



University of Kansas Chemistry Department Alumni Newsletter June 1995

*A publication for alumni and friends of the Chemistry Department
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In Memoriam

Clark Eugene Bricker

June 17, 1918 - June 14, 1994



Dr. Clark E. Bricker

In the life of an institution, there are individuals who, by their ideas, behavior, and influence, deeply affect the character of the institution. The KU Chemistry Department counts Clark Bricker as one who helped mightily to form what the Department is today and what it aspires to become in the future.

Brick arrived at KU in the fall of 1963 to assume direction of the General Chemistry program and continued in that role until his retirement from the University in 1983. Brick's success in conveying the principles and practice of chemistry to beginners was so immediately spectacular that it soon became surrounded by myth and legend. There is, however, a great deal that is inarguably factual and instructive.

Brick presented a rigorous and comprehensive, thoroughly up-to-date general chemistry course that was briskly demanding of every student. His grading practices were tough and showed no sign of the grade inflation that afflicted many undergraduate courses across the country during Brick's KU years. Yet, the students in his classes regarded him with an enduring affection and loyalty, and devoted an unparalleled energy and effort to their study of chemistry. Far from being limited to the most successful students, the good personal feeling, the pleasure in their study, and the gratitude for a fine academic experience seemed to be brought out in every student Brick encountered.

Brick's colleagues have thought about how Brick inspired his students. Most people feel two interlocking qualities made up Brick's secret. One factor was simply a great respect and affection of his own for the people he taught, which were perceived and returned. An equally critical factor was the deep knowledge of chemistry and unstinting enthusiasm for learning that Brick brought into the classroom from a life-

(continued column 1, page 4)

NOTES FROM THE CHAIR



Richard Givens commends Jack Rose for 33 years of dedicated service to the Department, see the full story of Jack's retirement reception on page 13.

Givens Joins Academic Affairs

Late last fall, Richard Givens was named an associate vice chancellor for Academic Affairs. On January 2, Givens began his new position as a half-time appointment and is completing his seventh year as chairman of the Department. He has been sharing the AVC position with Brower Burchill who will retire from the University in June. At that time, Givens will take over full responsibility for the AVC position in addition to his teaching and research commitments in the Department. Kristin Bowman-James will assume the chairmanship (see page 5).

Givens came to the University as an assistant professor in 1967. In addition to serving as Department chairman for seven years, he was associate director and then director of the Center for BioAnalytical Research (CBAR) from 1983 until 1991.

Dear Alumni and Friends:

The *seven-year itch* has taken a firm hold of me, and now I feel it's time to move on. I leave the position of chairman of the Chemistry Department with mixed feelings of relief and anxiety. Serving the Department as its chairman has been a rigorous, seven-year course in time management, accounting, human relations, personnel management, and leadership. I haven't received a grade yet, but I do have the usual student anxieties of one who knows that he could have done better and yet is pleased with what he has learned. I have had wonderful instructors challenging me to enter into areas in which I had not ventured before and assisting me when it was apparent that I was in deep trouble. At the same time, the position has had a rejuvenating effect on my own career. I believe that I have acquired new skills, uncovered a few new talents, and discovered several personal limitations that I had not known existed. The most important discovery that I have made is the high degree of dedication that this faculty has to their own professional development, their desire to make major improvements in our programs, and their drive to improve the overall stature of the Department within the University and throughout our own profession. Each one of them has been very supportive, easing my burden and permitting me to meet my own responsibilities.

We have made noteworthy progress in several areas during my tenure, namely, our faculty number has now reached twenty-three full time equivalents (comprising twenty-five individuals), our graduate student count exceeded 100 last fall, our research dollars have been hovering above the \$2 million line mark each year for the past few years and our endowment passed the \$2.5 million point for the first time this year. Four years ago, we set goals of twenty-eight FTE faculty, 120 graduate students, \$6 million in external funding, and nearly \$4 million endowment support by the end of this decade, certainly stretching but achievable goals. My predecessors, namely, Jake Kleinberg, Jack Landgrebe, and Marlin Harmony, had built a solid foundation for our planned expansion, and now my successor, Kristin Bowman-James, will see that we maintain that momentum. Our most significant accomplishment has been the addition of a dozen new faculty in the past eleven years. These

additions have already added excitement and renewed vigor to our research and teaching programs and have engaged our friends in biology, physics, pharmacy, and biochemistry.

Reaching these goals will not be easy, however. These are very challenging times for higher education as it becomes abundantly clear that increasing federal and state support will be nearly impossible. We will continue to labor to build this Department into a competitive one for our students and to secure additional research funding from industry, federal agencies, foundations, and the state. Our success to date can be directly attributed to a combination of hard work and careful planning by our faculty and staff.

As you will note in this year's Newsletter, we have had a banner year in graduating our students. We have already awarded ten doctorate and nine master's degrees this year and the summer promises more. We graduated thirty-five seniors this year (twenty-two bachelor of arts and thirteen bachelor of science degrees), a total that has held relatively constant throughout the last decade. Our undergraduate classes in general and organic chemistry are filling to capacity, and there are measurable increases in the analytical and physical chemistry sequences. Our undergraduate majors continue to be competitive for national and international awards. Our graduate students are also gaining recognition for their scholarship (*e.g.*, see the feature on Julie Stenken's Fulbright experience on page 17).

As a part of our growth, we have encountered severe shortages in available research and teaching laboratory space. We find ourselves in the precarious position of offering undergraduate laboratories in very outdated facilities with equipment that is inadequate in number and quality for a modern chemical laboratory program. The atmosphere is less inviting to our undergraduates who are looking for a possible "home" and a major. This coupled with the lack of modern lecturing facilities for our larger classes has made it more difficult to convince undergraduates that a degree in chemistry is a worthy goal, and that we are practitioners in a modern, state-of-the-art discipline. To remedy this, we have put a new laboratory teaching facility on the drawing board, currently estimated to cost about \$40 million. Also, Hoch (now Budig Hall) will be "on-line" in about fifteen months. The addition of these two facilities would greatly enhance the effectiveness of our teaching program. I think we've come a long way; it's truly been a team effort.

For me, it's a short trek up to Strong Hall for the next 3.5 years to help out in Academic Affairs. I intend to continue my teaching (two physical organic courses next year) and to be available to assist my research group (currently three graduate and three undergraduates). After the sojourn, who knows? Seven years ago, I was prepared to spend my time in our photochemistry laboratories, but an unexpected turn of events changed all of that. This time, well, I will make no predictions.

In concluding this letter, I wish to express my own feelings of sadness at the loss last June of Clark Bricker. He was an inspirational teacher and mentor, not only to his students but to all of us. His legacies are his many, many students. He also left us with the knowledge that it is possible to have good research and also provide our undergraduates with an excellent environment for their education. In fact, these two endeavors belong together. We will miss him.

Our Newsletter is chock full of interesting news about the Department, our alumni, and the events of the past year. I invite you to take time to read it thoroughly and hopefully be inspired to send us information about yourself. We collect your letters and notes throughout the year and make a special effort to put the information into the next Newsletter. We accept your information at any time, so don't hesitate. Write when you have something we should include. As you read through the reports of our activities for the past year, please remember that many of them are the result of the support we obtained from your contributions to our endowment funds. In fact, it is your contributions to the endowment funds that make this Newsletter possible. KUEA contributions are used to support many of our graduate students in the form of fellowships and summer research support, to support and develop new faculty, and to fund our invited seminar and annual Named lecture series. We appreciate the loyalty and generosity that each of you has shown, and we sincerely invite you to visit us whenever you are in Lawrence.

Sincerely yours,

time in basic scientific research.

Today, when some are attempting to create and exploit conflicts between teaching and research in universities, this last point is vital. Clark Bricker was a researcher of high quality. As a graduate research student, he contributed to the Manhattan Project during World War II. He created and cultivated widely-known research programs in analytical chemistry as a faculty member at Johns Hopkins University, Princeton University, and KU. Brick published more than sixty research articles in the chemical literature and supervised the research work of a dozen graduate students.

Brick therefore went before his classes, not as someone who had acquired his chemistry from other people's textbooks but as one of the creators of chemical knowledge. The authority with which he could speak, combined with the deep humanity of his approach, added up to an unbeatable combination. No amount of devotion or book-learning on Brick's part could have replaced his research experience, and no amount of technical expertise could have substituted for his own compassion.

Another of KU's legendary teachers, John Brushwood, has pointed out that what is called teaching and what is called research are simply two facets of the experience of learning. Learning is what everyone in a true university does, whether they are undergraduate students, graduate students, or faculty members. Clark Bricker personally exemplified, in the profoundly humane community he built with his students, how learning can be rigorous, productive, efficacious - and yet very joyful. --Richard Schowen

KU's 16th Chancellor Named

Robert Hemenway, chancellor of the University of Kentucky in Lexington, will become the 16th chancellor to oversee the University of Kansas.

Frank Sabatini, chairman of the Kansas Board of Regents, announced the appointment following a special meeting of the regents on January 7, 1995, at which the board unanimously selected Hemenway, 53, for the position.

Hemenway's selection follows a national search that began in June 1994 when Gene A. Budig, then KU chancellor, left the position to become president of baseball's American League. Budig, who began his official duties with the American League on August 1, had served as KU chancellor since 1981.

In addition to Hemenway, other finalists for the chancellor post were Lois B. DeFleur, president of Binghamton University, a campus of the State University of New York; Milton D. Glick, senior vice presi-

dent and provost at Arizona State University in Tempe; and R. Gerald Turner, chancellor of the University of Mississippi in Oxford.

Hemenway has served as chancellor of the Lexington campus since 1989. The main campus of the University of Kentucky includes eleven colleges with an enrollment of about 21,000 students and 1,000 faculty members.

During Hemenway's tenure, the Lexington campus has increased the number of National Merit Scholars enrolling in the freshman class from 12 to 82, has



Dr. Robert Hemenway

increased the average ACT score of entering freshmen from 23.9 to 24.8, and has seen a 26 percent increase in minority enrollment.

Hemenway has been the leader of an affirmative action program that resulted in the hiring of 48 tenure-track African American faculty, including the dean of education and the dean of human environmental sciences, and the hiring of 101 women faculty.

Two of the most significant fund-raising accomplishments under Hemenway's leadership have been \$45 million in capital projects, including a new civil engineering building and a new agricultural research farm, and \$35 million in private funds raised by Lexington campus colleges.

Hemenway was dean of the Kentucky Governor's Scholars program from 1984 to 1986, directing classes for 300 of the state's most academically talented high school juniors.

Former chair of Kentucky's English department and former dean of Arts and Sciences at the University of Oklahoma, Hemenway is best known for this biography of Zora Neale Hurston, an African American novelist, anthropologist and folklorist. With an introduction by novelist Alice Walker, the biography won a number of awards and was listed by The New York Times among its "Best Books of 1978." In 1991, a reprinting was included as a Quality Paperback Book Club selection.

A native of Sioux City, Iowa, Hemenway graduated from Hastings High School in Nebraska in 1959. He received his bachelor's degree from the University of Nebraska at Omaha and his doctorate from Kent State in Ohio. Hemenway's daughter, Robin, is a graduate student in American studies at KU.

Until Hemenway assumes his new position as KU chancellor, Delbert M. Shankel, KU professor of microbiology, will continue to serve as chancellor. (News release and photo provided by University Relations.)

Self-Study Project Completed

When the Chemistry Department faculty approached the dean and the associate dean of the College of Liberal Arts and Sciences James Muyskens and Sally Frost-Mason with a voluntary request for an external review, they were very surprised -- no one had ever volunteered to undergo this grueling, time consuming self-study and evaluation process. However, faculty members persisted in their belief that this type of internal and external calibration was critical for positioning the Department to move into the twenty-first century and that it was an important component in the Department's search for the next chair. In the end, the administrators agreed to the review. In March 1994, the year-long evaluation project began with the appointment of an *ad hoc* External Review Committee comprised of faculty members **George Wilson** (chair), **Daryle Busch**, **Tom Engler**, **Cynthia Larive**, and **Barbara Schowen**. Gary Grunewald, chair of the Medicinal Chemistry Department served as an external committee member.

The review project was executed in three stages: (1) an update of the Department's existing *Long Range Plan*; (2) a self-study which consisted of administering, and analyzing the results of three surveys designed by the committee to measure the perceptions and opinions of faculty, graduate students, and staff concerning current and future activities of the Department; and finally (3) a site visit by an external review team.

Stages 1 and 2 were successfully completed in September, and piles of information were prepared for distribution to faculty, University administrators, and reviewers. For the final stage, the deans invited two reviewers to visit the Department -- Royce W. Murray of the University of North Carolina at Chapel Hill and Kendall N. Houk of the University of California at Los Angeles. The external review site visit took place in mid-November, and for two days the review team toured the Department and visited with faculty, graduate students, and University administrators.

Houk and Murray's final report was submitted to Dean Muyskens in mid-December. Summarizing high-

lights from that report, the reviewers considered the collegial spirit of the Department to be admirable, particularly noting the balanced contributions made to instructional programs and administration by all divisions. The team noted that the twelve new faculty additions in the last decade were transforming the Department in a highly favorable direction, commenting further that each division had faculty members of distinction in graduate research activities and junior faculty making progress with their own research programs. In addition, they noted that the bioanalytical faculty group, in particular, was making especially important contributions to enhancing the international distinction of the Department. The reviewers praised the Department's dedication to the quality of its undergraduate instructional program and offered suggestions for further enhancement. At its request, the team visited the undergraduate laboratory spaces used for general and organic chemistry and found the facilities outdated and "deplorable." University administrators were strongly urged to support the Department's proposal for a new undergraduate teaching laboratory facility for the Chemistry, Biological Sciences, and Physics Departments. The reviewers also noted that there was a definite case for increasing the number of faculty and instructional support personnel in the Department, based on enrollment figures.

Our year-long evaluation project concluded early this spring with a discussion of the self-study and external review results with Dean Muyskens and Associate Dean Frost-Mason. Immediately following that wrap-up session, the Department proceeded with its next important project -- an internal search for the next Department chair.

Kristin Bowman-James Named Department Chair

Effective this June, Kristin Bowman-James will be chair of the Chemistry Department. Kristin came to KU in 1975 as an assistant professor and was promoted to full professor in 1987. Her research program involves the design and synthesis of organized macrocyclic systems to achieve molecular recognition and ultimately catalysis.

Highlights of Bowman-James' career at KU include a Faculty Participation Award for summer study at the Argonne National Laboratory; an extended collaboration with her late husband, Mathias P. Mertes, Jr., KU professor of medicinal chemistry, and Jean-Marie Lehn, Nobel Prize recipient in chemistry; induction into the University of Kansas Women's Hall of Fame; and an NSF Career Advancement Award which enabled her to take an extended sabbatical leave as a visiting professor at Caltech, where she worked on protein structure.

Kristin served as a member of the Metallobiochem-

istry Study Section of the NIH, 1988-92. She also served as membership chair for the Division of Inorganic Chemistry of the American Chemical Society, 1986-90, then continued as secretary of the division for the next three years. Recently, she was appointed secretary/treasurer of the Inorganic Division of the American Association for the Advancement of Science.



Kristin Bowman-James

Bowman-James was born in Philadelphia and received her bachelor's and doctorate degrees from Temple University in 1968 and 1974, respectively. During the last two years of her graduate research, she studied at the Israel Institute of Technology (Technion) in Haifa with her advisor, Zvi Dori. Interestingly, Kristin conducted postdoctoral research with our own Daryle Busch, who was then a professor of chemistry at The Ohio State University.

Among Kristin's extracurricular activities is her long standing interest in sports cars. She is frequently seen driving her '67 'vette roadster between home and campus. Kristin recently added drag racing (the legal kind) to her activities, an interest that she and her husband, Gary James, share. Gary has been her mentor on the finer points of maneuvering a "big block" rear engine dragster.

KAN-SYN Creates State's First Synthesis Laboratory

In August 1994, the NSF announced that nine states would receive one-year Experimental Systemic Initiative (ESI) awards. The awards -- ranging in amount from \$62 to \$454 thousand -- are a recently added element of the NSF's Experimental Program to Stimulate Competitive Research (EPSCoR). The ESI awards give the nineteen designated EPSCoR states the flexibility to initiate

short-term innovative projects and to respond to emerging opportunities; for example, to create an information network, or to take advantage of increasing industry-university collaboration in a particular area. This year the NSF received thirty-eight requests for ESI support, and ten of them were selected for awards through merit review. They include projects in Alabama, Idaho, Kansas, Kentucky, Maine, South Carolina, Vermont (jointly with West Virginia, Idaho and Arkansas), West Virginia, and Wyoming (two separate awards).

In Kansas, the NSF funded our KAN-SYN group's proposal *Unleashing the Power of Molecular Design and Synthesis for Science and Technology*. The total award

was \$610 thousand-- \$260 thousand federal funds and \$350 thousand non-federal match. The intention of this proposal is to create a statewide laboratory for the synthesis of research materials. This laboratory, known as the Kansas Advanced Synthesis Laboratory (KASL), will prepare specialized molecules for academic researchers and operate the state's only advanced synthesis laboratory to provide graduate students and postdoctorals with an initial experience in modern synthetic methods. Currently, laboratory space and start-up funds have been identified and the search for the new director is well underway. KASL operations are expected to begin by the summer of 1996.



Besides providing start-up funds for the synthesis laboratory, the ESI grant also provides funds for the enhancement of hardware and software for computer-aided molecular design. The vision of the *Molecular Science Electronic Highway* is to make real-time design and characterization of complex molecules and supramolecular systems a reality.

The Chemistry Department's KAN-SYN research network continues to expand from the eleven original group members awarded EPSCoR funds two years ago. Currently, this group has members conducting research in five departments at the state's three doctorate granting institutions. KAN-SYN now includes six undergraduate students, eight graduate students, six postdoctorals, and the following eighteen faculty members:

Kansas University: Jeffrey Aube (medicinal chemistry), David R. Benson, Robert M. Bowman, Daryle H. Busch, Thomas A. Engler, Richard S. Givens, Joseph A. Heppert, Kristin Bowman-James, Carey K. Johnson (chemistry), Tom C. Squier (biochemistry), Bala Subramaniam (chemical and petroleum engineering).

Kansas State University: Andrew S. Borovik, Eric A. Maatta, Charles G. Riordan (chemistry).

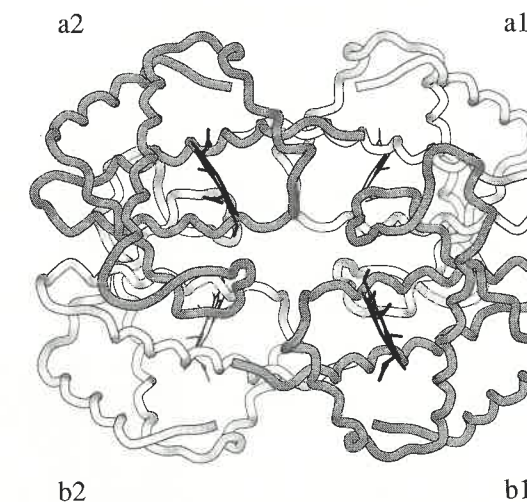
Wichita State University: Dennis H. Burns (chemistry), Pawan K. Kahol (physics), B. Jack McCormick, W.T.K. Stevenson (chemistry).

Workshop on Algorithms for Macromolecular Modeling

Computer simulations of large molecules such as hemoglobin or a strand of DNA may one day provide the keys to major breakthroughs in drug design and the development of novel materials. A major workshop held last fall (September 30-October 2, 1994) attracted many of the world's top experts in this burgeoning field to the new Kansas Institute for Theoretical and Computational Science (KITCS) at the KU campus for three days of in-depth presentations. Over ninety researchers attended the meeting, from departments of biochemistry, physics, chemistry, biophysics, biomedical engineering, computer science, pharmaceutical sciences, and mathematics. Several participants came from industry and the national laboratories.

The unusually broad range of disciplines represented at the meeting was a goal of the organizers **Krzysztof Kuczera** (chemistry) and Ben Leimkuhler (mathematics), who received sponsorship from both the Department of Energy and the National Science Foundation. "Our purpose was to bring modelers together with those developing numerical methods, software, and mathematical techniques to exchange ideas about all aspects of macromolecular modeling," Leimkuhler said.

One of the major themes of the meeting was protein folding, one of a select group of problems labeled a "grand challenge" by the National Academy of Sciences. The goal of protein folding is to determine the natural shape or "conformation" of a complex macromolecule, given the list of atoms making up the molecule and the forces that bind the atoms together. The problem is that starting from a purely mathematical formulation of the model leaves too many possibilities to search--even on



Hemoglobin--the oxygen transport protein in red blood cells

the fastest computers. The challenge was likened by one attendee to finding the holes in a golf course blindfolded, by sense of touch alone. The best approach seems to require optimal use of the most advanced computers, but tempered with a lot of good scientific intuition. With its unique interdisciplinary emphasis, the NSF-EPSCoR funded KITCS appears to be well-positioned to foster such broad-based efforts.

The Kansas Union got high marks for its well-run facilities. The weather was perfect for the event, and attendees commented on the beauty of the Lawrence campus and the charming downtown area.-- Larisa Martin, Department of Mathematics



Emeritus Professor Ralph Adams, (l) visited with Mike Weber (Ph.D., 1992), applications specialist at Cypress Systems, Inc., in the exhibit area during the Fourth International Workshop on Bioanalysis. The Kansas City Chromatography Group presented a session in which eleven companies demonstrated their products.

Scientists from Eight Nations Attend Workshop on Bioanalysis

Scientists from France, Sweden, South Korea, Ireland, Canada, Norway, and the United Kingdom were among those attending the Fourth International Workshop on Bioanalysis on July 10-13, 1994, at KU. K.C. Kwan, vice president of drug metabolism for MERCK presented the plenary lecture in which he outlined the shadow growing over the pharmaceutical industry and emphasized the need for more bioanalytical chemists. Other workshop lecture sections focused on microseparation systems, microdialysis sampling, mass spectrometry, biosensors, and high field NMR. There were also discussion sessions in which attending scientists participated in more informal exchanges.

Three Chemistry Department faculty members made presentations or conducted short courses at this year's workshop. **George Wilson** made a presentation on biosensors and *in vivo* monitoring of glucose, while **Craig Lunte** conducted a short course on microdialysis with Peter Kissinger (Purdue). **Sue Lunte** presented a paper on the pharmaceutical applications of capillary electrophoresis/electrochemistry and also lead a short course with John Stobaugh (pharmaceutical chemistry) on capillary electrophoresis.

Christopher Riley, CBAR director and organizing chair for the workshop, said the participants enjoyed the quality of the workshop presentations and the breadth of topics. "People liked the informal atmosphere and the opportunity for high-level discussions," he said.

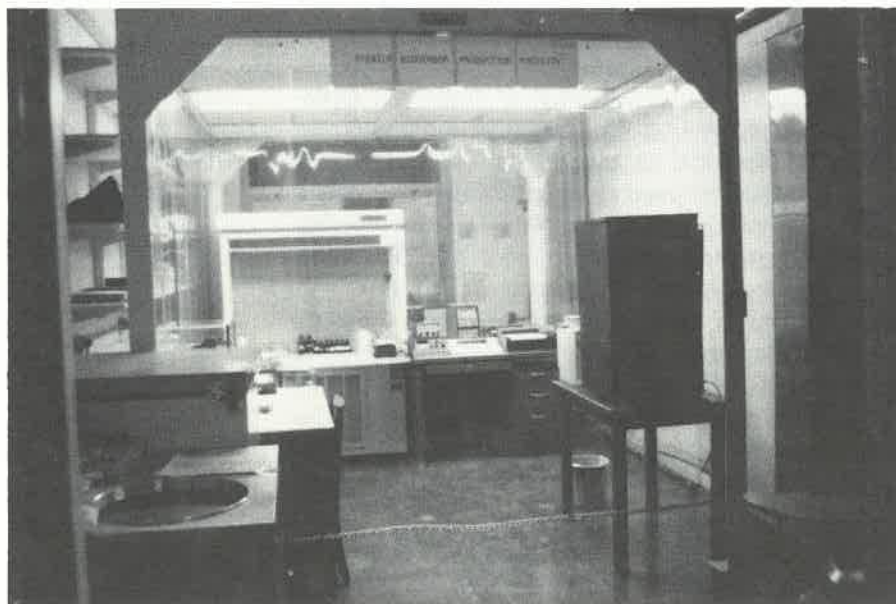
Sponsors for the event were Beckman Instruments, Bioanalytical Systems (BAS), Cydex, L.C., Elsevier Science, Ltd., Genentech, Inc., Glaxo, Inc., the Higuchi Biosciences Center, INTERx Research Laboratories, a division of MERCK, the Lawrence Visitors and Convention Bureau, Marion Merrell Dow, Oread Laboratories, Inc., Procter & Gamble, and Roche Pharmaceuticals.

A fifth workshop is scheduled for 1996. Those of you who are interested in receiving future mailings on that workshop should call Cynthia Beall, CBAR program assistant at 913/864-7328, or e-mail to beall@smisssman.hbc.ukans.edu. (Excerpts from an article appearing in *NEWS from HBC*, September 1994.

Biosensor Measures Glutamate Release in the Brain

George Wilson and Eli Michaelis (pharmacology and toxicology) have developed a selective, sensitive and rapidly responding *in vivo* glutamate sensor which makes it possible to measure the dynamic events associated with glutamate neurotransmission in the central nervous system. This patented sensor is an enzyme-based electrode which is 35 mm long and 0.8 mm in diameter.

Although research funds came from a number of other



The Chemistry Department's new sterile biosensor production facility

sources, this project arose from the Department's broader EPSCoR proposal entitled *Signal Transduction in Biology: Analytical Methodology*, of which Wilson and Michaelis are the principal investigators. "It's important to understand the fundamental processes that are going on in the brain and then find analytical methods to follow these processes," Wilson said.

The glutamate sensor can help research scientists determine how much glutamate is released, how it is processed, and in what quantity glutamate becomes destructive. In a clinical setting, the sensor might be used to determine the boundary of a brain tumor, pinpoint the site at which epileptic seizures begin, or identify the penumbra of a stroke.

"This sensor never would have happened," Michaelis said, "if we didn't have the combination of people we have here or if we were in another setting where people don't talk to each other." Research associates working with Wilson and Michaelis on development of this sensor

were: Kim Mitchell, a Marion Merrell Dow postdoctoral fellow studying mechanisms of aging, who recently completed her doctorate under the guidance of **Ralph Adams**; Yibai Hu, M.D., a postdoc with Wilson's research group whose work with biosensors is funded by NIH; and Fakhildean Albahadily (NSF MACRO-ROA, 1992), an alumnus of our Summer Research Program for College Teachers in Bioanalytical Chemistry and a chemistry professor at Central State University, Edmond, Oklahoma. (Excerpts from an article appearing in *NEWS from HBC*, January 1995.)

College Professors Attend Fifth MACRO-ROA Reunion

For chemistry faculty at colleges and universities which focus solely on undergraduate education, the lack of research equipment and huge teaching loads are real roadblocks to the development of research programs for



Fifth MACRO-ROA Reunion Participants

(l. to r., front) **James M. Chapman**, Rockhurst College, participated 1994, mentor **Richard Givens**; **Cynthia Larive**; **Jim Yu**, Central Missouri State University, participated 1989, mentor **George Wilson**; **Robert L. Zey**, Central Missouri State University, participated 1987, mentor **Robert Carlson**; **F.N. Albahadily**, Central State University, participated 1992, mentor **George Wilson**; **Richard Givens**; and **Ted Kuwana**. (l. to r., back) **Paul L. Weber**, Briar Cliff College, participated 1991, 1994, mentor **Sue Lunte**; **Allen van Asselt**, Bethel College, participated 1994, mentor **Ted Kuwana**; **George Wilson**; **J. Dennis O'Malley**, Haskell Indian Nations University, participated 1988, mentor **Richard Schowen**; **Thomas D. Bolden**, Alcorn State University, participated 1991, 1994, mentor **George Wilson**; **Edmund Shearer**, Fort Hays State University, participated 1993, 1994, mentor **Richard Schowen**; **Allen Hiebert**, Tabor College, participated 1992, mentor **Ted Kuwana**; **Mike Barbush**, Baker University, participated, 1989, mentor **Richard Givens**. Not pictured: **Rosemary Effiong**, Xavier University, participated 1994, mentor **Cynthia Larive**.

their undergraduate chemistry majors. So when thirteen alumni from our Summer Research for College Teachers program returned last fall for a two-day reunion organized by **Cynthia Larive**, program co-PI, an important topic of discussion was the impact of this NSF program on their teaching and research efforts.

A survey administered during the reunion by Dr. Larive verified that with the support and encouragement of KU faculty mentors, alumni of our summer research program were able to continue the new research projects at their home institutions with only a modest investment in hardware and chemicals. Throughout the academic year, most of the alumni had given presentations or presented posters about their research results at regional or national meetings or had students who participated in undergraduate research competitions. Several of the activities during the reunion weekend involved posters and presentations, which encouraged alumni to discuss their current research results with colleagues and mentors.

In addition to maintaining their research activities, many alumni reported that they are also involved in chemistry curriculum review and course development projects at their home institutions. Our survey showed that most respondents had been actively writing instrumentation, research, and faculty enhancement grant proposals, seeking funds to further expand their teaching and research capabilities. To support their grant writing efforts, one of the highlights of the weekend was a presentation by KU's Kevin Reed, assistant director of Research Support, entitled *Funding Opportunities for Research and Education*.

... This program has forced me out of my rut and broadened my horizons...

-- MACRO-ROA participant
Summer 1994

When asked how the summer research experience had influenced their professional development, one survey respondent, who had just completed a second summer in the program, best summarized its impact with the following statement:

Career "burnout" results when a professional does the same old things, the same old way and has no motivation for change or intellectual growth. This program has forced me out of my rut and has broadened my horizons. In addition, it has brought home to me how much I don't know about chemistry.

Carnival of Chemistry

They oooh-ed and aaah-ed and wow-ed! They roamed the main floor of Malott with balloons, bags of take-home goodies and bright, excited faces. They saw, experienced and even learned a little chemistry. Who were "they"? -- the over 800 participants of all ages at the first Carnival of Chemistry held November 13, 1994, in celebration of National Chemistry Week. The family event was free and advertised through the Lawrence elementary schools. The day was sponsored by the KU section of the American Chemical Society (ACS).

The event was a huge success. Glowing remarks came from parents, children, teachers, and KU faculty. Phone calls of thanks were received in the Chemistry Department. Comments such as "fun," "great success," "clever ideas," "well-organized," "lots of people," "who did all this work?" and "do it again!" were made.

tor), Tonya Dombrowski (advertising), Martha Morton (building coordinator) **Ken Ratzlaff** (KU ACS chairman), **Grover Everett** and **Albert Burgstahler**. How-



"Picture Yourself as a Chemist" was a popular activity with Carnival participants.

ever, hard work, creative ideas, and many hours were contributed by faculty, students, chemists, and community members too numerous to mention. Karen Johnson charmed and encouraged over seventy eager volunteers to participate. The enthusiastic response included individuals from KU's Departments of Chemistry, Biological Sciences, Geology, and School of Education, INTERx/MERCK, Oread Labs, FMC, Lawrence Technologies, Kansas Department of Health and Environment, the Environmental Protection Agency, Lawrence Arts Center, Haskell Indian Nations University, and the community of Lawrence. The gathering of so many people wanting to share the excitement of science was truly an achievement.

Major financial support for this carnival was received from INTERx/MERCK and the KU section of the American Chemical Society. Great cookies were donated by HyVee, and the Rent-To-Own Center delivered a television/VCR for the day. Other contributions were received from *Sigma Xi*, Walmart, Checkers, Dillons, Procter and Gamble, the KU department of physics, the KU Bookstore, and Hobby Lobby.

The most popular activity was a chemistry show entitled *Cold Things, Hot Things and Between*. The show was planned and directed by Grover Everett and Jack Landgrebe and presented by the KU ACS undergraduate affiliate chapter. Originally three

shows were scheduled, but the demand was so high that five shows were given, each filling room 2001 to capacity. The look on Jack Landgrebe's face was indescribable when he was told, "We've got to add another show!" The undergraduates were losing their voices by the time they were done. It's fortunate that Grover Everett had a track scholarship at North Carolina--he ran from the re-



Cynthia Larive's daughter, Erin, sports her new "Ms. Beaker" chemistry face motif, while conducting her "Cabbage Chemistry" experiments.

ception in honor of his teaching award (see page 20) to Malott Hall, then ran up and down (many times) from the laboratory to the auditorium with more chemicals for yet another show!

Jack Landgrebe was the creator of the impressive glassware exhibit in the display case outside of the chemistry office. The exhibit was part of a contest called "Name That Glassware." There were sixty-seven contestants, and twelve prizes were awarded. The exhibit managed to challenge most of the chemistry faculty.

The "Charge-It" room had a fascinating display set-up by Albert Burgstahler with the "Mercury Beating Heart" and several clocks "plugged into" fruits, potatoes, and solutions of salt. Cynthia Larive astounded visitors with a glowing pickle and an electrochemical cell. Graduate student Alexander Kolchinskii performed a beautiful copper plating demonstration.

Many people were at-

tracted to "Fun with Magnets." They discovered iron filings in breakfast cereal, played with floating magnets, went fishing for magnetic objects, observed magnetic rocks, and magnetic fields. They could even make a beautiful refrigerator magnet for use at home.

In the "Weight and Density" room, coordinated by Al Lata, you could weigh and take home a weepul, play with density divers, and predict the density of objects by dropping them into a density column.

Other hands-on activities included making "silly putty," investigating the pH of household substances using red-cabbage paper, making gum drop molecular models, and creating beautiful chromatography butterflies from coffee filters and a black pen.

The cookie walk introduced the periodic table of elements; the prize was a cookie complete with a chemical symbol of the winning element. You could go "Fishing for Chemicals" and catch a prize labeled with its chemical structure. You might also have been ready to put your feet up in the conference room and watch videos of chemical demonstrations, careers in chemistry, and the history of chemistry. The face painters created many smiling faces with wonderful little chemistry motifs such as "Ms. Beaker", and "Mr. Bunsen Burner" and rainbows. (The face painters will swear that we had at least 8,000 participants that day!) On their way out, participants could pick up a balloon and learn about Dr. H.P. Cady's discovery of helium in natural gas (KU, 1905), buy a T-shirt and pose for "Picture Yourself as a Chemist" by donning safety glasses and lab coat for a Polaroid snapshot.

The Carnival of Chemistry was a wonderful way to bring together children and the scientific community and to celebrate National Chemistry Week. The message of the day was clear. "Chemistry is Fun and Chemistry is Everywhere!" --Kathy Heppert, chair, Carnival of Chemistry



Chemistry Carnival participants "packed the isles" for five chemistry magic shows presented by the Department's ACS undergraduate affiliate chapter!

The success of the Carnival can be attributed to a dedicated and well-organized planning committee consisting of Kathleen Heppert (chair), Karen Johnson (volunteer coordinator), **Jack Landgrebe** (safety coordina-



A "Name That Glassware" exhibit challenged Carnival goers, as well as chemistry faculty.



The Dream

Budig Hall (formerly Hoch Auditorium, gutted by fire in 1991) is scheduled for completion in July 1996. It will include a 1,000-seat lecture hall, two 500-seat lecture halls and a testing commons. The total budget for the project is \$21.8 million.

(Artist's drawing provided by University Relations)

The Reality

A view of the construction site, looking northwest from the top of Malott Hall. A two-level, 49,000 sq.ft. Maps and Government Documents Library which would have housed more than 30,000 maps and 900,000 documents was planned for the basement, but due to the budget short-fall of \$4 million it has been indefinitely postponed. This leaves the Chemistry Department without the much hoped for sixth floor expansion space. In the first stages of construction, more than 5,000 truckloads of dirt were removed from the site to create a hole about 30 ft. deep.



Business Changes on West Campus

In December 1994, Oread Laboratories, Inc., was purchased by David Kimbrell, a local businessman. The company, which employs about ninety people and is located in the Oread West Research Park, was founded in 1983 as a commercial outlet for technologies developed at the Higuchi Biosciences Center for BioAnalytical Research. Kimbrell plans to expand upon the company's existing pharmaceutical analysis expertise and to add environmental analysis services as well.

A second change took place in January 1995 when

MERCK & Co., closed INTERx Research Corporation, a drug delivery research company located near McCollum Laboratories on KU's west campus. INTERx was originally created in 1972 by the late Professor Takeru Higuchi through the support of the KU Endowment Association (KUEA) and a group of investors, then purchased by MERCK in 1980. KUEA, which retained ownership of the property, is currently working with the Kansas Innovation Corporation to find a new occupant for the facility. MERCK officials cited the desire to focus resources on the company's primary mission of discovery and development of new medicines as the reason for the change. INTERx employed about fifty people.

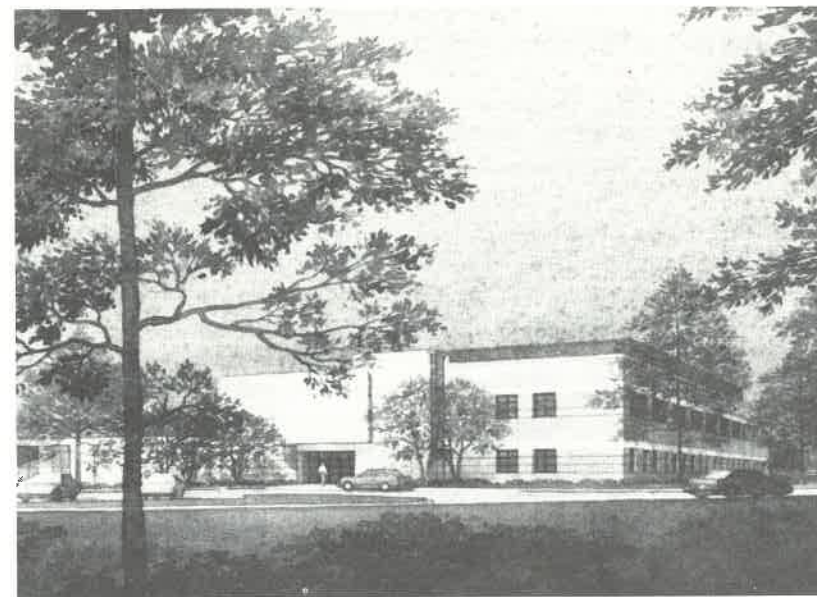
Construction of New Research Building Underway

Work is under way on the \$8.95 million Dolph Simons Sr. Center for Bioscience Research. The building is named in honor the late editor and publisher of the Lawrence Journal-World.

The new building is being constructed on the Lawrence west campus as part of the Higuchi Biosciences Center of Excellence. It will provide research space for the University's nationally recognized pharmaceutical and biochemical programs. The facility will house laboratories, offices, and lab support space and will bring Higuchi researchers to one location.

The building is being funded by grants totaling \$4.9 million from the National Cancer Institute and a special state-approved revenue bond fund of \$4.05 million, which KU will repay. The building is expected to be complete and ready for occupancy in Fall 1995.

The Higuchi Biosciences Center comprises Centers of Excellence for biomedical research, bioanalytical research, and drug delivery research. The center is named in honor of the late Takeru Higuchi, University Regents Distinguished Professor of chemistry and pharmacy at KU from 1967 until his death in 1987. *(Excerpts from a June 1994 University Relations press release.)*



Artist's drawing courtesy University Relations

The Dolph Simons Sr. Center for Bioscience Research



(1 to r) Jack Rose and John Lawrence (back) with Evelyn Goodrich and Orlena (Williams) Carr (front) at Jack's retirement reception.

Jack Rose Retires

After thirty-three years of dedicated service, Jack Rose has retired as director of laboratories. Jack, a Lawrence native, attended KU on a Navy ROTC Scholarship and graduated in 1953 with a degree in industrial management from the School of Business.

In June of that year he entered the Navy as an ensign in the supply corps. Before his release to inactive duty in May 1956 as a lieutenant (j.g.), he served on two ships as a supply and disbursement officer.

From July of 1956 until May 1960, Jack worked for the Reynolds Metals Company in Sheffield, Alabama, as assistant purchasing agent in their reduction plant. He then decided to return to Lawrence and obtained a transfer to the Reynolds Metals Kansas City Sales Office.

On March 1, 1962, Jack began working for the Chemistry Department as director of laboratories. At that time the various operations of the Department relating to the proper function of the undergraduate and graduate laboratories were in need of major overhaul. Jack installed efficient inventory, purchasing, and budgeting systems. His open and friendly manner of dealing with the faculty, staff, and students made

him an important contributor to the pleasant working environment we maintain in the Department.

On March 2 in the Malott Room of the Kansas

Union, the Chemistry faculty and staff held a reception and buffet for Jack, recognizing his highly valued contributions to the welfare of the Department. Short talks about Jack (none serious in vein) were made by Rich



While Paul Gilles looks on (far left), Jack Landgrebe presents Jack Rose with the "Distinguished Plumbing Award" to honor Jack's exceptional creativity in plumbing the sixth floor still.

Givens, Paul Gilles, and Jack Landgrebe of the teaching faculty, Susan McAfee of our business office, and also by a number of Jack's friends from the community. Final remarks were given by Jack's daughter, Leslie. It was a most enjoyable occasion.

Jack and his wife, Martha, will remain in Lawrence. Martha plans to continue to play an active role in the Girl Scouts, the Docents of the Spencer Art Museum, the Bromelsick Committee, and the Presbyterian Church. Jack will be spending more time in the country in his basement metal-working shop and foundry. He is skilled in fashioning works of art from silicon-bronze.--Jake Kleinberg

Statewide EPSCoR Conference Builds Research Potential, Competitiveness

About 110 people attended *The Road from Basic Research to Commercialization*, the statewide conference sponsored by K*STAR, the Kansas Science and

Technology Advanced Research Program. K*STAR is a National Science Foundation (NSF) EPSCoR program focused on increasing Kansas' competitiveness for federal research grants. EPSCoR, which means Experimental Program to Stimulate Competitive Research, is administered by KTEC, the Kansas Technology Enterprise Corporation. The Chemistry Department currently has four cluster programs funded by EPSCoR: *The Kansas Program for Molecular Design, Synthesis and Applications of Macromolecular Materials and Supramolecular Systems*; *The Kansas Ultrafast Spectroscopy Program*; *Signal Transduction in Biology: Analytical Methodology*; and the *Kansas Institute for Theoretical and Computational Science*.

This October 1994 conference brought together people interested in building Kansas' potential in basic and applied research and in commercializing the products of that research. NSF representatives, academic researchers, business people and industrialists, and people from state agencies involved in research and technology and economic development gathered in Topeka for the two-day meeting.

Topics such as grant development strategies, the role of basic research and EPSCoR, and technology transfer covered a range of issues important to those with research and commercial interests.

"This conference was an ambitious attempt to bring together leading university researchers and successful corporate entrepreneurs," said Ed Abbott, an NSF consultant and chemistry professor at Montana State University. "These ties will improve competitiveness within Kansas universities and industry and will result in a stronger state economy."

Jim Hoehn, from the NSF EPSCoR's Office of Systematic Reform, said the well-organized meeting met its intended purpose to give academic scientists the chance to assess their accomplishments under EPSCoR.

"They described in impressive detail their achievements within their EPSCoR clusters," said Hoehn. "The meeting was a successful effort to enable researchers to interact with those outside their own universities and with those in the private sector."

Hoehn praised **Ted Kuwana**, K*STAR director, for his efforts to develop a strong EPSCoR program. "I'm impressed with Ted's commitment to diversifying the people in Kansas who participate in EPSCoR and to reaching out to involve state legislators in EPSCoR programs," said Hoehn.

"The appointment of Sally-Frost Mason, associate dean of KU's College of Liberal Arts and Sciences, as associate director of this program is another indication of the desire and determination of K*STAR to make the EPSCoR program work for the state."

Both Abbott and Hoehn view K*STAR as a model in some respects in its ability to focus on making fundamental research relevant to the private sector and to the state as an avenue for wealth creation.

"I think K*STAR is a model program," said Abbott.

The conference will return to KU in the spring of 1998.



Philip Boudjouk, North Dakota ASCEND/EPSCoR Project Director (left); Jim Hoehn, NSF EPSCoR Program Manager; and Ed Abbott, NSF EPSCoR Consultant, participated in the 1994 statewide EPSCoR/SBIR Conference.

"When visiting other states, I often use it as a prime example of a well-designed and well-run program. K*STAR is facing an enormous task, but I am confident it will prove to be one of the most successful EPSCoR programs."--Billie Archer, K*STAR program coordinator

Kansas College Teachers Conference

KU Chemistry Department alumnus Dale Hawley (Ph.D., 1965), now head of the Chemistry Department at K-State, hosted this year's Kansas College Chemistry Teachers Conference, March 17-18, in Manhattan. The focus of this year's conference was multimedia in chemistry.

Four KU chemistry faculty were participants at this year's conference. During the Friday session, **Jack Landgrebe** served as moderator of a panel discussion: *Should we abandon the more traditional organic textbooks?* At the Saturday session, presentations were made by **Barbara Schowen** on *Undergraduate advising*, **Grover Everett** on *Emphasizing concepts in general chemistry*, and **Albert Burgstahler** on *Advantages of teaching pH-species distribution curves of weak acid-weak base systems in general chemistry*.

J.K. Lee, KU Chemistry Department professor, organized the first Kansas college chemistry teachers conference in the spring of 1973. The conference convened at KU each spring for the next three years before starting to rotate among the state's universities and colleges, with the fourth conference taking place at Wichita State.

Health Careers Pathways Program

The Health Careers Pathways program (HCPP) is an eight-week summer program designed to enhance the academic skills of minority students who hope to become medical doctors. Activities include diagnostic testing, skill development in reading and communication, and course instruction in mathematics, the basic sciences, and English. Each year the program adds about ten new students, and over the years, students in this program have included all four of the recognized minority groups in the U.S.

The Chemistry Department has participated in this summer program since its beginning in 1987. The Chemistry curriculum is taught at three levels: (1) a

preparatory course for students who will enter college and take general chemistry the following fall, (2) a course for students who have completed a college-level course in general chemistry and who need review and preparation for organic chemistry, and (3) a tutorial-format review of both general and organic chemistry for students preparing to take the MCAT exams. **Clark Bricker**, **Grover Everett**, and **Earl Huyser** taught courses in this program with the assistance of graduate students Martha Morton, Nancy Eilerts, and Phil Colombo.

Grover Everett, who taught from 1987 through 1992, has seen an improvement in both motivation and abilities of students in the program over the years. Some of these students are not fully aware of the difficulty in gaining entrance to medical school, as well as the in-depth nature of the curriculum they will face. A considerable portion of class time at the beginning of the summer is devoted to study techniques and frank discussions of long-range personal goals, motivation, and self-confidence.

This summer session is only one of a number of program activities offered year-round. This program is funded by a grant from the U.S. Department of Health and Human Services, Division of Disadvantaged Assistance, to the University of Kansas Medical Center. It is offered at no cost to minority students. For information about participation in this program contact Amber Regan-Kendrick at KU's Office of Minority Affairs, (913) 864-4351.

Bailey Hall Placed on Kansas Historic Register

Bailey Hall has stood patiently for ninety-five years and finally it was recognized as being one of the important buildings in the state when it was added to the Kansas Register of Historic Places on February 25, 1995. Bailey Hall brought fame and fortune to the University of Kansas when it housed the Department of Chemistry from 1900 to 1956. The State Food Laboratory of Kansas operated in this building from 1906 to 1920. It was through the research of the Chemistry Department that the state's pure food and drug law was passed in 1907. The research scientists who studied in Bailey and later became leaders in their fields throughout the world: Robert Kennedy Duncan who later founded the Mellon Institute of Industrial Research; Edward C. Franklin who became president of the American Chemical Society; Edwin C. Slosson who founded the Science Service for the popular dissemination of scientific information, and Elmer V. McCollum who discovered Vitamins A and C. In 1903, one of the first liquid air machines in the country was installed, making possible Professor H.P. Cady's isolation of helium from natural gas, an outstanding discovery of the twentieth century.

Bailey Hall was named for Professor E.H.S. Bailey, who came to KU in 1883 as a one-man show. He taught general chemistry, qualitative analysis, quantitative analysis, organic chemistry, assaying, mineralogy, metallurgy, blowpipe analysis, toxicology, physiological chemistry and materia medica. Two years after his ar-

rival, perhaps out of sheer enthusiasm, he added a course in domestic and sanitary chemistry. KU thus became one of the first universities to offer a course in the practical applications of chemical principles to everyday life. Out of this course came the Department of Home Economics. The origins of the Departments of Geology, Chemical Engineering, Pharmacy, and the Kansas Geological Survey also began in this building.

Bailey Hall is the only building left standing on the KU campus designed by John G. Haskell, a well-known architect of that era. Together with Professor Bailey, Haskell toured the country visiting and examining chemical laboratories of large universities. The result was the most modern and practical building for chemical and pharmaceutical work west of Chicago. The Kansas legislature of 1897 cut the request of \$80 thousand to \$55 thousand, making it necessary to leave off everything that had been planned for architectural effect. The contract price of the building was \$38 thousand, leaving \$17 thousand for equipment and other expenses.

The material used for the outside of the building was native limestone, laid in horizontal courses with recessed pointing. A large portion of this stone was quarried on location as the upper courses of rock were removed in order to obtain a solid foundation on the lowest of a series of ledges. Some of this stone was of a light color, while others were yellowish from iron oxide. The yellowish stone was used on the back side and also for interior filling. One of the most distinctive features of the building were the thirty-two brick chimneys.

At the dedication services for the School of Edu-

cation in October 1956, Chancellor Franklin Murphy said, "Bailey Hall has served this university and this nation as an extremely productive center for the development of chemists and pharmacists who have gone to the four corners of this state and this nation to reflect

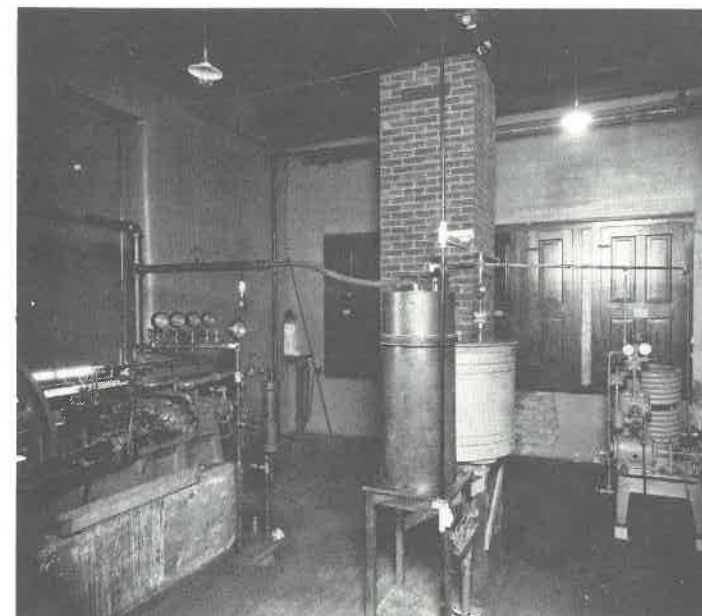


Photo Courtesy University Archives

This liquid air plant in Bailey Hall is where helium first was isolated by Professor H. P. Cady

credit upon themselves and their university. It is heartening then to realize that Bailey Hall will continue to have impact on the lives of the university family, albeit without the stacks. For although the same stone walls stand as firmly as in yesteryear, a new building has been constructed within these walls."--Carolyn Berneking, granddaughter of E.H.S. Bailey and KU Archives volunteer.

KU Chemistry in CyberSpace

The KU Chemistry Department can be found in "cyberspace," both with e-mail and in a developing site in the world-wide web.

First, **Electronic Mail**. Any faculty member and most staff members can be located with an e-mail address in which the username consists of the first initial and last name and the hostname is CaCO3.chem.ukans.edu (that's rock-chalk, of course). So, to find Grover Everett, use

geverett@caco3.chem.ukans.edu

or for Kristin Bowman-James, use

kbowmanjames@caco3.chem.ukans.edu

On the world-wide web the site is under development but will be unclocked this summer. To view, connect to our home page and navigate from there. (If you don't know what that means, ask your kids or your local guru.) The Chemistry Department home page is:

<http://www.chem.ukans.edu/chem/welcome.htm>

At this location, you will soon find the following: (1) information about the research program for each faculty member, often with a relatively current photograph, (2) undergraduate curriculum description and degree requirements, (3) graduate degree requirements, (4) descriptions of the Analytical Resource Labs, their personnel, and their capabilities, (5) probably a phone book, and (6) a glorious full-color image of the *ChemHawk* drawn by alumnus Uma "Pop" Sampath.

Endowed Lectures

The Chemistry Department presented three endowed lectures during the 1994-95 academic year. The first lecture, the Forty-seventh Annual Frank Burnett Dains Memorial Lecture, was given by Professor Francois Diederich who is currently chair of the Laboratory for Organic Chemistry at the Swiss Federal Institute of Technology (ETH), Zurich, Switzerland. His lecture, on October 5, 1994, was entitled *Synthetic Receptors and Synthetic Enzymes*.

On February 14, 1995, Professor C. David Gutsche of Texas Christian University gave the Eighth Annual Ray Q. Brewster Lecture. Dr. Gutsche's lecture was entitled *Protean Life of Calixarenes*.

Dr. J.L. Skinner, University of Wisconsin at Madison, gave the Arthur William Davidson Lecture on March 15, 1995. Skinner's presentation was entitled *Probing the Dynamics of Disordered Crystals: Spectral Diffusion of Individual Molecules*.

Reflections of a Fulbright Scholar

When I sat down to write a short article about my living and research experiences in Sweden, I absolutely didn't know where to begin. There are many aspects of this trip that I could write pages about. For this article, I will focus on my daily life and maybe a few other interesting highlights of this study abroad experience.

I perform my research in microdialysis in the Department of Clinical Pharmacology at the Karolinska Institute (KI), a teaching hospital about 20 km south of Stockholm. To arrive at KI, I first take a bus from my

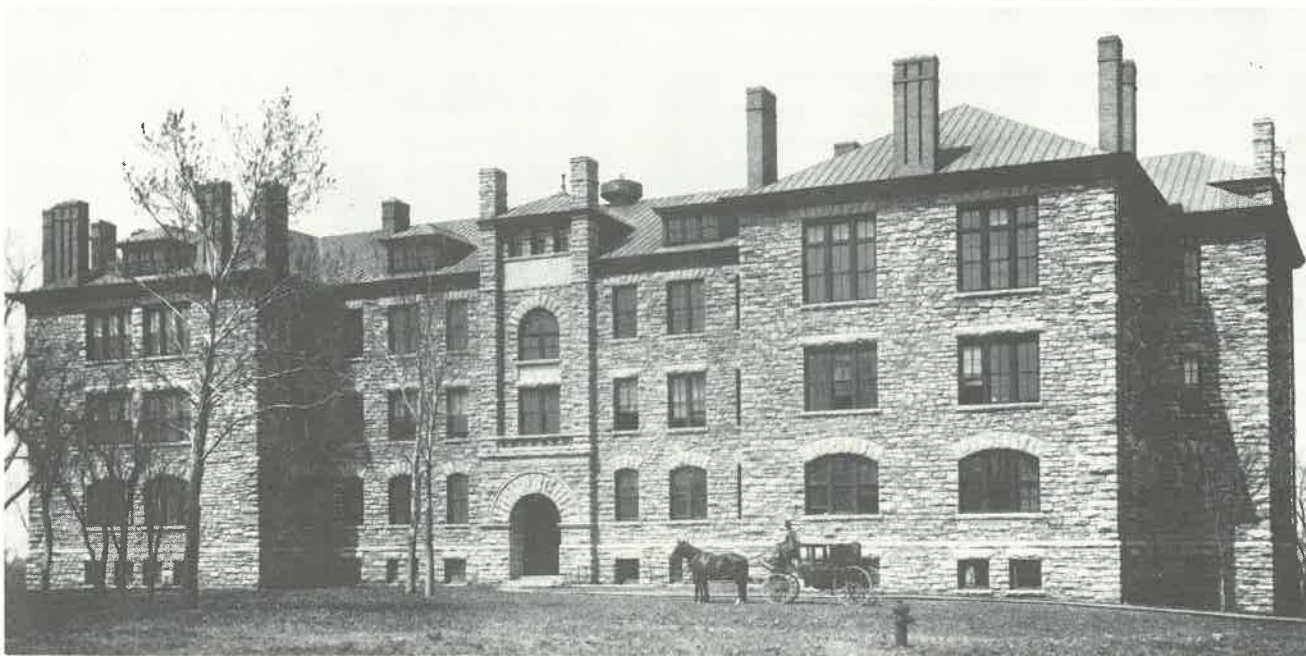


Photo Courtesy University Archives

Bailey Hall in its early days was distinguished by its many chimneys, which vented chemical work areas in the labs. The building opened in 1900.

home to the subway. From the subway, it's on to Central Station where I change to a regional train which takes me to the hospital stop. The entire commute takes one hour. Occasionally, I long for the days when I could roll out of my bed, hop on my bike, and arrive at Malott Hall in five minutes! Public transportation is relatively inexpensive in Sweden. A regional commuter system pass allows unlimited travel for approximately \$50 per month.



Julie Stenken

It takes five to seven years to complete a doctorate degree here. Students spend the vast majority of their time working on research, since coursework is virtually nonexistent. At KI, a student is required to take only two seminar courses on various subjects. Each course lasts five days with approximately eight hours of instruction per day. Recently, a course in pharmacogenetics was team-taught by various experts from around the world. It is interesting to note that grades are state property in Sweden and thus are available to the public and the press. Even King Carl XVI's grades were published in Swedish newspapers!

At the time of the final defense, the Swedes very much enjoy having a quality scientific discussion of the dissertation being presented. Two weeks before the defense, the dissertation is made available in book form and must contain the required four research papers published in peer-reviewed journals, in addition to the two more submitted manuscripts. This allows the scientific community to come to the defense prepared with questions or comments.

The defense begins with a faculty opponent giving a 30-45 minute overview of the thesis and its importance to the scientific community. This is similar to E.J. Corey presenting an organic chemistry student's dissertation! After this introduction, the questions from the faculty opponent begin with the first paper and continue until all questions have been answered on each paper. The process generally takes about three hours. Then, the committee and the scientific audience are allowed to ask questions.

Besides the research, there is plenty to do and see around Stockholm. The Fulbright commission takes area Fulbright scholars to at least one cultural event each

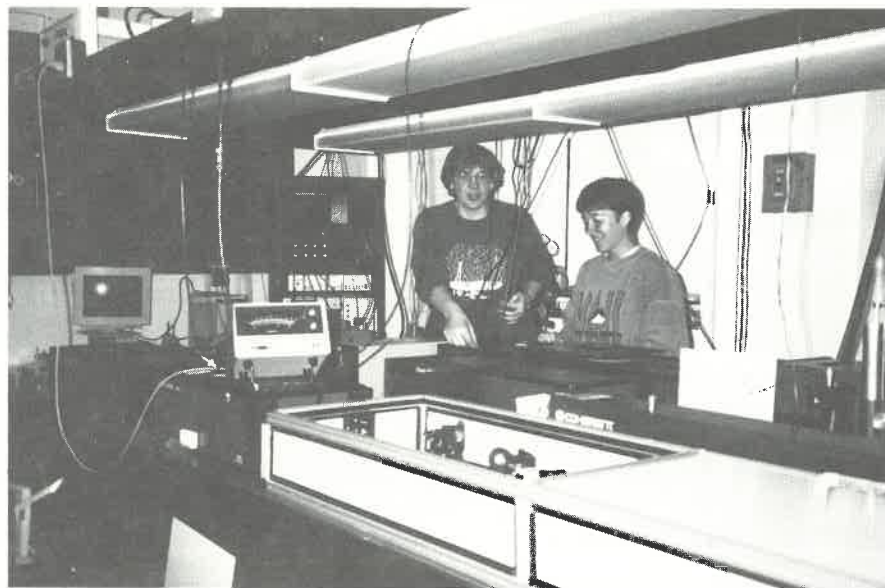
month. I was especially grateful for the opportunity to observe the Nobel Prize ceremonies at the Stockholm Concert Hall on Nobel Day.

To close, it is the nineteenth of March and officially we had twelve hours of light today. Since January, a cartoon after the Sunday evening news reports the amount of light gained in the morning and evening in the cities of Lund, Lulea, and Stockholm. Winter is long and hard for the Swedes, and you can feel a winter depression that begins in November. It has only been in the last month that I have witnessed people waking up to spring. So from almost 60 degrees N latitude, I say "Hej da, har det bra!" (Hey there, have it good!) -- Julie Stenken, Fulbright scholar.

New Lasers On-Line

To a science novice, it looks like a pulsing, horizontal, Christmas decoration or the movie set laboratory used in the film "Real Genius," but it's really our ultrafast laser group's new, high-powered, state-of-the-art Ti:sapphire laser system, which produces one hundred femtosecond pulses of light for the study of molecular energetics. "This new equipment puts us in the forefront of laser technology," said Bob Bowman, assistant professor and physical chemist. Located in the basement of Malott Hall, this new laser is part of \$250 thousand in equipment purchased with funds provided by the group's NSF EPSCoR proposal, *The Kansas Ultrafast Spectroscopy Program*.

Carey Johnson, Robert Bowman, Thomas Squier (biochemistry) and their research groups use this new laser to study such areas as charge carrier dynamics in semiconductor nanocluster materials, the ultrafast dynamics of molecules in solution, the fast reorientation of molecules in supercritical fluids, two photon fluores-



Graduate students Kirsten Roussel (l) and Erica Larson (r) with the new Ti:Sapphire Laser

cence excitation and more. "This new laser has greatly expanded the range of materials that we can study," said Kirsten Roussel, a fourth-year graduate student in Bowman's research group. The many exciting new research possibilities of the ultrafast program encouraged several prospective graduate students to join the Department's physical chemistry division during our recruiting period last spring.

Future plans for the ultrafast group include a regular graduate course in laser-based kinetic studies offered for the first time this fall as *Special Topics in Ultrafast Spectroscopy*, with Bowman and Johnson serving as co-instructors. In addition, the group is hoping for continued support from a new EPSCoR proposal submitted to the NSF which joins the ultrafast group and the KAN-SYN group on a new project entitled *Design, Function, and Dynamics of Supramolecular Materials*.

Expanding Horizons

For the second time during this academic year, hordes of young students were packed into Malott and Haworth Halls. This time they were here for the *Expanding Your Horizons in Science and Mathematics Conference*, one of over 120 such conferences held nationwide each year to encourage young women in the fields of science and mathematics. Participants included 206 girls and eight boys in grades six through eight and 57 adults. Most came from the eastern Kansas school districts, although several were from Wichita and as far west as Great Bend. The goals of the conference, held on January 25, 1995, were to increase the participant's interest in science and mathematics, foster an awareness of career opportunities in each field, and to form personal contacts in these areas.

Margarita Gurri Glass, president of the National Council of Hispanic Women (NCHW), National Chapter, presented the keynote address, which was followed by breakout sessions comprised of four adult sessions, twenty-nine hands-on workshops, and twenty-one career discussion sessions. Conference sponsors included KU's divisions of Biological Sciences and Continuing Education, K*STAR EPSCoR, the College of Liberal Arts and Sciences, and the Office of Academic Affairs, just to name a few.

Is there a Loch Ness Monster?, Wet and wild, and How do they fly? were just a few of the hands-on workshops that explored areas such as marine and freshwater biology, hydrogeography, and aerodynamics. Chemistry Department graduate students Rebecca Roesner and Erin Smith headed up a workshop entitled *T-shirt chromatography*, helping students create patterns on T-shirts using the principles of chromatography. Another group comprised of Kathy Heppert and Karen Johnson (orga-

nizers of our Carnival of Chemistry), Tonya Dombrowski, graduate student, and Martha Morton (Ph.D., 1993) from the NMR Laboratory, wow-ed them with the properties of polymers in the *Monster Molecules* workshop, when they made rubber balls, slime, and nylon. Dawn Drass, an analytical chemistry graduate student, demonstrated HPLC for a session on drug metabolism and the human body entitled *Where does it go?*

With titles like *Does that compute? Big money!*,



Graduate students Rebecca Roesner (center back) and Erin Smith (bulls-eye T-shirt) help conference participants with T-shirt chromatography projects.

Everybody's business, and Is there a doctor in the house? career session participants were exposed to career opportunities in the field of computer science, economics, business, and medicine. Chemistry's Cynthia Larive was involved with a workshop exploring the work of the professional chemists and how what they do affects our daily lives in a discussion entitled *React with a chemist!*

Other Department graduate students, namely Kirsten Roussel, Erica Larson, Steve Pauls, and Katherine Prater, performed essential behind the scenes work in planning and on facilities. All helped to make this conference a huge success, and a good time was had by all who attended.

Faculty Recognition and Awards

Kuwana Receives Midwest ACS Award

A highlight of the 29th American Chemical Society Meeting held in St. Louis last November was the presentation to Ted Kuwana of the 50th Midwest Award. Ted is the sixth KU faculty member to receive this award. The previous KU faculty to be honored in this manner

were: Ray Brewster (1957), Tak Higuchi (1975), Ralph Adams (1979), Jacob Kleinberg (1983), and Richard Schowen (1992). Robert D. Coghil, a Department alumnus who received bachelor's and master's degrees from KU in 1921 and 1922, respectively, was also honored with this award in 1949.

Ted's scientific history in the Midwest region began in 1956 when he came to Kansas from Cornell University to pursue his doctorate degree under the guidance of Buzz Adams. He returned to KU in 1985, when he accepted the Regents Distinguished Professorship of chemistry and pharmaceutical chemistry at KU, the chair previously held by Takeru Higuchi. Since 1985, Ted has continued his highly regarded scientific studies in electroanalytical chemistry and has since added to his accomplishments new developments in bioanalytical chemistry. He has published over 190 papers in the areas of analytical and bioanalytical chemistry.



Ted Kuwana

Beyond his personal scientific achievements which are numerous, Ted was recognized with the C.N. Reilly Award in Electroanalytical Chemistry from the Society for Electroanalytical Chemists in 1989 and an Honorary Membership and Medal from the Japanese Society of Analytical Chemistry in 1991. Ted has contributed greatly to the progress of bioanalytical chemistry in general and in particular to its development in the Midwest region. His leadership and scientific example in the Center for Bioanalytical Research (CBAR) at KU have brought international attention to the Midwest for this burgeoning field. His leadership, industry, and persuasive presentations to his peers have made possible the establishment of the \$9 million K*STAR program for

Kansas funded through the NSF Exploratory Program to Stimulate Competitive Research (EPSCoR). This effort will have a significant effect on the quality and competitiveness of the research programs at Regents institutions of higher education. Ted's service as a member of the Kansas Technology Enterprise Commission's (KTEC) board of directors has been influential in linking research efforts in Kansas educational institutions to the private sector, in order to further economic-development activities in the state.

Finally, Ted has had an exemplary career as a mentor. He has twenty-seven former students who are now in academic positions, an impressive record by any measure. The success of his students, both in academia and in industry, is perhaps the best measure of his ability to mentor young, independent-minded scientists.

Ted Kuwana began his scientific life in the Midwest region, left to establish his reputation as a creative researcher and stimulating mentor, and a decade ago returned to serve KU, the state of Kansas, and the Midwest region as an inspiring and influential scientific leader. He is a most deserving recipient of this award.

Kuwana to Receive ACS National Award

The Department was notified on March 27, that Ted Kuwana has been selected as the 1995 recipient of the ACS Division of Analytical Chemistry's highest honor, the AWARD IN ELECTROCHEMISTRY, sponsored by EG&G Princeton Applied Research.

This award is given to a member of the Division of Analytical Chemistry who through scholarly activity has definitely and uniquely advanced the field of electrochemistry. It consists of a stipend of \$4,000, a plaque, and payment of travel expenses to the awards presentation at the ACS national meeting in Chicago, August 20-24, 1995.

Mortar Board Names Everett Outstanding Educator

In 1994, Grover Everett was one of five KU faculty members named an Outstanding Educator by KU's chapter of Mortar Board, a national senior honor society. Recipients were recognized by an announcement at the November 12 KU football game and a public reception on November 13 in the Watkins Room of the Kansas Union.

"Everett makes the subject matter of basic chemistry interesting and relevant" a Mortar Board member

wrote, "livening up his classes with demonstrations and a genuine love for the material." Last May, Everett was also named a Chancellors Club teaching professor.

Grover came to KU in 1966 and became a full professor in 1976. He earned both master's and doctoral degrees from Harvard University and his bachelor's degree is from the University of North Carolina. (Excerpt from an article appearing in the *OREAD*, August 26, 1994.)



Grover Everett

Two Chemistry Professors Receive Research Awards

Chemistry professors received two of the four 1994 Higuchi/Endowment Research Achievement Awards during KU's faculty convocation held on August 22. Each award carries a \$10,000 stipend to further the recipient's research.



Daryle Busch

Daryle H. Busch, Roy A. Roberts Distinguished Professor of chemistry, received the Olin Petefish Award in recognition of research accomplishments in basic sciences.

Busch came to KU in 1988 from The Ohio State University. His research focuses on coordination chemistry and the binding of small molecules and ions to transition metals and on the synthesis of macrocyclic ligands.

Previous Chemistry Department Olin K. Petefish Award recipients include Ralph N. Adams (1982), Shih-I. Chu (1988) and George Wilson (1993).

Ted Kuwana, received the Irvin E. Youngberg Award in applied sciences. Ted's research emphasizes electroanalytical and bioanalytical chemistry. Kuwana is the first Chemistry Department faculty member to receive the Irvin E. Youngberg Award since the Higuchi Awards program was established in 1981.

Faculty Promotions

Barbara Schowen and **Tom Engler** were promoted to full professor rank and **Fusao Takusagawa** was promoted to senior scientist by the Kansas Board of Regents in April 1995.

Susan Lunte Appointed Director of CBAR

Dr. Susan M. Lunte is the new director of the Higuchi Biosciences Center for Bioanalytical Research. Sue received her doctorate in analytical chemistry from Purdue University in 1984 and worked at Procter and Gamble for three years before coming to KU in 1987. She joined the CBAR staff as assistant scientist, became assistant director in 1990, associate scientist and associate director in 1993, and research associate professor in 1994.



Susan Lunte

In addition to her appointment as CBAR director, Dr. Lunte has accepted a position, beginning this fall, as an associate professor in KU's Department of Pharmaceutical Chemistry. She also serves as courtesy associate professor in the Chemistry Department.

Dr. Lunte succeeds Christopher Riley who left CBAR in December 1994 to become senior director of analytical research and development at DuPont MERCK Pharmaceutical Company in Wilmington, Delaware.

Laird and Larive are NSF CAREER Awardees

The National Science Foundation (NSF) strongly encourages the early development of academic faculty as both educators and researchers. The Faculty Early Career Development (CAREER) program is a Foundation-wide award instrument for the support of junior faculty within the context of their overall career development.

This year the NSF received 137 CAREER proposals in chemistry, and nationwide there were 37 awards made this spring. Two Chemistry Department faculty members, **Brian Laird** and **Cynthia Larive**, were named recipients of this prestigious CAREER award.

Brian's award was in theoretical chemistry for a

project entitled *Theory and Computer Simulations of the Solid-Liquid Interface*. Brian came to KU in January 1994. He has bachelor of science degrees in chemistry and mathematics from the University of Texas in Austin, and a doctorate degree from Berkeley.

"This award is a tremendous honor and a big boost for my research program," Cindy Larvie said. Cindy's proposal *NMR Spectroscopy Investigation of Aggregation in Model Peptides*, was in the area of analytical chemistry. She has a bachelor of science degree from South Dakota State University, a master's from Purdue, and a doctorate from the University of California, Riverside. Cindy came to KU in August 1993.

Richard Schowen Receives Alexander von Humboldt Research Award



Richard Schowen

The Alexander von Humboldt Foundation, Bonn, Germany, has selected Richard L. Schowen, Summerfield distinguished professor of chemistry, biochemistry, and pharmaceutical chemistry, as a recipient of a Humboldt Research Award for Senior U.S. Scientists, representing the amount DM 100,000.-, which

is approximately \$75,000.

This prestigious award is granted in recognition of Schowen's past accomplishments in research and teaching and entitles him to stay for a period of twelve months, beginning February 1, 1996, at a research institute of his choice in Germany. Dick will be developing a collaborative project with Professor Hans Limbach at the Free University in Berlin in which that university's magnetic resonance methods will be linked to KU's kinetic studies in an investigation of proton bridging by protease enzymes.

Student Honors and Awards Chemistry Undergraduate Selected as Rhodes/Marshall Candidate

Alicia Ines Arbaje was one of two KU seniors nominated to compete for Rhodes and Marshall scholarships. The prestigious scholarships provide stipends for graduate study in Great Britain. Nominees are selected from the honors program by a nine-member nominating

committee at KU. Selection for the scholarships is highly competitive, and nominees must excel academically and demonstrate leadership in a variety of nonacademic activities.



Alicia Ines Arbaje

Arbaje graduated this May with degrees in chemistry and sociology. Her career plans include service in public health and preventive medicine. Arbaje, who holds top KU scholarships in sociology and chemistry, wants to help increase access to health care and lower its costs. She has worked on such diverse research projects as health-care rationing and chemical compounds related to brain degeneration.

Alicia was one of two recipients of the 1994 Kansas Health Foundation Fellowship, enabling her to promote health care and community development in Kansas communities. She addressed substance abuse, adolescent pregnancy, and youth violence. Arbaje serves as a Hispanic AIDS instructor and trainer in Lawrence. Alicia will be attending medical school in the fall. (Article appeared in the *OREAD*, November 18, 1994.)

Alicia was one of two recipients of the 1994 Kansas Health Foundation Fellowship, enabling her to promote health care and community development in Kansas communities. She addressed substance abuse, adolescent pregnancy, and youth violence. Arbaje serves as a Hispanic AIDS instructor and trainer in Lawrence. Alicia will be attending medical school in the fall. (Article appeared in the *OREAD*, November 18, 1994.)

Ralph S. Wolbach Memorial Scholarship Awarded

In memory of Ralph S. Wolbach, a one-time \$2,250 scholarship was presented at the Department's spring awards ceremony to Alayna Miller, a senior chemistry major. Proceeds from the scholarship will be applied toward Alanya's tuition and fees during the 1995-96 academic year.

Elizabeth Tippetts, Wolbach's daughter, provided the Department with the following information about her father, who passed away last year.

Until the depression in 1931, Ralph Wolbach's father paid his tuition to the University of Kansas while Ralph supported himself by doing odd jobs around town and at a fraternity house. With the assistance of his aunt, who gave him the remaining tuition as an early graduation gift, Wolbach was able to complete his bachelor of arts degree in chemistry in 1932.

Upon completing his degree, Wolbach worked as a surveyor for the Coast and Geodetic Survey in their depression era project of installing triangulation markers in the areas of southern Utah and Arizona. Later in his career, Ralph worked as a meteorologist for the U.S. Weather Bureau, where he retired in 1965. In addition

to being a meteorologist, Wolbach became an expert in the areas of financial management and horticulture and was an avid gardener who propagated camellias, as well as growing vegetables and fruits, for many years.

"While he was gone from Kansas for over sixty years," Tippetts wrote, "he always considered himself a Jayhawker."

ACS Student Affiliate Chapter Honored

Outstanding and commendable ACS student affiliate chapters are chosen for special recognition on the basis of their programs and activities as described in their annual reports. A total of 325 annual reports were received for the 1993-94 academic year. Of these, twenty-three outstanding and forty-six commendable chapters were selected by the ACS Society Committee on Education.

Our Chemistry Department's student affiliate chapter, with Ruth Martindale as president and **Barbara Schowen, Grover Everett and John Landgrebe** as faculty advisors, was one of the group of commendable chapters recognized by the awards ceremony at the ACS national meeting in Anaheim, California, in April. Included among the chapter's activities that year were presentations of the chemistry show *Hot Things, Cold Things and Between* at the local area elementary schools. (See the *Carnival of Chemistry* on page 10, for one of the activities of the 1994-95 group under the leadership of seniors Matt Meyer, Huong Lam, Brad Hart, and Trien Le.)

40th Honors Banquet

This year, the 40th Award Presentation Honors Banquet took place on April 29, 1995, at 12 Noon in the Big 8 / Jayhawk Rooms of the Kansas Union. Serving again as master of ceremonies, Al Lata introduced the distinguished guests from various areas of the University, the emeritus faculty, and other friends of the Department. This was Richard Givens seventh and final awards presentation as chair of the Department, and he outlined some of the notable accomplishments of the faculty and the progress of the Department throughout the past year.

The guest speaker this year was James L. Muyskens. Muyskens, who came to KU in 1988 dean of KU's College of Liberal Arts and Sciences, holds a master of divinity degree from the Princeton Theological Seminary and a doctorate in philosophy from University of Michigan. He is a member of KU's Department of Philosophy and continues to teach courses in ethics

and volunteer as an instructor in the western civilization and honors programs.

In his presentation entitled *Why not optimism*, Dean Muyskens referred to the analogy of the glass half-full (optimism) or half-empty (pessimism). He provided the audience with several examples of the two extreme philosophies from both literary and historical sources. He then went on to assert that optimism is one of the forces underlying scientific discovery. While alchemists may have dreamed of turning lead to gold, modern chemists have, in fact, turned oil into nylon.

Muyskens labelled our current decade of the 90s as one of pessimism, akin to the period between the two world wars. He challenged the audience to side with the optimists and to look beyond what they see before them, like the early Kansas pioneers who "saw it not as it was, but as it will be." Muyskens concluded with a quote from a personal conversation with Irene Nunemaker that "America's best days lie ahead."

A complete list of banquet award recipients appears on page 24.

The Class of 1995

This year the Chemistry Department graduated thirty-five students--twenty-two received bachelor of arts degrees and thirteen received bachelor of science degrees, with several receiving recognition for their academic accomplishments. Seven graduates completed the CLAS Honors program, four completed the Department Honors program, five graduated with highest distinction, and four graduated with distinction. Four were initiated into Phi Beta Kappa.

In addition to recognition for academic excellence at the University's graduation ceremony, some students were individual or multiple award recipients throughout their undergraduate tenure in the Department. As incoming freshman this class included a National Merit scholar, two Summerfield scholars, three Watkins-Berger scholars, and a Chancellors Club scholar. As juniors, two chemistry majors received national recognition when they were awarded prestigious Barry M. Goldwater scholarships.

National and state recognition continued for seniors when one was named a Rhodes/Marshall candidate and a Kansas Health Foundation fellowship recipient. Two students received honorable mention in the National Science Foundation's graduate fellowship competition, with one of those students also being named a Hertz Foundation predoctoral fellowship recipient. Special recognition was given to two graduating seniors who received University awards for exceptional character and potential for community service--the Class of 1913 Award and the Rusty Leffel Concerned Student Award.

For the second, consecutive year, the Department was honored to have a chemistry student as the com-

mencement standard bearer for the College of Liberal Arts and Sciences in the graduate student procession. (Details about the recipients of all these awards appear on page 26.)

The Department again hosted a breakfast reception for its graduating seniors on commencement morning, May 14. Students stopped by the decorated second-floor conference room with their family and friends to visit with former faculty members and advisers before going off to other activities and the walk down the hill.

40th Chemistry Honors Banquet

Honors to 1994-95 Students

Undergraduate Student Awards

| | |
|---|--|
| The Mack Barlow Book Award in General Chemistry | <i>Krista A. Engelman / Charles R. Green / Adrienne M. Juett / Lynn M. Lopresti / Brooke J. Pointer / Page B. Surbaugh / Stephen F. Weller</i> |
| The Owen W. Maloney Scholarships | <i>Quang M. Lam / Kirsten S. Leff</i> |
| Organic Chemistry | |
| One semester course | <i>Susan T. Holcomb</i> |
| Two semester course | <i>Jeremy J. Jagoda / Shawn Moore / Paul D. Tittel</i> |
| Analytical Chemistry | <i>Alayna M. Miller</i> |
| The Fassnacht Scholarship | <i>Brad R. Hart</i> |
| The Leonard V. Sorg Scholarship | <i>Ronald C. Chen</i> |
| The Clark E. Bricker Scholarship | <i>Drew P. Manica</i> |
| The Jacob Kleinberg Award | <i>Nicholas Pivonka</i> |
| Special Honors for Outstanding Achievement in Chemistry to Graduating Seniors | |
| pursuing a Career in Medicine | <i>Alicia I. Arbaje / Todd A. Freize / Huong M. Lam / Michael J. Malis</i> |
| Those Completing Departmental Honors | <i>Cristian Campos / Dejian Liu / Huong M. Lam / Matthew P. Meyer</i> |
| American Institute of Chemists Award | <i>Huong M. Lam</i> |
| Alpha Chi Sigma Awards | |
| Chemistry | <i>Matthew P. Meyer</i> |
| Chemical Engineering | <i>Jennifer L. Collins</i> |
| The Snyder Award | <i>Anne Marie Owens</i> |
| Physical Chemistry Awards | |
| One semester course | <i>Todd A. Frieze</i> |
| Two semester course | <i>Matthew P. Zart</i> |
| Wolbach Memorial Scholarship | <i>Alayna M. Miller</i> |

Graduate Student Awards

| | |
|---|--------------------------------------|
| The H.P. Cady Award | <i>Garyk Papoian</i> |
| Outstanding First-Year Teaching Assistant | <i>Katherine Prater / Diana Rank</i> |
| The Ray Q. Brewster Award | <i>Jinyang Hong</i> |
| The Paul and Helen Gilles Award in Physical Science | <i>Gouri Jas</i> |
| The Higuchi Doctoral Progress Award | <i>Jingyan Wang</i> |
| The J.K. Lee Award | <i>Greg Harms</i> |
| The Phillips-McCollum Summer Research Award | <i>Yan Wang / Rebecca Roesner</i> |
| The Reynold Iwamoto Award | <i>Sheila Rogers / Sandra Barnes</i> |
| The Argersinger-Phillips Summer Research Fellowship | <i>Scott D. Bembenek</i> |

Graduate Degrees Granted

June 1, 1994 - May 30, 1995

Doctorate

| | |
|---|-----------------------------|
| Kyle A. Beran | Mentor: M.D. Harmony |
| Dissertation: <i>Spectroscopic Investigations of Unstable Molecules Using Laser, Mass and Microwave Spectroscopy</i> . Kyle was a teaching postdoctoral this spring in the Chemistry Department, serving as a physical chemistry laboratory instructor. | |
| Nancy Eilerts (honors) | Mentor: J.A. Heppert |
| Dissertation: <i>High Oxidation State Complexes of Titanium, Vanadium, and Tungsten: Applications in Inorganic Materials</i> | |

and Stereoselective Catalysis. Nancy is a National Sciences and Engineering Research Council of Canada (NSERC) Postdoctoral Fellow studying with Malcolm Chisolm at Indiana University.

Michael P. Garoutte (honors) **Mentor: R.L. Schowen**

Dissertation: *Evidence on Tunneling and Charge-Relay Catalysis in Serine Protease Action: Effects of Temperature and the D102N Mutation in Isotopic Waters*. Mike will be a teaching postdoc this summer in the Chemistry Department, serving as the instructor for an organic laboratory course.

Leo William Kueper III (honors) **Mentors: R.S. Givens and R.L. Schowen**

Dissertation: *Chemistry and Light: I. Mechanistic Explorations of the Oxalate/H₂O₂ Chemiluminescent Reaction. II. Synthetic and Photochemical Investigations of Desyl Caged Nucleotides and Amino Acids*. Argersinger Prize for an Outstanding Dissertation. Bill is a postdoc with Gary Schuester at Georgia Tech.

Kenneth O. Lynch, Jr. **Mentor: T.A. Engler**

Dissertation: *Cycloaddition Reactions of 1,4-Benzoquinones and their Benzoyl / Phenylsulfonyl Imine Analogs: New Syntheses of Dihydrobenzofurans, Dihydroindoles and Structurally Related Molecules*. Ken is a postdoc with Leo Paquette at The Ohio State University.

Luis Morales **Mentor: P.W. Gilles**

Dissertation: *High-Temperature Vaporization Chemistry and Thermodynamics of Ti₃O₃ and the Magneli Phases between TiO_{1.66} and TiO_{1.83}*. Luis is a postdoc with Mark Williamson (Ph.D., 1990) at the Los Alamos National Laboratory.

Iffaaaz Salahudeen **Mentors: G.S. Wilson and S. Lunte**

Dissertation: *Development of Electrogenic Derivatizing Reagents and Amino Acid Analysis Using Capillary Electrophoresis-Electrochemistry*. Iffaaaz is a postdoc at KU with John Stobaugh in the Department of Pharmaceutical Chemistry.

Delong Zhang **Mentor: D.H. Busch**

Dissertation: *Synthesis, Characterization, and Structural Studies of the Metal Complexes with Ligands Derived from Triazacycloalkanes and Related Compounds*. Delong is a research associate at Battelle Pacific Northwest Laboratory in Richland, Washington.

Dongbo Zhang (honors) **Mentor: G.S. Wilson**

Dissertation: *Studies of Electron Transfer Properties of Cytochrome C₃*. Dongbo is a postdoc in the Department of Pathology at the Medical College of Virginia.

Jingfeng Zhang **Mentor: P.M. Hierl**

Dissertation: *Chemical Accelerator Studies of Ion-Molecule Reaction Dynamics*. Jingfeng is a postdoc at Carnegie-Mellon.

Master of Science

Anqing Chen **Mentor: C.E. Lunte**

Thesis: *On-Line Microdialysis Sampling Coupled to Fast HPLC*. Anqing now works at Johns Hopkins University.

Gregory Gfesser **Mentor: T.A. Engler**

Thesis: *Application of a New Method for the Formation of 2,3-diaryl-2,3-dihydrobenzofurans Towards the Synthesis of ε-Viniferin*. Greg is a research associate at Abbott Laboratories.

Deepani Gunasekera **Mentor: R.S. Givens**

Thesis: *The Chemiluminescence Reactions of Aryl Pyruvates*. Deepani is a graduate student at Simon Fraser University, Vancouver, B.C., working with Andy Bennett, a former postdoc of Dick Schowen.

Rolande Hodel **Mentor: J.A. Heppert**

Thesis: *Synthesis and Characterization of Hydrogen Bonded Tungsten(VI) ortho-Hydroxycarboxylic Acid Complexes: Investigation of the Hydrogen Bond by Nuclear Magnetic Resonance Spectroscopy*. Rolande works at Nanocrystals Technology, Inc., in New York.

Savitri Murthy **Mentor: G.S. Wilson**

Thesis: *Sulfoxidation of Methionine in Small Model Peptides: Evaluation of the FeCl₃ / Thiol Oxidizing System*.

Jiaher Tian (honors) **Mentor: K.B. Schowen**

Thesis: *Effect of Cosolvents on Proton Inventories of Alpha-Chymotrypsin Catalyzed Hydrolyses*. Jiaher is a Ph.D. student in the Department of Environmental Engineering at Johns Hopkins University.

Minli Xie **Mentor: R.L. Schowen**

Thesis: *A Proton-Inventory Study and Molecular Dynamics of Kinetics of Lactate Dehydrogenase from Bacillus Stearothermophilus*. Minli is a Ph.D. student in the Department of Pharmaceutical Chemistry at KU.

Wen-Jen (Michael) Wang **Mentor: J.A. Landgrebe**

Thesis: *Selected Studies of Intermolecular 1,3-Cycloaddition and 1,4-Sigmatropic Hydrogen Migration of Carbonyl Ylides from Ethyl Diazoacetate and Ketones*.

Yuji (Simon) Zhou **Mentors: C.E. Lunte and S. Lunte**

Thesis: *On-line derivatization system for in vivo monitoring of neurotransmitter amino acids using on-line microdialysis/capillary electrophoresis*. Simon is a graduate student in the School of Pharmacy at the University of Michigan.

University Award Recipients

Huong Lam (B.A.)

Rusty Leffel Concerned Student Award and Commencement Standard Bearer for the College of Liberal Arts and Sciences

L. William Kueper III (Ph.D.)

Argersinger Prize for an Outstanding Doctoral Dissertation

Sandra Rogers Barnes (graduate student)

KU Black Faculty and Staff Council, Student Scholar

Sheila Rogers (graduate student)

KU Black Faculty and Staff Council, Student Scholar

Alicia Arbaje (B.A.)

Class of 1913 Award

Fellowship Recipients

David P. Skinner (B.S.)

Hertz Foundation Predoctoral Fellowship

Gouri S. Jas (Ph.D. candidate)

American Heart Association Postdoctoral Fellowship

Alicia Arbaje (B.A.)

Kansas Health Foundation Fellowship

Merck Training Grant Awardees

Three undergraduate students who were recipients of MERCK Undergraduate Fellowship awards conducted research last summer in the analytical division.

Michael J. Malis worked with Sue Lunte on the in-house synthesis of dependable and efficient polyacrylamide gel columns; Marc R. Anderson worked with Ted Kuwana on instrument design and environmental chemistry problems; while Rachel A. Rose conducted research in the area of peptides and sugar

complexes using molecular modeling and NMR techniques in Cindy Larive's lab.

In addition to providing \$9,600 for summer stipends, this training grant also provides \$9,000 for obtaining state-of-the-art instrumentation, comparable to that used in industry, for the Department. This year with an additional \$3,000 in matching funds from the univer-

sity, the Department was able to purchase a much needed gas chromatograph (FID).

Two Seniors Receive Honorable Mention in NSF Competition

This year, two Chemistry majors Matthew P. Meyer and David P. Skinner, received honorable mention in the NSF's Graduate Fellowship Competition. Matt Meyer, who conducts research in Brian Laird's group, plans to attend the University of Wisconsin this fall. David Skinner, a member of Bob Bowman's research group, plans to attend the University of California, Berkeley.

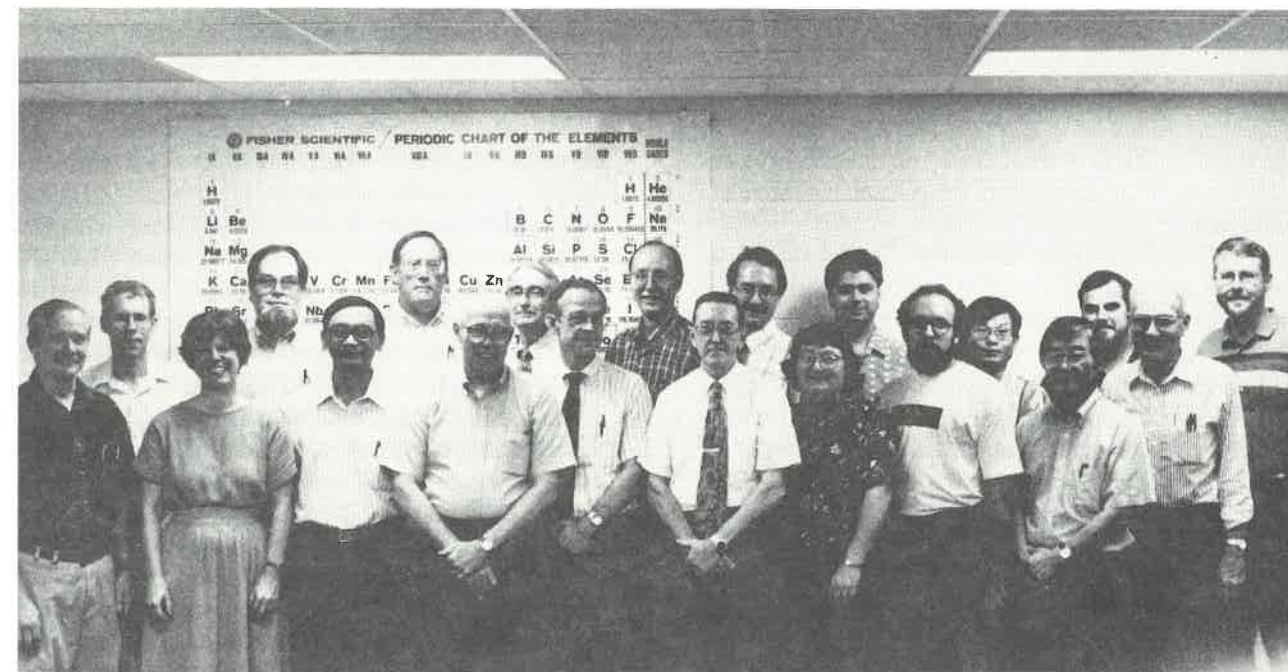
The NSF had more than 6,000 applications nationwide this year, with 728 fellowship awards and 1,396 students receiving honorable mention. Honorable mention recipients can request access to the nation's four supercomputer centers supported by the NSF for their graduate research work.

FACULTY NEWS

RALPH ADAMS (Emeritus). The last of the *in-vivo* electrochemistry was completed this past year with the appearance of Kim Mitchell's paper in the *Journal of Neurochemistry* on norepinephrine release and reuptake dynamics. Actually, one more article in this area will appear - Adams was a guest editor for a contributed volume on brain electrochemistry in the *Neuromethods* series, which should appear soon. The human brain studies continue strongly - much aided by Cynthia Gouvion, a talented analyst who produces more excellent data than

the aging Adams and Oke can understand.

BOB BOWMAN. Our research group has been busy studying the charge carrier dynamics in small semiconductor particles (< 10 nm in diameter) and thin films. Most recently, we have seen that there is a marked dependence of the charge trapping and recombination kinetics on the size of the particles. This has implications for their utilization as photocatalytic agents and for solar energy applications. We have just begun a study on the new femtosecond Ti:Sapphire laser system to under-



Chemistry Department Faculty 1994

(front row from l. to r.) Richard Givens, Barbara Schowen, Shih-I Chu, Richard Schowen, Marlin Harmony, Jack Landgrebe, Cynthia Larive, David Benson, Ted Kuwana, and Paul Gilles. (back row from l. to r.) Grover Everett, Ken Ratzlaff, George Wilson, Alfred Lata, Robert Carlson, Carey Johnson, Brian Laird, Fusao Takusagawa, Craig Lunte, and Joe Heppert. (not pictured) Sue Lunte, Daryle Busch, Kristin Bowman-James, Albert Burgstahler, Tom Engler, Robert Bowman, Peter Hierl, and Krzysztof Kuczera.

stand how molecules redistribute their energy upon photoexcitation. We continue to present our work at local, regional, and national meetings. The group has seen some old faces leave and added a few new faces, but as usual, there are always two or three undergraduate researchers making major contributions (including first authorship on a recent paper!). The major nonscientific event of the group was a bike ride from Lawrence to Bob's house in Olathe (~30 miles.) Over thirty people participated, more than half of whom were chemists including Professors Engler, Everett, and Laird, as well as Bob, who finished last among the faculty contestants!

KRISTIN BOWMAN-JAMES has been kept quite busy this last year. Together with Daryle Busch, she co-chaired the XIX International Symposium on Macrocyclic Chemistry, which took place in Lawrence from June 12-17, 1994. This was the first time the symposium was held at a site other than Provo, Utah, in the United States. The symposium was a great success and brought over 170 chemists to Lawrence, over 60 of whom were international participants. A large number of macrocyclic chemists came from the countries of the former Soviet Union thanks to a grant from the International Science Foundation. This year the Symposium is to be held in Jerusalem and Kristin plans to participate. She spent two years in Haifa at the Israel Institute of Technology (Technion) as a graduate student and is looking forward to visiting with old friends this summer.

In January of this year, Kristin became the secretary/treasurer of the Chemistry Division of the American Association for the Advancement of Science. This new position should help to keep her busy for the next several years.

Another undertaking is a book entitled "The Supramolecular Chemistry of Anions," which Kristin is co-editing with her collaborators Professors Enrique Garcia-Espana from the University of Valencia and Antonio Bianchi from the University of Florence. The book covers all aspects of anion chemistry and will be a comprehensive treatise of the subject. It will be published by VCH and should appear sometime next summer.

Research-wise, Professor Bowman-James is extremely lucky to have a fine group of researchers associated with her group. The newly expanded group (which consisted of only a postdoctoral associate and visiting scientist two years ago) is very international. There are five graduate students: Nick and Olga Gerasimchuk, from Kiev, Garry Papoian from Armenia, Arthur Reyes from the Philippines, and Brian Coleman from the U.S. Professor Colin Cairns from Drake University (originally from Ireland) is also visiting on a sabbatical, and has proven to be an outstanding colleague and an asset to the group. Two undergraduates are also in the group, Yunnee Lim from PRC and Cristian Campos from Costa Rica. Kun-Jian Gu from PRC, and a member of the group for six years, is currently working with Professors

McCormick and Kahol at Wichita State University helping with polymer synthesis. He will probably rejoin the group some time this summer. Group parties now have exciting cuisines from all over the world. The highlight of the year social-wise was the "Big Apple Pie Bake." The pie weighed in at over twenty pounds, but was entirely eaten by the next day by hungry graduate students and others.

ALBERT BURGSTHALER. During July in the 1994 summer session, I worked with John O'Brien, one of Professor Busch's graduate students, in cooperation with the Applied English Center (AEC), to instruct and drill seven of our new foreign graduate students to improve their oral communication skills in English for their laboratory teaching and problem-session tutoring.

In September, I attended the XXth Conference of the International Society for Fluoride Research in Beijing, China. I found it to be a very interesting and rewarding experience.

In November, I presented a paper at the Midwest American Chemical Society meeting in Kansas City, and I made a further presentation of this work at the Kansas College Chemistry Teachers Conference in March in Manhattan, Kansas.

In the fall, I will be giving the lectures in the large CHEM 184 course.

BOB CARLSON. I have been teaching the large CHEM 624 and 626 classes this academic year for the first time since Hoch Auditorium burned down. I never thought that I would actually miss Hoch, but it was certainly a better place to teach the organic classes than the auditorium in the student union. I have now been at this for so long that I have several students whose parent, or in one case parents, took organic chemistry from me (quite) a number of years ago. I have continued collaborative research with John Stobaugh and Sue Lunte in the Center for Bioanalytical Research and with Fusao Takusagawa. I am pleased to have Koichi Yoshida, a visiting scientist from Japan, in my laboratory for two years. Along with Sanjay Nimkar and Jennifer McCullough, we have made considerable progress on some of our synthetic problems. We have enjoyed visits from several of my former graduate students, and I am getting an increasing amount of e-mail from some of them. I have had a rather heavy service load, serving on the time-consuming University Committee on Sabbatical Leaves and the College Committee on Undergraduate Studies and Advising, in addition to various departmental committees. With Jack Landgrebe becoming the associate chair for graduate studies, I have become, by default, the organic division's coordinator.

SHIH-I CHU devoted a considerable amount of time this year in developing a statewide NSF EPSCoR proposal for the establishment of the Kansas Center for Advanced Scientific Computing (KCASC). In addition he continues to serve as the project director of the Kansas Institute for Theoretical and Computational Science

(KITCS). The KITCS has now formally been established as a permanent organization at KU reporting directly to the vice chancellor for research, graduate studies, and public service. If funded, the new center KCASC will focus on the development of high-performance computing technology, multi-disciplinary research interactions, and a statewide parallel computing network. Participating faculty members include computational chemists, physicists, mathematicians, and engineers from KU, Kansas State, Wichita State, Emporia State, and the National Institute for Aviation Research in Wichita.

With his research group, Chu continues to work on the development of new theoretical formalisms and accurate and efficient computational techniques for *ab initio* probing the structure, symmetry, and multiphoton dynamics of atoms and molecules in the presence of intense and superintense laser fields, classical and quantum chaos in field-driven highly excited atomic and molecular systems, and the nature of chemical bond in intense external fields. He will present several invited lectures in national and international meetings and travel to Canada, Taiwan, and China in the summer of 1995.

GROVER EVERETT. This year it was my turn to teach the large introductory class in general chemistry in the fall (about 1,000 students), and I have continued with 600 of the same students for the second semester of general chemistry. Some new teaching methods acquired at the Biennial Conference on Chemical Education last summer were worked into these courses this year. I have also been involved in a few activities associated with the professorship awarded to me last spring; most of these have involved recruiting new students for KU. Next fall I am scheduled to teach a graduate course (physical methods), so there will be more time for research. In the spring and summer of 1996, I will be on sabbatical leave in Australia, where I will renew collaborative activities that have continued since my last sabbatical there.

PAUL GILLES (Emeritus) spends most of his time cleaning up and emptying the research laboratories, a chore that should be finished in the late spring. Several people have expressed interest in receiving metals, crucibles, and equipment. Intending to complete his activities with IUPAC during the current calendar year, Paul attended a meeting in London in March and plans to attend the General Assembly in Guildford, outside of London, in August.

In August 1994, Paul served as a discussion leader at the Gordon Conference on high temperature chemistry. Former co-workers John L. Margrave, H.F. Franzen, Karl E. Spear, and Dean E. Peterson presented invited papers, and posters were presented by Margrave, Spear, Franzen, Phillip G. Wahlbeck, Jimmie G. Edwards, Glen F. Kessinger, and Mark A. Williamson. Edwards was elected chairman of the next conference scheduled for 1996.

RICHARD GIVENS. For the photochemistry and

chemiluminescence group, 1994 has been an eventful and productive year. Two graduate and one undergraduate completed their degrees during this period. Billy Hudson obtained his bachelor's degree and is working in Kansas City. Deepani Gunasekara completed her master's and headed to Simon Fraser University to pursue her Ph.D. with Professor Andy Bennett, a former postdoc with Dick Schowen. Shortly thereafter, Bill Kueper defended his Ph.D. work, earning honors, and then headed to the University of Illinois to do a postdoctoral stint with Professor Gary Schuster who himself moved to Georgia Tech to become dean of the School of Sciences. Thus, Bill is now a Georgian but much worse, he is still working for an administrator.

The group expanded during the summer and fall with the influx of new students and visiting faculty. Jim Hohman from Fort Hays University returned for another summer to work on the synthesis and isolation of the peroxyoxalate of difluorophenol. Jim Chapman from Rockhurst worked on our project to develop the use of peroxyoxalate chemiluminescence for DNA mapping that Dr. Kuroda (Nagasaki University) had initiated. An undergraduate NSF-REU student, Greg Dudley, continued our project on the photochemistry of caged bioactive substrates. Greg will attend MIT next year as a Ph.D. aspirant and further develop his synthesis skills. In December, Leroy Chimilio joined the group and will begin the synthesis and photochemistry of some new *alpha*-ketosulfonate derivatives, charting a new direction for our photochemical thrusts.

My meanderings through the year were uncharted, for the most part. As noted in *Notes from the Chair*, I am relinquishing the department chair with a feeling of relief and accomplishment after seven eventful years. The Department has made good strides toward building its reputation in education and in frontline research. There is still much to be done, and I believe progress will continue to be made as long the faculty and staff give our maximum effort toward improvement of our programs. I have come to understand more than ever what an incredible group of individuals we have in this Department -- the students, staff, researchers, and faculty alike. They have made this short trip through my tenure as chair much more rewarding and enjoyable than I had anticipated.

My schedule, however, will be no less hectic. As I edit this short review of my activities, I am returning from a trip to Japan where I attended the Bioluminescence and Chemiluminescence Workshop in Tokyo organized by Professor Imai. I also had opportunities to visit Nagasaki and see Professors Kuroda and Nakashima with additional side trips to see Professor Toyo'oka at Shizuoku and Dr. Kawasaki at Sankyo Ltd. This summer, I will make trips to Woods Hole (associateships program panel review for the NRC), the Gordon Conference on Organic Photochemistry at Salve Regina, Rhode Island, the Chicago ACS meeting, and a special

celebration honoring Glen Russell (at Iowa State) with whom I worked in 1966-67. I will top the year off with a trip to Hawaii for the Pacific Basin ACS Meeting to participate in a symposium organized by Howard Zimmerman.

Oh yes, I also accepted the position as associate vice chancellor for academic affairs which actually started in January. That job will keep me off the street!

After a return to graduate teaching (molecular spectroscopy) in the fall semester, **MARLIN HARMONY** was back to CHEM 184 in the spring. He has also spent numerous hours the past eighteen months as a member of the steering committee of the University's Long-Range Physical Development Planning Task Force. This group is currently working on the final stages of the next 10-15 year plan.

Research work with supersonic free jets has continued, the latest addition to the laboratory arsenal being an FT-microwave instrument. Harmony's fourteenth doctoral student (Kyle Beran) finished his work this past year and his ninth master's student (Deanna Angst) will complete her work by summer's end. Co-directorship of the Department's undergraduate summer research program (NSF-REU) continues as well.

Last October, with indispensable and immeasurable support from wife Nancy and Departmental friends, Harmony underwent completely successful lung cancer surgery. He was back at work full-time within a month and has more-or-less resumed the usual uncivilized, if not downright unhealthy, schedule characteristic of chemistry faculty. Summer vacation (travel) plans are not yet finalized, but they will be especially enjoyed this year.

JOE HEPPERT. My research group has seen two notable graduations during the past year. Nancy W. Eilerts completed her doctorate and received an NSERC Postdoctoral Fellowship to continue her studies under my former postdoctoral mentor, Malcolm Chisholm, at Indiana University. She is investigating the mechanisms of metal-catalyzed ring opening polymerization processes. Rolande Hodel completed a master's in my group and landed a job with Nanocrystals Technology, a high-tech firm interested in potential electronic and optical applications of nanocrystalline materials. This is an exciting area with great growth potential and an exciting opportunity for Rolande.

As you can guess from the number of recent graduations, my group size is getting smaller. I currently have four graduate students working on three distinct projects: transition metal Lewis acids as catalysts for stereospecific and asymmetric reactions, transition metal complexes with potential as mesomorphic and photonic materials, and an investigation of the mechanism and process chemistry of certain reaction injection molded thermoset hydrocarbon resins. The latter project is a collaboration in its second year with B.F. Goodrich Company. I am always eager to discover talented students or

industrial contacts who are interested in these related areas. Please feel free to give them my e-mail address (JHeppert@CaCO3.chem.ukans.edu) so that I can send them more information.

I was happy to see two of my first two Ph.D. students, Tim Boyle and Beth Thomas, at the recent ACS national meeting in Anaheim. Tim is responsible for some very elegant metal alkoxide chemistry aimed at the synthesis of rational precursors for sol gel reactions at Sandia National Laboratory. Beth continues to thrive in a frontiers technology group with interests in radiopharmaceuticals and imaging technology at Mallinkrodt Medical.

PETER HIERL. Peter Hierl relinquished the position of Department associate chair in December 1994, when he was awarded a National Research Council senior associateship. He had served as associate chair since 1987. Peter is currently on leave from the University and is conducting research at Phillips Laboratory (formerly the Air Force Geophysics Laboratory) at Hanscom Air Force Base, Massachusetts.

EARL HUYSER (Emeritus). This first year of retirement was not quite what we expected it to be. Since last June, we have already made four trips back to our hometown, Holland, Michigan. Two of these trips were to high school class reunions and two were for visits to my mother. We have yet to make the trip to the Rockies that we had always planned to make as soon as retirement came.

There has been plenty around Lawrence to keep us quite active. In addition to teaching two Bible study classes, one at the First Presbyterian Church and the other at the Presbyterian Manor, I have also been the president of the Lawrence Cosmopolitan Club. The latter is a responsibility that I avoided for years, saying always that I would take my turn when I was retired. They remembered.

My wife, Barbara, has me involved in a rather strange endeavor for me, namely, bowling in the Senior Citizens League. Having all of the athletic prowess of a pregnant cow, I feel exhilarated when I can actually bowl even one game as well as one of the members (she is 87 years old) of the team to which I have been assigned.

I keep very busy at home now. My wife has let me do a lot more cooking, although it would be helpful to have a lab tech around for cleaning up after I have been in the kitchen. I am slowly learning to use the woodworking power tools in my shop and at this point still have all ten fingers. An unusual amount of time is spent at the computer, not only doing some molecular orbital calculations but also learning how to make use of *Microsoft Windows*. The CD-ROM has added a new dimension, and its potential is fantastic.

CAREY JOHNSON and his research group are working on research in time resolved laser spectroscopy. The new Titanium-sapphire laser system (see story on page 18) has brought this work into the femtosecond

time regime. In another new project, we are exploring the potential information that can be obtained by probing ultrafast reorientational motions of molecules in solution by fluorescence decays induced by two-photon excitation. In addition, work on the mechanism of the proton-pumping protein bacteriorhodopsin has continued. Johnson and graduate student Greg Harms presented results of this project at the meeting of the Biophysical Society in San Francisco in February. In October, Dr. Chaozhi Wan, who was a postdoctoral associate in Johnson's group, moved to Pasadena to take a postdoctoral position with Professor Ahmed Zewail at Caltech. On the home front, the Johnson household became a more disordered system with the addition of William Carey Truong Johnson, adopted in December at age four months. Big sister Elizabeth (6) is delighted to have a baby brother.

KRZYSZTOF KUCZERA. I was engaged in several research projects during the past year. A computer simulation method was developed in my group which has great potential for studies of conformational equilibria of flexible molecules in solution, including protein folding. This method has been the basis of several grant proposals to external agencies. I am also working with graduate student Yan Wang on computer simulations of the role of disulfide bonds in small peptide drugs. This research has a basic component and also has implications for rational drug design. Our initial results were presented on the First Electronic Computational Chemistry Conference which was held on the Internet and world-wide web in November 1994 and will appear in the Conference Proceedings on CD ROM.

In July 1994, Anne Hermone, a biochemistry graduate student, joined my group and has started work on computer simulations of retinal isomerization in bacteriorhodopsin. This work will lead us to improved understanding of the process of vision and light energy transduction into proton gradients. We also plan to interact closely with Carey Johnson, whose group is studying the same phenomena using laser spectroscopic techniques.

Together with Ben Leimkuhler (KU, mathematics), Jan Hermans (UNC, biochemistry and biophysics) and Robert Skeel (UIUC, computer science), I was an organizer of the workshop Algorithms for Macromolecular Modeling, held at KU on September 30-October 2, 1994. Thanks to a timely choice of topics we were able to obtain funding from DOE and NSF and attract more than ninety participants from academia, national laboratories, and industry. We were able to bring together scientists attacking the molecular modeling problem from different perspectives-from biology, chemistry and physics to mathematics, computer software and hardware design.

In the first year of its existence, **BRIAN LAIRD'S** group has grown substantially. In January 1995, it welcomed a new postdoctoral associate, Ulrich "Ueli"

Zurcher - originally from Basel, Switzerland, and most recently from the research laboratory of Professor Bob Silbey at MIT. Ueli is currently working on a project together with second-year graduate student, Scott Bembenek, to understand the role of localized motions in amorphous systems. The goal of this work is to gain a molecular-level understanding of the glass transition - a very old, but little understood problem. So far, Scott has produced some very exciting simulation results, the first of which have been published in *Physical Review Letters*, with at least two further publications in the initial stages of preparation.

Also active in the group are two undergraduates. First, graduating senior Matthew Meyer is working on developing a computer program to do molecular dynamics simulations of solid-liquid interfaces. This project has important materials science applications in developing a microscopic description of crystal growth from the melt. Matt will begin graduate school in the fall at the University of Wisconsin in the group of Professor Jim Skinner (who was, in fact, Brian Laird's first postdoctoral advisor.) In addition, graduating senior Adam Kraft is doing a series of computer simulations to calculate the phase diagram of a system of spheres with long-ranged repulsion. These results will be important because this system is an important benchmark system for testing theories of first-order phase transitions. The phase diagram for this system is also very similar to that of several metals (iron, sodium) in that it exhibits a liquid to FCC crystal to FCC crystal transition as the temperature is lowered. Adam is currently applying to medical school.

In June 1995, Brian Laird will be spending a month at the Forschungszentrum in Julich, Germany, renewing an old collaboration with Dr. Herbert Schober on low-frequency localized vibrations in glasses. (He's also hoping to get as much use of the two Cray supercomputers in Julich as they will allow!)

JACK LANDGREBE assumed the role of associate chair for the graduate program for one year beginning in January of 1995. He remains very involved in teaching and in the development of an improved organic laboratory curriculum. Throughout this academic year he has served on the Chair Search Committee, and the Search Committee for the KASL (Kansas Advanced Synthesis Laboratory) Director, and has remained heavily involved with matters pertaining to space and facilities. He was pleased to learn that the proposed undergraduate science laboratory building is being actively discussed by the administration of the University for possible placement on the east side of Malott Hall. (Don't hold your breath yet! This project has a long way to go.)

Carolyn and Jack's youngest granddaughter, Samantha Landgrebe, turned one in March, while their oldest granddaughter, Julia Holsapple, turned three in February. All three families together with the two boys,

John and Eric Dahl, and Jack's mother, flew to San Francisco in January to attend a family wedding. Although they traded Midwest cold for west coast rain, the celebration and reunion were a great success.

CINDY LARIVE'S research continues to be focussed primarily on bioanalytical applications of NMR spectroscopy. Our work using NMR measurements of diffusion coefficients to probe aggregation of beta-amyloid peptides was funded by an NSF CAREER award. In addition to exploring applications of diffusion measurements, Shawn Mansfield's work using NMR to monitor cellular metabolism in response to anticancer drugs is progressing well, in part thanks to a several month stay by Thomas Beck, a German chemical engineering student from Dortmund University.

A particular highlight of the year was a group road trip to the FACSS meeting in St. Louis where Sheila Rogers, Dimuthu Jayawickrama, and Shawn Mansfield all presented posters on their research and Cindy organized a symposium on Non-invasive Bioanalysis with NMR Spectroscopy. In addition to their scientific activities at the meeting, the group found time to visit the Monsanto analytical facilities and go up in the arch for a view of the city. Other trips this year for Cindy included the Experimental NMR Conference with postdoctoral student Mengfen Lin, the Pittsburgh Conference and the spring ACS meeting in Anaheim. The Larive group is excited about the anticipated addition to the family of former group member Shana Zink (Durango, Colorado), with the arrival of her first child expected in November. Our own daughters Erin (10) and Megan (8) continue to be a great delight to their parents, although we are counting the years to teenagers with some trepidation.

CRAIG LUNTE. The Lunte research group has continued its work on *in vivo* microdialysis sampling and miniaturized analytical techniques. The group has made significant progress over the past year on projects to study novel anticancer therapies for solid tumors and on studies of the metabolism of environmental and pharmaceutical compounds. The microdialysis technique for drug metabolism studies is gaining popularity. In order to further the development of ideas from the laboratory, the Lunte group has formed a collaboration with BAS-Kansas to commercialize devices developed at KU. Malonne Davies will soon receive her doctorate and join BAS-Kansas as its director. Anqing Chen received her master's degree and now works at Johns Hopkins. Two new postdoctoral associates have joined the group in the past year, Alexander Fairbushevich from Russia and Kieran McLaughlin from Ireland. Craig was named an assistant editor of the *Journal of Pharmaceutical and Biomedical Analysis*.

BARBARA SCHOWEN'S news includes promotion to full professor (as of April 1995) and appointment last January to a one-year term as associate chair for undergraduate affairs. Recent research results carried

out by Jiaher Tian (M.S., August 1995) last summer working with Barbara and Dick were presented at the Enzyme Mechanisms Conference held in Arizona in January. The following month she joined Dick in a one-week trip to South Korea to attend (while he presented at) an international enzyme-inhibition workshop. An unexpected pleasure was being greeted at the airport and taken to dinner (authentic and delicious Korean food) by Dong Jong Choo (Ph.D., Givens 1983) and his wife Hea-Young Park Choo (Ph.D., 1984 Wiley, medicinal chemistry). Hea-Young who teaches at a College of Pharmacy in Seoul was an attendee at the workshop and somehow had discovered our itinerary.

Last summer Barbara attended the Biennial Conference of Chemical Education at Bucknell in Pennsylvania. Grover Everett and Al Lata attended as well. This amazing meeting (like a twelve-ring circus) had something for everyone: the latest in classroom computer technology, wonderful videos for visualizing complex molecular phenomena, laboratory instrumentation, the (electronic) textbooks of the future, methods for "engaging" students in the classroom and lab, etc., etc. This was followed by a trip to Puerto Rico to attend a similar but international meeting. Dick and Susana joined but spent most of the time on the beach.

Barbara has been busy this spring teaching CHEM 125 to about 250 students. The class is a mixed group of non-science majors, architecture and engineering students, pre-nursing and allied health students, education majors, and others. She is also involved--with Al Lata's and Rich Givens' help--in the one-credit seminar class for junior and senior chemistry majors. She is also a co-organizer--with two other KU faculty in other fields--of a class for KU honors students called "Science, Technology, and Society." Her part of the course is dealing with the impact of computer technology on society: legal, social, ethical issues. The class consists of invited speakers and student presentations (easy for her) but also the grading of about seventy-five papers of varying lengths.

She and Marlin Harmony are gearing up for another summer of our undergraduate research program. About ten students from all over the country will be supported for the eighth consecutive summer by an NSF-REU grant; another ten or so local students supported in different ways will be joining them. Otherwise everything is much as last year.

The Instrumentation Design Laboratory

The Instrumentation Design Laboratory is prepared to greet you on the world-wide web under the locator:

<http://www.chem.ukans.edu/anylresc/anylresc.htm>

Full-color photos of Tom Peters, Jon Mericle, Ric Roggero and the Director, Ken Ratzlaff, are included.

Our personnel are again unchanged, save Ric's shift to full-time in order to supervise the new Novell Netware Server. Malott is now served with a substantial serve to serve software, storage and print-server needs

Our involvement is varied: from Professor Bill Bell's insect-tracking *ServoSphere*, to Professor Dave Braaten's *valve controllers* that spent the year buried in the Antarctic, to the high-speed acquisition and control system for Professor Marlin Harmony's *FT Microwave* instrument, to HBC's nano-scale instrumentation and more.

Ken Ratzlaff, Director,
KRatzlaff@eureka.chem.ukans.edu

The Mass Spectrometry Laboratory

The Mass Spectrometry Laboratory eagerly awaits KU's entry into serious HPLC/MS. Todd and Christian Schoenich (pharmaceutical chemistry) were co-PIs on an HPLC/CZE upgrade package for the AUTOSPEC. The lab will be getting VG's latest version of an electrospray/APCI interface. The MSL will begin a new phase of involvement with investigators with this capability. Bob Drake now spends as much time repairing/upgrading/modifying instruments as he does running samples. He now has a stable of four instrument to maintain. The mysteries of electronic control over hybrid MS/MS instrument are his next challenge. Homigol Biesiada has become an important asset to the lab as a research investigator. She has been exploring MS/MS and will be the primary operator of HPLC/MS experiments. Todd continues to enjoy a wide variety of collaborations with KU investigators. Also, joint work with Richard O'Hair's group at K-State continues Todd's "venture" in ion/molecule chemistry. Charlie Judson is still about, continuing a rehabilitation program on some "retired" finnigan quadrupole instruments.

Todd Williams, Director
TWilliams@CaCO3.chem.ukans.edu

ALUMNI NEWS

Editor's Note: We enjoy hearing from you! You are a source of pride for the Department and the University!

1940 - 1949

Alvaro V. Chavarria (B.A., 1949) is the former head of the Agricultural Chemical Laboratory of the Ministry of Agriculture and the Food and Drug Chemical Laboratory of the Ministry of Public Health, both in Costa Rica. In 1954, Alvaro went into private enterprise and founded and built Ingenio Quebrada Azul Ltd. (sugar manufacture) and is still the owner of the sugar mill. In addition, he continues to build a cattle farming business, which he started in 1980. In 1986, Alvaro started to plant oranges in the northern part of Costa Rica and is currently planning to build an orange juice factory. Alvaro reports that he is doing fine and that he has three sons and a daughter, all of whom work with him in his business.

Robert J. Slocombe (Ph.D., 1943). I would like to share this with others. Something priceless that Professor Ray Q. Brewster gave me that I've not found in books was his attitude toward the unknown. It came out accidentally one day when I reported some surprising experimental results to him. In addition to encouraging me to continue, he said, "It's trying to tell us something." Those words stayed with me and were a source of wonderment and fascination with organic research throughout my career. This attitude conveyed the feeling that through experiments we can communicate with the unknown, and thereby, research is turned into a sort of spiritual experience--a refreshing end in itself.

1950 - 1959

James Earl Barney (B.S., 1946; Ph.D., 1950). I had a heart attack followed by quadruple bypass surgery in June 1994. So far, I seem to be recovering satisfactorily. I plan to continue my volunteer work at Carson High School, Carson City, Nevada, helping the Language Arts Department operate their writing laboratory. I assist students in using computers and in composition. I never thought that I would enjoy teaching high school English, but I find it very rewarding.

Harry A. Eick (Postdoc 1958) remains at Michigan State University with no plans to retire from teaching but hopes for relief from administrative work.

John L. Margrave (Ph.D., 1950) continues as E.D. Bucher professor of chemistry at Rice University. Following a special research symposium arranged in his honor at the time of his 70th anniversary, he has not yet

retired and his activities appear to continue unabated.

Harry A. Robson (Ph.D., 1958), now retired from Esso, also retired from Louisiana State University, Baton Rouge, has un-retired for a year to be acting as general presbyter in south Louisiana.

George E. Walrafen (B.S., 1947). Dr. Walrafen, graduate professor of chemistry at Howard University, Washington, D.C., is chairman of the Gordon Research Conference *Physics and Physical Chemistry of Water and Aqueous Solutions* which will convene in August of 1996. He presented an invited lecture at the International Conference *Water-Structure and Properties* in Kyoto, Japan, in March of 1994.

Quentin D. Wheatley (Ph.D., 1954), now retired from DuPont, and his wife Audrey celebrated their 50th wedding anniversary in 1994.

1960 - 1969

B. George Barisas (B.A., Chemistry, German and Mathematics, 1965) is currently professor of chemistry at Colorado State University and associate dean of the College of Natural Sciences there. During the spring of 1995, he will be Max Varon visiting professor at Weizman Institute of Science, Rehovoth, Israel.

K. Douglas Carlson (Ph.D., 1960) has retired from the Argonne National Laboratory where he had been working on organic superconductors.

J.D. Doll (B.S., 1967) received a doctorate from Harvard in 1971 and is now a professor of physical chemistry at Brown University in Providence, Rhode Island. The Department of Chemistry at Brown University and the theoretical chemistry and molecular physics group at Los Alamos National Laboratory have created the *Chemical Physics Preprint Database* which can be accessed via Internet using www server, anonymous ftp, or email. This database, which is a fully automated electronic archive and distribution server for the international theoretical chemistry community, was made possible by funding from the Camille and Henry Dreyfus Foundation. Send questions about the database to margaret_doll@brown.edu.

Jimmie G. Edwards (Postdoc, 1967) after spending a year in Julich, Germany, working at the advanced high temperature mass spectrometry facility, he is serving as chair of the Department of Chemistry at the University of Toledo, Ohio.

H.F. Franzen (Ph.D., 1962) continues in the Department of Chemistry at Iowa State University and in the Ames Laboratory. He has published three books and

is writing a review paper on sulfides.

James M. Leitnaker (Ph.D., 1960) who retired several years ago from the Oak Ridge National Laboratory still continues to consult two or three days a week, and with his wife, Jean, enjoys nearby children and grandchildren.

Gordon Lewis (Postdoc, 1964) continues as professor of ceramic engineering at Clemson.

Terry A. Miller (B.S., with highest distinction, 1965) was the recipient of the Bomem-Michelson Award at Pittcon '95 held this spring in New Orleans, Louisiana. Miller, professor of chemistry at The Ohio State University and an Ohio Eminent Scholar, has pioneered the application of a pulse-amplified cw dye laser system to free radical spectroscopy in a supersonic free jet expansion. At Ohio State, he serves as faculty coordinator for the laser spectroscopy facility, chairman of the chemical physics graduate program, and is on the president's and provost's advisory committee.

Thomas Petzel (Postdoc, 1967) continues as professor of chemistry at Hochschule der Bundeswehr, Hamburg, Germany.

Ernest R. Plante (Ph.D., 1960) retired from NIST (formerly NBS) and reports that he and his wife, Marie, are enjoying retirement with travel, birds, butterflies, and lunch often with NIST friends.

Carol Powers (Ph.D., 1969) was promoted to team leader at Avery Denison. She works on development of technology of labels and works with several research groups around the world.

Karl E. Spear (Ph.D., 1967) continues as professor of materials sciences at Penn State. His wife, Nancy, is preparing for a professional art show and Karl is doing a little sculpting. His book on high temperature thermodynamics is well underway. Some of his research activities relate to growth of synthetic diamonds.

Phillip G. Wahlbeck (Postdoc, 1960) continues at Wichita State University and has been spending the summers at the Los Alamos National Laboratory.

Sven Westman (Postdoc, 1962) continues educational activities at Stockholm University, Sweden, and with his choir.

Lauren Wilson (Ph.D., 1963) presently vice chancellor of the University of North Carolina-Ashville, has been selected as the new president of Marietta College in Marietta, Ohio.

Wayne Wolsey (Ph.D., 1962) and Sally Meyer (Ph.D., 1988) were faculty participants in the 25th Oak Ridge Science Semester at the Oak Ridge National Laboratory. Meyer was on sabbatical from Colorado College (accompanied by her husband Mark Morgenstern (Ph.D., 1991)) and Wolsey was on sabbatical from Macalester College in St. Paul, Minnesota. Wolsey interacted with Jim Chambers (Ph.D., 1964) at the University of Tennessee and Ted Mueller (Ph.D., 1963) at O.R.N.L.

1970 - 1979

Ann Cartwright (Ph.D., 1972) is currently national chairman of the Two-Year College Chemistry Committee. She continues as chair of the Chemistry Department at San Jacinto College in Texas.

Bruce R. Conrad (Postdoc, 1972) has recently been appointed corporate vice-president and health sciences advisor at International Nickel in Toronto. He envisions that he will miss the research environment as he undertakes these new responsibilities.

Donald W. Genson (Ph.D., 1972) reports that he was appointed last June as lecturer in chemistry and executive director of a new science BS/MBA program in the Eberly College of Science at Pennsylvania State University. He is committed to the role of making significant progress in redefining a new partnership between Corporate America and Penn State University.

Peter J. Hampson (Postdoc, 1970) continues at a small research and manufacturing company near Cambridge, England, which works in the field of sensors for high temperature liquids.

Dick Horn (Ph.D., 1973) still works for Kodak and is involved in bridging conventional photography with digital imaging.

Paul C. Nordine (Ph.D., 1970) is president of his own company, Containerless Processing, based near Evanston, Illinois. He uses different techniques to purify and fabricate materials at high temperature without contamination from container or atmosphere.

Dean E. Peterson (Ph.D., 1973) is presently director of the Los Alamos National Laboratory's Superconductivity Technology Center. His group recently unveiled a new, flexible superconducting tape that not only loses its resistance to electricity at a much higher temperature than do established superconductors but also can carry more than one million amperes of current per square centimeter of cross section. Possible uses for the new tape are highly efficient motors, very small magnetic resonance imaging machines, and superconducting power lines.

Kim M. Sheridan (B.A., 1978; M.D. 1984) is an OB-GYN at Harbor-UCLA Medical Center.

Richard L.C. Wu (Ph.D., 1971) and his wife Spring C. C. Wu own K Systems Corporation. She is president and he is executive vice president. They specialize in computer engineering services and engineering and scientific services. Much of Spring's activities are in providing computers, and Richard's are in research and development, much of which relates to diamond-like films. They have worked with a dozen or so clients, and since 1992 have completed some 10-15 projects and have several underway. Their daughter is in medical school.

1980 - 1989

Joan (Tholen) Collison (B.S., 1981) and her daughter have moved back to Hays, Kansas, where she has joined an ophthalmology practice. She misses some things from her years in Portland, but not the commuting.

Greg Cronin (B.A., 1989) received a doctorate in marine ecology from the University of North Carolina at Chapel Hill in 1994. Two weeks after defending his dissertation on seaweed chemical defenses, he and his wife, Julie, had their first child, Cody Ross. The family is currently living in South Bend, Indiana, where Greg is doing postdoctoral work on chemically-mediated plant-herbivore interactions in the Department of Biological Sciences at Notre Dame.

David R. Hardten (B.S. 1983; M.D., 1987). I have been in practice for one year as an ophthalmologist specializing in corneal surgery, refractive surgery, and external disease. I am still actively involved in the teaching of residents and fellows in ophthalmology. I am also involved in several basic and clinical research projects. Minneapolis has become my new home.

Dr. Borys Hrinchenko (Ph.D., 1983, M.D., 1992) will be leaving the Mayo Clinic in July to begin a fellowship in hematology/oncology at the National Institutes of Health.

Paula Koenigs (B.S., 1987) is a research scientist in anti-infective research at Procter & Gamble, Cincinnati, Ohio.

Joseph Blair Moon (B.S., 1985) has been with The Upjohn Co., since 1986. Currently he is senior research chemist in the computational chemistry unit.

Sandy Mecklenburg (B.S., 1985) is a director's fellow with Dr. Donohoe at the Los Alamos Laboratories, Los Alamos, New Mexico.

John Nuss (B.A., 1980) is associate director for organic chemistry at Chiron in San Francisco. He really likes his new job and loves the Bay Area.

Kristina E. Paquette (B.A., 1983). I recently completed all requirements for a doctorate degree in analytical chemistry at the University of Maryland, College Park, Maryland, and participated in commencement exercises in December 1994. In my dissertation entitled *Solubility of Cinnabar (Red HgS) and Implications for Mercury Speciation in Sulfidic Waters*, I developed a model that scientists and engineers can use to predict the fate of mercury in natural anoxic conditions. The research was conducted under the direction of Professor George R. Helz. I was selected as one of ten U.S. scientists to participate in the National Academy of Sciences' Young Investigator Program on water resources management in Turkmenistan and Uzbekistan, former republics of the USSR, in August-September 1994. I travelled to those countries where I met scientists and engi-

neers and visited water distribution and treatment facilities in order to set up joint research efforts to solve problems related to desiccation of the Aral Sea. I will begin work at the Food and Drug Administration, Washington D.C., in December 1994, where I will review new food and drug products to determine their impact on the environment as part of the overall approval process.

James Ray (M.S., honors, 1988). Since leaving Tom Engler's group in 1988, I have been employed with Eli Lilly and Company in Indianapolis, Indiana. After working for a brief time in the infectious disease area, I moved into the Cancer Research Division where I am currently an assistant senior organic chemist. Our research involves anti-folate compounds which have shown antitumor activity in our *in vivo* assays. Currently, our division has two candidates in clinical trials with another about ready to begin phase I.

My wife Cyndy found gainful employment as a registered clinical dietitian in the intensive care unit of St. Vincent's Hospital here in town and enjoys it very much. Our "spare" time belongs to our son, Ian, who is now 3 years old. He delights in mixing various liquids together (juice, milk, soda, etc.) and tasting the results, so we think he has the makings of a fine organic chemist (or bartender).

When I tell them I went to Kansas, everyone wants to know what "Rock Chalk" and "Jayhawk" mean (also, I think Larry Brown is following me.....) But that's okay - I can't find anyone who knows what "Hoosier" means either.

Richard Roberts (B.S., 1987) is now a postdoc in the lab of Jack W. Szostak at Massachusetts General Hospital. Szostak is also professor of genetics at Harvard Medical School. Richard reports that he finished his doctorate degree in the spring of 1993 under the guidance of David M. Crothers at Yale University in biophysical chemistry. His thesis was *Physical Chemistry of Nucleic Acid Triple Helices* and detailed the kinetics and thermodynamics of triple helix formation. In Jack's lab, Richard is currently working on extending *in vitro* selection to proteins. (He invites those who surf the internet to contact him at rroberts@frodo.mgh.harvard.edu)

Rod Schoonover (B.S., 1986) received his doctorate at Michigan in 1992 under the guidance of Raoul Kopelman and started in the fall of 1993 as an assistant professor at California Polytechnic State University at San Luis Obispo, California.

M.K. "Venkat" Venkatramanan (M.S., 1983) is now a senior scientist at Salsbury Chemicals, Inc. (A CAMBREX Company) located in Charles City, Iowa. He and his family love it there.

Patricia Young (B.S., 1975; M.D., 1980) is staff anesthesiologist at North Kansas City Hospital.

1990 - Present

Phillip Athey (Ph.D., 1990) reports that 1994 was a rewarding year for him at Dow Chemical Co. First, he was promoted to the position of project leader during the summer. Secondly, he received a Technology Excellence Award from the Chemical & Metals/Hydrocarbon Research Division of Dow for his work in the area of the synthesis of azamacrocycles. Currently his research has been focused on the synthesis of new biodegradable chelants.

Phil spends most of his spare time with his family--wife Valerie, Mitchell (4) and Jillian (2)--and training for road races (when he has time!).

Mohammed Ali (Ph.D., 1993) has finished his first semester as an assistant professor at Southeastern Missouri State University.

Whitney Baker (B.A., 1994) is working on the master's in library and information science (MLIS) at the University of Iowa. In addition to being enrolled in a book binding class, Whitney is doing independent research on paper pulp preservatives and paper chemistry at Iowa's Center for the Book to find both effective and non-toxic preservatives for hand papermaking. Whitney intends to pursue a career in book and paper preservation.

Kyle Beran (Ph.D., 1994) finished his doctoral work in December. He was a teaching postdoc in the Department during the spring semester, serving as a physical chemistry laboratory instructor.

Timothy J. Boyle (Ph.D., 1990) is currently a permanent staff member at the Sandia National Laboratory.

Jiang Chang (M.S., 1992) is finishing his Ph.D. degree at the University of Oklahoma.

Sing Hwa Chong (B.S., 1993) is currently a graduate student at the Department of Chemistry, California Institute of Technology, Pasadena, California.

Kapila DeSilva (Ph.D., 1994) is currently a postdoc at Virginia Commonwealth University in Richmond, Virginia.

Gregory Gfesser (M.S., 1994) finished his master's degree and is presently a research associate at Abbott Laboratories.

Deepani Gunasekera (M.S., 1994) is a graduate student at Simon Fraser University, Vancouver, B.C., working with Andy Bennett.

Howard Hendrickson (M.S., 1992) and **Tina (Anderson) Hendrickson (Ph.D., 1994)** are the proud parents of Caitlyn Beth, born November 11, 1994. They currently reside in Fayetteville, Arkansas, where Howard is completing a doctorate degree at the University of Arkansas.

Rolande Hodel (M.S., 1994) accepted a position at Nanocrystals Technology, Inc., in New York.

L. William Kueper, III (Ph.D. honors, 1994) is

a postdoc with Gary Schuester at Georgia Tech. He misses Lawrence and plans frequent returns.

Frank Luo (Post-doc, 1992-1993) is a chemist with the Kansas Department of Agriculture in Topeka, Kansas.

Kenneth O. Lynch, Jr. (Ph.D., 1994) finished his Ph.D. and is presently a postdoc with Leo Paquette at The Ohio State University.

Kim Mitchell (Ph.D., 1993) is a postdoc in pharmacology (KU) with Eli Michaelis. She is doing exciting new work with electrodes for glutamate and nitric oxide detection.

Sriram Naganathan (M.S., 1990) After earning a Ph.D. from SUNY-Albany and a postdoc stint at Pittsburgh with Paul Doud, Sri accepted a position as a research scientist at Pfizer.

Sang Kil Nam (B.S. 1994) was admitted to a master's program in environmental science at the Oregon Graduate Institute of Science and Technology in Portland (Beaverton), Oregon.

Tony Osei (Ph.D., 1990) has taken a new position with McNeil Consumer Products Co. in Ft. Washington, Pennsylvania.

Jayachandra Reddy (Ph.D., 1991) has accepted a position as a research scientist at Bristol-Myers Squibb in Syracuse, New York.

Iffaz Salahudeen (Ph.D., 1995) has accepted a postdoc position at KU with John Stobaugh in Pharmaceutical Chemistry Department.

UmaShanker 'Pop' Sampath (Ph.D., 1992) wrote to say that he accepted a postdoctoral position in the New Products Division of the agricultural group at Monsanto Company in St. Louis, where he started work in September 1993. Pop reports that in September 1993, he was awarded the Best Poster at the Frontiers in Bioprocessing III Conference in Boulder, Colorado, for research which appeared in *J. Am. Chem. Soc.*, Vol. 116,



Pop with his wife, Chandra, and their year-old daughter, Vijay

No. 13, 1994, titled *Sequence-Specific Cleavage of HIV mRNA by a Ribozyme Mimic* and in the *St. Louis Dispatch*, June 29, 1994. Pop, his wife, Chandra, and their year-old daughter, Vijay, embarked on their first major vacation to India last August.

Pop reports that he has continued with his art work and an advertisement with his design for the Race & Science Conference (held at Washington University-St. Louis in November 1993) was published in *Science* (AAAS) and *Chronicle of Higher Education* last September and October. The art work for the Pharmaceutical and Biomedical Analysis meeting organized by Dr. Stobaugh, to be held in St. Louis in 1995, was also his creation.

Steven Soper (Ph.D., 1990) is an assistant professor in the Department of Chemistry at Louisiana State University, Baton Rouge, Louisiana. This year, Steve received a LSU Outstanding Research Award, a college-wide competition for faculty early in their careers. He also received an NIH Award for developing new technologies for the high speed sequencing of the Human Genome.

Erich Steinle (B.S., 1994) is busy and enjoying his studies as a graduate student at the University of Michigan.

Greg Swain (Ph.D., 1991) is an assistant professor with the Department of Chemistry, Utah State University, Logan, Utah.

Neil Stephenson (Post-doc, 1990) and **Paula (Chinn) Stephenson (Ph.D., 1991)**. Neil and Paula welcomed their first child, son James Andrew, on August 20, 1994. Mom and Dad are both employed at Praxair, Inc., Tonawanda, New York, as development associates in advanced materials research.

Jiaher Tian (M.S., 1994), is now a Ph.D. student in the Department of Environmental Engineering at Johns Hopkins University. He likes the program and is doing well.

Mary Elizabeth "Beth" Thomas-Miller (Ph.D., 1992) is a research scientist at Mallinkrodt Medical.

Kirsten A. Unger (B.A., 1991) was awarded a 1993 NSF Graduate Fellowship and is currently working toward a Ph.D. in neuroscience at Washington University in St. Louis.

Chaozlei Wan (Postdoc, 1989-94) is now a postdoc with Ahmed Zewail at Caltech.

Michael Weber (Ph.D., 1992) currently holds the position of scientist with Cypress Systems, Inc., Lawrence, Kansas.

Donna Wei (M.S., 1993) has accepted a position with MERCK, Inc.

Minli Xie (M.S., 1994) is currently a graduate student in biochemistry at KU.

Delong Zhang (Ph.D., 1995) is a research associ-

ate with Battelle Pacific Northwest Laboratory in Washington.

Dongbo Zhang (Ph.D. honors, 1995) is currently a postdoc in the department of pathology at the Medical College of Virginia.

Jingfeng Zhang (Ph.D., 1995) is now a postdoc at Carnegie-Mellon.

Simon Zhou (M.S., 1994) is currently a graduate student in the School of Pharmacy at the University of Michigan.

Willie Michael Zimmeroff (B.A., 1993) worked at Teledyne-Getz in the mass spec and infrared spectroscopy lab in quality control. He left for a career in bread baking and food science research at the Corner Bakery in Chicago. Research will include analysis of the pH of interval yeast fermentation and analysis of vitamin enrichment addition to product.

DEATHS

Samuel H. Wilen, 63, professor of chemistry at City College of the City University of New York and an internationally recognized authority on stereochemistry, died of cancer November 16, 1994. Wilen was born in Brussels, Belgium, in 1931. In 1940, when Belgium was overrun by the Germans, he and his family escaped through unoccupied France to Cuba and arrived in New York in 1942. He received a bachelor's degree from City College with honors in 1951 and a Ph.D. degree in organic chemistry in 1956 from the University of Kansas. After a postdoctoral appointment at Notre Dame University, Wilen accepted a faculty appointment at City College. He rose through the ranks to become professor in 1970 and served a term as chairman of the chemistry department.

Dedicated to research as well as to teaching, Wilen published numerous articles, received several awards, wrote or coauthored three books, and was an editor of the authoritative series *Topics in Stereochemistry*. His most recent book, *Stereochemistry of Organic Compounds*, was coauthored with Ernest Eliel.

Wilen's research interests ranged widely, and included the synthesis of dihydropyrazines, Friedel-Crafts alkylation, and selective hydrogenation of organic compounds. In recent years, his main research focus was the rational design of resolving agents. He developed and taught a course on the use of the chemical literature and methods of access to it. This was expanded into an audio course for ACS. (Source: *C&EN*, November 28, 1994)

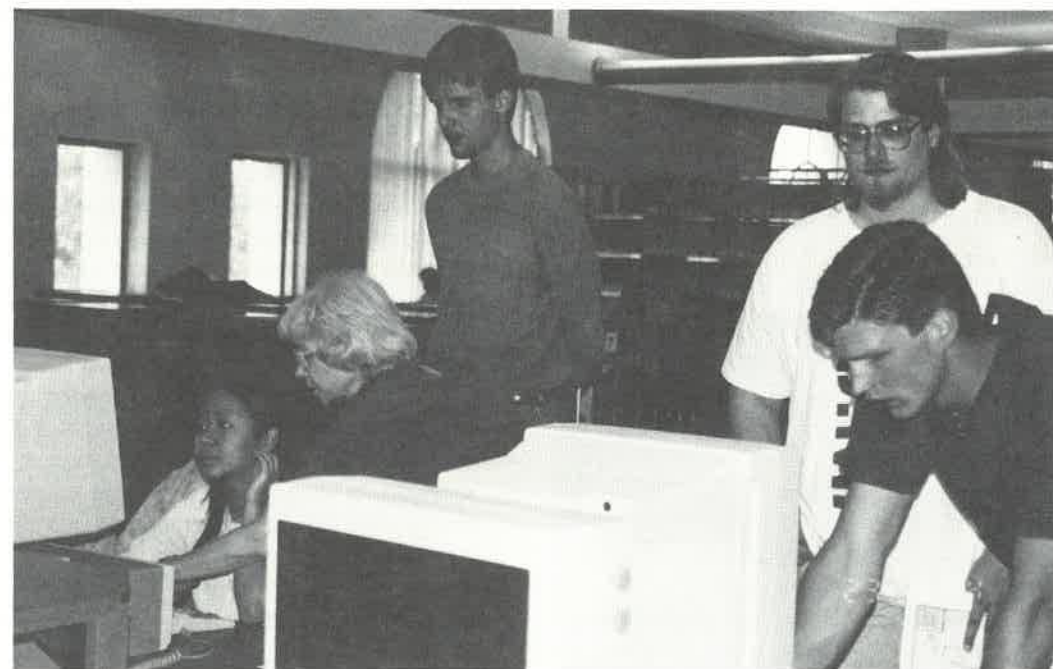
Correl N. Robinson, 80, died August 20, 1994, at a McAllen, Texas, hospital. Dr. Robinson received a Ph.D. degree in organic chemistry from the University of Kansas in 1941, studying with Frank B. Dains, and was a research chemist in Detroit, Michigan, from 1941 to 1946. In 1947, he went to work for the City of Topeka Water Department, where he remained until he re-

tired in 1979. He continued as a consultant to the City of Topeka Water Plant until 1986. Dr. Robinson also operated Robinson Laboratories from 1948 to 1980, which made stains and reagents for medical laboratories. (Source: Topeka Capital-Journal, August 24, 1994)

The Chemistry Department receives generous assistance from the KU Alumni Association in distributing its newsletters. We believe a strong and informed alumni group can be one of the most important supports of a department and of a university. We urge all our former students and colleagues to join the Alumni Association and assist in its exemplary efforts on behalf of the University. Annual dues for membership are \$35 single or \$40 joint (with spouse); life-memberships are available.

The KU Endowment Association maintains the following fellowships, funds, and scholarships on behalf of the Chemistry Department. Contributions are always appreciated.

- | | |
|---|--|
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| George Bailey Corbin Memorial Scholarship | |



Each summer Anschutz science librarian Connie Powell (center) helps incoming NSF REU and MACRO-ROA participants by providing orientation to various library resources including online chemical information retrieval services. Looking on are MACRO-ROA participant Dr. Rosemary Effiong (Xavier University, Louisiana), and REU participants Yunnee Lim (KU undergraduate from Malaysia), Greg Dudley (Florida State), Keith Marek (Jamestown College, North Dakota), and Monte Vander Velde (Northwestern College, Iowa). (Listed order is l to r.)

Dear Chemistry Alumnus:

The faculty and I hope that you have enjoyed reading our 29th annual Newsletter and will take time to send us information about yourself for the next edition. I would also appreciate any comments you might wish to offer about the Newsletter--what you enjoy reading, and what you would like to see that has not been included.

Please fill in this form and return it to Carol Bray, Academic Administrative Officer, Chemistry Department, University of Kansas, Lawrence, KS 66045 (FAX: (913) 864-5396) (Internet CBray@CaCO3.chem.ukans.edu).

Name _____

KU degree(s) and year(s) received _____

Other degree(s), year (s), schools (s) _____

Occupation _____

Employer _____

Employer's address _____

Information about yourself (job, further education, family, scientific achievements, etc.) which you would like in next year's Newsletter. (continue on additional sheet if needed)



Return to:

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Chemistry Department
2010 Malott Hall
Lawrence, KS 66045

TO: