

Fall 1981

OKCHE

SCHOOL OF CHEMICAL ENGINEERING AND MATERIALS SCIENCE THE UNIVERSITY OF OKLAHOMA



SURFACTANT ADSORPTION ENHANCED OIL RECOVERY
Erythrocyte Deformability Blood Flow
Process Control Surfactant Chromatography

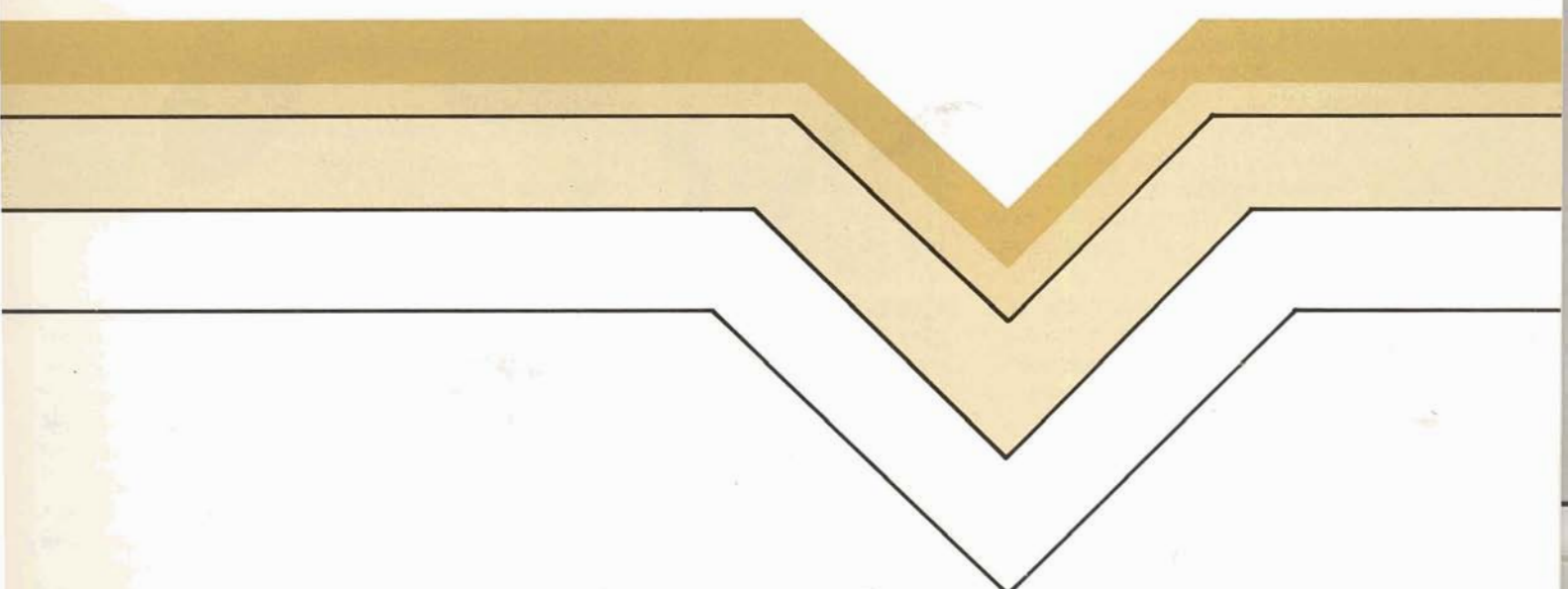
OU's CEMS—Looking Good
Despite Nationwide Faculty Shortage
New Profs Enhance Department

(see stories beginning page 2)

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GEARING UP FOR THE NEW SEMESTER

OU's CEMS—Looking Good Despite Nationwide Faculty Shortage



At a time when national magazines are expressing a widespread concern about faculty shortages in engineering education, we are happy to report that the University of Oklahoma's School of Chemical Engineering and Materials Science is stronger than ever.

As a case in point, we were able to hire three new faculty members during a time that the 120 or so AIChE-accredited chemical engineering departments had 170 faculty openings to fill nationwide.

Ed O'Rear and John Scamehorn began the fall semester with us, and

Jeff Harwell will join us in the spring. We think these men are three of the best prospects available for new CEMS faculty, as did several other schools. Each of the men received offers from prestigious institutions around the country. (See related articles on each new prof.)

The list of crisis stories on the state of engineering education is long. In the February 9, 1981, issue of *Chemical Engineering News*, Michael Heylin wrote in an editorial:

"In a nutshell, the chemical en-

gineering profession is eating its seed corn. A huge demand from industry for chemical engineering talent and the relatively high salaries that companies can pay are combining to make it very difficult for the dwindling supply of new, high-caliber chemical engineering PhDs. In fact, established faculty members are being attracted into industry. And all this is happening at a time when the size of the chemical engineering undergraduate classes has been skyrocketing."

In addition, Heylin points out, the number of PhDs finishing per

year as expressed in percentage of the BS class has dropped from 11 percent to five percent in the past few years. A further problem is that university laboratory equipment has become obsolete.

The expression, "eating the seed corn," was also used in recent articles in *Time* and *Newsweek*. The spring 1981 issue of *The Bridge* contained the statement by Courtland D. Perkins, president of the National Academy of Engineers, that the decline in engineering talent resulting from problems in engineering education has endangered both the defense of the United States and its economic growth.

And a front-page article in the June 29, 1981, issue of *The Chronicle of Higher Education* contained statements made by spokesmen for the American Society for Engineering Education who find engineering schools in American universities "on the eve of disaster." Many schools are now having to limit enrollments even though engineers are in greater demand than ever before.

In 1980, James G. Knudsen, while president of AIChE, prepared a paper entitled "The Crisis in Chemical Engineering Education" in which he stated many of the same concerns discussed above. In addition, he presented some statistics about chemical engineering enrollments. In 1974, chemical engineering freshmen numbered slightly above 4,000. In 1979, they numbered about 10,000.

At OU, our total undergraduate enrollment in chemical engineering was 72 in 1974 and 350 in 1980-81. At present, we have no plans to cut back enrollment in our undergraduate chemical engineering program because of any faculty shortage.

One major problem that universities have in attracting new faculty is the relatively low salaries they can offer compared to industry. All the engineering disciplines, not just chemical engineering, face this difficulty. The salary offers for even BS graduates are so attractive that it is hard to find well-qualified individuals for the PhD program.

It is true that there are several aspects of university life that partially offset the lower salaries: Freedom to do research in an area interesting to an individual faculty member, the change of pace inherent with the semester system plus summer opportunities, contact with students, and the satisfaction that goes with educating the young. There are other reasons that motivate individual faculty members as well. Still, intrinsic rewards do not erase the fact that professors are not paid as well as they should be.

At OU, we have overcome many of the problems that plague other universities. The University of Oklahoma has begun to support engineering in a more positive and dramatic way than ever before. President William S. Banowsky and Provost J. R. Morris have stated they will put significant amounts of new money into the College of Engineering over the next five years.

This year the college was given approximately \$700,000 in new money to be used for faculty positions, new staff, and increased operating budgets. One of our new faculty is being funded through this money, and we expect other new positions to be funded in the 1982-83 budget year.

As to the problem of obsolete equipment, CEMS has been able—with the fine support of OkChE—to outfit an excellent Unit Operations

Laboratory. We plan to continue to upgrade it over the next few years.

We are extremely optimistic about our future programs not only because of increased funding, but because of our new faculty coming this year. They will help us to decrease class size by offering multiple sections of the same course. They will be able to develop new undergraduate and graduate courses which will improve our ability to offer a more varied program. The research areas of the department will also be broadened by their interests and effort. We are excited by all this!

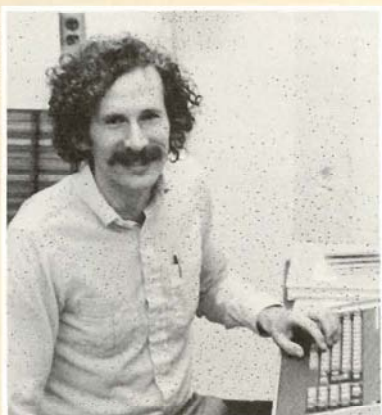
These three faculty members bring us new research areas and some new young blood. However, our problems are not fully solved by them. We still need more faculty and more graduate teaching assistants.

The new positions and increased funding promised by the university are sorely needed for us to improve and advance. But contributions by OkChE members are essential to help these new faculty start their research. In addition, alumni funds are important to continue scholarship support for our fine undergraduates. Despite our optimism about the growing interest of the university in our department, we will always need the support and contributions of our CEMS alumni to keep us on the road to excellence.

We think we can continue to do well in providing a superior education for undergraduates and develop an international reputation for our research efforts. And we are confident that the crisis in engineering education faced by other universities will stay away from our door at the University of Oklahoma.

New Profs Enhance Department

Ed A. O'Rear



Having grown up in the Appalachias of Alabama, Ed A. O'Rear was exposed to the principles of distillation at an early age. As for formal training in chemical engineering, this new CEMS faculty member earned both his bachelor's and doctoral degrees from Rice University (BScE, 1975, and PhD, 1981) with an intermediate degree in organic chemistry from MIT (SM, 1977).

One of Ed's objectives in joining CEMS will be to increase the collaboration between the department and the University Health Sciences Center in Oklahoma City. At Rice, he studied the physical and chemical changes associated with the altered flow properties of red blood cells exposed to abnormally high shear stresses. The results were shown to be clinically relevant to the pathogenesis of anemia in patients with artificial heart valves and in patients with chronic renal failure receiving hemodialysis.

His primary research interests include not only the rheology of blood but also the effects of orientational requirements on the kinetics of reactions at surfaces, and organic and coal chemistry.

Senior students will be introduced to Professor O'Rear this fall in their course in heat and mass transfer. Central to his future plans for teaching is the development of courses in fluid dynamics, stability

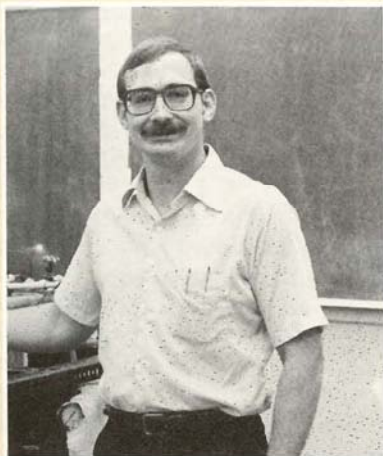
analysis, and perturbation methods.

According to O'Rear, one of his goals of teaching is to give students sufficient physical insight into fundamental principles so that they can adapt to the particular problem at hand. Of course, the liberal assignment of problems expedites this process.

A master of diversions, Ed enjoys symphony concerts, theater, many team sports as an observer, and basketball, softball, and fishing as a participant. His avid interest in basketball, football, baseball, and hockey are indicative of the confluence of Boston, Houston, and Alabama cultures.

To his surprise, Ed was asked on several occasions during his interview trip, "Are you a runner?" He cautiously gave a negative response to each inquiry and added, "Such an ambiguous question could be a potential embarrassment in rural Alabama."

John Scamehorn



Although this Longhorn fan may have a little trouble supporting Sooner football, John Scamehorn assures us that he is looking forward to working in the professionally stimulating atmosphere of OU.

John received his BScE and MS from the University of Nebraska in 1973 and 1974. He then worked in the chemicals research division of Conoco in Ponca City. In 1977, John left Conoco to enter the chemical engineering PhD program at the University of Texas. Since receiving

his doctorate slightly over a year ago, he has been working in the chemical engineering department of corporate research for the Shell Development Company in Houston.

John did his MS research in the area of kinetics of polymerization. At Conoco, he functioned mainly as a pilot plant engineer and also did preliminary design and economics. Among the areas he worked on there were adsorption for pollution control, polymer devolatilization, production of catalytic grade alumina, and chemicals from coal. John

did his PhD research in the area of tertiary oil recovery by surfactant flooding. At Shell, he has worked on membrane separation processes and adsorption.

John feels that this variety of experience will help make him a more effective teacher and researcher. "Having worked in a number of areas has allowed me to develop many ideas for research topics of both scientific interest and industrial importance," he says.

The areas John initially hopes to develop research projects in at OU

are the solution and adsorption thermodynamics of surfactants (of value in tertiary oil recovery and detergency) and pollution control using adsorption on activated carbon and by membrane separations (with emphasis on synfuels applications). He has a general interest in surface phenomena and hopes to develop a graduate course in it eventually.

John has a myriad of personal interests. He is an avid tennis player and also likes weightlifting, badminton, table tennis, running, and squash. John is a fanatic scuba diver,

having made a number of Caribbean trips. He also dives lakes, rivers, and caves.

In addition, he is devoted to the theater, particularly musicals, and has about 200 original cast recordings in his Broadway musical record collection. He also collects science fiction and other books on just about any subject. "And then there's girlwatching," adds the 27-year-old bachelor.

Jeff Harwell



Jeff Harwell will join the CEMS faculty in the spring semester of 1982. Jeff will be bringing with him his wife, Joyce, and three children—Jeffrey, age 2½; Charissa, age 1½; and an addition scheduled to arrive in December, 1981.

Jeff came to chemical engineering by a circuitous route. After graduating from Texas A & M in 1974 with a BA in chemistry and a minor in philosophy, he and his wife moved to Portland, Oregon, where Joyce taught third grade and Jeff attended Western Conservative Baptist Theological Seminary and worked

as a pastoral intern at Hinson Memorial Baptist Church. While at Western, he studied Greek, Hebrew, and theology.

After graduating in 1977 with a master of divinity degree, Jeff returned to Texas A&M where he enrolled in a special program in chemical engineering for graduate students with undergraduate degrees in science. He completed his master of science degree at A&M in 1979 and then enrolled at the University of Texas at Austin, where he is completing his PhD.

Jeff's research interests are in two energy-related areas. The first area is in tertiary oil recovery. He hopes to investigate the adsorption kinetics, interphase mass-transfer rates, and flow behavior of the multi-component mixtures of surface-active compounds being considered for use in oil-reservoir stimulation by chemical flooding.

His other research area is in new

low-energy separation processes. These include the use of adsorption to break microemulsions, surfactants to enhance the recovery of valuable chemicals from dilute solutions, and multicomponent adsorption behavior to reduce energy requirements for conventional separation processes.

Jeff insists that he enjoys teaching so much that he is willing to teach any of the standard graduate or undergraduate chemical engineering courses. He would, however, from time to time like to offer graduate courses in solution methods for non-linear partial differential equation models of chemical engineering systems and surface phenomena.

In his spare time Jeff continues to pursue his interests in Greek, Hebrew, and Biblical theology. He participates with his family in local church activities. He also enjoys gardening, carpentry, and being a "shade-tree mechanic."

Jischke Named New Dean of Engineering



Martin C. Jischke, a member of the University of Oklahoma engineering faculty for 13 years, has been named by OU President William S. Banowsky as the new dean of the College of Engineering.

The OU Board of Regents approved the appointment of Jischke at its May meeting, thus capping a nationwide search that provided a "strong pool of candidates for the position," the OU president said.

"The search committee did a thorough job identifying several strong candidates. Though each presented special qualities, Jischke proved a formidable candidate with broad experience as an administrator, researcher, teacher, and professional engineer," Banowsky said. Jischke was formerly director of the School of Aerospace, Mechanical and Nuclear Engineering.

On July 1, Jischke became dean of the College of Engineering, which encompasses seven individual schools of engineering and offers degrees in 12 engineering fields as well as meteorology, computer science, and environmental science. The college has an enrollment of approximately 2,400 undergraduate and 675 graduate students, and its facilities fill eight major buildings and portions of five other buildings.

"Jischke is a young, but widely experienced engineer who is well thought of professionally and who easily could compete for similar

positions at major universities across the nation," Banowsky added.

The 40-year-old engineer joined the OU faculty in 1968, shortly after earning his doctorate in aeronautics and astronautics at the Massachusetts Institute of Technology, Cambridge. He also earned his master of science degree in 1964 at MIT and his bachelor of science in physics with honors in 1963 at Illinois Institute of Technology, Chicago.

During 1975-76, he received a special appointment as a White House fellow and special assistant to the Secretary of Transportation.

Prior to joining OU, Jischke worked as a summer research fellow with the National Aeronautics and Space Administration at Moffet Field, California; Donald W. Douglas Laboratory in Richland, Washington, and Battelle Northwest Laboratory, also in Richland. During the summer of 1965, he was an

engineer with RAND Corp. in Santa Monica, California.

A registered professional engineer in the state of Oklahoma, Jischke has also served as a consultant to World Book Encyclopedia, the U.S. Air Force, the office of the Secretary of Transportation, Transworld Drilling Corp., U.S. Aviation Insurance Group, and several Oklahoma companies.

Jischke has been an active participant in numerous OU organizations and committees, including serving as chair of the Faculty Senate and the college's Graduate Studies Committee. He has also earned a reputation for outstanding teaching, receiving the Regents' Award for Superior Teaching in 1975. He has supervised the thesis work of 17 students and served as faculty advisor to several student groups.

Jischke's research interests are in fluid mechanics as related to the study of tornadoes, airplanes, and supersonic flight. He is the author or co-author of 48 refereed research publications, major technical reports, and other publications. In addition, he has received 10 research grants.

Born August 7, 1941, in Chicago, Jischke is married to Norman attorney Patricia Ann Fowler Jischke.

They have a four-year-old son, Charles, and an infant daughter, Marian.

Donna Murphy

The 1981 Program of Excellence Scholars

One hundred and ten students participate in the CEMS Program of Excellence at the University of Oklahoma. These students have been selected because of their superior grades and demonstrated leadership abilities.

The scholars include 75 upper-class students and 35 graduating high school seniors. They must maintain a 3.0 grade point average and major in chemical engineering or materials science. Each student receives \$250 each semester.

Included among the freshman members are all CEMS majors who receive the Program of Excellence scholarships as well as those who have been selected for the university-wide honors programs—University Scholars, Achievement Award winners, and those selected for the President's Leadership Class.

Funds for the Program of Excellence scholarship generally are donated to the school by several major companies. This year donors included Atlantic Richfield Co., Celanese Chemical Co., Gulf Oil Co., Allied Chemical Co., Shell Oil Co., and Sun Oil Co. Other donations have been provided by chemical engineering and materials science alumni.

Present Program of Excellence scholars in the OU School of Chemical Engineering and Materials Science are listed below with their hometowns:

Altus: Jeffrey Graham –
Bartlesville: Ron Armstrong, Michael Bresson, Jeanette Dockery, William B. Miller, James M. Stanley
Bethany: Carl Ellett, John T. Martens

Broken Arrow: Clay Burkholder
Claremore: Lowell Matthews
Del City: James Canavan, Patricia Lyle, Phillip Lyons
Durant: Terry D. Davis
Edmond: Lester Landis
Enid: Norman Galer, Linda Kaiser
Fort Sill: Karen Rudesill
Lawton: Michelle Williams
Midwest City: Michael L. Isbell
Newalla: George A. Conner
Newcastle: Brenda Littlejohn
Norman: Brian Harden, Samuel Little, Don Powers, Stephanie Reid, Paula Root, Bruce Stevens
Oklahoma City: Joe Bohannon III, Gary Cartwright, Geoffrey Chappel, Lori Fewin, Brian Fritzler, Steve Rickey, Bryon S. Yee
Pocasset: Diane Steelman
Ponca City: Laura Brinson, Craig Rice
Pryor: Johnny Jordan
Shawnee: Orlando Diaz, Karen Butterfield
Tulsa: Wayne C. Chang, William Paul Ives, Michael A. Jones, Stephen Lester, Thomas W. Long, Bradley Lowery, Randy Millier, Wes Nichols, Kelli Riddle, Darlene Summers, Diane Tucei, William Vander Heyden
Bel Air, MD: Gretchen Matthern
Buffalo Grove, IL: Ronda Milhollin
Dallas, TX: Zackery Stowe
Keithville, LA: Sharon Potter
Lake Jackson, TX: Brad Blevins
Palos Heights, IL: Larry Erickson
Phoenix, AZ: Miya Linsenmeyer
San Francisco, CA: Karen Dougherty

Students who have been added to the Program of Excellence beginning in the fall of 1981 are:

Ardmore: Scott Meadows
Bartlesville: Karen Stanley
Blair: James A. Rogers

Lawton: Sung K. Kim
Moore: Yong Hwan Kim
Norman: Karen L. Lawrence
Oklahoma City: Mark A. Gonce, Kelly Trice, Ngoc Chau Thi Thai
Shawnee: Bradley Gollhardt
Wilburton: Ronald Raunika
Billings, MT: Scot Roswurm
Frankfort, IL: Russ Davidson

University Scholars selected for the fall of 1981 majoring in chemical engineering or materials science and thus invited to participate in the Program of Excellence are:

Adair: John King
Blanchard: Scott Childs
Del City: Janet Tateya
Midwest City: Charles Carr, Greg Oliver
Moore: Kevin Clary
Ponca City: Warren Becraft
Pryor: Bryan Shelton
Putnam City: Phillip Haddad
Sallisaw: Mark Cotney
Tulsa: Kenneth Butler, Lori Graham, Susan Lack
Arkansas City, KS: Brent Tracy

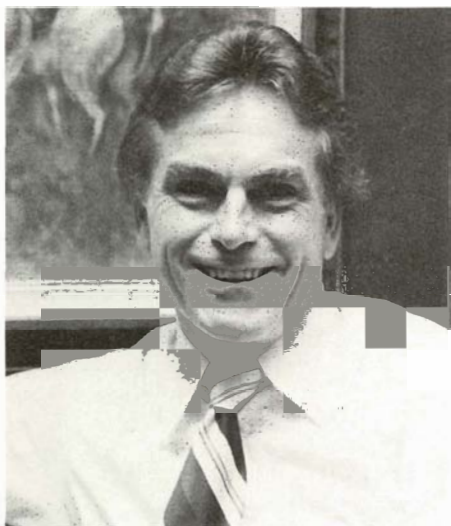
Achievement Award recipients invited to participate are:

Oklahoma City: Michael Lee
Pawnee: Frank Tucker
Tulsa: Dana Langston

President's Leadership Class members invited to participate in the Program of Excellence are:

Ardmore: Janet Nash
Frederick: Charles Greenfield
Oklahoma City: Charles Jones
Perry: Jean Ann Breshears
Tahlequah: Lisa Tibbetts

Starling Receives Outstanding Faculty Award in Research



Kenneth E. Starling

The 1981 College of Engineering Award for Outstanding Faculty Achievement in Research went to Kenneth E. Starling, George Lynn Cross research professor of chemical engineering and materials science.

Only one such award is presented each year based on recommendations of colleagues and students.

For more than 20 years, Starling has worked in the field of understanding and predicting fluid thermodynamic properties and has provided analytical models, correlations, and data that are used widely in the design of new chemical processes and energy systems. In particular, he has generated and compiled data essential to today's gas processing industry.

Through the early 1970s, Starling focused his research on the natural hydrocarbon systems and fluid problems associated with the natural gas processing industry. In the mid-1970s, the Department of Energy sought his assistance in developing ocean thermal and geothermal energy systems.

Most recently, however, he has redirected his attention to the study and investigation of coal liquids and

other synthetic liquid fuels. His research efforts aid not only the chemical engineering field but also the energy future of Oklahoma and the nation.

Starling has obtained funding from outside sources totaling over \$1.1 million dollars during his career at the university. In the past three years, (1978-1980) he has obtained funding for research totaling about \$718,000 of the \$1.1 million. Currently he has projects in progress supported by outside sources in the amount of \$602,000.

He has published 78 technical papers and one book over his 20-year technical career. In addition, he and his group have published several project reports concerning his funded research. It is amazing to see this level of productivity during a time in which he also served one year as interim vice provost for research administration and continued to teach.

Lee Gains Tenure

Professor Lloyd Lee was granted tenure by the University of Oklahoma this spring. We are happy to report that Lloyd has reached this important step in a faculty member's career.

Part of a departmental recommendation for tenure requires us to obtain references from several individuals outside the university. A common theme expressed by those persons was that Professor Lee is one of a select (and altogether too small) group of engineers that has the sort of grasp of statistical mechanics that enables him to com-

pute the thermodynamic transport properties of a wide variety of fluids and fluid mixtures of engineering importance.

He has continued to pursue many topics utilizing a statistical-mechanical approach and is close to finishing a book on statistical mechanics for engineers. In addition to his teaching, he has assisted the department by being coordinator of the graduate program.

Since his new home in Norman is now complete and he has received tenure, we hope to have Lloyd with us for many years to come.



Dr. Lloyd Lee assists a student in career planning.

Regents' Award Goes to Radovich

Nominated by colleagues, endorsed by students and fellow scholars, and selected by a committee of regents, John M. "Jay" Radovich was one of seven University of Oklahoma faculty members selected in April to receive the prestigious Regents' Award for Superior Accomplishments.

Radovich, a CEMS faculty member for five years, is widely recognized for his enthusiastic and effective commitment to the total education of undergraduate chemical engineering students. He has taught 10 different courses since joining the University of Oklahoma. Nominated by his students, he received the Baldwin Study-Travel Award in the spring, 1980.

Radovich has worked to revitalize the CEMS curriculum and has rebuilt the Unit Operations Lab in which students receive essential experience. By writing individual grants, he was able to obtain funding to purchase and construct equipment for 11 new experiments.

Because of his belief that students should be able to communicate clearly and effectively, he has also helped develop a technical writing



John (Jay) Radovich receives his Regents' Award from Dee Replogle Jr., president of the OU Board of Regents.

course taught by the English department.

In addition, he was instrumental in developing a laboratory reference library for students, and he is an advisor to several student organizations.

Radovich's concern for students' education sometimes results in discomfort and hard work on the part of students. However, after they have entered industry, many comment that the effort required by Professor Radovich prepared them well, and they are grateful.

Students Honor Townsend

During the rushed, closing days of a college semester it is unusual to find students thinking much beyond their final exams. So when a group of seniors set about to raise money to honor a professor, it's assured that the professor has had a tremendous influence on them.

It is doubly impressive when the professor is not even teaching the class that honors him.

Such is the case with Dr. F. Mark Townsend, a David Ross Boyd professor of chemical engineering and materials science at the University of Oklahoma.

Recently, the school's senior design class decided to create a scholarship in Townsend's name because

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Surprising Prof. F. Mark Townsend with a scholarship created in his name are Debra Thompson (left) and Terrie Boguski, seniors in CEMS.

DEPARTMENTAL EVENTS

The Harry G. Fair Memorial Lecture

"he has gone out of his way to help us," explained senior Debra Thompson of Kansas City, Missouri. The class members settled on a scholarship because they felt Townsend would best appreciate something created in his name to help a student, Thompson said.

From the approximately 42 students in the class of seniors, \$340 was raised for the scholarship which will be awarded to a deserving student in the fall.

Townsend was not teaching the senior design class during the spring, but "we always go to him when we have a question about our projects," Thompson said. "Several times I've stopped him as he was heading for lunch, yet he always returned with me to his office and helped me with my questions," she added.

Thompson and Terrie Boguski of Aurora, Kansas, spearheaded the fund drive.

Townsend, an OU faculty member since 1955, is noted among the students and faculty of the School of Chemical Engineering and Materials Science as an outstanding teacher. The David Ross Boyd professorship, which Townsend received in 1976, was created to recognize and reward "vigorous performance and leadership in the teaching, counseling, and guidance of students."

Donna Murphy

Robert S. Purgason, a recent University of Oklahoma engineering graduate, returned on April 24 as guest speaker at the seventh annual Harry G. Fair Memorial Lecture.

Bob is manager of operations for Perry Gas Processors of Odessa, Texas. He joined Perry in May 1978, after receiving his bachelor's degree in chemical engineering. He has had a unique career with Perry Gas Processors in moving to a management position so quickly after joining the company.

But then, he had a very busy career while he was a student at OU. He was active in his social fraternity, Alpha Tau Omega; he participated in Student Entertainers, directed the Sooner Scandals, and served on the executive committee of University Sing.

In addition, he received several honors, including a Program of Excellence Scholarship from the School of Chemical Engineering and Materials Science, and he was named one of the Big Men on Campus.

Bob is currently a member of the Rotary Club in Odessa, a member of AIChE, and one of the Natural Gas Men of the Permian Basin. He and his wife, Cynthia, live in Odessa. They both like to play tennis, and Bob is an avid jogger.

The annual Harry G. Fair Lecture is given in memory of Fair, an outstanding OU alumnus who died in 1974. The lecture is made possible by a fund contributed by his widow, Janie Swift Fair.

Bob Purgason was invited to speak this year because he has an interesting perspective to share with students concerning the role of engineers in business based on his rapid promotion to a responsible managerial position.

Some excerpts from Bob Purgason's lecture:

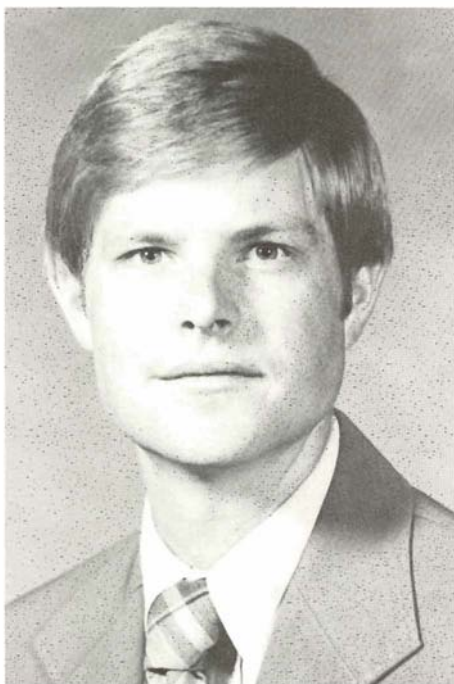
I'm especially thrilled to have the opportunity to visit with you about my path from a BS in chemical engineering in May 1978 to manager of operations for Perry Gas Processors, Inc., in April 1981. Since my promotion last September, I have learned much more than I did in school.

My knowledge has not been technical in nature, but very important as to how people interface with each other. A few things I have learned are as follows:

(1) Always question why. Not in an obnoxious manner, but so you will know. Don't go through an exercise without some knowledge of why you are doing it and where it fits into the overall scheme of things. This will not only help motivate you, but will allow you to do a better job by tailoring your information to what is needed overall.

(2) Learn from anyone you can. I have not found anyone in my dealings yet that I was not able to learn from—plant operators, foremen, roustabouts, laborers. I try to treat all people with respect and recognize they know more about what they are doing than I do. I'm especially aware of that in my present position since two of the people working directly for me are area managers with combined experience of approximately 20 years in plant operations. These two men know more detail about how to run a treating plant than I'll ever hope to gain, and I must rely heavily on them for information and support. They realize that I can't do my job without them.

(3) Understand your professional peers. As important as your subordinates in your everyday jobs are your peers—not only those in the engineering profession, but your peers in the legal, accounting, and management professions. Don't get me wrong, I still feel that you get



Robert S. Purgason

the best education in chemical engineering, but you need to understand the guiding principles and ethics of the other professions, too.

Lawyers deal in adversary terms. There is always a winner and a loser. You take one side and fight to the end. This may seem contrary to your idea of compromise, but it does have its place, and you need to know enough about lawyers to know when you need one.

Accounting is another profession that may seem unfamiliar to you, but it is especially important to you as a manager, because your performance is measured by the accountant's numbers. Some of the accountant's principles are consistency, matching, and materiality.

The manager's principles are important as well. His job is to get things done through people. Most of the remaining points I will make relate to managerial concepts I have struggled with.

(4) Set performance standards and

morals that you don't compromise. If you are working on a project and you feel you need to work late to do the job right or to achieve your goals for that project, work late. I guarantee you'll catch some flack from your peers. But if long hours are what it takes to meet your performance standards for your work, do not give in to peer pressure.

The application of this standard in the managerial ranks is probably even more difficult. Just because a task is done by someone working for you, that is no excuse to compromise your performance standards. The real challenge for a manager is getting his standards (or higher ones) done through others. This is certainly one area that I'm still working on, but one of the most important from a managerial point of view.

(5) Be aggressive in learning what your boss expects. Start by setting your own goals and then send them to him for approval. No matter what your job description says you should be doing, make sure there is no difference of opinion when a project is assigned. Set a measurable objective from the beginning, and tell your boss that you're going to do it. When he agrees, you will both be satisfied with your plan.

(6) Accept responsibility for your projects. You may not have the authority to make important decisions concerning a project, but you can almost always make recommendations as to what decisions should be made. Give various strategies with options. You should never throw your hands up and ask what do I do now. Make sure you have a solution to recommend. Your solution may not be chosen, but at least you'll see the difference between your recommendation and what your boss implements, and you can learn from that interaction.

Often to get your proposal chosen you have to act as a salesman. It's

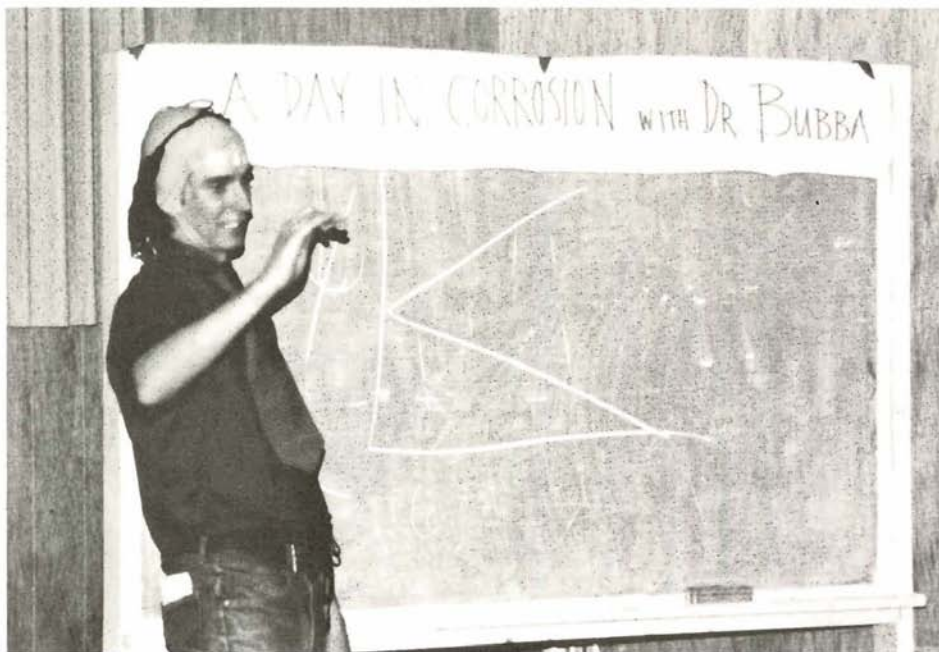
very easy to say that your boss is hardheaded and won't approve your grand design with its great rate of return. But I contend that if you have not gotten approval for a project, it's either because it wasn't a good one, or you haven't done your job of selling it.

(7) Be proud of and true to your profession of chemical engineering. Even though you may be functioning as a manager, don't allow yourself to slip into technical mediocrity, at least in your specialty. Spend time presenting technical papers and involved in community activities. We as engineers must get out and contribute to the community to add the external respect our profession deserves.

You will notice that the one common ground I've been talking about is people, and it is in people and your ability to work with them and for them that your ultimate success or failure lies, especially should you choose the managerial path.

Not everyone is the type to be a manager. We need exceptional engineers as well as engineers as managers. The key is not which role you are in but that you enjoy your work and contribute.

Year Five for Roasted Faculty



OU's student chapter of AIChE held its fifth annual Faculty Roast on April 22. Because of the reputation of previous roasts, the attendance at this year's event was a record. In keeping with tradition, the evening began with pizza and beer.

Professors Carl Locke and Jay Radovich opened the evening's entertainment by presenting awards to deserving seniors. One of the most notable awards—the first annual Freddie Wilson Award—was given to Mark Kennelley, who incidentally was a junior at the time.

Next, Dr. Locke launched his short-lived career as a poet by reciting an uninspired, poetic "Three-Mile Island" concerning the virtues (or lack thereof) of the graduating class.

Sharon Potter kicked off the roasting of the faculty by broiling Dr. Bob "Whizzo" Wills. Her skit was inspired by observing Dr. Wills in a local laundromat as he carefully performed a mass balance on laundry soap to ensure optimum cleansing capacity.



After an exceptional imitation of Dr. Lloyd Lee in English 1001, Dr. Lee was presented with a poster of his favorite weight lifter (who just happened to be a leftover Penthouse Pet).

Next, the audience was treated to "A Day in Corrosion with Dr. Bubba (a.k.a. Carl Locke)." The skit emphasized Dr. Locke's extraordinary organizational aptitude. In typical Lockonian style, the roaster (Vic Savage) entered the room wearing a tweed hat and twirling horn-rimmed glasses, then proceeded to distribute handouts in which page 34 preceded page 3.

No AIChE Faculty Roast would be complete without special attention given to the dedicated shop foreman. Bill Terrell's soliloquy was complete with chewin'bacca, a pot belly, and insights concerning the intelligence of the faculty.

Dr. Radovich was the next faculty member to be roasted. The infamous instructor's exploits in Heat and Mass Transfer and Unit Operations Lab provided more than sufficient material. However, this evening the audience was treated to a slide show dealing with the more intimate side of his character.

Mark Kennelley and company were able to gain the cooperation of Dr. Radovich's wife, Ann, and their three daughters in providing a very humorous and enlightening glimpse of Dr. Radovich's domestic lifestyle. Dr. Radovich was certainly taken by surprise!

Mike Stice then proceeded to remind Dr. Kenneth Starling about all of the fun times provided by Advanced Process Design. Special attention was paid to the overhead transparencies Dr. Starling prepares for class, as students in the back of

the room could only see what was written if they remembered to bring their high-power binoculars.

The closing skit, "To Tell The, By Dee Way, Truth," concerned Dr. Abe Matthews, a visiting professor. Three students, appropriately attired, were questioned by a panel consisting of three students. Questioning revolved around Dr. Matthews's grasp of higher mathematics and his by-dee-way philosophy that a chemical engineer's weapon is kinetics.

As the fires died, the scorched faculty inconspicuously departed to nurse this year's burns, and the students left with a feeling of fulfillment.

Victor Savage and Cohorts

The CEMS Awards Banquet—1981

Once again we had the pleasure of honoring our most outstanding students in chemical engineering and materials science at the sixth annual CEMS Awards Banquet held April 24. Approximately 160 students, faculty, and guests attended the banquet this year.

Dr. John Radovich, master of ceremonies, managed to honor both students and faculty this year. After a little inquiry he obtained information regarding honors and awards some of the faculty had received as students. That bit of information proved to be very interesting!

Those students receiving awards were as follows: Sam Little, Celanese Award for outstanding freshman in chemical engineering; Michael Bresson, CEMS Award for outstanding sophomore in chemical engineering; William Vander-Heyden, Phillips Petroleum Company Award for outstanding junior; Bryan Dotson, Pamela Pesek John-



Master of ceremonies Jay Radovich presided over an enjoyable awards banquet that recognized both students and faculty.

son Award for outstanding senior in chemical engineering design; Scot Roswurm, ASM-AIME Award for outstanding freshman in metallur-

gical engineering; Keith McMinn, ASM-AIME Award for outstanding junior in metallurgical engineering; Hemant Goradia, Robert Vaughn Award for excellence in chemistry.

We were very fortunate to have so many representatives from industry at the banquet this year. Attending from Phillips Petroleum Company were Mr. and Mrs. Dick Askew and Mr. and Mrs. George Meese; from Warren Petroleum Company, Ray Canfield, K.C. Purgason, and Ken Purgason; from Mobil Corporation, T.M. Klaric; from Conoco Inc., Mr. and Mrs. Francis Sage; from Perry Gas Processors, Charles Perry, Wayne Johnson, and Mr. and Mrs. Robert Purgason; from Cities Service, Joe Bohannon; from Hinderliter, James N. Scott; from Emtec Corporation, Mr. and Mrs. Charles Powell.

We in the CEMS department are very proud of all our fine students.



Other Student Awards

In addition to the awards announced at the Awards Banquet, scholarships have been given to three women in the CEMS department.

Laura Brinson, a senior from Ponca City, received a Schlumberger Collegiate Scholarship in the amount of \$2,250.

Deaneatte Dockery, a sophomore from Bartlesville, was awarded a \$600 Jeri Kay Savage Memorial Scholarship by the Kappa Alpha Theta sorority, which established the scholarship in memory of one of its members who was killed in an automobile accident while attending OU as an engineering student.

Linda Kaiser, a sophomore from Enid, was selected to receive a \$150 Society of Women Engineers scholarship for 1981-82.

We were pleased to have so many representatives from industry at this year's Awards Banquet.



This year the CEMS Awards banquet was attended by approximately 160 students, faculty, and guests

Alumni Notes

Let us know where you are and what you are doing. Please fill out one of the enclosed information cards and send it to us. We will publish the information in our next issue of OkChE.

1940s

J. H. (Jim) Richards, BS '40, 5624 Holt Ave., Los Angeles, CA 95006, formerly with McDonnell Douglas, retired in March to devote full time to world travel.

Paul F. Tapp, BS '40, 7341 Westover, Houston, TX 77087, is retired.

Joe B. Clarke, Jr., BS '46, Box 51224, Lafayette, LA 70505, is president of Vermilion Oil and Gas Corp.

W. A. Grieves, BS '46, 12302 Overcup, Houston, TX 77024, serves as a technical advisor for Exxon.

William S. Hudson, BS '47, 2138 Bank of Southwest Bldg., Houston, TX 77002, is vice president of Miller and Lents, Ltd.

Wayne C. Montgomery, BS '48, RD 1 Box 457, Gibsonia, PA 15044, works as a market manager for Aluminum Company of America in Pittsburgh.

1950s

V. Wayne Jones, BS '51, 621 SNB Plaza, Odessa, TX 79762, is executive vice president of Perry Gas Companies, Inc.

Charles R. Perry, BS '51, 621 State National Plaza, Odessa TX 79762, is president of Perry Gas Companies, Inc.

1960s

C. Thomas Sciance, BS '60, MS '64, PhD '66, 715 Westcliff, Wilmington, DE 19803, works as technical manager in the petrochemicals department of E. I. du Pont De Nemours. He and his wife, **Anita Fischer Sciance**, BS '60, have a son, Steven, who is majoring in electrical engineering/computer science at Rice University and a son, Fred, who is attending the Wharton Business School, University of Pennsylvania, on a full NROTC scholarship.

Richard A. Hall, BS '63, 1416 E. Wing, Arlington Heights, IL 60004, is employed as the director of manufacturing (consumer products group) for A. E. Staley Mfg.

Ralph R. Hall, BS '64, 6 Marianna Place, Morriston, NJ 07960, was promoted to senior staff engineer as a specialist in lube process engineering with Exxon Research and Engineering Co. His wife, C. J., is now a certified legal assistant.

1970s

Robert M. Mead, BS '71, 1916 W. Tuliptree, Huntsville, AL 35803, was recently appointed associate director of technical studies in the division of continuing education at the University of Alabama in Huntsville.

Charles M. Garrison, PhD '72, 6028 Cedarwood, Fairfield, OH 45014, works in the mixing and mass transfer group of the engineering division of Procter and Gamble.

Forrest F. Craig, III, MS '74, PhD '76, 19510 Enchanted Spring Drive, Spring, TX 77373, is the manager of field projects with Texen Resources, Inc.

Jeffrey C. Arnoldi, BS '76, 2115 S. Idalia, Aurora, CO 80013, works as a process engineer for Stearns-Roger Engineering Corp. He, his wife Linda, and daughter Jessica have recently moved to "the high country."

Brenda A. Martinez, BS '79, Aptdo #6-1356, Estafeta El Dorado, Panama, is employed as a chemical engineer in the alternate energies and conservation section of the Institute of Hydraulic Resources and Electrification in charge of the biogas projects.

1980s

Raul Moreno, BS '80, Box 2166, Houston, TX 77001, is employed as

a project engineer with Bechtel.

Phong X. Nguyen, BS '80, 234 Petunia, Lake Jackson, TX 77566, works as an associate engineer with Pullman Kellogg.

George White, BS '80, Box 4974, Norman, OK 73026, is continuing his education in petroleum engineering at OU. He is working on a master's degree.

OU Alum Now President of GPA



E. C. Lindenberg

E. C. (Ed) Lindenberg has been named president of the Gas Processors Association. An OU alumnus and a member of the board of CEMS's Foundation for Excellence, Lindenberg serves as president of Gulf Oil Services of Caracas, Venezuela.

As the first president of GPA based outside the United States, Lindenberg plans to shift the group's focus to the international scene. At present only 25 member firms are from outside the U.S.

The Gas Processors Association, a non-profit trade association based in Tulsa, has about 190 corporate members who account for 90 per cent of all natural gas liquids produced in the United States.

The GPA provides a forum for the exchange of ideas, experience, and technology for those involved with the production, transport, marketing, and equipment concerns of their industry.

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