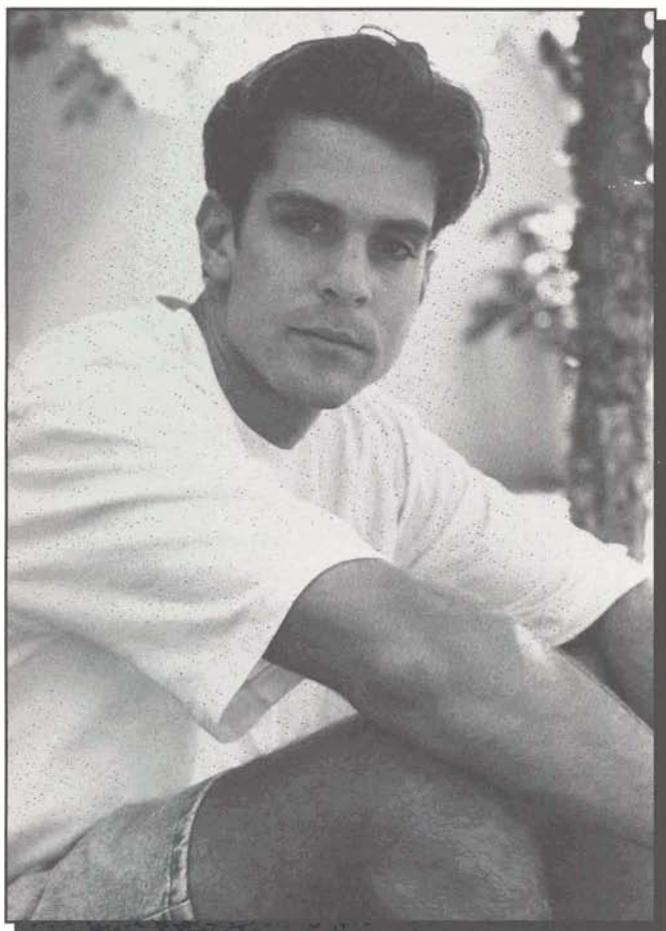


Mario Coelho
Houston, Texas
Doctoral Candidate
BSChE - University of
Houston, May 1993



Gregory Davis
Dekalb, Texas
Master's Candidate
Phillips Fellowship
BSChE - University of Texas
at Austin, May 1993

Outstanding Fall '93 Graduate Program Recruits



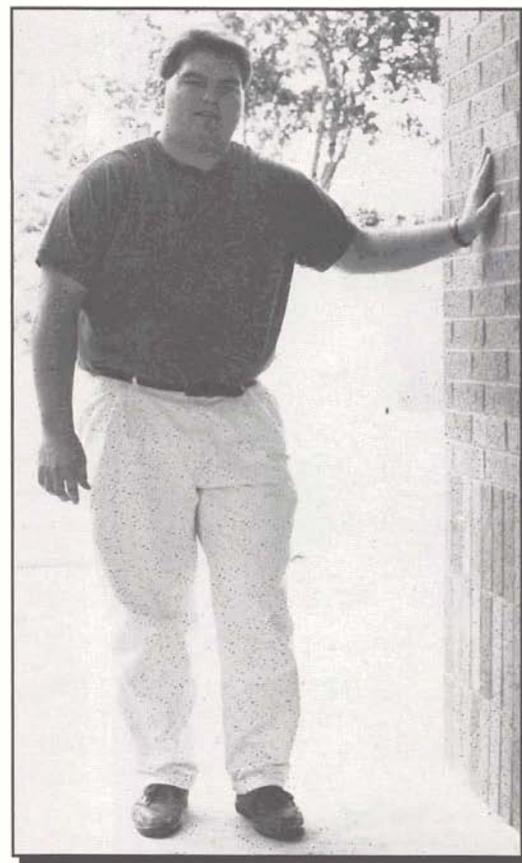
▲ **Michael Donato**
Bergen, New York
Master's Candidate
Conoco Fellowship
BSChE - Syracuse
University,
May 1993

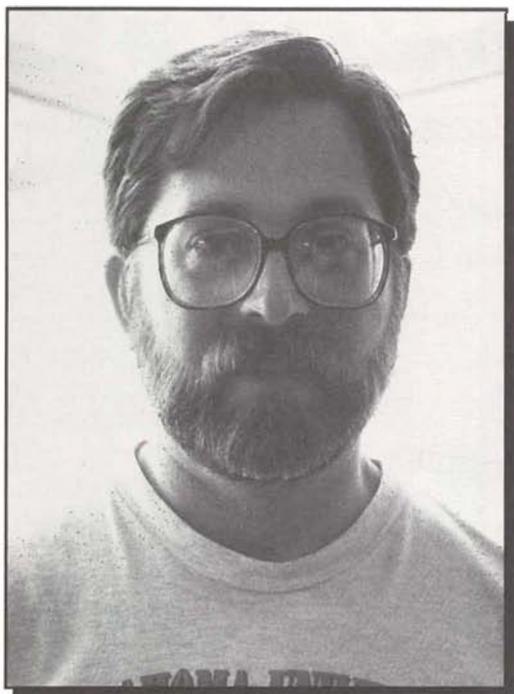
Hatice Gecol
Istanbul, Turkey
Doctoral Candidate
BSChE - Istanbul Technological
University, July 1987
MSChE - University of Colorado,
Boulder, May 1993



▼ **Stephen Forlow**
Saint Cloud, Florida
Master's
Candidate
BSChE - Florida
Institute of
Technology,
June 1993

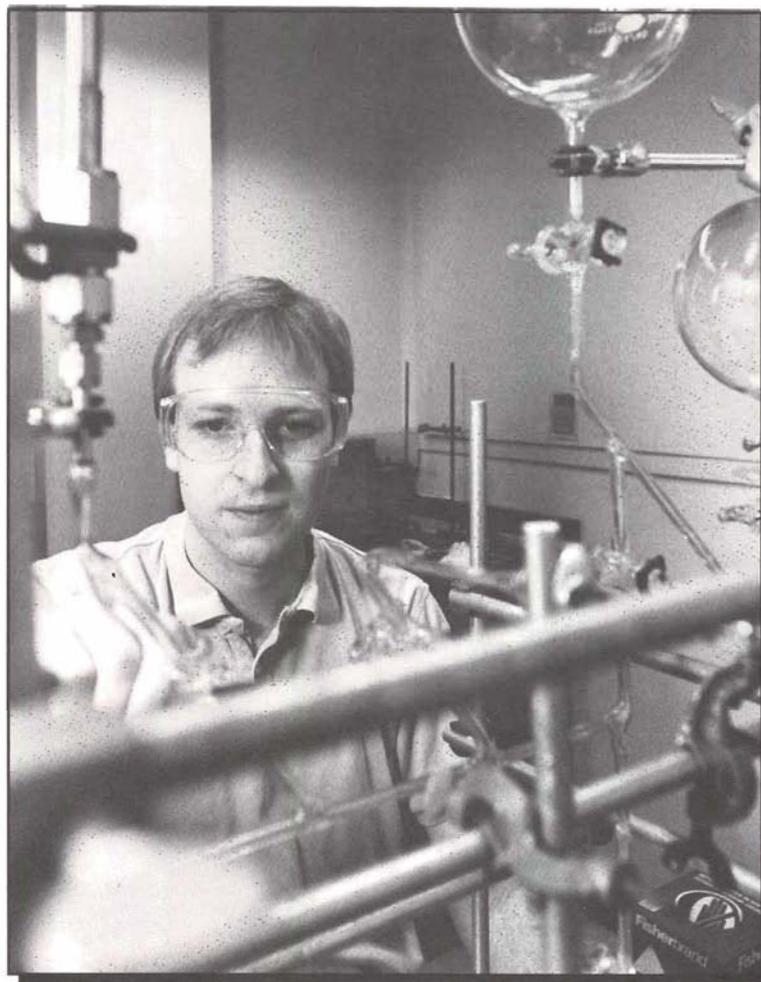
Bobby Joe Hill
Marietta, Oklahoma
B.S. Chemistry, South-
east Oklahoma
State University,
May 1993





Philip J. Howard ▲

Norman, Oklahoma
Master's Candidate
B.S. Chemistry - University of
Oklahoma, May 1979
D.D.S., University of Oklahoma,
May 1983



**Christopher
Loughran**

Azie, Texas
Master's Candidate
Exxon Fellowship
BSChE - Texas A & M
University, May 1993



Steven Horstkamp ▲

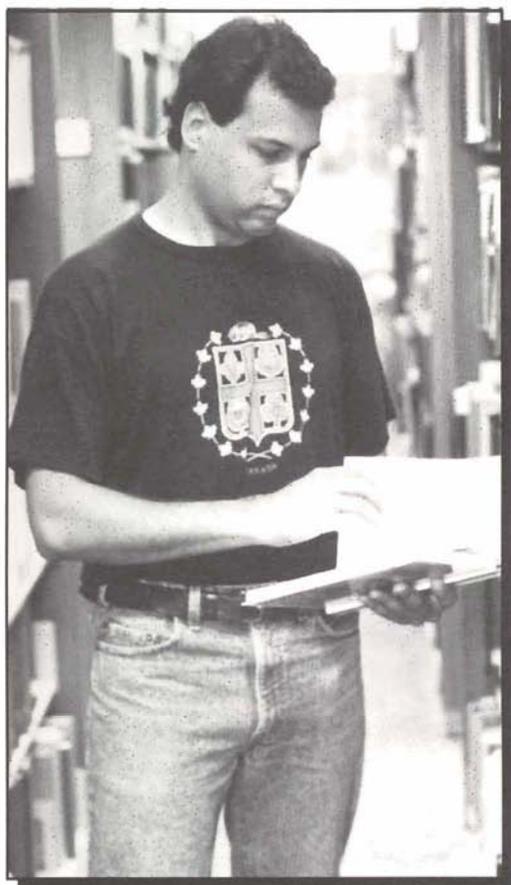
Asheboro, N. Carolina
Master's Candidate
B.S. Chemistry - Western Carolina
University, Dec. 1992
M.S. Chemistry - Western Carolina
University, May 1993



Juan Luongo

Caracas, Venezuela
Master's Candidate
Exxon Fellowship
BSChE - University of
Oklahoma, May 1991





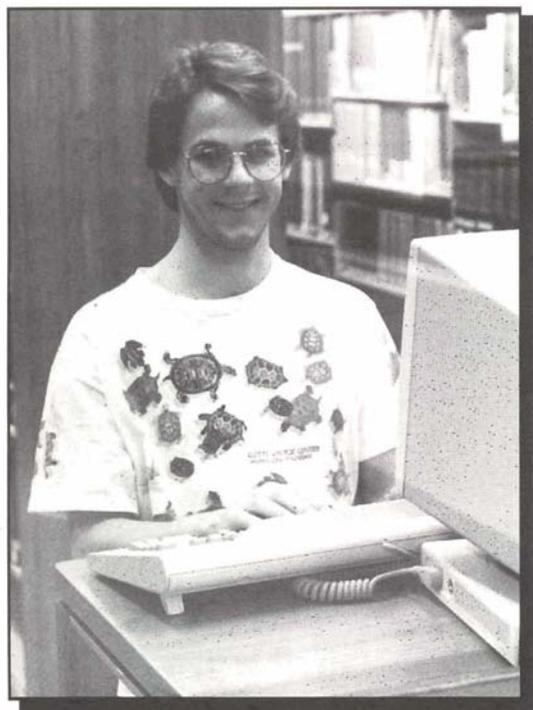
John Robles

San Antonio, Texas
Master's Candidate
B.S. Chemistry - University
of Texas at San Antonio,
May 1993



Scott Smith

Burnt Hills, New York
Doctoral Candidate
DuPont Fellowship
BSChE - Worcester
Polytechnic Institute,
May 1993



Justin Van Duine

Laingsburg, Michigan
Master's Candidate
Diamond Shamrock Fellowship
BSChE - Michigan State University,
May 1993



Scott Wilkie

Sarasota, Florida
Doctoral Candidate
BS Mech. Engr. -
University of
Oklahoma,
December
1987

Doctoral Candidate Mariana Ioneva Awarded Link Energy Fellowship



Mariana Ioneva

Mariana Ioneva, a Bulgarian doctoral candidate in CEMS, was awarded an \$18,000 Link Foundation Energy Fellowship for the academic year 1994-1995.

The fellowship includes \$14,500 for an academic year and summer stipend, \$2,500 for support of research supplies and small equipment, and \$1,000 for cost of publication.

The objective of Ioneva's work that earned her the fellowship is the development of technologies for high density storage of natural gas at moderate conditions for use as a vehicular transportation fuel. Among the most promising materi-

als are the recently discovered ordered mesoporous molecular sieves such as have been synthesized in her CEMS laboratory. Unlike zeolites, the micropores of these sieves can be tailored to various sizes using surfactant templating. This flexibility may allow researchers to take advantage of capillary forces which should enable greater density storage in a porous solid with lower pressures and ambient temperatures than required in a vessel.

Ioneva graduated in 1991 with the equivalent of an American BSChE from the Higher Institute of Chemical Technology in Sofia (now known as the Sofia Technological University) with specialization in chemical technologies and materials for microelectronics and electronic components and specialization of technology of super-high purity substances for electronics.

Ioneva came to CEMS in 1991 from Sofia with an outstanding academic record of 5.9 on their 6 point scale. She elected to work on Professor Jeffrey H. Harwell's methane sorptive-storage project because of her awareness of the potential importance of methane to the economy of the former Eastern Block nations and her feelings that this technology could be of importance to the economy of Bulgaria.

During the course of her work at OU, Ioneva constructed an apparatus for the hydrothermal synthesis of zeolitic materials and successfully synthesized a sample of Cloverite.

This is no mean feat: Cloverite is very difficult to synthesize and Ioneva was working entirely from the open literature; no one in any CEMS' research group had worked on zeolite synthesis before so she was on her own. Since that time, she has added to her feats the synthesis of the new Mobil Oil zeolitic materials, the so-called MCM-41's. Most recently, she has used the Mobil surfactant template technology to create several entirely new zeolitic materials under study in CEMS for gas storage capabilities.

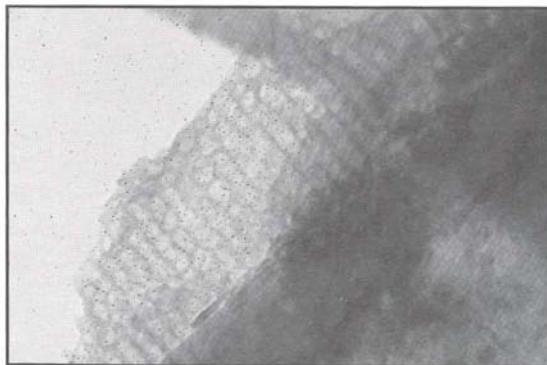
The Link Foundation is a New York charitable trust established in 1953 by Mr. and Mrs. Edwin A. Link. Grants totaling more than \$3 million have been awarded to universities and colleges and other non-profit organizations.

Mr. Link was best known for his invention of the first successful flight simulator in 1929. Prior to his death in 1981, he had accumulated more than 27 patents for aeronautics, navigation and oceanology equipment.

After a two-year study to determine how the Foundation could create an active, living memorial to Mr. Link, a major program of fellowships in the area of energy research and conservation, Link's last scientific interest, was established in 1983.

University of Rochester administers the Link Foundation Energy Fellowships. Objectives of this program are to foster energy research and to disseminate results of that research through lectures, seminars and publications. Since 1984, grants have been made annually to universities or other non-profit organizations which select doctoral student fellows and supervising faculty or research directors to pursue an energy-related project. Ideas that can be implemented in the relatively near future are given first priority by an independent selection committee.

A microporous material created from a surfactant template such as this created in Ioneva's CEMS lab may have the potential to offer more efficient storage of natural gas for vehicular transportation.



Bruce Roberts Awarded Dissertation Prize for Engineering and Physical Sciences

Bruce L. Roberts was recognized by the University of Oklahoma for producing the single most outstanding doctoral dissertation in the area of engineering and physical sciences during 1993 for his work "The Use of Micellar Solutions for Novel Separation Techniques".

The \$1000 award was presented to Roberts at the April 12 Faculty Appreciation Luncheon and Award Ceremony to acknowledge the contribution graduate students make to research, creative activities and education. It is one of only two given, the other going to the arts and humanities area.

Roberts received his B.S. in microbiology from OU in 1975 before serving as an officer in the U.S. Air Force for four years. He then returned to OU and completed an M.S. in chemical engineering in 1985 and went to work for one year at Texas Instruments in experimental investigation and optimization of processes.

In addition to his doctoral research efforts, Roberts has



Bruce Roberts, right, accepts the 1993 award for best doctoral dissertation in engineering and the physical sciences from OU Provost James Kimpel.

taught a number of introductory engineering courses and sections of the chemical engineering unit operations lab.

His master's and doctoral work have resulted in several refereed publications and book chapters.

Roberts is a member of the consulting firm Surfactant Associates, Inc. and president of another, Surfactant Environmental Engineering, in Norman.

Ph.D. Candidate John O'Haver Recognized by Materials Research Society for Superior Research

John O'Haver, a doctoral candidate working with Professor Jeffrey H. Harwell in thin films formation, received a Graduate Student Award in Recognition of Outstanding Performance in the Conduct of Research from the Materials Research Society on April 13, 1993 during the spring meeting of the society in San Francisco.

O'Haver presented a paper entitled "Formation of Ultrathin Polystyrene Films in Absorbed Surfactant Bilayers on Silica". The paper was coauthored with Harwell and CEMS professor Edgar A. O'Rear. The paper resulted from

ongoing research work in thin films formation in collaboration with PPG Industries in Pittsburgh, Penn.

and with the Oklahoma Center for the Advancement of Science and Technology.



John O'Haver receives a Graduate Student Award in Recognition of Outstanding Performance in the Conduct of Research from Tom Picraux, president of the Materials Research Society

FACULTY GROWTH AND DEVELOPMENT

What makes undergraduate and graduate students successful are their teachers, and our dynamic faculty is dedicated to high quality education and leadership in the field of chemical engineering. Ensuring a superior faculty, however, is a constant challenge for our school because demand for

New Faculty



Brian P. Grady's expertise enhances CEMS' program of research in polymer science and engineering and strengthens the School's capacity to train the large numbers of chemical engineers employed in polymers-related industry. His specific research interests include morphology of multiphase polymers, X-ray, light and neutron scattering; and polymer deformation and orientation. His ultimate goal in his work in these

areas is to identify the structural features which result in the superior performance of high performance polymers used in diverse applications such as automobile parts, biomedical devices and electronic components.

Grady completed his doctoral degree in December 1993 at the University of Wisconsin, Madison, with a focus on X-ray scattering of ion-containing polymers at extremely small angles and orientation and deformation of properties of ion-containing polymers. His graduate research there also included work with UV-curable acrylates and bioabsorbable polymers. His research resulted in a number of technical journal articles and two book chapters for which he was coauthor. As a doctoral student, Grady received the National Science Defense and Engineering and the Wisconsin Alumni Research Foundation Fellowships.

After completing his bachelor's in chemical engineering summa cum laude at the University of Illinois at Urbana/Champaign in 1987, Grady went to work as a project engineer at Procter and Gamble where he was responsible for design, construction, startup and operation of a \$200 million pilot plant.

Grady took on teaching responsibilities early, as an outstanding undergraduate. As a teaching assistant he prepared and delivered a lecture every week to two sections of an upper level introductory freshman chemistry course at Illinois. His scholastic ability earned him an R. R. Donnelley National Merit Scholarship during 1983-'87, the Reynold Clayton Fuson Award and a Bronze Tablet in 1987, and membership in Phi Beta Kappa in 1987 and Tau Beta Pi and Phi Kappa Phi in 1986. During the summer before his senior year, he worked at a Universal Oil Products manufacturing facility operating a semi-batch process which activated a catalyst for use in improving the octane rating of gasoline.

He is a member of the American Institute of Chemical Engineers, the American Physical Society's Division of High Polymer Physics and Division of Fluid Dynamics, the American Chemical Society's Division of Polymer Chemistry and Division of Polymer Materials Science and Engineering, the Society of Plastics Engineers and the American Association for the Advancement of Science.

Grady is engaged to be married in June to Michelle Walsdorf, an elementary teacher in Wisconsin.

quality professors is great and resources are limited.

The strength of our faculty is linked to Professor Emeritus Cedomir Slepcevic, who joined OU in 1955 and has been credited with bringing the University of Oklahoma into the modern research era. He was elected to the National Academy of Engineering in 1974, the first faculty member in OU's history to become a member of a national academy.

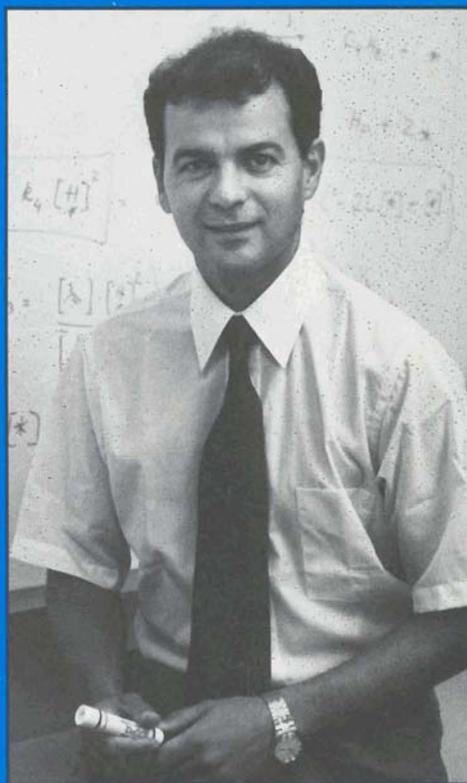
Although this tradition continues, our ability to attract and retain a distinguished faculty necessary to build an international

reputation for research and teaching depends, in large part, on the availability of endowed chairs and professorships. Further, endowed lectureships improve the school's ability to attract and retain promising junior faculty and to assist in their development. CEMS currently has three endowed positions.

These endowments provide funds for professional development, research-related travel, salary supplements to assure that OU faculty salaries are nationally competitive, and seed money for research in emerging new areas.

The specific objectives for faculty enhancement are to:

- Fully endow thirteen faculty positions, including:
 - Three Endowed Chairs (\$1M)
 - Six Endowed Professorships (\$500k)
 - Four Endowed Lectureships (\$100k min.)
- Ensure the potential for growth by identifying the department as an "area of future emphasis" within the university.



Daniel E. Resasco joined the CEMS faculty in August 1993 with an abundance of experience in teaching and research.

His research interests are in the general area of heterogeneous catalysis with particular emphasis on the study of the materials. The focus of his research in CEMS will be on the study of zeolite-supported metal clusters with applications in the abatement of gaseous pollutants from mobile and stationary

sources, dehydrogenation of lower alkanes, and the aromatization of alkanes. Additionally, he will continue research begun earlier in his career on catalysis on sulfides, carbides and nitrides and on effects of catalytic species present in the intergranular phase in electronic ceramics.

After completing his B.S.Ch.E. in 1975 at the Universidad Nacional de Sur in Argentina, Resasco was employed until 1978 as a project engineer at Somisa Steel Mill. He then came to the U.S. on a Yale University Scholarship and obtained his Ph.D. in 1983. He returned to his native Argentina to teach and conduct research in the Chemical Engineering Department of the National University of Mar del Plata. While there, he served as Division Leader in Catalysis at the Institute of Materials Science and Technology from 1983 to 1985, chairman of the Chemical Engineering Department during 1987-1988, and as Graduate Program Director of the Materials Science Program and Assistant Dean for Research of the School of Engineering during from 1988 through 1990. From 1984 to 1990, he served as project director of the National Research Council of Argentina.

In 1991, Resasco joined the research and development division of Sun Co. Inc. in Marcus Hook, Pennsylvania. As senior scientist, he was in charge of the development of a catalyst for a commercial unit.

His research in Argentina and the U.S. has resulted in more than 40 refereed technical journal articles.

He holds one Argentine patent and has two U.S. pending.

He has served as a consultant to Argentine companies including Petroquimica Gral. Mosconi, Estudios de Factibilidad and Monomeros Vinilicos S.M. and to the Sun Co. in the U.S.

Resasco was recognized by the National Research Council of Argentina in 1987 with the Bernardo Houssay Award for scientific achievement. He also received the Harding Bliss Prize for excellence in engineering and applied science from Yale University in 1984. One of his papers, "A Model of Metal-oxide Support Interaction for Rh on TiO₂", published in Journal of Catalysis, 82, 279 (1983) was listed in 1986 by ISI as one of the 20 most-cited chemistry papers.

Resasco and his wife Teresita have five children, Mariana, 13; Marilina, 11; Julian, 10; Magdalena, 6; and Joaquin, 4.

Asahi Glass Chair Inaugurated

John F. Scamehorn, Asahi Glass Chair in Chemical Engineering at the University of Oklahoma, accepts a plate which commemorates the inauguration of the endowed chair at the University of Oklahoma from Kimihiko Sato, Member of the Board and Director and General Manager of the R&D Development General Division of Asahi Glass Co., and Tadao Horikoshi, President of the Asahi Glass Foundation, both from Tokyo.



Representatives of Asahi Glass Co. Ltd., the Asahi Glass Foundation and Asahi Glass America Inc. and representatives of the State of Oklahoma and University of Oklahoma celebrated the inauguration of the Asahi Glass Chair in Chemical Engineering at the University of Oklahoma on November 30. The chair was made possible by a joint gift of \$500,000 from the Asahi Glass Co. and the Asahi Glass Foundation which was matched by the State of Oklahoma Endowed Positions Program during OU's \$100 million Centennial Campaign in 1990.

John F. Scamehorn, a George Lynn Cross Research Professor in the School of Chemical Engineering and Materials Science (CEMS), is the first recipient of the Asahi Glass Chair in Chemical Engineering. He has developed an international reputation as a leading researcher in the area of fundamental and applied surfactant technology.

Asahi representatives to the Norman event included Kimihiko

Sato, Member of the Board and Director and General Manager of the Research and Development General Division of Asahi Glass Co., Ltd., of Tokyo, Japan; Osamu Shiragami, Senior Executive Director of the Asahi Glass Foundation of Tokyo; Tadao Horikoshi, President of Asahi Glass America, Inc., New York, N.Y.; and Shunichi Samejima, Director, Chemicals Research and Business Development, Asahi Glass America, Inc.

Inauguration activities to commemorate the event included an afternoon of special lectures at OU's Sarkeys Energy Center by Sato, Shiragami, Scamehorn, James F. Rathman, a former doctoral student of Scamehorn who is currently an assistant professor in the Chemical Engineering Department at Ohio State University, and by Jeffrey H. Harwell, Director of the School of Chemical Engineering and Materials Science at OU. A reception and dinner honoring the Asahi Glass Group as donors and Scamehorn

as recipient of the chair was held at the Petroleum Club in Oklahoma City.

Commemorating remarks were given by Scamehorn, Harwell, Sato, Eddie C. Smith, Dean of Graduate College and Interim Vice Provost of OU; and Billy L. Crynes, Dean of the College of Engineering.

"It was our first experience to establish a chair of this nature at a university," Sato observed. "We have a long business relationship with Oklahoma since 1984 when we, jointly with our wholly owned subsidiary, Ise Chemical Industry, acquired Woodward Iodine Corporation, in Woodward, Oklahoma."

"With the aid of Dr. Yoshi Sasaki, Professor of Meteorology at the University of Oklahoma, we had built a good relationship with the people at the University and were aware that a part of its strength lies in the field of applied research on surfactants and membrane technologies," Sato said. "We hope that the Chair, with the wisdom and strong

leadership of Dr. Scamehorn, will help increase quality in the educational process and contribute to the furtherance of the study in chemistry."

"It is very meaningful to develop and share (science and technology) beyond national borders. Based on this belief, we have actively promoted international cooperation programs," Shiragami said. We sincerely hope that this endowed chair will help to accelerate international progress of science and technology, thus contributing to promote friendship and goodwill among the University of Oklahoma, the State of Oklahoma and the Asahi Glass Group, as well as between the United States and Japan," Shiragami said.

"An endowed faculty position is the most effective way to bring increased quality to the educational process," said OU President Richard L. Van Horn in 1990. "With this endowed chair, Asahi Glass is providing academic excellence for students of today and for future generations."

Scamehorn joined the faculty of CEMS in 1981 as an assistant professor. He was promoted to associate professor in 1984 and to full professor in 1989. In 1992, he was honored with the additional title of George Lynn Cross Research Professor. He is associate director of the Institute for Applied Surfactant Research, an industry-sponsored consortium of OU faculty in the School of Chemical Engineering and Materials Science, the School of Civil Engineering and Environmental Science and the Department of Chemistry and Biochemistry.

His primary current research interests include surfactant-based separations, detergency, wastewater treatment, paper recycling, thermodynamics of systems containing surfactant mixtures, and synergistic behavior of surfactant mixtures in a wide variety of phenomena. Surfactants (short for surface active agents) have applications in almost every manufacturing product and process in industry.

Scamehorn's research at OU has been supported by the Nation-

al Science Foundation, the Department of Energy, the Bureau of Mines, the U. S. Environmental Protection Agency, the U. S. Army, the Center for Waste Reduction Technologies, the American Chemical Society, Shell Development Co., ARCO, Mobil and many other agencies and companies.

He has edited two books and has published over 80 refereed papers or book chapters. Scamehorn is associate editor of the soaps and detergents section of the Journal of the American Oil Chemists' Society and is on the board of the Journal of Colloid and Interface Science.

Scamehorn received his bachelor's degree in chemical engineering from the University of Nebraska in 1973 and his master's in 1974. He completed his doctoral degree at the University of Texas at Austin in 1980.

Before coming to OU, Scamehorn was employed as a research engineer by Shell Development Co. in Houston, Conoco Inc. in Ponca City and E. I. DuPont in Wilmington, Delaware.

He is a very active consultant to companies including Lever Research, Proctor & Gamble, Shell Development Co., Horizon Chemical, 3M Corp., Pfizer Corp., Clorox Corp., Union Carbide, Exxon, Ecoblab, Bulk Chemicals Corp., PPG Corp., James River Corp., Ethyl, GAF and others through his own company Scamehorn Consulting and through Surfactant Associates, Inc. of Norman.

Scamehorn and his colleagues at Surfactant Associates provide continuing education in surfactant science and technology to chemical and environmental engineers and research chemists internationally through short courses offered regularly in Norman, at company headquarters and in Europe and the Far East.

Scamehorn holds a large number of patents and is a registered engineer in the states of Oklahoma and Texas.

He is a member of the American Institute of Chemical Engineers, the American Chemical Society,

American Oil Chemists Society and the Technical Association of the Pulp & Paper Industry.

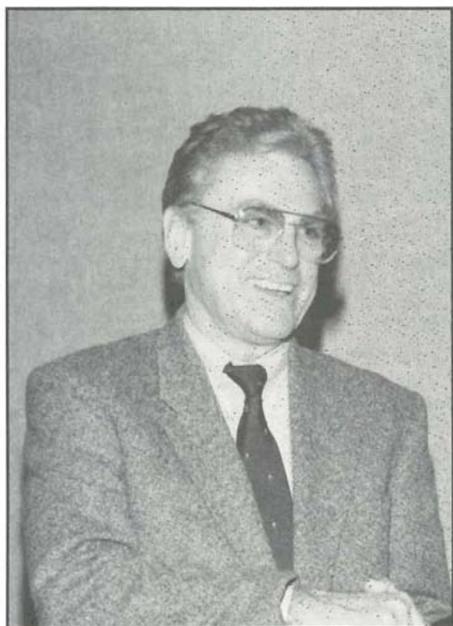
As an undergraduate at Nebraska, Scamehorn was named a Regents Scholar. Since joining OU, he has been named in Outstanding Young Men of America, and received the OU College of Engineering Dean's Council Faculty Excellence Award in 1983, the O.U. College of Engineering Young Faculty Development Award in 1984 and 1985, the OU Associates' Distinguished Lectureship Award in 1986, the Halliburton Lectureship Award during 1987-1992, the OU College of Engineering Annual Award for Faculty Excellence in Research in 1986, and an Award from the American Oil Chemists' Society for Outstanding Paper Presentation at the AOCS Annual Meeting in 1987 and 1991.

Asahi Glass has interests in glass, ceramics, chemicals, electronics and life sciences. The company was estimated to be worth in excess of \$8 billion in 1988 and was 94th on the international Fortune 500 list at that time.

"An endowed faculty position is the most effective way to bring increased quality to the educational process. With this endowed chair, Asahi Glass is providing academic excellence for students of today and for future generations."

*— OU President
Richard L. Van Horn,
1990.*

Starling Honored as First C.M. Sliepceвич Professor of Chemical Engineering



Kenneth Starling, a George Lynn Cross Research Professor of Chemical Engineering and Materials Science at the University of Oklahoma, has been named the university's first C.M. Sliepceвич Professor of Chemical Engineering.

"Kenneth Starling is one of the University of Oklahoma's most distinguished researchers and teachers," said OU President Richard L. Van Horn. "The Sliepceвич professorship is an investment that allows Dr. Starling to continue to develop ground-breaking research and provide outstanding learning opportunities for OU students."

A member of OU's faculty since 1966, Starling served as director of the OU School of Chemical Engineering and Materials Science and as OU's interim vice provost for research administration, each for one year. He was named a George Lynn Cross Research Professor in 1978.

Starling is the author of more than 130 publications and is the recipient of a total of \$3 million in grants from such sources as the National Science Foundation, Gas Research Institute, Department of Energy, American Gas Association and the Oklahoma Center for the Advancement of Science and Technology.

He was recognized for outstanding instruction and service by the OU Student Association in 1990 and was a member of the executive committee of the International School of Hydrocarbon Measurement held annually at OU from 1980 through 1992.

Starling has served as a consultant to such companies as Esso Production Research Co., Texaco, Amoco, Allied Chemical Corp., Kerr-McGee Corp., Gulf Oil and National Austrian Oil Co.

He is a member of the National

Science Foundation, the American Chemical Society, the American Institute of Chemical Engineers, the American Society for Engineering Education, Who's Who in Engineering, Sigma Tau and Sigma Xi honorary societies and the American Association for the Advancement of Science.

In addition, Starling serves on the editorial boards of *Energy Progress* and *American Institute of Chemical Engineers Journal*.

Prior to joining OU, Starling was a senior research engineer at Esso Production Research Co. in Houston and a research engineer for the Institute of Gas Technology in Chicago. He also has served as a consultant to the Electric Power Institute in Palo Alto, Calif. Starling holds a doctoral degree from the Illinois Institute of Technology in Chicago.

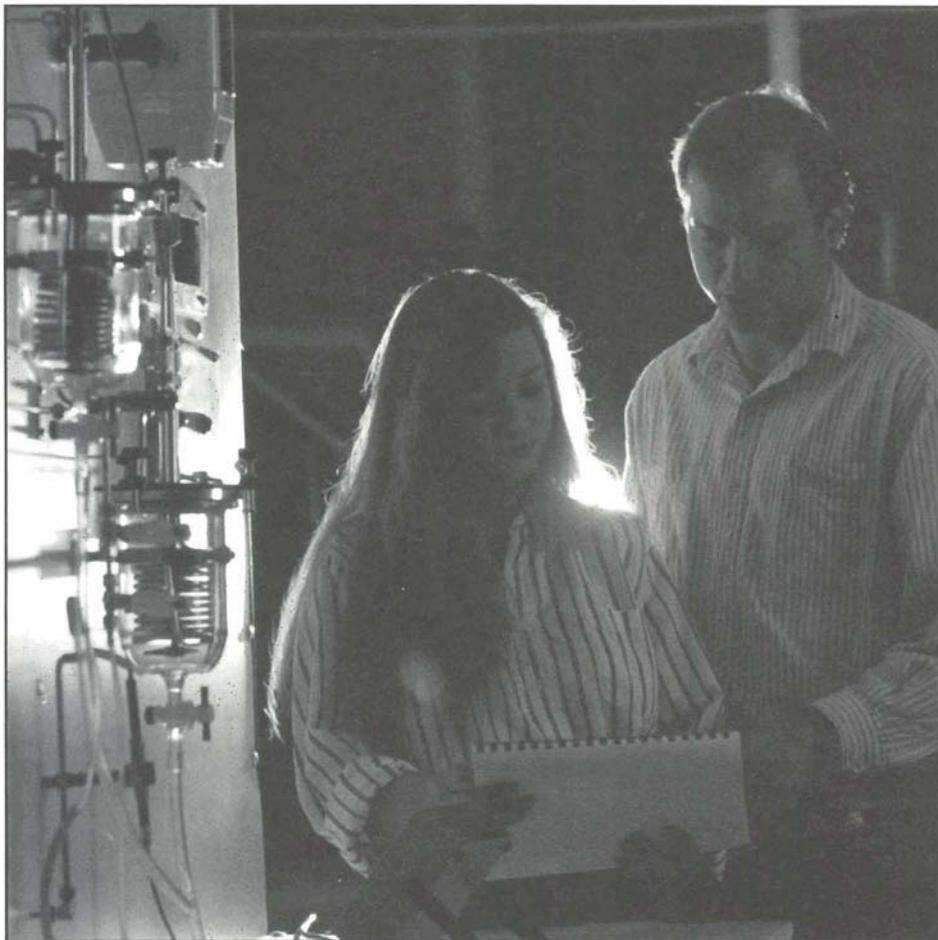
The endowed professorship honors C. M. "Cheddy" Sliepceвич, a distinguished OU professor emeritus of chemical engineering who devoted his life to teaching engineering and to improving the world through technology.

Sliepceвич, who was elected to the National Academy of Engineering in 1972, retired in May 1991 as George Lynn Cross Research Professor of Engineering after 36 years of research, teaching and administration.

The Sliepceвич professorship was funded by alumni and corporate friends of the School of Chemical Engineering and Materials Science, in particular the Gas Processors Suppliers Association, whose leadership gift provided major support for the endowment. Establishment of the professorship was undertaken by OkChE as a three-year fund-raising project in conjunction with OU's Centennial campaign.

While you may frequently hear in the media about faculty at research universities never being in the classroom, Dr. Starling has long been a favorite of CEMS undergraduate students. He has taught our junior Thermodynamics and senior capstone course in process design for years and will be adding Senior Design 1 to his responsibilities in Fall 1994. We are proud to be able to say that undergraduates in CEMS are taught by an international scholar of Dr. Starling's reputation.

TEACHING LABORATORIES



Excellence in engineering at the university level requires not only outstanding faculty and students but outstanding laboratories as well. We are fortunate in the School of Chemical Engineering and Materials Science to have excellent teaching and research laboratories. This segment of our PLAN 2000 is designed to maintain this standard of excellence on an ongoing basis.

Modern, well equipped laboratories enable faculty to compete equally with their peers; enhance our ability to attract outstanding students; and increase the potential for external support for research.

The following enhancements would directly benefit our students:

Workstations with advanced design software and sophisticated graphics capability

- An endowment to provide annual income for upgrading, maintenance and operating expenses

An endowed instructorship for a full-time laboratory coordinator

Richard L. Huntington Fellowship Endowment Ensures Continued Quality Instruction in Unit Operations

In September 1990, the family of the late Richard Lee "Doc" Huntington family established the R. L. and Ruth Huntington Memorial Fund to provide support for a graduate assistant to work during the summer to help maintain CEMS' Unit Operations Laboratory and continue to upgrade experiments as needed. At the time the fund was established, a goal was established to increase the endowment amount to \$25,000, an amount sufficient to generate enough interest income to provide full support for the assistant summer stipend. (State funds provide support for a graduate assistant in the laboratory during the academic year.) Since that time, the fund has grown to more than \$21,500.

Huntington was named director of the newly created School of Chemical Engineering in 1937 after spending four years as an associate professor in Petroleum Engineering. He set out to establish a state-of-the-art instructional laboratory in the old Chemical Engineering Building north of the Field House. In 1965, when the School was moved to the new Carson Engineering Center, he designed the new undergraduate laboratory and supervised all details of installation of equipment. The lab has since been moved into new facilities in Sarkeys Energy Center and the experimental equipment refurbished.

The R. L. and Ruth Huntington Memorial Fund will help provide for the continued maintenance of a state of good condition in the lab throughout the future.

RESEARCH CENTERS OF EXCELLENCE

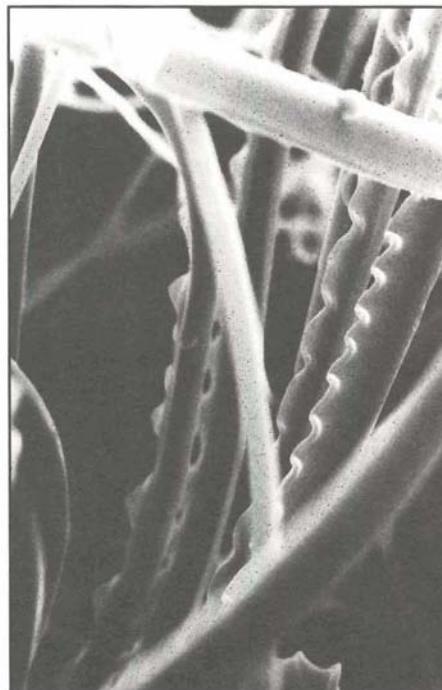
Research Laboratories

During the past four years, CEMS, which was already nationally recognized for its research performance, has increased research expenditures by more than 50% and the number of research contracts by 65% while the number of faculty has remained constant. This growth in productivity has been accomplished by identifying critical areas of research and focusing the efforts of the faculty on these areas.

Our plan is to designate the following research programs as Research Centers of Excellence and expand the facilities in each with state-of-the-art technology through corporate and government support:

- The Institute for Applied Surfactant Research (IASR) is the leading academic research center in the world which focuses on advancing both the scientific base and the technological applications of the surfactant industry. Our goal is to increase the corporate support base for IASR to \$300,000 per year.
- The Center for Polymer Fibers Research (CPFR) is a leading academic research center for melt blown polymer fibers. Our goal is to develop corporate support for expansion to include spunbond fiber research for a total support base of \$250,000 per year.

- The Bioengineering Research Institute (BRI) has been established as a major area of CEMS. Our goal is to develop a base of corporate and government support for BRI of \$1 million per year.
- The Center for Gas Utilization and Processing (CGUP) is central to the role of CEMS in Oklahoma, the nation, and the profession. CEMS has a long history of leadership and innovation in natural gas research and we will especially emphasize multi-disciplinary research and industry partnerships. Our goal is a funding level of \$1 million per year for CGUP.



Technologies emerging from OU CEMS research laboratories help create new products, processes, industries and jobs worldwide. Melt-blown fibers such as these created in Robert Shambaugh's lab are used in products from fabrics to filters, and more.

Enhancements in the following areas would benefit our graduate students and faculty and expand our research capability.

- *Natural Gas Utilization and Processing* focusing on the conversion of natural gas to higher value products and its use as a transportation fuel in a solid oxide electrochemical fuel cell
- *Polymer Research* to extend our expertise in nonwoven fiber technology to spunbond fibers and develop advanced tools for relating polymer nanostructure to macroscopic polymer properties
- *Biomedical Engineering* adding a video microscopy system
- *Biotechnology* - adding the capability to perform molecular modelling of peptides and proteins
- *Surfactant Technology* developing a fully equipped Surfactant Recovery Laboratory

To provide for these enhancements, CEMS PLAN 2000 calls for:

- \$700,000 in gifts and equipment grants to expand existing laboratories and for new facilities
- An endowment base of \$750,000 for ongoing laboratory modernization, maintenance, and research and instructional support

CEMS PLAN 2000 SUMMARY

The School of Chemical Engineering and Materials Science, the College of Engineering and the University of Oklahoma are all on the threshold of excellence. CEMS's PLAN 2000 is our blueprint to move beyond this threshold and take advantage of the opportunities and challenges of the 21st century.

Our vision is clear and our plan is ambitious, but we feel it is critical to the future of CEMS. The plan covers all facets of our program, its research and its students. Our hope is that those who have a stake in the future of our industry will take part in the work to make our vision a reality.

The summary of financial needs to realize all segments of CEMS PLAN 2000 are:

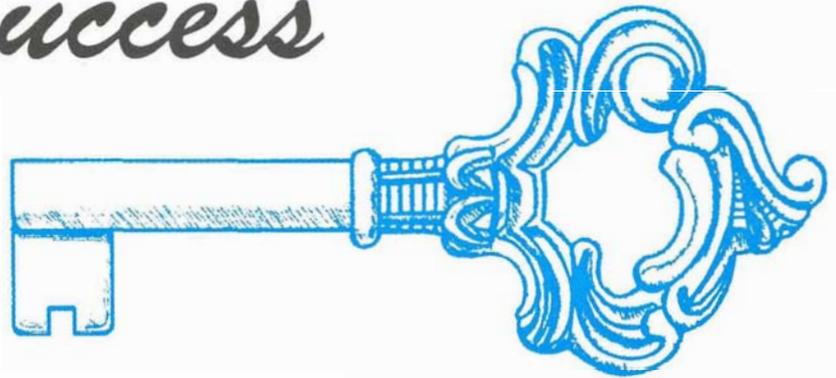
- \$160,000 in annual gifts for scholarships and graduate fellowships through 'Keys To Success'
- \$6.8 million in endowments ranging from \$10,000 for a named scholarship to \$1 million for a faculty chair (including state match)
- \$1.6 million in Distinguished Benefactor Matching gifts for scholarships and fellowships
- \$700,000 in cash or equipment grants for teaching and research laboratories
- \$2.5 million annually in a combination of corporate support and research funding in four Research Centers of Excellence

Endowments and other major gifts may be pledged and paid over a period of several years. In the case of Endowed Chairs and Professorships, one-half must be paid at the time of commitment and the balance within three years to qualify for the Oklahoma State Regents Matching Program.

This is clearly the most significant undertaking in our history. We, the OkChE Board of Directors and faculty of the School of Chemical Engineering and Materials Science, propose the plan as our response to the opportunities and challenges of the 21st century. We are dedicated and committed to its successful implementation. With your support, we will make it a reality!



Keys to Success



The College of Engineering's first comprehensive and coordinated annual giving program, *Keys to Success*, is designed to encourage the broadest possible participation in annual giving by alumni and friends. "Keys" provides donors with clear and logical opportunities to determine the size of their contributions based on ability and interests, and creates the opportunity to acknowledge and recognize an individual donor's total annual gifts to the college and its units.

As a result, CEMS alumni will no longer find the familiar gift forms in the back of *OkChE* magazine; besides the Keys annual announcement, alumni will receive only one other *general* solicitation, from the University Development Office. This simplified program will reduce administrative overhead for each school in the College, reduce confusion about how to best target your gifts and enable the highest percentage of each gift to support the area designated by the donor.

Alumni of the School of Chemical Engineering and Materials Science who have given through *OkChE* in the past may now designate their gifts to CEMS through the Keys program by indicating their preference on the reply card that accompanies the annual Keys report. If you have been a past supporter of *OkChE*, we ask you to consider making your gift through Keys in the future; just remember to designate "CEMS" when you make your gift!

Keys to Success focuses on providing unrestricted funds as well as critical support for undergraduate scholarships and graduate fellowships and support in other essential areas at both the college and school level.

Central to the design of the Keys program is the "menu" of giving options, recognition levels, and its focus through the *OkChE* Board. The giving options and recognition

levels were designed to appeal to all alumni and friends by offering them the flexibility of matching interests with financial ability. However, the real success of the Keys program will be the personal relationships built on a strong allegiance to the College of Engineering and OU.

The following recognition levels will be used to recognize a donor's total annual contribution to the College.

The J. H. Felgar Society

For gifts of \$5,000 or more

The W. H. Carson Society

For gifts of \$2,500 to \$4,999

Engineering Fellows

For gifts of \$1,000 to \$2,499

The Deans' Council

For gifts of \$500 to \$999

The Cannon Club

For gifts of \$250 to \$499

The Shamrock Club

For gifts of \$100 to \$249

Proud Engineers

For gifts up to \$99

In 1993, more than 800 alumni and friends joined the college in support of this goal by contributing more than \$218,000, an amount nearly double that raised in 1992, the first year of the Keys campaign.

The College has maintained its role as a leader on campus by setting the standard in many areas. The quality of students in the College is second to none and among

the schools *within* the College, the quality of students in CEMS is second to none. Research expenditures in the College are at an all time high while faculty have redoubled their commitment to excellence in teaching and student service. Private support has fostered this success and it will be private support that will maintain the level of quality that has been achieved in CEMS and take us to the next higher level.

However, with cutbacks in state support for 1993-94 and 1994-95, our dependence on private funding continues to grow. While this presents both a considerable and continuous challenge, the rewards are significant as private contributions enable the college to continue to offer an outstanding academic experience in spite of the uncertainties associated with state appropriations.

Annual giving represents an opportunity for each alumnus and friend to invest in the college. Every gift, regardless of size, represents a commitment to the engineering tradition at the University of Oklahoma and, as such, is a gift to the generations of the future. We owe a debt of gratitude to our annual donors who supported the College during 1993, and encourage each of our alumni and friends to join these loyal supporters during our 1994 campaign.

Unrestricted gifts are essential to the College and to CEMS. The ability to meet the changing needs and priorities of students and faculty by channeling unrestricted funds to specific areas or programs is one of

the key entrepreneurial opportunities in our academic environment. In addition, unrestricted funds provide both the dean and the directors with the ability to support essential programs that cannot be adequately funded through state appropriations.

Unrestricted gifts to the college or one of its schools will be used to help fund our successful undergraduate student recruiting programs, critical equipment needs, supplemental faculty support, alumni programs and to meet other needs as they arise to maintain our competitive edge.

Academic recruitment of the nation's brightest undergraduates is a fiercely competitive environment. Outstanding academic programs and the availability of financial assistance are two of the keys to recruiting and retaining exceptional students. During 1993-94, the College enrolled 67 National Merit, 15 National Achievement and 2 National Hispanic Scholars. Of a

total of 253 National Scholars enrolled in all classes and engineering majors, 66 are in chemical engineering!

Gifts designated for scholarships at the college level will primarily be used to fund our Distinguished Freshman Scholarship Program which was created to support the college's aggressive recruitment of National Scholars and other academically gifted students. Gifts designated for scholarships in CEMS will be used to provide scholarship support to attract and retain students with outstanding academic abilities and superior leadership potential.

The College's Minority Engineering Program is one of the very best in the nation. By providing a level of service that is, by any measure or standard, exceptional, this program is bringing to campus some of the brightest minority students nationwide. As evidence of the success of this program, 15 National Achievement Scholars chose to enroll in the college in Fall 1993. The

success of this Program has played a critical role in keeping CEMS at the focus of the nation's industrial recruiters during the recent years of business uncertainty in many industries.

Since 1954, more than 1,000 companies have established employee matching gift programs to encourage charitable giving. Over the years, CEMS and the College of Engineering have benefited tremendously from the generosity of these participating corporations. Of a total of \$1,164,369 given to the College as annual gifts and endowments, \$203,000 was given in corporate matching funds, in addition to \$1,121,158 given directly to the College in annual gifts, endowments and gifts in kind.

The OkChE Board of Directors in CEMS

The OkChE Board of Directors in the School of Chemical Engineering and Materials Science and alumni of the School have contributed in large part to the progress toward objectives established in our Plan 2000. Their contributions have made the C.M. Sliepcevich Professorship a reality. Their support for scholarships has been instrumental in attracting and retaining hundreds of exceptional students throughout the years. Attracting and retaining world class faculty and first tier students is essential to developing a premier program.

Contributions in time and leadership of the Board and financial support of CEMS alumni for the objectives established in Plan 2000 will secure for present and future generations a reputation of the School of Chemical Engineering and Materials Science at the University of Oklahoma as among the finest programs in the U.S. and the world.



Members of the OkChE Board of Directors attending the Spring '94 meeting, left to right, Jeffrey H. Harwell, C. Thomas Perry, Robert S. Purgason, David P. Kurtz, Omer Kircher, John Waller, Edward D. Holstein, Gary A. Kilpatrick, Spencer Knapp

New Alumni

B.S.

August 1992

Cheryl J. Haskins
Nora Therese Melton
Mike Odell
Asim Khalid Shafi

December 1992

John Paul Carr, Jr.
Shellie Ranea Chard
Michael G. Hawkins
Ralph S. Lancaster, Jr.
Bryan Carl McAlister
Kevin Paul Millburn
Meredith Anne Pate
Gregory Dee Russell
Yuefeng Yin

May 1993

Jason Edward Butler
Richard Craig Combs
Hiep Duc Dao
Carolyn B. Drummond
Cori Lyn Elmer
Robert C. Finley
Julie Ann Hankinson
Audrey Elaine Hooks
Joseph Michael Jones
Gary Glen Mixon
Charles D. Nolidin
Stephan Trontg

August 1993

Jay Todd Benson
Christopher A. Good
William F. Harper, Jr.

December 1993

Jan Stewart Goldberg
Haley M. Miles Keen
James Gary Keen
Michael Alexander Vela

May 1994

Adel A. Alamri
Teffany Clozette Arnic
Mary Jean Arnold
Wayne A. Bodine
Maximilian T. Boone
Hung-Yang Chou
Benjamin E. Craig
Eric R. Ding
Zeno Gabing
Colletta D. Gallimore
Leon E. Grossman
Rustin T. Hauge
Natalie L. Henderson
Russel W. Hooper
Michelle R. Lawrence
Lewis C. Lietch
Kah Ban Lim
Paul E. Lindgren
Maria L. M. DeZapata
Christopher A. Mattingly
Carl R. Maxey
Marc M. McClymonds
Lisha G. McKinney
Stacey L. Meyer

Robert K. Mullins
Yew Boon Ong
John D. Provine
Talee K. Redcorn
Steven V. Richards
Norman L. Rogers
Evan L. Russell
Brittany K. Saucier
David S. Savage
Roderick W. See
Chin Leong Sim
Gary L. Skidmore
Michael C. Sterling
Sandeep K. Sukumaran
John D. Tomlinson
Thuy Ngoc Truong
Van Giang Trinh Vo
Kim R. Furlong Warram
Lynn S. Washburn
Joe B. Whitmire
Seng Leng Wong
Si Cheng Wong

M.S.

August 1992

Soujanya C. Bhumkar
Susan B. Shadizadeh

December 1992

Hoern-Yann Chen
Yachuan Huang
Abdeally Mohammed

May 1993

Carlos Ivan Murillo
Rajiv Sudhakar Rao

August 1993

Anil Gupta
Qi Song
Kostas Zgafas

December 1993

Rajat Bhatnagar
Eduardo J. Cartaya
Cesar R. Hernandez

May 1994

Lori Ann Hole Lowery
Udayasimha Shivaswamy
Daniel Wai-Tak Wong

Ph.D.

May 1993

Churl Hee Lee
Duy Trong Nguyen

August 1993

Nien-Tung Ma
David L. Wilkinson

December 1993

Bruce L. Roberts

May 1994

Tim Melton

Alumni Notes

Mukesh Bisaria, PhD '92, has been post-doctoring at McMaster University in Hamilton, Ontario, Canada with Prof. John Vlachopoulos in the Center for Advanced Polymer Processing and Design. He and wife Rashmi are happily adapting to high-rise big city life.

John M. Campbell, Sr., BSChE '48, PhD '51, has been chosen for honorary member status in the American Inst. of Mining, Metallurgical and Petroleum Engineers, and the Society of Petroleum Engineers. He was cited for "pioneering contribution in the fields of gas and natural gas liquids processing and his unselfish sharing of his technology in the classroom and through the publication of books and technical literature". He is a former OU professor and department chairman, CEO emeritus of The Campbell Group and still active as an international consultant.

Shellie Chard, BSChE '92, is working as an environmental engineer in water pollution control in the State of Oklahoma Dept. of Environmental Quality. Shellie is playing a lot of tennis, going to Sooner basketball games and enjoying a new pet cat named Avery.

Heather M. Horsiman, BSChE '92, is a gas engineer for Texaco Exploration & Production Inc. in Tulsa. She wed Chris Murphy, an OU accounting grad of '91, and the two have bought a home in Tulsa.

Debra K. Madaj, BSChE '81, MD '87, completed her residency in internal medicine and is currently in practice with her husband Tom at the Internal Medicine Assoc. of Platte County in Kansas City. The pair has three children, Natalie, 5; Andrew, 3; and Christopher, 5 months.

Meredith Pate, BSChE '92, vacationed in Key West, Florida before starting work at Amoco Chemical in Houston in March '93.

Kevin J. Kennelley Receives NACE International A. B. Campbell Award

Kevin J. Kennelley, MS Mete '85, PhD Mete '87, received the 1994 A. B. Campbell Award from the National Association of Corrosion Engineers. The award is presented for the most outstanding paper or manuscript published in *Corrosion* or *Materials Performance* during the year by an author no older than 35. Kennelley is principal research engineer and technical coordinator of the Materials Protection Group at Arco Exploration & Production Technology in Plano, Texas. Kennelley conceived, planned and executed a study of the effect of gaps—called holidays—of various sizes on coated pipe. The findings from his study "Current and Potential Distribution on a Coated Pipeline with Holidays" (*Corrosion*, Vol. 49, No. 3) will

help design engineers predict the performance of a cathodic protection system before its installation.

Kennelley received the award at NACE's Corrosion/94 annual conference in Baltimore, Maryland in March.

Kennelley has written or co-written 18 publications on corrosion, co-wrote a book chapter on the corrosivity and electrochemical behavior of calcium magnesium acetate and was co-editor of the NACE International book *Flow-Induced Corrosion: Fundamental Studies and Industry Experience*.

NACE is the largest society dedicated exclusively to the prevention and control of materials corrosion. The association has more than 16,000 members worldwide.

Deaths

Howard Potter Bonebrake, Sr., BSChE '23, on July 17, 1993 in Monroe County, Florida Keys. He was born in April 15, 1900 in Weatherford, Oklahoma Territory. He was retired from the Aluminum Company of America.

Melvin A. Witte, BSChE '38, on Oct. 1, 1992, in Oklahoma City. He was born July 16, 1914 in Joplin, Mo. He was president of Oklahoma Testing Laboratories where he began work after graduation from OU.

lack of scholarship funds.

And this brings me to one of the most important articles in this issue of *OkChE*: with the help of alumnus Dick Askew (see page 8), OKChE has developed a plan to address this problem. Dick has deposited \$100,000 in the OU Foundation. For every \$10,000 given to endow a Program of Excellence Scholarship, Dick will provide \$10,000 in matching money to create a \$20,000 endowed scholarship. Here is how the endowment works: every year the endowment will produce \$1,000 to \$2,000 that can be used to provide a scholarship while still retaining enough money in the endowment to protect it against inflation. And as long as OU and CEMS are still around (a very long time, we hope!), the endowment will still be providing scholarships.

Thanks to Dick's generosity we are enthusiastic that we can quickly endow 10 scholarship funds, each with a \$20,000 endowment, and each of which will provide scholarships for 1 or 2 students each year. The actual amount of money produced will depend on the OU Foundation's success in investing its funds in a given year and the rate of inflation that year. Obtaining this strategic goal will result in a dramatic increase in our ability to provide scholarships to CEMS's outstanding students.

We hope to raise the money to match Askew's contribution for the 10 endowed scholarships in two ways. First, we are looking for five individuals to give \$10,000 each. Dick has generously agreed to allow the scholarships endowed by these individuals to bear the names of the donors. If, for example, John Jones were to contribute \$3,333 a year for three years to a J. Jones endowed scholarship fund, then Dick would provide a

\$10,000 match to create a Jones-Askew endowed scholarship. Every subsequent year CEMS would then select an outstanding student, like those in this issue, to be the Jones-Askew scholar for that year, for as long as OU and CEMS are around. If John Jones was employed by a company that matched his contribution to the endowment, then the amount of his own money he would need to give to create the endowment would decrease. Please contact us for more information on the details of the way company matching reduces what is needed from an individual to create an endowment.

We believe this is a wonderful opportunity for some of our faculty and alumni to not only say "Thanks" to OU for the value of their education, but also to create a memorial for their family. I hope many of you want to take advantage of this opportunity. Some of you may want to use this unique opportunity to create a living memorial for a loved family member who fondly remembered their years at OU.

We are also creating five endowment "pools" in the names of five of our most beloved professors from the past 50 years. These will be pools for scholarships in the name of Mark Townsend, Doc Huntington, Bud Reid, Ken Starling, and Ray Daniels. Please help us raise \$10,000 in the names of these CEMS faculty so that we can begin memorial scholarships for them. If, for example, you work for a company with a 1:1 match, and you make a \$500 contribution to the Mark Townsend endowed scholarship pool, we would have nearly 10% of the funds needed to create a Townsend-Askew endowed scholarship. We will be contacting some of you separately to see if you are interested in contributing to one of these pools. To make a contribution to the Doc Huntington

endowment pool, for example, please send your contribution directly to CEMS, indicating that you wish for it to be placed in the Huntington scholarship pool. When the pool reaches \$10,000, it will be matched by the Askew Fund to create a permanently endowed scholarship in Doc Huntington's name.

In summary, we have the following giving options available to you for this next year:

- Annual support for CEMS students and activities
 - A direct contribution to OkChE through the department
 - A contribution designated to CEMS or OkChE through the Fall '94 Keys to Success campaign of the College of Engineering
- A one time commitment or contribution to create or help to create an endowed scholarship fund
 - A separate scholarship endowment in the name of a family or individual of your choice
 - One of the 5 endowment pools in the names of Professors Townsend, Huntington, Reid, Daniels or Starling.

**School of Chemical Engineering
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