Alumni Newsletter
Department of Chemistry
University of Kansas

July 1994

Faculty, staff, and students enjoying Earl Huyser's retirement reception,
see related story on p. 6

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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Walter and Roy Cross Memorial Fund
Higuchi Chemistry Fund
Higuchi Fellowship Fund
Fassnacht Memorial Scholarship
Paul and Helen Gilles Award
Ernest and Marvel Griswold Fund
Elmer V. McCollum Fellowship
Chemistry Development Fund
Cornelius & Martha McCollum Fellowship
Chemistry Research Fund
George Bailey Corbin Memorial Scholarship
Leonard V. Sorg Scholarship
Susan and Stephen Snyder Chemistry Award
Reynold T. Iwamoto Award
W. Mack Barlow Memorial Award
Chemistry Fellowship Fund
Emily V. Berger Research Fund
Owen W. Maloney Scholarship
Clark E. Bricker Scholarship
Scientific Equipment Fund
Ralph N. Adams Research Fund
J.K. Lee Memorial Fund
Jacob Kleinberg Award

June 1994

Dear Alumni and Friends,

We are sending you our annual newsletter a little earlier this year thanks to the help of Carol Bray, Grover Everett and Jake Kleinberg. As you leaf through the 1994 issue you will discover that a number of significant changes are occurring or have occurred. The two most important are the additions of Dave Benson (Ph.D., UCLA, with François Dieterich and a postdoctoral with Peter Schultz, Berkeley) and Brian Laird (Ph.D., Berkeley, with A. D. J. Haymet and a postdoctoral with J. Skinner at Columbia and Wisconsin). These two young men have added significant strength to our organic and physical chemistry groups.

One of our major projects, the refurbishing of the research laboratories in Malott, is nearly complete as of this writing. Under the watchful eyes of Jack Landgrebe and Jack Rose, thirty research laboratories received significant renovation supported by a $300,000 grant from NSF Laboratory Modernization Grant and an equal amount from the state of Kansas.

Richard Givens at Earl Huyser's retirement reception

With this project behind him, Jack Landgrebe has taken on another major initiative for the Department. He is coordinating a proposal for an undergraduate Science Teaching Laboratory Facility to serve chemistry, physics and the biological sciences. Those of you who have visited Malott in the past ten years know that our 1954 vintage undergraduate laboratories fall below the functional and safety standards of laboratories at our sister universities. In February, the departments approved and forwarded to the University Administration a proposal for a 129,500 square foot facility estimated to cost $40M. That proposal has since been forwarded to the Board of Regents to be considered for future capital improvements to the University. We know that this is a long term project, but the need is current and much planning will be necessary before this goal can be realized.

The Department has experienced several losses. Earl Huyser retired this spring upon completing his thirty-fifth year. He was a teacher, mentor, and scholar as was recently recognized again last fall when he received the Chancellors Club Teaching Award. Earl finished his teaching career as he started it, with Organic Chemistry I and II. While he has joined the emeritus rank of the faculty, he is not through mentoring young, would-be scholars. He will teach one of our summer courses on beginning chemistry, another one of our ever-expanding summer program offerings.

While composing this letter, I was informed that Clark Bricker passed away. His death

on June 14th marked the end of a great career. Brick was featured in last fall's issue of *CLAS Notes* published by the College of Liberal Arts and Sciences. We will include a full article on Brick in next year's *Newsletter*. Earlier this spring Jane Kleinberg also passed away from cancer. For many of us who arrived in the '60s, she helped us get settled in Lawrence and was a close family friend. She also helped many of us "bring up" our children. They will miss her, as will we all. Jake continues to come by the Department on a weekly basis.

Awards were forthcoming to many faculty in the Department this year. Daryle Busch received the Izatt-Christensen Award for Macrocyclic Chemistry, only the fourth person to receive this prestigious recognition. He was given the award at the XIX International Symposium on Macrocyclic Chemistry held in Lawrence, which was hosted by Kristin Bowman-James and Daryle. Daryle was also elected chairman of the chemistry section of American Association for the Advancement of Science and was one of the four nominees for the two candidate positions for president of the ACS. George Wilson was the recipient of the Olin K. Petefish/Higuchi award in recognition of this work on the glucose sensor and in bioanalytical chemistry. The award provides a research of $10,000 for his research. And last month, Chancellor Budig announced that Grover Everett will be the thirteenth Chancellors Club Teaching Professor, a professorship begun in recognition of the teaching career of Clark Bricker. Brick was the first recipient, receiving it the year before he retired. Brick was especially pleased that Grover had won the award, which he learned just a month before his death.

Finally, I will conclude my letter with my annual expression of appreciation for your support over the past year. Please continue to consider the Department. Endowment funds are an indispensable part of the resources we use to build the Department. Your support, which this Department has and continues to enjoy, truly forms the base for our new initiatives. Recruiting new faculty and talented graduate students, encouraging our undergraduates, and winning admiring friends are the objectives for our use of endowment funds. Thank you and I hope you enjoy this edition of our Newsletter!

Richard S. Givens

Chemistry NSF-REU Program Awarded Third Three-Year Renewal

There is no better way to excite young science students than to get them into a research laboratory environment working on a real research project. These experiences are often a deciding factor in determining their future careers in research. However, very few undergraduates can afford to devote a summer to full-time research without some form of financial support. In December, **Marlin Harmony** and **Barbara Schowen** were awarded the Department's third three-year grant for an NSF Research Experiences for Undergraduates in Chemistry program. The specific aim of this program is to provide financially-supported research opportunities for promising undergraduate students.

Overall, the NSF supports sixty summer REU programs at institutions throughout the U.S. This program provides juniors or sophomores who plan careers in chemistry with stipends of $2,750 plus travel and housing allowances for the ten weeks they are engaged in basic research. Each year REU brings together an enthusiastic group of 10-12 students and allows them to interact with faculty, postdoctorals and graduate students, and each other to experience first-hand the intellectual stimulation and teamwork associated with research in the chemical sciences. We receive over 100 applications each year from across the country for the ten full-time summer research positions funded by this NSF program. Participants

REU students prepare for a summer poster session

are recruited from over 300 colleges in seventeen states, including seventy-five schools which enroll high percentages of women and minority students. Participant selection is based on academic record, perceived potential, motivation for research, and underrepresented status in the field of chemistry. In this program, emphasis is placed on helping students develop into independent researchers. During the summer, each participant carries out an independent research project which they choose from the twenty possible projects suggested by our faculty. It is their opportunity to gain experience in both the approach to modern scientific research and the use of current research techniques and instrumentation. Activities include weekly seminars and presentations of interim and final reports in poster sessions or seminars.

Our Chemistry Department faculty believe that the education of chemistry majors is not complete without research experience. To be most effective, the experience should involve a project with definite goals and with the possibility of a tangible outcome. It should be carried out in a well-equipped laboratory setting in collaboration with a senior scientist as a mentor. There are eighteen faculty members in the Department who serve as research directors and mentors for these students, fully integrating them into their research groups.

Marlin and Barbara labor diligently each year to assure that everything functions smoothly and to provide a quality experience for these students. That they are successful in achieving these goals is indicated by students' interest in chemistry research careers. In exit surveys, these budding researchers revealed overwhelming enthusiasm for their experiences; over 90 percent claimed they were more inclined to plan for graduate study in chemistry after their summer research experience. Here are observations and comments taken from the exit surveys of several program participants:

".....sometimes graduate school and the resulting research seems unreal - this (REU) made it seem both real and obtainable."

"The general challenge of research and the overall atmosphere were stimulating.... interaction with others was rewarding and the problem seminars were great."

"The instrumentation in my lab was mind-boggling at first, but by the end of the summer I felt like I understood it."

Proof of these statements emanates from the fact that eleven of our recent NSF-REU participants have chosen to return to KU and are currently part of our Ph.D. Chemistry program!

College Professors Enjoy Summer Research in the Chemical Sciences

This year marks the eighth year for our *Summer Research for College Teachers in Bioanalytical Chemistry* (MACRO-ROA). This NSF program supports summer research for college teachers from non-graduate institutions who work with faculty advisors drawn from the Chemistry Department and the Center for Bioanalytical Research. Each college teacher joins in a collaborative research project with a faculty advisor. Professors **Marlin Harmony, Richard Givens, Robert Carlson, Ted Kuwana, Richard Schowen, Carey Johnson, Craig Lunte, George Wilson,** and **Sue Lunte** have served as faculty mentors and colleagues in research. The program recently received its third, three-year renewal. Currently, **Ted Kuwana** serves as PI, and **Cynthia Larive** is the Co-PI.

The purpose of this program has evolved since its inception in 1988 from a demand for well-trained professionals in analytical chemistry to a more determined effort to encourage students to pursue careers in analytical chemistry. The stated purpose of the proposal in 1988 was:

"Faculty who are excited and involved in chemical research will undoubtedly greatly influence the professional career choices of students. It is these predominantly undergraduate institutions, acting as 'feeders' which will provide most of the students for our graduate institutions and the chemical professions."

In 1990, the program emphasis shifted toward encouraging the college faculty to bring the excitement of research back to their undergraduate students and to strengthen their background in science. More emphasis was placed on long-term tracking of the effects and results of the college faculty experience.

A significant and unique feature of our program is that we do not restrict the field of study among the various disciplines of chemistry. We invite applications from faculty in many disciplinary areas, since our objective is to familiarize undergraduate college faculty with biologically oriented analytical problems that require contributions of organic, physical, biochemical, pharmaceutical, and inorganic chemists as well as those with a background in analytical chemistry. Similarly, we encourage participation of all for our own faculty with research interests that extend into bioanalytical chemistry. This has broadened the base of bioanalytical research among our neighboring undergraduate institutions, as well.

For many faculty at undergraduate institutions, limited access to research grade equipment and heavy teaching loads are powerful obstacles to faculty who desire to develop research programs for undergraduates. For the undergraduate college faculty member, the MACRO-ROA program provides the reinforcement and stimulation that they experienced during their Ph.D. and postdoctoral training. For more established undergraduate college faculty who have not actively participated in research for several years, the research experience restores the confidence they need to conduct research with undergraduates at their home institution. The research problems defined by the KU faculty mentors in this program are designed so that the program participants can take the research problem, or some modification of it, back to their home institution. Therefore, the focus is on bioanalytical problems which do not rely on large instrumentation. In addition, we offer the use of KU instrumentation facilities such as NMR and mass spectrometry after the participants have returned to their home institutions.

With NSF's permission, a pilot program was initiated during the summer of 1993 whereby three former MACRO-ROA participants were also invited to return to KU. The intent was to strengthen and extend research collaboration, and provide assistance and stimulation so that efforts to conduct research with undergraduates at their home institution could be improved. This activity will continue during the 1994 summer program.

Our program now has a total of 34 alumni. A majority of the participating faculty came from an area within a radius of approximately 250 miles of Lawrence. About 15-20 return each year to a reunion at KU which provide the MACRO-ROA alumni with an opportunity to exchange views, share their successes, strengthen ties and stimulate a renewed dedication to their teaching and research. It also gives us a mechanism for assessing the impact and effectiveness of the MACRO-ROA program by asking the faculty what they have been doing at their home institution. We excerpt some of their observations and comments, as documented by letter, as follows:

"...it has permitted me to establish a working relationship with a healthy research department."

"It was inspiring to hear of the impressive accomplishments of my peers at other small colleges and universities subsequent to their experience in the MACRO-ROA program."

"That I can teach at a small college and maintain a dynamic relationship with scientists here [KU] is one of the healthiest aspects of my career."

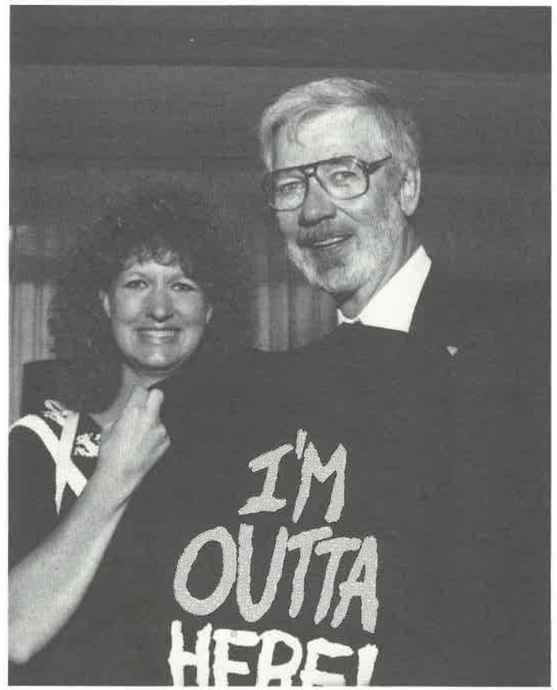
We look forward to meeting four new MACRO-ROA participants this summer and also welcome three of our alumni back to continue their collaborations.

Earl Huyser Retires

This year's commencement marked the end of a long and highly successful teaching and research career at KU for Earl Huyser.

Born and raised in Holland, Michigan, Earl stayed in that city for his undergraduate education, earning an A.B. degree from Hope College in 1951. His graduate studies were carried out at the University of Chicago, where he was awarded the Ph.D. degree with a major in organic chemistry in 1954. He worked under the direction of Professor W.H. Urry.

Earl remained at Chicago for most of the next academic year as a postdoctoral associate and in March of 1955 took a position with the Dow Chemical Company in Midland, Michigan. He was inducted into the Army in November 1955 and was stationed at the Army Chemical Center in Edgewood, Maryland, until February 1956. Then, he was a postdoctoral research associate with Professor Cheves Walling at Columbia University until June of 1957, when he returned to Dow. In 1959 he accepted a position at K.U. as an Assistant Professor.



Earl and his daughter enjoy a retirement gift

Earl's qualities as a stimulating teacher and productive researcher led to rapid promotion, and he attained the rank of Professor in 1966. Earl's early research thrusts were in free radical reactions and their mechanisms. He dabbled in photochemistry (with Doug Neckers) and in the Hill reaction (with some of his last students). His recent work has been largely concerned with the examination of computational quantum mechanics of intermediates produced in both organic and inorganic reactions. Major attention has been paid to the structures of the ground and excited states of these intermediates. Numerous research publications and a large number of students have come from his laboratory. Eighteen master's and thirty-four doctoral students have done their work under Earl's direction.

Earl has taught both undergraduate and graduate courses in organic chemistry as well as freshman chemistry. He served for three years as coordinator of the latter program. The receipt of both an Amoco Teaching Award and a Chancellors Club Career Teaching Award attests to his excellence as a teacher.

Earl has lectured on his research at numerous universities, edited a number of books and written two; one is a textbook on general chemistry, and the other is the widely used Free Radical Chain Reactions. In addition, he has been a consultant for Dow for many years.

This summer, Earl and his wife Barbara plan to travel in the Southwest, Montana, and the Canadian Rockies and will also attend their high school class reunions. Longer-range plans include setting up a woodworking shop at home. Scientific endeavors are being continued. He is making molecular orbital calculations relating to the excited states of free radicals and other reaction intermediates and is working on a book that tentatively has the title Computational Quantum Chemistry for Organic Chemists.

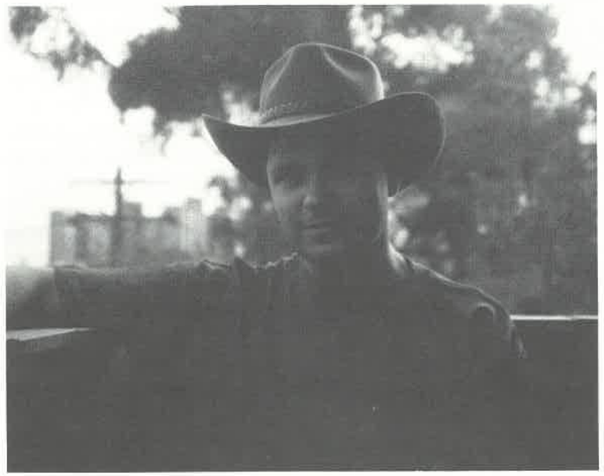
On May 12, the Department hosted a reception for Earl at the Kansas Union. Over 75 friends, faculty, and students attended the celebration of Earl's retirement. He was "awarded" a number of presents from his former students and a CD ROM for his computer. Jack Rose, representing the staff, presented him with a First Aid kit and a "free" entry permit to the emergency room to cover any unforeseen incidents when he begins his second career in woodworking.

New Faculty Addition

Dr. Brian B. Laird joined the Chemistry Department faculty as an assistant professor at the beginning of the Spring 1994 semester. Brian received both a B.S. degree in Chemistry and a B.S. degree in Mathematics from the University of Texas in Austin in 1982. In 1987, he received a Ph.D. degree in Chemistry from the University of California at Berkeley. The development of a microscopic theoretical description for a variety of complex amorphous, mac-

romolecular or interfacial systems is the primary focus of his research.

From 1988-1989, Brian was a postdoctoral student with Jim Skinner at Columbia University. During 1989-1990, he travelled to Forschungszentrum Jülich, Germany to study as a NATO postdoctoral fellow. In 1991-92 Brian was a faculty intern at the University of Utah, then studied for six months as an Australian Research Council Fellow at the University of Sydney. Just prior to moving to Lawrence, he was



Dr. Brian Laird

a lecturer at the University of Wisconsin at Madison. Outside of the world of Chemistry, Brian's interests include hiking, mountain biking, camping and playing the piano.

XIX International Symposium on Macrocyclic Chemistry

Daryle H. Busch and **Kristin Bowman-James** were co-chairs for the XIX International Symposium on Macrocyclic Chemistry held at KU on June 12-17, 1994. About 175 participants attended. One-third were from other countries including Scotland, Northern Ireland, England, Belgium, Netherlands, Germany, Spain, Italy, Israel, Russia, Ukraine, Poland, Korea, Japan, and Canada. Although held in the U.S. every other year, this conference has traditionally been held at Brigham Young University. Holding this conference in Lawrence was a major change in tradition and an exciting opportunity for the Chemistry Department.

The scientific program for this symposium provided a forum for discussion of all aspects of macrocyclic chemistry, including theoretical and experimental subjects and applications. Presentations included plenary lectures by Jerry L. Atwood, Reed M. Izatt, and Dennis P. Riley of the USA; Arndt Knöchel and Karl Wieghardt of Germany; Martin Schröder of Scotland; and Luigi Fabbrizzi of Italy.

Additional presentations made as symposium lectures were presented by Jerald S. Bradshaw of the USA, Enrique Garcia-España of Spain, Ernst-G. Jäger of Germany, Yaroslaw D. Lampeka of Ukraine, Dan Meyerstein of Israel, Peter Moore of the United Kingdom, Hisashi Okawa of Japan, and Myunghyung Paik Suh of Korea.

Special emphasis was placed on making the poster sessions the centers of discussion.

Fourth International Workshop on Bioanalysis Scheduled for July

The Higuchi Biosciences Center for BioAnalytical Research (CBAR) will host the Fourth International Workshop on Bioanalysis on July 10-13, 1994. The workshop will bring together bioanalytical chemists from academia, industry, and government laboratories to discuss the latest developments in the field.

The workshop will consist of formal lectures, discussion sessions, and short courses. The twenty-three lectures will center on several of the latest technological developments in bioanalysis, whereas the discussion sessions will single-out specific bioanalytical problems faced by pharmaceutical, biotechnological, and biomedical communities. Part of the discussion will also focus on the question of technology transfer.

In addition, short courses will be offered in Assay Validation, Microdialysis, Capillary Electrophoresis, and Enantiomeric Separations.

The opening plenary lecture will be presented by Dr. Chiu Kwan, Vice President of Drug Metabolism for Merck, Sharp & Dohme on the *Bioanalytical challenges facing the pharmaceutical industry in the 21st century.*

George Wilson, Craig Lunte, and Adjunct Professor of Chemistry and Assistant Director of CBAR, **Sue Lunte**, have been invited to make presentations at the workshop. **Wilson's** presentation is on biosensors and *in vivo* monitoring of glucose.

In addition to conducting a short course on microdialysis with Peter Kissinger (Purdue), **Craig Lunte** will present his work on microdialysis sampling for pharmacokinetics and drug metabolism studies.

Sue Lunte will present a paper entitled *Pharmaceutical applications of capillary electrophoresis/electrochemistry* and will also lead a short course with John Stobaugh (Pharmaceutical Chemistry) in capillary electrophoresis.

Major funding for this workshop has been provided by Procter and Gamble with additional supplemental funds from the Higuchi Biosciences Center.

Networking for Career Enhancement

Comments such as "I feel strongly that being among women and with women at this workshop helped me develop and gain more confidence...," and "It was very nice to meet so many people (women) like myself..." were heard frequently at the Networking for Career Enhancement workshop. The workshop held September 9-10, 1993, in Topeka was attended by 120 participants including university faculty, secondary teachers and counselors, undergraduate and graduate students, as well as individuals working in the private and public sectors.

The program was divided between keynote speakers and breakout sessions. The keynote speakers shared personal experiences mixed with practical approaches for planning and implementing a successful scientific career, whereas the breakout sessions allowed participants to meet in smaller groups to discuss specific topics which included: Grant funding and Proposal Writing, Career Management: Your Professional Image and Tomorrow's Opportunities, Attitudes and Abilities: A Look at the Gender Issues in Precollegiate Science Education, Upward Mobility: The Glass Ceiling, Career Planning: Long Term Career Development, Entrepreneurialism: No Guts, No Glory!, University and Business Partnerships: What are the Possibilities?, Early Intervention Programs, and Two Career Families — Blending Careers and Family.

The tone of the workshop was established in the opening address *Being a Woman Scientist in Kansas* by Dr. Donna Sweet, an AIDS researcher at St. Francis Regional Medical Center, Wichita, who spoke about her nontraditional path to becoming a M.D. and her career as a scientist. In spite of her success, she recognizes the barriers confronted by women pursuing nontraditional science careers. Dr. Sweet actively mentors women students (both traditional and nontraditional) in addition to conducting clinical research on AIDS and the treatment of AIDS patients.

Kay Cronkite Waldo provided insights in her presentation *Networking: The Name of the Game*. Ms. Waldo is a professional trainer who specializes in professional development, self-management, and communication skills. She addressed the internal, interpersonal, and organizational challenges of networking. She then shared practical approaches for creating strong personal and professional support systems.

Mothers Milk: Some Varieties of Sexism, was presented by **Richard L. Schowen**, the Solon E. Summerfield Distinguished Professor of Chemistry, Biochemistry, and Pharmaceutical Chemistry at KU. He shared his personal observations on the tribal rituals of scientific clans and how they can affect the process of doing science and attitudes toward the participation of female colleagues. Dr. Schowen's coverage of the topic provided a light, but sensitive examination of the barriers that women face in the academic research environment. Diana Prentice Carlin shared her views on *The Gender Gap in Communications*. Dr. Carlin, assistant professor of communications studies at KU, shared research on the myths and realities of communication differences between women and men.

Based on participant feedback, the Networking for Career Enhancement Workshop was well received by the audience in attendance. Plans are being formulated for a second workshop next year.

*This workshop was hosted by The National Science Foundation and the Kansas K*STAR NSF EPSCoR Program.*

Chemistry Outreach Project

The Outreach Project is a series of chemistry "Magic Shows" presented by the ACS Student Affiliates to elementary and middle schools in Lawrence and elsewhere in Douglas County. The goal of the program is to show young people that science can be exciting and fun. Generally, a group of two to six

undergraduate students plus a faculty adviser visits a school to present the show to groups ranging in size from a single classroom to the entire school. Presentations are sometimes made to groups of Boy or Girl Scouts. Most shows include demonstrations involving liquid air, dry ice, urethane foam, hydrogen and helium balloons, a lycopodium powder flash, luminol, acid-base indicators, and colorful precipitation reactions. With small groups, members of the audience are invited to participate in hands-on experiments such as paper chromatography and making "slime."

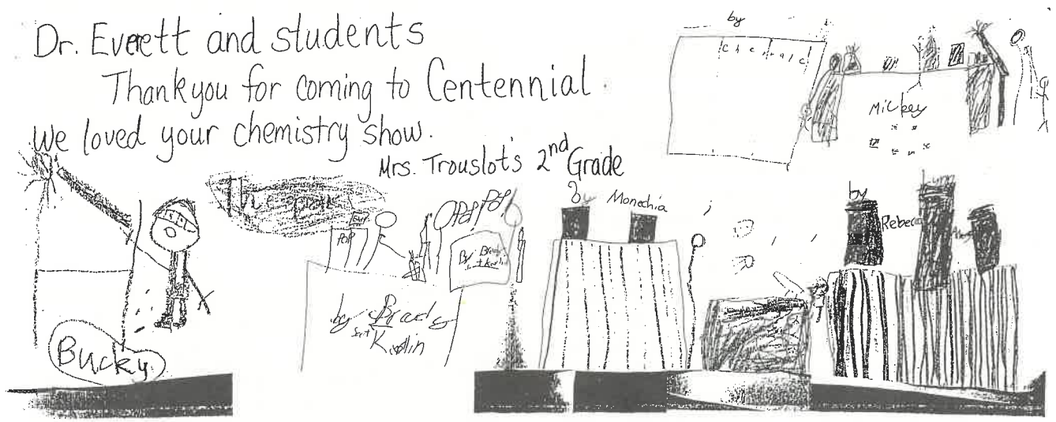
The program began several years ago when Grover Everett was asked to make presentations at a number of public schools. He assembled a series of readily-portable demonstrations and wrote instructions for their preparation and presentation. In the past two years, this has largely been taken over by the ACS Student Affiliates under the energetic leadership of Ruth Martindale. The affiliates added more demonstrations and expanded the write-up. Student participants in the 1993-94 Outreach Project include: Elliott Farber, Aida Gerges, Brad Hart, Huong Lam, Trien Le, John Lord, Ruth Martindale, Matthew Meyer, Scott Peterson, Jim Speicher, and Erich Steinle. Others who have made presentations recently are Kathy and Joe Heppert, Martha Morton, Jack Landgrebe, Clark Bricker, Cindy Larive, and Grover Everett.

Leicester University Exchange

This marks the end of our third year of having chemistry-major exchange students from the University of Leicester (England) spend the academic year at KU. Darren Letts, Helen Bandey, and Sinead Martin all took undergraduate and graduate courses in the Department and participated in research in inorganic chemistry (Leicester provides a particularly strong background in inorganic chemistry). Sinead was the mainstay of KU's women's rugby team the past year in addition to doing superb work in Joe Heppert's lab.

New Undergraduate Laboratory Teaching Facility Proposed

Now forty years old, the undergraduate chemistry laboratories in Malott Hall represent an anachronistic vestige. Newer instrumentation has been crammed into nooks and crannies, troughs and sinks are continually being repaired to counter regularly occurring leaks, and students are crowded into inadequate space with far fewer hoods than necessary to service the needs of any modern chemistry curriculum.



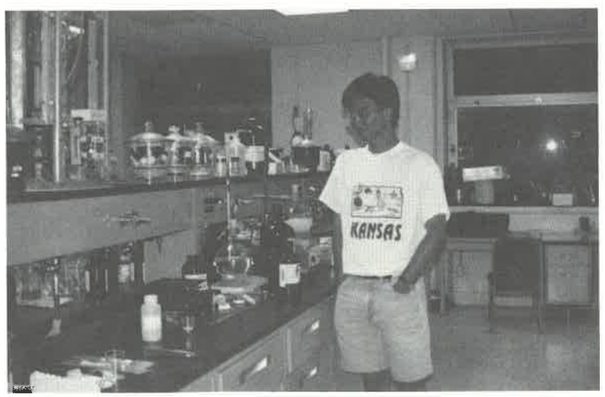
Thank-you banner from Centennial 2nd graders to Grover and the ACS Student Affiliates

The Department of Chemistry is leading the charge together with the Department of Physics and Astronomy and the Division of Biology for the construction of a major new building currently projected to be about 129,500 net assignable square feet or roughly the size of Malott Hall. About 66,500 square feet of that building would house all of the undergraduate laboratories and academic administrative offices for the Chemistry Department.

Although this proposal has a long road ahead, our need has already been recognized by the University Administration who presented this and several other key capital improvement projects to the Board of Regents this spring. We are optimistically projecting a construction date of 2004 and are already looking forward to the prospect of having an adequate number of safe, modern teaching laboratories, student resource rooms, computer commons areas, support facilities, and classrooms to meet the needs of our students in the initial decades of the twenty-first century.

Face Lift

By the time you receive this Newsletter, $600,000 of remodeling to 17,500 square feet of research space in the Department should be completed. Started in the Spring of 1991, this project was staged over several years so as to minimize disruption. Major accomplishments include modernizing laboratories with regard to environmental health and safety concerns, improving the lighting, making more efficient use of the available space, and replacing aging utility pipes and sinks. Because the space affected includes research support laboratories as well as individual research labs, everyone in the Department will benefit from these improvements. We invite you to visit us for a tour to see for yourself.



Newly remodeled laboratory space

Hoch Reconstruction Update

As many of you know from our July 1992 *Alumni Newsletter*, Hoch Auditorium, built in 1928, was gutted by fire after it was struck by lightening on June 15, 1991. In 1992, the Kansas Legislature appropriated $15 million for the reconstruction of Hoch from a $185 million windfall obtained through federal funds received by the state resulting shortfall in federal payments. The Hoch reconstruction plans were revealed in February 1993 and called for three large lecture halls, four classrooms, and additional space for the Science Library.

It was hoped that reconstruction would begin in April 1994. However, hopes were dashed in December 1993 when the bid estimates received exceeded available funds by over $3 million -- estimates ranged from $18 - 21 million. Since it appeared unlikely that more funds would become available, the project was downsized to meet the requirements of the existing funds. One cost cutting measure under consideration that would have negatively impacted the Chemistry Department was scrapping of the library space. The original plans had space designated for the relocation of the Maps and Government Document Library, which now occupies the 6th floor of Malott Hall. However, in the closing hours of the legislative session, KU received an unexpected surprise -- the Legislature appropriated the additional $3.8 million needed for construction. It now appears that the library space will be restored to the building plan.

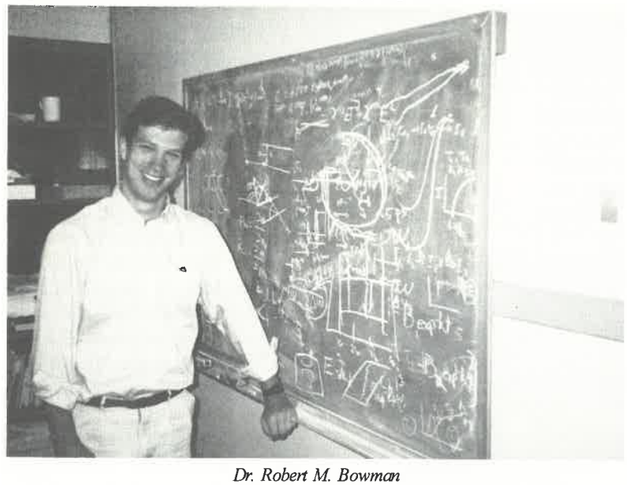
The bid process is scheduled to begin July 5 and should be complete by August 23. We hope to be back teaching in Hoch classrooms by the Fall semester of 1996. In the meantime, our faculty and students continue to struggle with course examinations held in a myriad of classrooms all over the campus.

Endowed Lectures

The Chemistry Department presented three endowed lectures during the 1993-94 academic year. The first lecture presented, the Forty-sixth Annual Frank Burnett Dains Memorial Lecture, was given by **Professor Marye Anne Fox** who is the M. June and J. Virgil Waggoner Regents Chair in Chemistry at the University of Texas, Austin. Her lecture was entitled *Directional Electron Transfer in Synthetic Macromolecules.*

On March 30, the Seventh Annual Ray Q. Brewster Lecture was presented by **Professor Marcetta Y. Darensbourg** of Texas A&M University. Dr. Darensbourg's lecture was entitled *Sulfur Site Reactivity in Nickel Thiolates: A Study of Sulfur Oxygenates*.

Dr. Ahmed Zewail, Linus Pauling Professor of Chemical Physics from the California Institute of Technology, presented the Arthur William Davidson Lecture on April 29. Zewail's presentation was entitled *Chemistry and Biology at Femtosecond Resolution.* Dr. Zewail was also guest speaker at the Department's Honors Banquet on Saturday, April 30.



Dr. Robert M. Bowman

Dr. Brewster's Memoirs

Dr. Brewster's daughter, Doris Brewster Swift, has compiled a book built on selected entries from the diaries and various journals kept by her parents. The present volume is entitled *Life on Mississippi Street: Post-war Years 1919-1931.* It is available from the Watkins Museum (1047 Massachusetts Street, Lawrence, Kansas 66046) for $25.00 per copy plus $5.00 charge for postage and handling.

Faculty Recognition and Awards

Bowman Named 1994 Cottrell Scholar

This April, Research Corporation named Assistant Professor **Robert M. Bowman** as a 1994 Cottrell Scholar. The competition for the award was especially keen. Bowman was one of seventeen faculty from over 120 candidates nation-wide who were designated Cottrell Scholars. The Cottrell Award emphasizes excellence in both teaching and research and carries a $50,000 stipend to be used to further the research and teaching career of the recipient.

It was not surprising to our faculty and students that Bob Bowman would be so honored for his excellence in teaching and research. His teaching experience began ten years ago at Columbia University where he held the positions of teaching assistant, senior laboratory teaching assistant, and graduate recitation leader in *Quantum Chemistry*. He was recognized for excellence in teaching with the J. Malcom Miller Award, an honor which he still prizes.

Since his arrival at KU in the Fall of 1991, Bob has gained experience teaching most of the offerings in physical chemistry. While this is certainly a very intense and time-consuming program for Bob, it has afforded him the opportunity to interact with many of our graduate and undergraduate students in laboratory and lecture settings. He anticipates full participation in the entire gamut of undergraduate and graduate courses in physical chemistry throughout his career.

In addition to his lecture and laboratory assignment teaching commitments, Bob is committed to building his research program. His continuing interest in ultra-fast reaction dynamics has led to construction of a "state-of-the-art" femtosecond laser system for study of excitor dynamics of small semiconductor particles to determine their non-linear optical properties and quantum effects. Bob is also collaborating with **Carey Johnson** and Tom Squier (Biochemistry) on our NSF-EPSCoR sponsored *Kansas Ultrafast Spectroscopy Program*.

Bob is a deserving recipient of the recognition and support he has received from the Cottrell Scholars Award. Frederick Gardner Cottrell, for whom these awards are named, founded and endowed Research Corporation, a foundation for the advancement of science and technology. Support for the physical sciences at graduate institutions has been a Research Corporation priority. With the initiation this year of the Cottrell Scholars Awards Program the foundation continues its essential mission to "...recreate the traditional communities of scholars, to recognize a commitment to both teaching and research, and to make teaching skills important in tenure decisions."

Dr. Daryle Busch

Honors Bestowed on Daryle Busch

A highlight of the XIX International Symposium on Macrocyclic Chemistry was the presentation of the Izatt-Christensen Award to **Daryle H. Busch**. Daryle is the fourth recipient of this award.

Busch, who is the Roy A. Roberts Distinguished Professor of Chemistry, is considered the father of the field of synthetic macrocyclic metal complexes. Each year, this award is given to an outstanding person working in the field of macrocyclic chemistry by Steven Izatt, president of IBC Advanced Technologies Inc., of Provo, Utah, and sponsor of the award. It consists of a plaque, $2,000, and travel expenses to the international symposium.

Daryle's field of research can succinctly be described as bioinorganic chemistry. The foundation of his research is in transition metal coordination chemistry, including original synthesis, structure, reactions, and properties of new and unusual metal complexes; he has published over 320 scientific articles in the field.

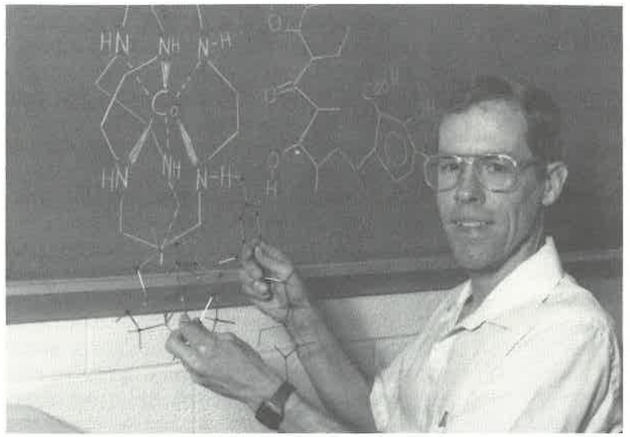
Much of the research can be described by the phrase "inclusion chemistry" which is the design, synthesis, and study of molecular systems having chambers specifically outfitted to accept certain metals or to facilitate certain chemical transformations. Examples of naturally occurring "inclusion complexes" are the active site of an enzyme and the oxygen binding site of hemoglobin. Busch's first success in this area was the design, synthesis, and characterization of the family of totally-synthetic iron (II) oxygen carriers--synthetic hemoglobin analogues. Daryle's current efforts blend inclusion chemistry and coordination chemistry.

In addition to being the Izatt-Christensen awardee, Daryle has received another honor this year. He recently became Chairman-elect of the Chemistry Section of the American Association for the Advancement of Science (AAAS). The AAAS, which publishes the internationally acclaimed journal **Science**, was founded in 1848 and incorporated in 1874.

Everett Receives Professorship

Chancellor Gene Budig recently announced the appointment of **Grover Everett** to a Chancellors Club Teaching Professorship. The award is based on "excellence in teaching over a period of time as demonstrated by a strong reputation among students and faculty colleagues and by an established record of

distinguished teaching." "Throughout the years, Grover Everett has demonstrated his commitment to helping students, assisting them in understanding



Dr. Grover W. Everett

complex subjects and encouraging them to use their knowledge to help others. It is a privilege to be able to reward his tireless efforts," the Chancellor declared.

Grover received a B.S. degree in chemistry from the University of North Carolina in 1962. After graduate school at Harvard University on an NSF Graduate Fellowship where he completed his Ph.D. degree in inorganic chemistry in 1966, he joined the Chemistry Department faculty at the University of Kansas as an assistant professor. He was promoted to professor in 1976. More than twenty-five graduate and postdoctoral students have worked under Grover's supervision. He has taken sabbatical leaves in Australia and in England.

In the past few years, Grover has focused much of his effort on maintaining the tradition of quality in our current general chemistry program begun by Clark Bricker, the first recipient of the Chancellors Club Teaching Professorship. "Professor Everett has made a positive impact on thousands of freshman and sophomore students at a very important time in their college careers," David Shulenburger, Vice Chancellor for Academic Affairs, stated. "Professor Everett is surely one of our best." Colleagues nominating Grover said that despite the large number of students and the awareness that many of them do not plan to continue their studies in the chemical sciences, he is able to project a personal touch and to make his class interesting.

With Grover's selection, KU has filled thirteen Chancellors Club Teaching Professorships which were inaugurated in 1977 through the efforts of the KU Endowment Association.

ACS Honors 50-Year Member

Emeritus Professor Paul W. Gilles is being honored this year by the American Chemical Society as a 50-year member. Dr. Gilles will receive a certificate, a special pin, and a permanent badge entitling him to free registration at all national and regional meetings.

Earl S. Huyser Receives Teaching Award

Each year the Chancellors Club honors a senior faculty member who has taught at the University for at least fifteen years and who exemplifies the University's commitment to outstanding teaching.

At the 16th meeting of the Chancellors Club on October 1, 1993, Earl S. Huyser received this year's Chancellors Club Career Teaching Award. The award recognizes Earl's contribution to the welfare and overall education of his students during his teaching career at the University of Kansas.

George S. Wilson Recognized with Award

At the Fall 1993 faculty convocation, **George S. Wilson**, Higuchi Distinguished Professor of Chemistry and Pharmaceutical Chemistry, received the 1993 Higuchi/Olin K. Petefish Award for Research Achievement in the basic sciences. The award carries a $10,000 stipend to further the recipient's research.

George joined the Chemistry Department faculty in 1987 and is recognized as a pioneer in the use of chemical analysis techniques on biological systems. His current research is aimed at the development of microbiosensors. George is now in the final phase of developing a short-term, implantable glucose sensor for diabetics. A patent for his sensor was granted late in 1992. Future plans include connecting the sensor to a miniaturized monitoring unit which

Dr. George S. Wilson

will provide blood glucose values to the patient on a continuous readout basis. When the glucose values fall outside the patient's allowable range, an alarm will sound to alert the patient. This type of monitoring is particularly important in the prevention of nighttime hypoglycemic incidents.

George's other research interests include investigating mechanisms of biological electron transfer in order to understand how electrons are passed from metal or organic centers to adjacent proteins.

From 1967 until his death in 1987, Takeru Higuchi (1918-1987) was KU Regents Professor of Chemistry and Pharmacy and chairman of the Department of Pharmaceutical Chemistry at KU. In 1981, Takeru and Aya Higuchi established an award program to recognize the research achievements of faculty at Kansas Regents' institutions. Higuchi named the Research Achievement Awards in honor of four individuals, Balfour S. Jeffrey, Olin K. Petefish, Dolph C. Simons, Sr., and Irvin E. Youngberg.

Professor Wilson is the fourth member of the Department to receive one of the Higuchi Awards. Two faculty members have received the Olin K. Petefish Award -- Ralph N. Adams (1982) and Shih-I Chu (1988). In 1982, Richard Schowen received the Dolph Simmons, Sr., award for research in the biomedical sciences.

Chemistry Faculty Awarded CBAR Funds for 1993-1994

In the fall of 1993, the Higuchi Biosciences Center for BioAnalytical Research staff announced the research projects funded for 1993-94. In the summer of 1993, the Center initiated two new methods of fostering interdisciplinary research among University faculty professors: The New Initiatives in Bioanalytical Research (NIBR) program and the Focus Group program.

CBAR supports new research ideas through its NIBR program by annually supporting two to three projects at $20,000 to $30,000 each. The projects selected for 1993-94 were:

A High Sensitivity Immunoassay for AIDS, **George Wilson (PI) and Richard Givens.**

Metabolic Profiling using NMR Spectroscopy Coupled with Microdialysis, **Cynthia Larive (PI) and Craig Lunte.**

The objective of a CBAR-supported Focus Group is to facilitate multidisciplinary research in a specific area of bioanalytical chemistry that has significant commercial potential. Two focus groups can be funded per year: $100,000 for the first year, and $125,000 for the second.

Focus Group proposals selected for 1993-94 were: *Microdialysis*, **Craig Lunte (PI),** M. Southard, E. Topp, **Richard Schowen**, C. M. Riley, and **Sue Lunte** and *Capillary Electrophoresis*, J.F. Stobaugh (PI), **Sue Lunte**, and **Robert Carlson**.

MERCK Training Grants Awarded

In December of 1992, MERCK Research Laboratories awarded a $15,000 MERCK Research Laboratories Drug Metabolism Bioanalytical Training Grant to three Analytical Division professors to support the training of undergraduate students in chemistry. Professors **Ted Kuwana, Craig Lunte,** and **Cindy Larive** served as mentors for the three students. Drs. Chiu Kwan and Bogdan Matuszewski are the liaison directors for MERCK.

The purpose of this grant is to help undergraduate students prepare for careers in bioanalytical chemistry or a closely related biomedical field. The three undergraduate students selected worked with a research director during the summer of 1993.

Huong M. Lam, a junior planning to pursue a M.D./Ph.D. program, carried out a summer research

project in Craig Lunte's group in which she examined the validity of vacuum ultrafiltration as a method to determine drug binding to plasma proteins.

Trien P. Le, a senior planning to be a practicing chemist upon completion of his B.S. degree, worked with Cindy Larive, using NMR to measure the rates of azide reaction with thiols.

David P. Skinner, a senior planning graduate studies in theoretical and computational chemistry performed molecular modeling theoretical studies on cyclodextrin complexes in Ted Kuwana's research group.

In addition to providing undergraduate research opportunities, the MERCK training grant helped the Department obtain scientific equipment needed for undergraduate instruction and research. By supplementing the MERCK training grant with a 25 percent matching equipment grant from the University, the Department was able to purchase a capillary electrophoresis system.

Last December, MERCK awarded another $18,000 training grant to the Analytical Division for research to be conducted this summer.

Student Honors and Awards

Student Receives NSERC Fellowship

Graduate student Nancy Eilerts, a member of **Joe Heppert's** research group, received a two year grant for postdoctoral work from the National Sciences and Engineering Research Council of Canada (NSERC). After completing her Ph.D. this summer, Nancy will continue her studies at Indiana University with Malcolm Chisholm, one of the nation's leading inorganic chemists.

Recently, Nancy also won the Post-Comprehensive Division Research Paper Competition, a university-wide competition in the science disciplines sponsored by Sigma Xi where students present their research. In her Ph.D. research, Nancy pursued a seminal study of the mechanism of chiral titanate Lewis acids, which are employed as catalysts in a range of enantiospecific organic transformations.

Double Delight!

Professor Tom Bolden of the Chemistry Department at Alcorn State University in Lorman, Mississippi, first came to the University of Kansas in 1991 as a NSF MACRO-ROA program participant and spent a busy summer conducting research as a member of **George Wilson's** group. The following summer, Sandra and Sheila Rogers, two of Tom's best chemistry undergraduates, spent their summer here as budding researchers in our NSF REU program. In the fall of 1993, Sandra and Sheila joined our Ph.D. program and have successfully completed the first year. We are now pleased to announce that both are recipients of graduate research fellowships. If you haven't already guessed, Sandra and Sheila are twins! Tom (who returned this summer to participate again in the NSF MACRO-ROA program) and the Department are doubly proud of the accomplishment of our two awardees. Here's the scoop on the awards.

Dr. Tom Bolden with Sheila and Sandra Rogers

Monsanto Research Fellowship

Citing both her academic accomplishments and potential to be an outstanding analytical chemist, W. M. Haynes, Director of the Analytical Sciences Center and External Funding for Monsanto Corporate Research recently awarded Sheila A. Rogers a one-year $25,000 fellowship to support her continuing education in the field of analytical chemistry. This fall, Sheila will begin her second year in the Department and is working with **Cindy Larive** on peptide conformation and aggregation using NMR spectroscopy.

NIH Graduate Research Fellowship

Sandra L. Rogers Barnes is the recipient of an NSF Graduate Fellowship. The fellowship provides a stipend of $14,400 per year for full-time graduate study. NSF also provides an annual cost-of-education allowance of $8,600 in lieu of all tuition and required fees. This fall, Sandra will be studying with **George Wilson's** mapping of glucose levels in the brain and determining how brain glucose levels are linked to neurochemical processes. Of particular interest is the affect of diabetes on glucose levels in the brain.

Chemistry Student Named Fulbright Scholar

Julie A. Stenken, a graduate student in **Craig Lunte's** research group, was recently named a Fulbright Scholar. This fall, Julie will begin nine months of study at the Karolinska Institute in Huddinge, Sweden, near Stockholm. She will be conducting research with Lars Ståhle and Urban Ungerstedt in the Department of Clinical Pharmacology. According to Julie, Ungerstedt is the leader in microdialysis in Sweden and has over 200 publications in the field. She states that the technique of microdialysis was first explored in 1966 at the NIH. However, Ungerstedt is responsible for exploiting it during the '80s. Julie will study *Development of Quantitative Microdialysis.*

The Fulbright Program, started in 1946, is designed to increase mutual understanding between the U.S. and other countries through cultural exchange. Approximately 4,800 new grants are awarded annually. Fulbright grants are awarded to U.S. students, teachers, and scholars to study, teach, lecture, and conduct research abroad and to foreign nationals to engage in similar activities in the U.S. Individuals are selected on the basis of academic or professional qualifications and potential, and the ability and willingness to share ideas and experiences with people of diverse cultures.

Undergraduates Awarded NSF Fellowships

This year, two Chemistry Department undergraduates were awarded NSF Graduate Fellowships. One awardee Jeffrey Johnson, is a 1994 B.S. graduate, a 1993 Barry M. Goldwater Fellowship awardee, and is this year's Alpha Chi Sigma awardee. He has worked with **Robert Carlson**. Jeff was an NSF-REU student at Columbia University last summer working with Professor Koji Nakanishi. He will begin his graduate studies at Harvard this fall. He is the son of Ken Johnson, who earned his Ph.D. at KU in 1967 with Earl Huyser. The second awardee, Department alumna Kirsten A. Unger, was a B.A. chemistry graduate in 1991. Jeff and Kirsten were two of the 52 fellowship recipients in Chemistry nationally. They were also two of the five NSF fellows awarded this year to KU students. We are proud to be part of their accomplishments!

Overall, there were 950 fellowships awarded, with an additional 1,532 applicants receiving honorable mention. The NSF reported that a total of 6,222 applications were submitted. NSF reports that the new Fellows come from 48 states, the District of Columbia, and Puerto Rico. Of the 950 awards, 414 were made to women. Over the 43 year lifetime of this fellowship program, twelve NSF fellows have gone on to receive Nobel Prizes.

The NSF fellowships provide a stipend of $14,400 per year for full-time graduate study and an annual cost-of-education allowance of $8,600. In addition, both Fellows and Honorable Mention recipients may request the use of any of the four national supercomputer centers supported by the NSF for their graduate research work.

Chemistry Students Win Goldwater Scholarships

Undergraduate chemistry majors were two of the three Barry M. Goldwater Scholarship awardees at KU this year. The Goldwater Scholarship is a national competition to encourage excellence in science and mathematics. The scholarship was created to pay tribute to retired U.S. Senator Barry M. Goldwater of Arizona. Since 1989, four of the nine KU awardees have been Chemistry majors.

This year Huong M. Lam and Matthew P.

Meyer were among the 250 students nationally who were offered scholarships. The scholarships provide up to $7,000 for tuition, fees, books, and room and board for the awardee's senior year.

Matthew P. Meyer is majoring in chemistry and mathematics and works with **Richard L. Schowen**. Meyer presented his research at the 1993 Midwest Regional Meeting of the American Chemical Society in Columbia, Missouri. In addition to the Goldwater Scholarship, Meyer was also awarded the Department's 1994 Fassnacht Scholarship to an advanced student planning a career in Chemistry.

Huong M. Lam is majoring in chemistry and biochemistry and plans to earn both a M.D. and Ph.D. degree. Lam is currently conducting research with **Craig E. Lunte**. Lam was also awarded the Taft Award in Physical Chemistry for the two semester course ($100 book award) and the Jacob Kleinberg Award for a third-year chemistry major who has made outstanding progress in research. Lam's summer research was funded by the Merck Analytical Training Grant.

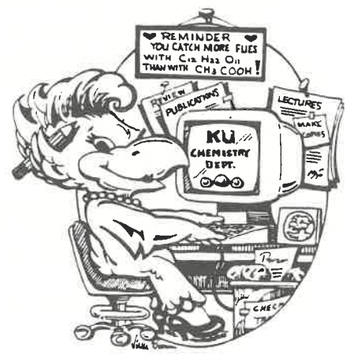
Budding sidewalk scientists use "high-tech" instrumentation to observe the May solar eclipse

New Phi Beta Kappa Members Initiated

Phi Beta Kappa is the oldest and historically most prestigious honor society recognizing excellence along with breadth and depth in the liberal arts and sciences. This spring, twelve of the Department's forty-nine May graduates were initiated as new Phi Beta Kappa members. The new members are: Alicia Arbaje, Kimberly Bland, Jennifer Brull, Angela Estes, Jason Fieser, Robert Gibbs, Jeffrey Johnson, Huong Lam, Cary Marquis, Daniel Orlando III, Margrethe Shoemaker, and Kristee Zoloty.

Reception for Graduating Seniors

This year the Undergraduate Affairs Committee and the Department sponsored a reception for our forty graduating seniors and their families. This festive event, complete with balloons, flowers, and lavish trays of food, was held in one of the Department conference rooms during the morning of Commencement Day. It was well attended by students, families, and faculty and should become a yearly event. We were especially fortunate to have the services of Cindy Larive's daughters Megan and Erin, ages seven and nine, respectively, who helped cut up the cheeses and prepare the strawberries!



39th Chemistry Honors Banquet

The 39th Annual Chemistry Department Honors Banquet was held on Saturday, April 30, in the Big Eight Room of the Kansas Union. In his opening remarks, Richard Givens (Department Chair) noted that this marked the sixth time that he has had the privilege to host the recognition banquet for the students in chemistry. Givens briefly outlined this year's achievements of the faculty and then coordinated the presentation of the awards to the students. Professor Ahmed H. Zewail (California Institute of Technology) concluded the luncheon ceremonies with a lecture on *The Art and Beauty of Science*. Zewail, who also presented the Department's Davidson Lecture during his visit, was the postdoctoral advisor for Robert Bowman.

The complete list of awards presented to the students in chemistry during the past year is shown below.

Honors to 1993-94 Students

UNDERGRADUATE STUDENT AWARDS

GENERAL CHEMISTRY	*Hooi Koon Ang, Jeffrey Michael Hesse, and Baozhu Helen Liu*
THE OWEN W. MALONEY SCHOLARSHIPS	*Paul David Tittel and Quoc Van Thruong*
ORGANIC CHEMISTRY	
Two Semester	*Juston D. Evenson, Xuan Lu, and Justin T. Teiwes*
One Semester	*Kathleen Renee Nuckolls*
ELI LILLY AWARD IN ANALYTICAL CHEMISTRY	*Erich Steinle*
THE TAFT AWARD IN PHYSICAL CHEMISTRY	
One Semester	*Lushen Li*
Two Semester	*Huong M. Lam*
THE FASSNACHT SCHOLARSHIP	*Matthew P. Meyer*
THE SORG SCHOLARSHIP	*Jessica Aga and Baozhu Helen Liu*
THE CLARK E. BRICKER SCHOLARSHIP	*Justin T. Teiwes*
THE JACOB KLEINBERG AWARD	*Huong M. Lam*
SPECIAL HONORS TO GRADUATING SENIORS	
FOR SUPERIOR PERFORMANCE	*Brian D. Dewhirst and Jason A. Fieser*
AMERICAN INSTITUTE OF CHEMISTS AWARD	*Erich D. Steinle*
ALPHA CHI SIGMA AWARDS	
Chemistry	*Jeffrey S. Johnson*
Chemical Engineering	*Nathan A. Hatcher*
THE REYNOLD IWAMOTO AWARD	*Alicia Ines Arbaje*
MEETH MEMORIAL AWARD	*Marc R. Anderson*

GRADUATE STUDENT AWARDS

THE H.P. CADY AWARD	*Erica Larson*
OUTSTANDING FIRST-YEAR TEACHING ASSISTANT	*Tonya Dombrowski and Arthur Reyes*
THE RAY Q. BREWSTER AWARD	*Kandiah Anandarajah and Xiaozhong Liang*
THE PAUL AND HELEN GILLES AWARD IN PHYSICAL SCIENCE	*Jingyan Wang*
THE HIGUCHI DOCTORAL PROGRESS AWARD	*Diana Aga*
THE J.K. LEE AWARD	*Ken Lynch*
THE SNYDER AWARD	*Maria Buchalova*
PHILLIPS/McCOLLUM SUMMER RESEARCH AWARD	*Chan-Ho Park and Sangryoul Park*
ARGERSINGER/PHILLIPS SUMMER RESEARCH AWARD	*Greg Harms*

Ernest Meeth Memorial Scholarship Awarded

A $1,000 scholarship was presented at the Department's awards ceremony this spring to Marc R. Anderson, a senior chemistry major. This new, one-time scholarship was given in memory of Ernest Meeth, a former Chemistry Department undergraduate student. Marla Meeth Pyle, Ernest's daughter, provided the Department with the following photo and biographical sketch of her father.

Ernest Meeth (Ernie) was born near Lebanon, Missouri, on March 12, 1926. In 1943, at age 17, Ernie dropped out of school and joined the Army

Ernest "Ernie" Meeth

Air Force. Upon his discharge, he returned to Lebanon, where he graduated from high school in 1946.

In 1949, Ernie began pursuing a B.S. in chemistry at KU. After three years at KU, financial circumstances forced his withdrawal. He finally completed his B.S. in chemistry at UMKC in 1960; however, he always considered KU his alma mater. He went on to obtain an M.S. in chemical education from Central Missouri State University in 1961.

Ernie passed away April 18, 1993. Friends, family, and co-workers have contributed to this award in memory of Ernie and in recognition of the value he placed on education.

FACULTY NEWS

ROBERT M. BOWMAN and his research group of four graduate students and one undergraduate have spent the year performing time-resolved experiments on very small semiconductor particles known as nanoclusters. He and two of his graduate students, D. Philip Colombo, Jr., and Kirsten A. Roussel, presented their research findings at the National ACS meeting at San Diego. Recently an exciting new experimental method for probing opaque materials was developed and should lead to a new area of research for the Bowman group. Teaching this past year included first semester undergraduate physical chemistry and an advanced graduate course on quantum mechanics.

On the personal side, Bob was married in August 1993, to Cristine Carriker, an obstetrician and gynecologist at the Shawnee Mission Medical Center. He and his wife divided the commuting distance equally and now live in Olathe, Kansas. The group gained a new member in June when graduate student Kirsten Roussel gave birth to Dale Mark!

KRISTIN BOWMAN-JAMES has had an enjoyable professional year. Four of the first year graduate students joined her group, Nick and Olga Gerasimchuk from Ukraine, Art Reyes, and Brian Coleman. Brian will actually be getting his degree in analytical chemistry, and Art has leanings in that direction. Two new grants have also helped in the financial aspects. Two laboratories belonging to the group are now totally remodeled, and provide a considerably better atmosphere for group morale.

On the personal side, Kristin Bowman-James has almost succeeded in training people to recognize her new name. She has received a number of complaints centering around the fact that she keeps changing it too often. (Too often is evidently anything less than 20 years.) Kristin has also adapted well to life in the country, where she now has room for her race cars and the associated paraphernalia. She is hoping to win some races this summer.

ALBERT BURGSTAHLER reports that last summer, together with Clark Bricker and Bob Carlson, he videotaped a series of chemistry review materials for Mary M. Dunkin at the KU Medical Center. These videos will be used by prospective minority medical students participating in the University's Health Careers Professional Pathways Program.

During the spring semester, Albert enjoyed teaching CHEM 188. He made generous use of his own video demonstrations as well as numerous "live" demonstrations. Albert was also commended by Dean Muyskens for "service above and beyond the call of duty" for his participation in the teaching of a LA&S course *Science, Myths, and Things Between*, which was taught for the first time this spring.

On a personal note, Albert's youngest son, David, who earned his B.S in Aerospace Engineering at KU in December 1990, was married to Leslie Lockridge (Des Moines, Iowa, B.S. in Mathematics from KU in 1990) on September 5, 1993, in Des Moines. David has just completed his first year in the MBA program at Harvard, and Leslie is working as an actuary for the Sun Insurance Company in Wellesley, Massachusetts.

DARYLE H. BUSCH 1993-94 was the year of elections for Daryle. He was elected Chairman of the Chemistry Section of the American Association for the Advancement for the Advancement of Science. He was also elected to the Steering Committee of the Council of Distinguished Professors here at KU.

Busch continues to serve on the Inorganic Chemistry Committee of the International Union of Pure and Applied Chemistry and was appointed to a second term on the Committee on Science of the American Chemical Society. Service to the professional community also took Busch to a number of National Labs to evaluate projects under the nuclear production site renovation program; he served as chair of the annual review team for the Chemistry Section of the Oak Ridge National Laboratory. Busch lectured at both National ACS Meetings and took part in a NATO Workshop on Transition Metal Supra-molecular Chemistry, in suburban Genoa, Italy.

The EPSCoR project labeled Kan-Syn continues under Busch's care. The program held its second highly successful workshop featuring *de novo* peptide design as presented by Dr. Degrado of Dupont. With Professor Heppert, an optimistic, but very exciting, proposal was submitted to NSF EPSCoR in response to a request for one-time, one year initiatives of lasting impact. A pre-proposal had been filed with K*STAR, the state of Kansas EPSCoR parent project, for 5 more years of an expanded Kan-Syn.

Locally, Busch served on the Distinguished Professors Committee to recommend two new appointees to University chairs and on the committee to fill the Murphy Chair in Art History. He participated on the Graduate Student Admissions Committee, The Chemistry Department Planning Committee, and the Chemistry Department External Review Committee.

With NSF funding, the Busch research group purchased a carefully researched cryogenic stop flow spectrometer to measure the rates of reactions between dissolved gases, namely oxygen, and compounds in solution. As delivered, the equipment failed to give reliable service and the following eight months were spent working with the manufacturer to develop an effective instrument of this kind. Happily, the effort was successful and they now enjoy working with a truly unique facility. The first 100 percent KU Ph.D. student to emerge from the Busch group is writing up at this time, closely followed by the last student having any ties to OSU. Three postdocs left the group during the year: Dr. Richard Warburton to National Draeger, Inc., in Pittsburg, Pennsylvania, Dr. Mohamad Masarwa to Bromine Compounds, Ltd., in Beer Sheva, Israel, and Dr. Alex Sauer-Masarwa to the Ben-Gurion University, Beer Sheva, Israel. Publications also proceeded at a great rate for the group in 1993, partly because certain editors failed to get their work out in the previous year, with a record number of twenty-three research and review papers.

SHIH-I CHU devoted a considerable amount of time and effort to the development of the theory institute project. Chu and his research group continue to work on the development of new theoretical formalisms and numerical techniques for probing the structure and dynamics of atoms and molecules under the influence of intense and super-intense laser fields, classical and quantum chaos in field-driven Rydberg atoms and molecules, and laser cooling mechanisms. During the summer, he will travel extensively in Taiwan and China, giving lectures in a number of universities. He is a plenary speaker for the Third International Conference on the Advancement of Physical Chemistry held in Nanjing in June 1994.

During the fall, **GROVER EVERETT** had a rare semester off from teaching general chemistry. He had forgotten how much less time is required to teach a graduate-level course, and he found time to write a couple of proposals. During the spring semester, he

was in charge of CHEM 125 and also teamed with Al Lata to teach CHEM 189, an honors section of twenty-five students taking the second semester of general chemistry. Grover and Al experimented with cooperative learning techniques in CHEM 189 and found it to be challenging, fun, and advantageous for both students and teachers. Members of the class constructed new displays for the hallways in Malott and communicated regularly with each other and with Al and Grover by electronic mail.

On the personal side, Grover had operations on both knees this year to correct congenital subluxed patellae that began to show signs of wear after his running more than 10^5 km during the past forty years. His wife, Carolyn, will retire this June after fourteen years of teaching at Central Junior High School and a total of twenty-four years in the public school system. His daughter, Susan, is a graphic designer in Chicago, and his son, Mark, has just finished his third year of graduate school in astronomy at Ohio State.

RICHARD S. GIVENS. This year marked his sixth year as chair of the Department. Last January, he announced that he will be stepping down to return to full time teaching and research. The Department will be in good hands, however. The addition of Carol Bray to the administrative staff has enhanced the effectiveness of the office and has benefitted the entire Department tremendously. The next chair should have a much better opportunity to meet the expectations of the Department and to fulfill its goals with the assistance of Carol as the Administrative Officer.

In research, his group has made good progress in expanding their studies on "caged" nucleotides. Interest has also increased in the work on the peroxyoxalate reaction which resulted in a trip to Brugge, Belgium, with Bill Kueper who spoke on the mechanism of this intriguing chemiluminescent reaction. Trips to Atlanta, Georgia, to speak at Georgia State (where Lucjan Strekowski is on the faculty), University of Illinois at Chicago, and Loyola of Chicago afforded opportunities to present results on phosphate esters and on chemiluminescence. The current group now numbers four graduate students, two undergraduates and two visiting professors, Jim Hohmann and James Chapman. The two visiting faculty are working on the chemiluminescent project along with Bill Kueper and Deepani Gunasekera. Both Bill and Deepani will graduate this summer. Bill will begin a postdoctoral assignment with Gary Schuster at Georgia Tech and Deepani will join Andy Bennet's group at Simon Fraser University to work toward her Ph.D. Jeff Barnes and Chanho Park will remain for another year or two and are working on the phosphate photochemistry including the release of caged nucleotides, a project which has attracted the attention of Molecular Probes, Inc.

Several news items from former group members include the news that Romi Singh has started his new position at Burroughs Wellcome Co. at Research Triangle, North Carolina, in the fall. He finished his postdoctoral studies with Professor William Traiger at Washington the month before. Mike Morrison is seen regularly (his daughter and Margy Givens compete on the same high school volleyball and soccer teams.) Visits from Jiang Chang and his wife (at Rohm and Oklahoma U.), Bogdan Matuszewski, Bozena and Paul (at Merck) and Dr. Dennis Morrell (Rohm and Haas Chemicals) were very enjoyable. Dennis returned to campus to give a lecture on career planning and his professional experiences since earning his Ph.D. at Berkeley. He brought his son to KU to entice him to become the next generation of Morrell Jayhawks.

Dr. Toshima Toyo'oka has started a new position as a faculty member in the Department of Pharmaceutical Sciences at the University of Shizuoka (Japan). They have a new addition to their family. The Givens also have a new addition; they became grandparents! Their eldest daughter and her husband are the parents of a beautiful young lady, Rachel Heeb. All in all, it's been a good, productive year, but he is sincerely looking forward to July 1, 1995!

MARLIN HARMONY continues to work with a small but dedicated group of graduate students on the study of reactive transient molecules in supersonic free jets. It is hoped that by the end of the summer of 1994 a second spectroscopic technique (Fourier-Transform Microwave Spectroscopy) will be operating to complement the very successful laser-induced fluorescence (LIF) studies.

After a full year of teaching general chemistry (CHEM 184 in both Fall and Spring semesters), Harmony's summer activities should be a refreshing change. In addition to the above-mentioned research, he will again team with Barbara Schowen in directing the Department's summer undergraduate research program (NSF-REU) which has (happily) been funded for three more years. In July, Harmony and spouse, Nancy (who celebrated her 25th year at KU), will spend five days in Paris and Nice with some Mediterranean cruising sandwiched in between.

JOE HEPPERT has spent a busy year focusing on publications and grant applications. He and Daryle Busch collaborated on the submission of a statewide ESI proposal to NSF that would establish an advanced synthesis service laboratory and the only advanced synthetic laboratory curriculum in the state. Jenny, Joe's seven year old daughter, won three awards at the Douglas County Science Fair this year.

CAREY JOHNSON and his research group of six graduate students are continuing their research on protein and peptide dynamics by time-resolved laser spectroscopy. One highlight during the past year has been a project involving graduate student Gouri Jas and postdoctoral scientist Chaozhi Wan, who were successful in generating picosecond time-resolved Fourier transform Raman spectra for the first time. In addition, the Kansas Ultrafast Spectroscopy (KUFS) program, which includes Professors Robert Bowman and Tom Squier (biochemistry) and is funded by the NSF EPSCoR program, has added a state-of-the-art femtosecond regeneratively amplified Titanium:sapphire laser, continuing the emphasis in ultrafast laser spectroscopy at KU. Carey, Jean, and their daughter Elizabeth (5) are looking forward to taking some time off this summer to do some camping.

During the past year **KRYZSZTOF KUCZERA** has been engaged in several research topics: (1) free energy simulations of effects of point mutations on proteins, (2) thermodynamic integration approach to conformational free energy simulations, and (3) development of algorithms for constrained macromolecular simulations (with Prof. Ben Leimkuhler, Mathematics Department). He is also participating with Ben Leimkuhler, Jan Hermans (UNC, Biochemistry and Biophysics) and Robert Skeel (UIUC, Computer Science), in the organization of a workshop on *Algorithms for Macromolecular Modeling*, to be held at KU on September 30 - October 2.

In the fall of 1993, Krzysztof taught Chemistry 640, *Biological Physical Chemistry*. In the spring, he taught Biology 801, *Special Topics: Introduction to Molecular Modeling*, in the Biochemistry Department. This course included a computer laboratory, introducing students to modern methods of molecular modeling on computer workstations. He is especially excited about this class, since it is directly related to his research activities.

TED KUWANA remains busy as Project Director for *Kansas Science and Technology Advanced Research Program* (K*STAR), a member on various corporate and state boards, as well as being co-PI with Dr. Cynthia Larive for the Research Opportunity Award (MACRO-ROA) program.

Dr. Kuwana continues working with students on fundamental and applied problems dealing with carbon microfibers and analytical detectors.

Since starting in the Department in January, **BRIAN LAIRD'S** research group has experienced exponential growth ($0 \rightarrow 1$ graduate students and $0 \rightarrow 2$ IBM workstations). Work is currently underway with first year graduate student Scott Bembenek on the role of vibrational localization in glasses. Planned summer activities include writing up this recent work for publication, trying to squeeze money out of NSF, attempting to get yet another workstation through purchasing, converting room B018 into a high-powered computational and theoretical development facility and doing some camping at Yellowstone.

JACK LANDGREBE continued his activities on behalf of the Department by coordinating a proposal involving Chemistry, Physics and Astronomy, and the Division of Biological Sciences for the construction of a new undergraduate science laboratory building which was submitted to the Board of Regents on April 1 (it's no joke) as a $40M project (see related story). Our most optimistic projection would be to have construction completed by early in the next century. Jack has also been shepherding the final stages of the three-year $600,000 project to remodel research space in the Department, and has helped the Department prepare comprehensive Chemical Hygiene and Safety Regulations. These are, to our knowledge, the first such regulations for any academic department on the Lawrence Campus.

On the home front, his wife Carolyn was named as the Outstanding Reading Educator in the state by the Kansas Reading Association and was nominated by the Lawrence School District for the Kansas Master Teacher Award. John and Laura, his son and daughter-in-law (Lawrence), had a baby girl, Samantha Alexandra, on March 12, 1994. His other granddaughter, Julia Elizabeth (Danville, Indiana) is already more than two years old and keeping her parents (and sometimes her grandparents) on their toes.

The past year included a momentous first for **CYNTHIA LARIVE.** Shana Zink, her first graduate student, completed her M.S. thesis in May. Shana has

returned to her home town, Durango, Colorado. Three graduate students along with a postdoc and a KU undergraduate student joined the group this year. Dr. Larive's research continues to be focused primarily on bioanalytical applications of NMR spectroscopy. Another highlight of the year was a week long vacation to Florida over spring break. The girls, of course, loved Disney World. But the highlight for Cindy was the Kennedy Space Center. Erin and Megan even convinced their parents to try astronaut ice-cream which doesn't taste too bad, despite having the appearance of styrofoam balls.

ALFRED LATA was invited to present the keynote address at the Case Western Reserve University Computers in Chemical Education Workshop in June 1993. The address was entitled *The Computer in Instruction: Vitalizing an Old Chemistry or Creating a New One*. He also participated in the electronic on-line conference *CHEMCONF: Applications of Technology in Teaching Chemistry*, which went on from June to August 1993, with fifteen papers and extensive on-line discussion. The conference was sponsored by the Committee on Computers in Chemical Education, of the Divisions of Chemical Education, ACS, of which he is a member and was past Chairman. At the November Midwest Regional Meeting, Al reported on this conference, as well as on the experiment *Pyrolysis of Iron Pyrite: An Introductory Stoichiometry Experiment*.

Al finds excitement in surfing the internet and discovered the materials there that are blossoming forth that have the potential to make an impact on the teaching and learning of Chemistry; materials available through FTP downloads, Gopher, and Mosaic, as well as information from News and via e-mail. His interests in theater and vocal music continue.

Work continues in **CRAIG LUNTE'S** research group on using microdialysis sampling *in vivo* to gain greater insight into pharmacologic and metabolic processes. Particular progress has been made in sampling tumors in order to study new anticancer drugs and in sampling the skin to study transdermal drug delivery. Advances have been made in the associated analytical techniques as well. A fast chromatographic system, separations in less than a minute, was coupled directly to microdialysis system to provide a separation based biosensor. This system is capable of continually monitoring the concentration of a drug and its metabolites in an experimental animal with resolution of less than a minute.

Several students in the Lunte group had exciting years. Julie Stenken received a Fulbright fellowship to study in Sweden. Houng Lam received a Goldwater fellowship for her final year of study for the B.S. degree at KU. Erich Steinle received his B.S. degree and promptly headed to Dortmund, Germany, to study for the summer. When Erich returns he will begin graduate study at the University of Michigan. Anqing Chen received her M.S. degree. Finally, Malonne Davies is making plans to study in Ireland with Malcolm Smyth at Dublin City University this summer.

Barbara and **DICK SCHOWEN** celebrated their thirtieth wedding anniversary in August 1993 by dining with Ingrid and Oliver Lee about 200 meters above the Danube, a couple of hours from Vienna. They went on for a few days in Munich, then to Sweden where they toured the country's research universities with an international team evaluating research in physical-organic chemistry for the Swedish Natural Sciences Research Council. From Stockholm, the Schowens flew to Zurich, where they dined with the Vedanis (Angelo is now director of computational science for the Swiss Institute of Alternatives to Animal Testing, near Basle). Earlier in the summer, Dick presented lectures on lactate-dehydrogenase catalysis, serine-protease catalysis, and solvent isotope effects in Japan at meetings in Kyoto, Hiroshima, and Fukuoka (IUPAC Symposium on Bioorganic Chemistry). During the academic year, Dick taught the introductory biochemistry and physical-organic courses, coordinated the first presentation of a new graduate course on *Issues in Scientific Integrity*, gave a series of fourteen lectures on structure-reactivity theory to Pharmaceutical Chemistry graduate students, and oversaw the NIH site visit for the training grant in Chemical Biology. This grant (which has since been funded) will provide stipends for graduate students doing research at the chemistry-biology interface, including spectroscopic and theoretical studies, enzyme and model reaction mechanisms and gene action. Among other engagements, Dick also spoke at Ribozyme Pharmaceuticals Incorporated in Boulder (where Ralph Christoffersen is president and CEO). Dick continues to maintain vigorous health through strenuous elbow-bending exercises and satisfies his love of nature by careful observation of Barbara's outdoor activities.

BARBARA SCHOWEN'S main efforts continue to be devoted to advising and teaching undergraduates. This past spring she taught the first semester organic lab, frequently engaging the 130 students in the weekly lecture in small-group activities, working problems or, during the first day, gaining hands-on experience with the properties of typical organic compounds. New instructional software for tutorials and problem-solving dealing with IR, NMR and mass spec has recently been purchased and installed on the undergraduate organic lab PCs, in anticipation of heavy use in this summer's Organic II lab course.

As Chair of KU's Health Sciences Committee, Barbara saw to the writing of the evaluation letters for over 200 KU applicants to medical and dental schools last fall. At least half of these students, many of them chemistry majors, were personally advised by her during their undergraduate years. She continues, along with Bob Carlson and Kristin Bowman-James, to work with our increasing numbers of B.A. and B.S. chemistry majors--engaged in curriculum advising, helping locate research opportunities, assisting in job hunting and the preparation of graduate-school and scholarship applications, and as advisor to our active ACS Student Affiliates chapter.

Barbara continues collaboration with Dick Schowen under a joint NIH grant on problems in enzyme reaction mechanisms. A paper dealing with some of this work was presented last fall by a graduate student, Jiaher Tian, who is about to complete his M.S. degree.

Two years ago, Barbara was elected to a three-year term the on University/Faculty Council, the University's governing body, and just completed a year as one of the six faculty members on this group's executive committee (SenEx/FacEx). Issues ranged from the substantive (research and academic policy) to the mundane (parking).

Susana is near the end of her fourth year at Columbia in the physical chemistry PhD program -- using lasers to study energy transfer between small molecules. Sarah migrated last year to Seattle, and is working on a Master's in Elementary Education and trying to stay alive by two part-time teaching jobs, one in a private elementary school and one in a new experimental school for autistic children.

Emeritus Faculty

RALPH ADAMS and Arvin Oke continue with their schizophrenia studies and expect soon to startle the psychiatry types (all three who will read it) with some new human brain chemistry results. Kim Mitchell, the last Ph.D. in Adams' group is now a research associate with Eli Michaelis on the West Campus.

PAUL W. GILLES has been dismantling the high temperature laboratory in anticipation of discontinuation of experimental work. His last student, Luis Morales, completed his dissertation defense on June 15. The laboratory equipment is gradually being dispersed.

In June of 1993, Paul attended the Midwest High Temperature and Solid State Chemistry Conference at Cornell University and announced the availability of some of the equipment. In August, he attended the General Assembly of the International Union of Pure and Applied Chemistry in Lisbon and served as secretary of the Inorganic Division which oversees the work of IUPAC on atomic weights, inorganic nomenclature, high temperature and solid state chemistry, and isotopic specific measurements.

Prof. Gilles presented a lecture at the Department of Chemistry and Biochemistry and the Center for Solid State Studies at Arizona State University in Tempe in February. He presented an invited paper at the Research Symposium in honor of John L. Margrave at Rice University in April.

At the VIII International Symposium on High Temperature Materials Chemistry held in Vienna in April, Prof. Gilles presented a paper and also chaired a session.

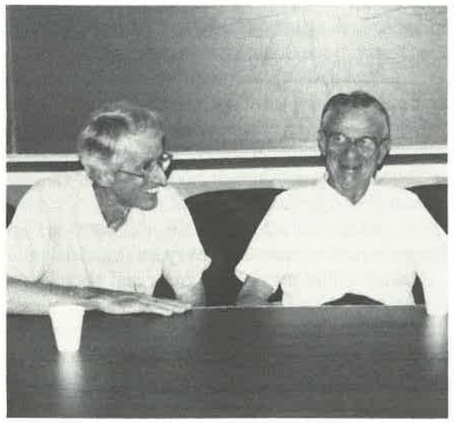
EARL HUYSER This past academic year was my last at KU. Some changes were made in that I left my office on the fifth floor and am now occupying an office on the second floor. Since this room is very near the Departmental office, I am seeing a lot of people and having the opportunity to get to know many of my colleagues better. This past year also involved teaching the two-semester organic courses. This second floor office made me quite accessible to students. One might get the impression that I spent most of this last year visiting with colleagues and students and there would be some truth in this.

Some time was spent, however, in getting ready for retirement. Not only did I get a new computer and plan to continue doing some computational quantum chemistry, but I have also been trying to set up a woodworking shop. This is a skill about which I know nothing, but I am ready to learn and I am getting some good advice from Jack Rose. Some of my colleagues have expressed great fear about my being that close to anything mechanical that is mov-

ing and capable of cutting.

Although supposedly retired at the end of the spring semester, I shall be involved with the Health Career Professional Pathways program in July. This will be a different sort of experience since it will involve a class of about 15-20 students rather than the 300-500 student classes I have been seeing the past few years.

At present, my wife, Barbara, and I have few really extensive travel plans other than returning to our hometown, Holland, Michigan, twice this summer for the purpose of attending our respective high school class reunions. In September, we plan to drive through the Rockies and see the aspens in all of their golden glory. Travel in the month of September has not been possible for us for 35 years and now we



Jake Kleinberg enjoys a coffee break with Jack Rose

shall take advantage of it the first time we can.

Professional Staff News

Ken Ratzlaff and the **Instrumentation Design Laboratory** have been heavily involved in networking over the past year and a half. Among other benefits, there is easy access to the internet. Well over a mile of coax ethernet cable has been installed by the IDL so that the task of bringing networking to any desk is a small one.

The second part of the project is to set up a local area network (LAN), and a large-capacity Novell Netware LAN will be installed this summer. This LAN will improve access to storage and printers, make e-mail easier, and facilitate the exchange of data and information between labs and offices.

Ric Roggero, currently on the staff, will see his position expanded to full time to coordinate the operation of the LAN.

All faculty now have e-mail addresses. If anyone should need the address of someone here, please send a note to: kuidl@ kuhub.cc.ukans.edu, and we will find it for you.

The **Mass Spectrometry Laboratory** has hired a research assistant, Homigol Biesiada. Homi came to the lab with considerable GC/MS experience and is now learning FAB and FAB MS/MS. **Bob Drake** continues to be indispensable.

Todd Williams has started a collaboration with Richard O'Hair, a mass spectroscopist at K-State. It has been fruitful and forces Todd to deal with fundamental ion molecule reactions, back to basics! Ongoing work with KU folk continues to expand. Todd is also trying to get electrospray MS in the lab. If successful, this will bring an important new capability to KU, ES is revolutionizing MS and HPLC MS!

ALUMNI NEWS

1941-1950

JUDSON E. GOODRICH (B.A., 1947; M.A., 1948; Ph.D., UC, Berkeley, 1951) is living in a retirement community near Santa Rosa, California, after thirty-four years as a research chemist at Chevron Research Co. in Richmond, California (twenty-five patents). He played French horn in the KU band under Russell Wiley, and is continuing the tradition playing in the Las Gallinas Valley Sanitary District Non-Marching Band and the Nova Albion Brass Quintet.

JOHN L. MARGRAVE (Ph.D., 1960), E. D. Butcher Professor of Chemistry at Rice University and a member of the National Academy of Sciences, was honored on April 29 by his department with a day-long research symposium on the occasion of his 70th birthday. Invited papers were presented by his Ph.D. research mentor, his postdoctoral mentor, five of his former graduate students and postdoctoral research associates. The sessions were moderated by other former associates each of whom tossed in some complimentary remarks. Some thirty posters were displayed as well. Approximately seventy people attended. The event was concluded by a banquet attended by about 400 people during which various tributes were presented. John does not plan to retire. He also remains as Editor of High Temperature Science.

1951-1960

ROBERT E. BARNHILL, an undergraduate mathematics major in the early '60s who wrote computer programs with Dr. Gilles' high temperature group, is now Vice President for Research and Strategic Initiatives at Arizona State University in Tempe. His mother resides in Lawrence.

BENTON S. DUFFETT, JR. (Ph.D., 1959) Last year Ben shared with the CHEM 692 *Junior/Senior Seminar* some information concerning how a background in chemistry can lead to a challenging career in patent law. Following graduation from the University of Michigan Law School in 1962, Ben specializes in the protection of chemical and biological inventions at the Alexandria, Virginia, office of Burns, Doane, Swecker and Mathis, where he is a partner.

CHARLES F. HOBBS (Ph.D., 1960) retired in April 1993 after thirty-three years at Monsanto. After nineteen years in Central Research, he moved to the Monsanto Agricultural Group where, for the past eight years, he led process development groups which brought several new products from the research stage into commercial production.

Charles feels that while basic research requires imagination and creativity and is much glamorized in academia, the development of efficient chemical processes for the production of commercial products while simultaneously meeting cost targets and increasing restrictive safety and environmental parameters is every bit as challenging.

JAMES M. LEITNAKER (Ph.D, 1960) though retired from Martin Marietta, which operates the Oak Ridge K-25 plant, has prepared a refined version of the popular SOLGAS program for equilibrium thermodynamic calculations.

LUDWIG LUFT (Ph.D., 1956) writes that his visit to KU in 1992 coincided with the 40th anniversary of his new beginning. He considers coming to KU as the best possible introduction to the United States. Open spaces, open doors, and helpful, generous people. The true heart of the country. Ludwig is still in touch with his old friends and is grateful to the Department for giving him a good start.

Coincidently, it was also the 40th anniversary of his marriage. Ludwig and his wife are still married, parents of two children and grandparents of two little grandsons. They have lived in Lincoln, Massachusetts, since 1962, where Ludwig manages a small business.

HARRY E. ROBSON (Ph.D., 1958) twice retired, is compiling an Atlas of Zeolite Synthesis.

PHILLIP G. WAHLBECK (Postdoctoral, 1960), Professor of Chemistry at Wichita State University visited twice during the year to obtain some of the high temperature equipment, including the quadrupole mass spectrometer. He is spending the summer in Los Alamos.

QUENTIN D. WHEATLEY (Ph.D., 1954) retired from Dupont is recovering from hip surgery and is enjoying his offspring.

1961-1970

DIETER BERGNER (Postdoctoral, 1968) continues his work with Hoescht, Frankfurt, but like so many others experiences budget problems. The NPR correspondent with the same name and female voice must be a different person.

WILLIAM H. BRECKENRIDGE (B.S., 1963) was recently named one of ten University of Utah faculty members to receive the University's 1994 Presidential Teaching Scholar Award recognizing excellence in teaching. Each scholar receives a $5,000 increase in annual base salary. Recipients were selected through a rigorous process involving representatives of student government, faculty, and administration.

Professor Breckenridge was a 1959 graduate of Louisburg Rural High School, Louisburg, Kansas; a 1963 graduate of KU (B.S. with highest distinction and honors in chemistry); and a 1968 graduate of Stanford University (Ph.D. in chemistry).

HORNG-YIH CHEN (Ph.D., 1968) retired from Dupont in 1992.

JIMMIE G. EDWARDS (Postdoctoral, 1967), University Distinguished Professor of Chemistry at the University of Toledo, spent a semester at the EEC research establishment in Julich, Germany. While in Europe, he attended the VIII International Symposium on High Temperature Materials Chemistry at which he presented a paper. He visited KU in May and drove away with some equipment from the

high temperature laboratory. His current research interests include the elucidation of some very unusual vaporization phenomena in some systems for which the pressure falls as the temperature rises.

H.F. FRANZEN (Ph.D., 1962), Professor of Chemistry at Iowa State University, continues as American Editor of the *Journal of Less Common Metals*. His current research interests include both experimental and theoretical work on incommensurate structures. He visited KU and received some equipment from the High Temperature Laboratory.

LARRY D. KERSHNER (Ph.D., 1968) has been named senior associate scientist for Ag Chemicals Process Research of the Dow Chemical Co., Midland, Michigan. Larry will continue to be actively involved in applying Ag process development skills to the greater Dow world through his participation in the definition and application of Core Technical Competencies.

Over the past several years, Larry has made key contributions to the process development of an array of Dow Elanco new products, particularly in the Aryloxyphenoxy herbicide area, with special emphasis on the preparation of chiral intermediates. He has also brought his talents to bear on a number of projects outside of Ag. He was one of the effective leaders of a team which made a technical success of the bleach activator project. Larry is also recognized for the emphasis he places on and the active role he plays in mentoring. The dynamic mentoring program in ACPR is largely due to his leadership.

JAMES W. HAYDEN (Ph.D., 1968) left the field of research chemistry a number of years ago and entered the field of Emergency Medicine. Dr. Hayden and his wife, Lauren, now live on a ranch in the panhandle of Idaho and he commutes to Spokane, Washington. He also operates a consulting practice in the forensic interpretation of drug test results.

DENNIS MORRELL, (B.S. 1969; Ph.D. 1973, UC-Berkeley) spent a day visiting the campus with his son, Chris Morrell, last February. Dr. Morrell's present position is as Research Supervisor in the Engineering Sciences Division of the R&D Department at Hercules in Wilmington. His group, whose expertise is catalysis and high-pressure processing, does process development for existing and emerging products. While Chris was touring the campus as a prospective freshman, Dennis consented to give a presentation at our Friday noon seminar. His well-attended talk entitled *A Chemist's Evolving Career in Industry* was both general and technical in nature and was extremely interesting and appreciated by undergraduates, graduate students, and faculty alike.

DOUG C. NECKERS (Ph.D., 1963) was recently named McMaster Distinguished Professor of Photochemical Sciences at Bowling Green State University in Bowling Green, Ohio. Harold McMaster is a major donor to Bowling Green and funded the endowment for the position. Doug has also been named this year's winner of the Morley Medal given by the Cleveland Section of the American Chemical Society. Morley was a Case physical chemist who collaborated with Michaelson in the first measurement of the speed of light. Neckers is being recognized for his contributions to photochemistry and photochemical technology. His research contributions have centered on the development of photocatalysts for photopolymerization, photooxidation, and phototherapy. These advances have gained Neckers international recognition as an expert in polymer photochemistry. He holds 25 patents, several of which have led to direct commercialization. Among former winners is Daryle Busch of the University of Kansas.

PAUL C. NORDINE (Ph.D., 1970) is President of Containerless Processing, Inc., a small business research establishment. He was the successful bidder and bought the newer induction heater in the high temperature laboratory. He visited and prepared the heater for shipment.

THOMAS PETZEL (Postdoctoral, 1967), Prof. Dr. rer. nat. at the University de Bundeswehr, in Hamburg, Germany, attended the VIII International Symposium of High Temperature Materials Chemistry in Vienna. His current research interests are in vaporization studies and in high temperature structural studies.

JULIUS REBEK, JR. (B.A., 1966) presented the Franklin Lecture at KU in 1992. Dr. Rebek is currently the Camille Dreyfus Professor of Chemistry at M.I.T University, and was elected Fellow of the American Academy of Arts and Sciences in 1993.

The Chemistry Department would like to add that in May 1994, Dr. Rebek joined the elite ranks of the National Academy of Sciences as one of fifty-one men and nine women elected as new members.

KARL E. SPEAR (Ph.D., 1967), Professor of Ceramics at Pennsylvania State University, visited and retrieved some equipment from the high temperature laboratory. His current research activities include work on diamond thin films. He presented an invited lecture at the VIII International Symposium on High Temperature Materials Chemistry in Vienna.

HARRY WIEDEMEIER (Postdoctoral, 1964), Professor of Chemistry at Rensselaer Polytechnic Institute, has written fondly of his days at KU.

1971-1980

BRUCE R. CONRAD (Postdoctoral, 1972), Director, Process Research at International Nickel, Ltd., reports that Russian imports of nickel have depressed the market. He continues to serve on the Boards of the Canadian Metallurgical Society and the Ontario Learning and Technology Exchange Consortium. His private partnership sends most of its profits to a women's shelter. His wife, Audrey, finished her Masters of Divinity and served as a part-time Pastoral Assistant.

DAVID HENTON (Ph.D., 1973) Dave is still at Dow Chemical and has recently moved into the super absorbent polymer research area after twenty years of plastics research. Midland, Michigan, is still home and he and his wife Barb just celebrated their 25th wedding anniversary backpacking at Mount Rainier in Washington State. Barb is the gas manager for consumer power. Their son Michael graduated from the University of Missouri at St. Louis (Dave's old school) and recently was married. Their daughter Sheri graduates in May from Michigan State University. Barb and Dave spend a lot of their spare time playing with their four-year-old granddaughter Annie.

KEVIN KELLY (Ph.D., 1980) has been appointed Director of Product Development and Support at ABC Instruments (a division of Laboratory Automation, Inc.). ABC Instruments was formed from the instrument division at ABC Laboratories, Inc., in Columbia, Missouri. Dr. Kelly joined with two other members of the instruments division management to purchase the division from ABC Laboratories in September 1993. The new company will employ about thirty people and continues to manufacture and market sample preparation and cleanup instrumentation for food product and environmental analytical applications. Kevin and his wife Paula, both KU graduates, have lived in Columbia for three years. Their daughter, Harriet Lundy, finished work this summer at KU on a degree in business communications.

TOM B. LEWIS (M.S. 1964, Ph.D., 1967) In addition to earning both his M.S. and Ph.D. under Albert Burgstahler, Tom also studied as a research fellow with Richard Givens in 1976. In past summers ('89, '90 and '92), Tom served as a member of the summer teaching faculty at University of Missouri, Columbia. This summer, he is back at KU's Chemistry Department serving as a temporary instructor for CHEM 626--Organic Chemistry II. During the academic year, Dr. Lewis serves as Chair of the Chemistry Department at Ottawa University, Ottawa, Kansas, where he has been a faculty member since 1965.

DEAN E. PETERSON (Ph.D., 1972) is at Los Alamos managing a substantial program in thin films of superconductors.

DAN QUINN (Ph.D., 1978) is currently Professor of Chemistry at the University of Iowa. Research continues in the Quinn group on the mechanisms of cholinesterases and lipases (in particular cholesterolesterase). Quinn states that he bilked his Iowa colleagues into promoting him to Professor in 1992, and then promptly departed for a six month sabbatical at the University of California-San Diego, where the joys and tedia of site-directed mutagenesis were lived. The climate and science in San Diego were great, though the Wagnerian splendor of the midwest thunderstorm was missed. Return to Iowa has brought life back to normal, whatever that means.

KENNETH A. SCHWARTZ (B.A., 1976; M.D., 1979) is leaving a family practice of eleven years in Rifle, Colorado, to accept employment at Asbury-Salina Regional Medical Center as an emergency room physician.

RICHARD L. C. WU (Ph.D., 1971) is at Wright Patterson Air Force Base working on diamond coatings. He also is adjunct professor at the Wright State University Medical School. His wife has her own computer business, and their daughter is a medical school student.

1981-1990

PETER JOHN HART (B.A., 1987, 1988) John received his Ph.D. from the University of Texas at Austin in Biochemistry in December 1993, under the guidance of Jon Robertus. His dissertation was written on the structural determination and refinement of a chitinase from barley seeds to 1.8 Angstroms resolution using x-ray crystallographic methods. He recently accepted a postdoctoral position in the laboratory of David Eisenberg at UCLA and began work there in early February.

ANDY LOTTES (Ph.D., 1989) studied for two years as a postdoctoral fellow with Paul Gassman at the University of Minnesota (1989-1991) and then began work as a senior development chemist at 3M.

Andy states that work in Gassman's lab was thoroughly enjoyable; it was a chance to do a couple years' worth of hardcore research without the pressures of graduate school. Now, he makes adhesives for use on masking tapes and is becoming more of a polymer engineer as the days go by. Andy states that if he's learned anything, it's that polymers aren't necessarily just that dark crud that one chromatographs away after a messy synthesis!

Andy spends his spare time enjoying the road race circuit in the Twin Cities area. He reports that he typically runs a couple of marathons a year (very slowly) and several races at the shorter distances.

DIANE ORDWAY THOMPSON (Ph.D., 1982) After four years as Assistant Director of the Center for Drug Delivery Research (CDDR) at the Higuchi Biosciences Center at KU, I have again "graduated" from KU to Director of Research and Development for CyDex L.C. a start-up company in Overland Park, Kansas. CyDex was established by KU and a group of investors to develop and market a series of modified cyclodextrins. The rest of my time is spent with my husband Tom (Med Chem Ph.D., 1980 - Drug Metabolism at Marion Merrell Dow) as we chauffeur our sons Matt (11 years) and Mike (7 years) to their activities. We are bracing ourselves for their teen age years which seem to be starting early.

Jack Rose with his new 6th Floor still.

1991-

MICHAEL SCOTT ENGEL (B.A., Chemistry, B.S. Biology, 1993) is in his first year of graduate studies working on a Ph.D. at Cornell University.

BILL M. MACPHAIL (B.S., 1991) On December 16, 1993, Bill accepted a position as a research assistant with Pitman-Moore (soon to be renamed Mallinckrodt Veterinary), an animal health care international corporation. He is working in their ecto-parasiticides product development group at the corporation's Science and Technology Center outside Chicago, Illinois. Previously, Bill worked at Pitman-Moore's animal pharmaceuticals and biologicals production site in Kansas City, Kansas, as a pharmaceutical quality control chemist. His research duties include developing product analytical testing methods and assisting in formulations duties with the group's senior research director to develop safe and effective pesticides to be used on food and companion animals.

Before beginning work with Pitman-Moore in March 1993, Bill worked as a quality control laboratory supervisor for the FMC Corporation (a commodity chemical manufacturer) at its Lawrence, Kansas, site.

LUIS A. MORALES (Ph.D., 1994) will go to Los Alamos as a postdoctoral researcher. He will work with Mark Williamson (Ph.D., 1990)

SONGLIN XU (Ph.D., 1993) completed his Ph.D. studies with Professor Harmony in December and promptly headed to the state of Washington to take up a two-year postdoctoral appointment at the Pacific Northwest Laboratories (formerly Batelle) in Richland. His studies will include infrared laser spectroscopy which interfaces nicely with his KU work in microwave and laser (visible) spectroscopy.

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

NAME _____

KU DEGREE and YEAR RECEIVED _____

PRESENT POSITION _____

ADDRESS CHANGE (if any change) _____

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PERSONAL NEWS (Please write this exactly as you would like it to appear in the next newsletter)

COMMENTS ON NEWSLETTER (content, format, etc.)

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