

School of Chemical Sciences

#27

Fall 1990

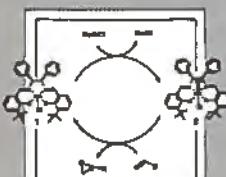
ALUMNI NEWS

University of Illinois
at Urbana-Champaign

INSIDE



Les Coleman
of Lubrizol



Jacobsen discovers
new chiral
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Organic chemistry
following WWII



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high jinks

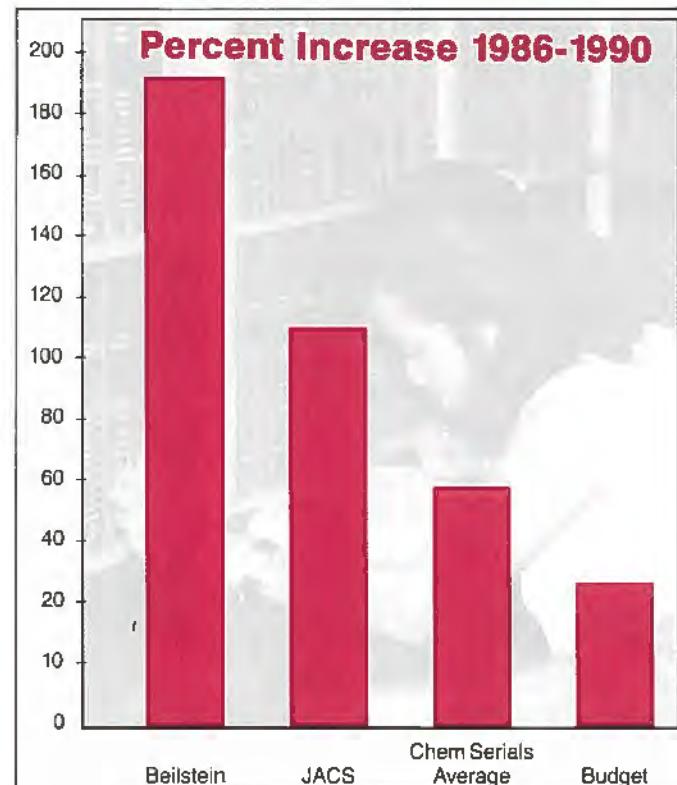
For its 100th Anniversary Our Library Needs a Gift That Will Last Forever

The chemistry library was the first departmental library on campus. Organized in 1891 by enthusiastic chemists who were impatient with the short hours at the main library, its excellent collection has given it a reputation as one of the premier academic chemistry libraries in the world. It has served as a major attraction for faculty and students and is an important support for outstanding teaching and research.

Unfortunately, the chemistry library is in danger of losing this premier status. It is suffering from the growing gap between the cost of maintaining a quality collection and the budget allocated by the central library. The figure tells the story.

Since 1986, the cost of a subscription to the most frequently used journal, the "Journal of the American Chemical Society", increased 110%. During the same period the price of each volume of the "Beilstein Handbook of Organic Chemistry", well known to generations of students, rose 194%. Yet the university budget for our library has grown a total of 26% since 1986, has received no increase this year, and is projected to receive none next year.

To meet the most pressing needs, 95% of the current budget goes for serials. There is virtually no money for monographs or to build the collection for the future. In fact, in order to purchase any new serials, an equivalent dollar value of existing serials must be cancelled.



Although the library has made heroic efforts to stretch its dollars and to maximize its efficiency, the discrepancy between what we have and what we need is increasingly noticeable. Paul, a graduating senior, lauds the library for the efficiency of its staff. "They know the answers and give you good help even without having to ask someone else." "Reshelving is fast and the journals get on the shelf almost as soon as they come in. The August issue is on the shelf in August, not in September."

Julie, another undergraduate student, has noted the results of the belt tightening. "When you find an article in 'Chem Abstracts' that you really want and it's not there, it can be frustrating," she said. "Often the material is outdated." Paul echoed the sentiments of many students when he said that the chemistry library

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Lester E. Coleman Blends Corporate Management and Scout Leadership



▲ Coleman as Lubrizol CEO describing his company's products
and
as national Boy Scout executive



Dr. Lester Coleman, Ph.D. '55, carries two full-time positions, but receives compensation for only one. In the chemical industry he is known as the Chairman of the Board of Lubrizol Corporation, market leader among producers of specialty chemicals for lubricants and fuels. In the Boy Scouts of America, he is an active member of the national executive board and a recipient this year of the Silver Buffalo award, the Scouts' highest honor, a distinction he shares with President Bush.

His ability to carry a heavy load with dispatch has been apparent ever since he appeared at the University of Illinois as a chemistry graduate student in 1952. After only two years and eight months, he received his M.S. and Ph.D. degrees under the supervision of Professor Marvel. Even his final oral exam was completed in record time. In keeping with tradition, Coleman had saved for a month to afford the round of beer at Farwell's that celebrated the minting of a new Ph.D. Coleman's oral began at 9 a.m. but lasted only 45 minutes, too early in the day for beer. The group nevertheless repaired to Farwell's and toasted the event with a round of milk shakes.

During his first year at the U. of I. Coleman had a teaching assistantship with Professor Bailar, who remembers him as "an outstanding leader, even among the graduate students." This was followed by a Rubber Reserve Research fellowship which supported his thesis research on improving the hysteresis

properties of natural rubber, before the discovery of *cis* 2,2-polybutadiene.

One summer, Coleman held a Rockefeller grant to study the detoxification of DDT by South American cockroaches. His experience in entomology and background in polymer chemistry led, many years later, to his election to the board of directors of S.C. Johnson & Son, known for its Raid®, Off®, and Edge® products.

On the advice of Speed Marvel, Coleman joined the Lubrizol corporation directly after graduation after having accepted invitations to visit all the major chemical companies in the country. He had 17 offers of employment. Lubrizol became his choice because of the caliber of the people he met during his interviews.

During the years he worked as a chemist, he obtained 34 U.S. patents on his products, many of which are still on the market. It was a period of unprecedented growth for the company. When

he joined Lubrizol in 1955, the company had sales of \$40 million; last year its sales were \$1.2 billion.

As Chairman of the Board, Coleman has steered the company into many diverse markets, including formation of the Lubrizol Business Development Company and the establishment of an agribusiness unit. Eighty percent of the company's business is still in specialty chemicals for lubricants, but the agribusiness and business development segments are growing rapidly. Lubrizol invests heavily in research and development, more in line with the level of investment made by the pharmaceutical industry than the level of specialty chemical companies.

This year, for instance, the company expects to sell about 40 million pounds of genetically modified sunflower oil. This new product, called TRISUN®, is a monounsaturated sunflower oil that is used as a cooking oil, a spray oil for cookies, crackers, and cereals, and is an ingredient in non-dairy creamers, frozen desserts and baby formula.

A Scouting Leader At The National Level

Running alongside and closely allied to his professional career has been Coleman's growing responsibilities in the Boy Scout movement. For Coleman, Scouting started even earlier than chemistry. Coleman received the rank of Eagle Scout in 1945 and among the 51 merit badges he earned were ones in chemistry and physics.

One of the reasons that he likes Scouting is because he believes that "it is people who turn you on and turn you off." This was certainly true for Coleman. An excellent high school teacher introduced Coleman to chemistry and encouraged him to major in that field at the University of Akron, where he took his undergraduate degree. At the end of his sophomore year, his chemistry professor advised him to change majors because he would "never make it in chemistry." However, during his senior year he found excellent organic chemistry professors and proceeded to excel in all the senior and master's level organic and polymer chemistry courses offered.

As Coleman explains his extensive involvement with Scouting, "Many people helped me in my life. By volunteering my time through Scouting, I can repay some

of the help I was given by helping others." He has been extremely active with the Boy Scout Explorer program. This program was initiated after a study of the guidance function in schools showed that teenagers lacked adequate opportunities for career exploration.

At Lubrizol, Coleman encouraged the establishment of Explorer posts in such areas as data processing, chemistry, photography, auto mechanics, computer programming, secretarial services and even a law post which puts on mock trials with local judges presiding. In Scouting and Exploring, there are now more youngsters wishing to join than adults willing to be leaders.

As a by-product of Exploring, Lubrizol has been able to recruit some excellent employees among the posts' former members. In addition, the program helps develop interpersonal skills among the Lubrizol employees who become post leaders, which prepares them for additional responsibility.

Coleman was national chairman of Exploring for three years and Lubrizol was one of the companies chosen to make a film to persuade other heads of corporations to sponsor Explorer posts. For his service to the Exploring program he became one of only four individuals who have been presented with the Spurgeon Award, named for William Spurgeon — the founder of career Exploring.

For Coleman, Scouting is a sound investment in the future because "it is one of the

very few good prevention programs now existing in this country. It protects youngsters against crime, delinquency and drugs and teaches them citizenship ideals and skills. An Eagle Scout is a good employee in any company. If he can live by the 12 points of Scout law, he is the kind of person any employer would want."

Coleman has received the Silver Beaver award for contributions at the local level, the Silver Antelope award for work at the regional level, and now the Silver Buffalo award. The latter has been given since 1926 "for distinguished service to youth . . . of a national character, outside of the line of regular duty, whether directly through or independent of the Boy Scouts of America." Previous winners include Franklin D. Roosevelt, General Dwight D. Eisenhower, Norman Rockwell, Walt Disney, Neil Armstrong and Bob Hope.

As though that were not sufficient, Coleman also serves as director of Norfolk Southern Corporation, the Harris Corporation, and S.C. Johnson & Son. In his home community, he is a trustee of the Greater Cleveland Roundtable and a member of the Business Advisory Council of the Cleveland Center for Economic Education. In addition, he is also on the Advisory Council for the College of Science of the University of Notre Dame and on the Board of Overseers of the Dartmouth Institute, where business executives and their wives spend a month of mental stimulation in a physically healthy setting. Preparation for a session at the Dartmouth Institute consists of

reading a prescribed list of 40 books. This was a pleasure for Coleman because he finds relaxation in books as well as in the outdoors.

Last year Coleman impressed U. of I. students in Engineering 298 with his presentation to their class. In thanks they gave him the Engineering Doorknob Award, which he displays in his office. Hearing of the chemistry library's urgent need for funds to maintain our outstanding collection, he offered to chair our alumni drive.

Professor Bailar was clearly prophetic. Coleman was a leader as a graduate student and has been one ever since. We at the School of Chemical Sciences are proud to claim him as one of our alumni.

◀ At left, the Silver Buffalo Award, the Scouts' highest honor, which Coleman received this year.

Please Designate Alumni Fund Gifts to Us

Many of you give to the College of Liberal Arts and Sciences Annual Alumni Fund and your dollars are a welcome addition to development programs throughout the college. If you designate your Alumni Fund gift to the School of Chemical Sciences or one of its departments, i.e. chemistry, biochemistry or chemical engineering, then your dollars will be available directly to our development programs and we will be doubly grateful. These funds are used to support student recruitment programs, this alumni newsletter, get-togethers at ACS meetings, to name just a few. So, if you want to be sure that your dollars will go to the department of your choice, make sure to include your designation.

Remember to include corporate matching forms if you are working for a company that makes matching gifts. Some companies match even better than 1:1 so that your gift may be worth a great deal more than your donation. Your gift and company match count toward your membership in gift clubs and presidents council.



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a great deal to us.**

Illinois Inventors

Jacobsen Discovers Important New Chiral Catalysts

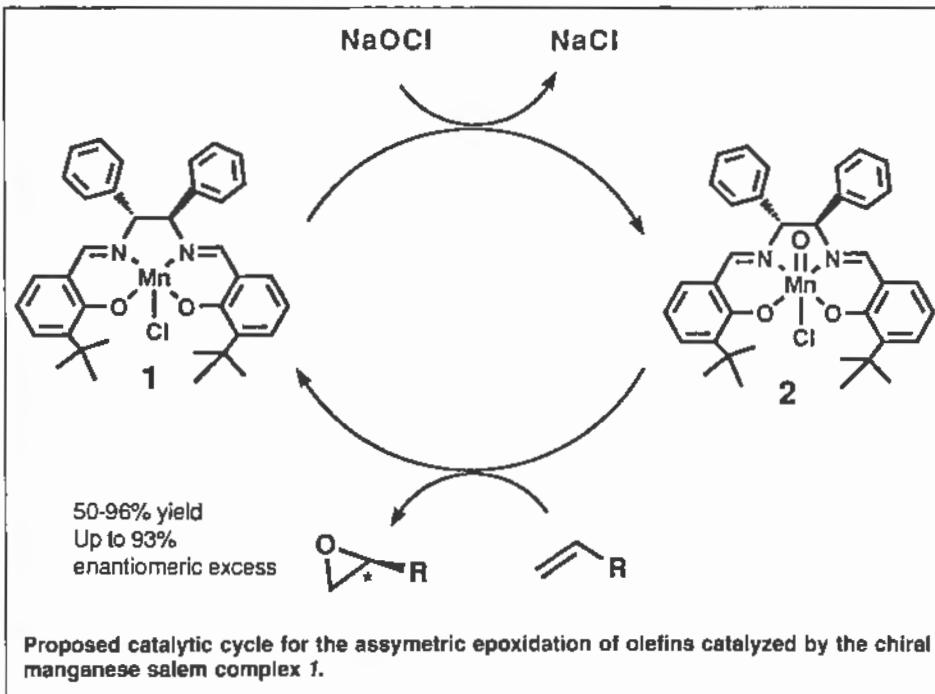


Eric N. Jacobsen

During the course of his investigations of fundamental chemical reaction mechanisms, Professor Eric Jacobsen has discovered a practical route to valuable chiral intermediates that promises to find wide use in organic synthesis. All this has occurred in the two years since he arrived at the U. of I.

His discovery is very important, especially to pharmaceutical companies, because approximately half of all synthetic drugs now on the market are chiral, i.e. they come in two forms (isomers) that are non-identical mirror images. Despite the fact that they share nearly all the same physical properties, the two isomers, known as enantiomers, can have drastically different biological properties. The thalidomide tragedy is perhaps the best known example of a drug that was administered as a 50:50 (or racemic) mixture of enantiomers. One enantiomer is an effective sedative but the other caused severe birth defects when women used the drug during their pregnancy.

Therefore, the FDA continues to tighten standards of enantiomeric purity of products allowed on the market, and pharmaceutical companies are very interested in processes that enable them to comply with this requirement. However, the synthesis of organic compounds



in enantiomerically pure form is usually extremely difficult.

As shown in the figure, Professor Jacobsen has developed a catalytic process whereby chiral epoxides can be prepared from simple olefins with up to 93% enantiomeric excess, which corresponds to a 96.5 to 3.5 ratio of enantiomers. The catalyst is a chiral salen ligand attached to manganese. Although not commonly used in organic synthesis, salen complexes have been around for a long time. In fact, the most important component of the ligands used by Jacobsen is a chiral diamine synthesized by Professor John Bailar at Illinois in the 1950s. Bailar prepared diphenylethylene diamine in the course of his classic studies on the stereochemistry of inorganic coordination compounds.

The catalytic cycle in the Jacobsen epoxidation involves two distinct stages. In the first, the manganese center in 1 accepts an oxygen atom from sodium hypochlorite (household bleach). This generates a so-called oxo complex 2, which reacts in the second stage with olefin to form the epoxide. Thanks to the asymmetric environment created by the salen ligand, the oxygen is transferred preferentially to one face of the double

bond, leading to predominantly one enantiomer of the corresponding epoxide and regenerating the original metal complex. As little as one mole of the chiral catalyst can convert 100 moles of olefin to the enantiomerically enriched epoxide.

While this appears to be the first practical application of salen complexes in organic synthesis, these systems are now considered promising templates for a variety of other asymmetric reactions which can lead to biologically useful intermediates and to new understanding of the mechanisms of reactions. Jacobsen is now using similar catalysts to study other processes, such as alkylation, which involves the formation of carbon-carbon bonds.

Jacobsen points out that the original goal in this project was to use stereochemistry, the spatial arrangement of atoms in molecules, to understand how things come together in olefin oxidation by metal complexes. Modeling the transition state by inference, Jacobsen has developed a theory for the mechanism of epoxidation, which is completely consistent with the observed enantiomeric preference. This mechanism is of fundamental interest to a wide range of chemists. Perhaps most important, it permits changes to be made

in the catalyst structures with predictable consequences on selectivity.

Jacobsen gives a great deal of credit for his success to the environment offered by the chemistry department. "We could not have made nearly as much progress as we did without the excellent facilities and support we received from the U. of I.", he said. "I have been fortunate to be able to build an unusually large group of five graduate students and four undergraduates in only two years."

"My students are very dedicated, and this is important because our research is very labor intensive. At first, the projects did not go that well, and I owe a great deal to Wei Zhang, an outstanding graduate student who found solutions to many of the problems we ran into, and came up with great ideas of his own. Now that things are working well, everything seems easier."

The last twelve months have been "incredibly exciting" for Jacobsen and his group but he is already looking ahead. His group is currently producing better, and even more selective catalysts than his original systems, ones that create even greater energy differentials between the favored and non-favored pathways to each enantiomer. He is also trying to use very simple rather than complex processes.

The latter is probably an additional reason for the interest that pharmaceutical companies have shown in his work. The university has applied for a patent on his process and one of the largest pharmaceutical firms in the country has already found an important application in the production of a new drug. Jacobsen is especially pleased that the work which began as a purely academic problem may also be of real benefit to mankind.

The Chemical and Engineering News article that reported his discovery on April 2, left no doubts about its importance. It states that "the technique may be applied to research syntheses of natural products and industrial production of drugs, pesticides, pheromones, and flavor and fragrance additives. Such widely applicable asymmetric syntheses take on new importance in light of (new) regulations concerning marketing of enantiomeric versus racemic drugs."

Jacobsen has made a phenomenal start, even in a department known for its talent, and we fully expect that his career will continue its remarkable course.

Illinois Organic Chemistry Following WWII

by Karl Heumann, Ph.D. '51



Karl F. Heumann sitting on Hadrian's Wall, northern England, September 1984.

I entered Illinois in October of 1947 along with what I believe was the largest group of organikers so far seen there. I have clear recollections of long lines on registration days, necessitating especially early rising so as to go through the various steps, designed originally for more leisurely times.

I was in the organic course that "Speed" Marvel gave in the Fall of 1947, and I still remember the relief he showed when it was over, his first academic lecture in many years. Later lectures followed the usual Marvel Rule: drop your pencil and flunk the course by

missing 30 seconds of facts. Could that be where the name "Speed" originated?

My relationship with Professor Roger Adams (The Chief) did not include any course work other than research. During the latter part of the '40s he was involved in many activities off-campus. Therefore, it was quite amazing to have him return after a long absence and ask me, "How did that melting point turn out?"

Through the interest and kindness of The Chief I was able to fulfill requirements for a minor in American Literature. Thus I had the best of both worlds: Professor John T. Flanagan for Emerson, Thoreau, Hawthorne and Melville for literature and the others for my organic chemistry and biochemistry.

I learned a lot of useful chemistry from Professor Nelson Leonard but did not expect to fall under his spell because of his musical ability. Now there is a man who has combined two subjects superbly.

My last official hour at Illinois, my final oral, was spent in the "new" building across the street from Noyes, the one and only time I was ever in it (October 1950). To save money, we drove overnight to St. Paul where 3M awaited. Graduate studies at Illinois were indeed crowded and busy years.

Library *continued from page 1*

needs more open hours, more space and more quiet, all of them a reflection of the lack of resources.

A current faculty member who can remember using the library as a student in the 60s has found the gradual erosion noticeable. As he said, "This library is one of the gems, not just on this campus but nationwide." He warned us, "You have something very special. Don't lose it."

With your help we won't lose it. For that reason, the School of Chemical Sciences has decided, for the first time ever, to appeal to its alumni for help in order to establish an endowment for the library. A \$200,000 endowment will ensure the library \$10,000 annually to purchase monographs, books needed for class assignments, for staff to augment library hours, and to maintain the

depth of the collection. As our chemistry librarian, Tina Chrzastowski, points out, *A true research collection should include materials that are not only used by present faculty and students, but should reflect historical and future trends in chemical research. Research collections are broad in scope and format. They are not limited to present research needs but look beyond to new areas of research and scholarship. In the last year I have found for the first time that the Chemistry Library's budget has been unable to meet all the research needs of the faculty and students.*

Dr. Les Coleman, one of our outstanding alumni, has offered to chair the library drive (see p. 2). After the holidays, you will be receiving a letter to ask for your generous support. The success of the campaign will ensure that on its 100th anniversary, the chemistry library will be able to look forward to an exciting future as well as to an illustrious past.

Year-in-Review



Professor Paisley in center of dais

The students file in after the trumpet processional

"Chemistry at Illinois is synonymous with excellence."

David Paisley, Professor of Chemistry,
commencement speaker



At the end of his commencement address, the speaker reminded his overflow audience in 100 Noyes Lab that "The U. of I. represents chemistry at its finest. It is a proud legacy and you are now part of that tradition."

The U. of I. continues to attract outstanding students, as well as faculty. Two Illinois graduates in chemistry, Catherine Murphy and Omar Yaghi, were named Postdoctoral Research Fellows by the National Science Foundation and a third, Mark W. Grinstaff, won the Procter and Gamble Graduate Fellowship in Colloid and Surface Chemistry from the ACS. Two graduate students in chemical engineering won national fellowships, Mei Kam Chow from DuPont and Daniel Klingenberg from Hertz.

Hee Kwon Chae, another graduate student, was invited to present a paper to a symposium sponsored by the Korean Federation of Science and Technology, the Korean counterpart of our National Science Foundation. Chin-Ti Chen, also a graduate student, was selected as a finalist for the 1990 Sherwin-Williams Student Award of the ACS Polymer Materials Science and Engineering Division. As part of the competition he presented a paper at the national ACS meeting in September and received a travel grant.

Average salary offers reported by our graduates are rising with inflation. Compared with last year, average offers for B.S. graduates in chemistry and biochemistry rose by 4% and for B.S. graduates in chemical engineering by 6%. Average salary offers for chemistry Ph.D.s rose 6% and for chemical engineering Ph.D.s 5%. Our salary offers are comparable to national data. In almost every category women's salary offers were higher than those of their male counterparts.

As further examples of our student body, the capsule descriptions below will introduce some of our current students and newly minted graduates.

Bob Morris Is A Young Man In A Hurry

In exactly four years, Bob has completed his Ph.D. requirements and written a thesis in synthetic inorganic and organometallic chemistry which won him a Theron Standish Piper Award, given for an outstanding thesis in inorganic chemistry. He has also written or contributed substantially to 8 papers which have either been published or are about to be. In addition, he finds time to help

care for his one year old daughter while his wife goes to her part time job as a nurse at a local hospital.

Bob came to Illinois from Ball State University in Muncie, Indiana, where he started as a medical technology major and ended up with a chemistry major and math minor with three years of research plus undergraduate teaching experience. He was a member of three different honor societies and, in his senior year, was president of the ACS student affiliate group.

His next year will be spent as a postdoctoral fellow at the University of California at Berkeley, working with



Bob Morris takes a brief break in his lab



Kimiko S.

Professor Robert Bergman. After that he hopes to obtain an academic position back in the Midwest, within striking distance of Muncie, Indiana, to maintain his close family ties.

He very much enjoys teaching and hopes that his future position will provide time and encouragement for dedicated teachers. He thinks that good undergraduate instruction, such as he enjoyed at Ball State University, is invaluable and would feel very comfortable returning to a midsize educational institution where he could give students adequate individual attention.

Kimiko Suzue Achieves Top Honors

When Kimiko Suzue first came to the U. of I. her favorite spot on campus was the undergraduate library. Her hours paid off in achieving Bronze Tablet and in graduating summa cum laude (both include the top 3%). More important, the effort has opened doors for future studies. Current plans will take her to M.I.T. on a three year defense department fellowship which will cover her tuition and a stipend that increases each year.

After she has set up a research project, she may integrate her studies into an MD-Ph.D. program at the Harvard Medical School. This is possible because she has also been accepted at Harvard and offered deferred admission status. The idea for the combined program came from her experience last summer working for Professor Harvey Lodish at M.I.T., where some of her colleagues were successfully involved in combined programs. Kimiko's summer research with the mouse liver glucose transporter

led to a publication on which she is first author.

Along the way, Kimiko has been awarded an Arthur W. Sloan Prize, and an American Chemical Society Regional Scholarship, and finished her studies as a Phi Beta Kappa and won the Worth Huff Rodebush award for "outstanding achievements in the chemical sciences." Aside from all this, she has found time to plan her wedding to a fellow U. of I. alumnus, who will also be located in the Boston area.

In addition to her coursework, Kimiko has taught quiz sections as an undergraduate teaching assistant and done tutoring "to find out whether I enjoyed teaching." The exploration of career options, Kimiko says, "makes you realize what you are taking classes for." Kimiko's earlier experiences with patients in a hospital setting and with students in her specially designed tutoring sessions suggest that in addition to her laboratory work, she will always look for opportunities to maintain close interactions with people. Her series of awards suggests that she would be successful in any path she chooses.

Carol Lamberson Studies Bioorganic Chemistry

Now in the final year of her Ph.D. studies in bioorganic chemistry Carol hopes eventually to use her dual interests in biology and chemistry for research on medicinally active substances and chemical probes.

For the last two years she has been recipient of a Procter and Gamble Fellowship and last year she was one of three students to win a coveted Fuson Memo-

rial Travel Grant. As a result she had the opportunity to present her research findings at a national ACS meeting and has published a paper in addition.

Carol credits much of her current success to a very good undergraduate chemistry program at Franklin and Marshall College in Lancaster, Pennsylvania. The school was small, offering considerable individual attention and Carol graduated with two chemistry awards. An excellent female chemistry professor asked her to carry out research in her laboratory and Carol worked for this professor during most of her undergraduate career.

After her Ph.D. is completed, Carol is planning on a postdoctoral program at Brown University where she will be doing terpene biosynthesis and will have the opportunity to learn techniques used in molecular biology. With her expertise in molecular biology and organic chemistry she should have no problems finding a satisfactory position in academia.

George Haynes Follows Multiple Interests

For George Haynes, one of the chief attractions of working at Los Alamos National Laboratory was to meet outstanding scientists who also had other interests, "outside lives". This affinity reflects George's own approach. His years at the U. of I. have brought many honors including membership in the Chancellor's Scholar program and in several honorary societies, and opportunities to develop his interests within

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With her proud parents after the graduation ceremonies



Carol Lamberson at work



George Haynes is an enthusiastic teacher

Year-in-Review *continued from page 7*

and outside of science by sampling various work/study programs. He has taken several courses in physics and philosophy and has taken part in an informal student think tank or "Gedanken Group" to explore scientific conundrums beyond those presented in the classroom.

To enhance his study at the U. of I. he has spent every summer elsewhere. After his freshman year he studied nuclear chemistry at San Jose State University. The following summer and fall he worked at Los Alamos and at the Lawrence Livermore Laboratory at Berkeley. As a result of this work, he was the primary author of one publication and contributed to two others. In the fall he will begin his Ph.D. program in theoretical chemistry at the University of Pennsylvania, bringing with him 10 hours of supercomputer CPU time which he received along with an honorable mention from the NSF Graduate Research Fellowship program. Throughout his years at the University, George has found time for Alpha Chi Sigma, the professional chemistry fraternity. In the fall of 1989, he was elected to the position of house manager in which he oversaw the completion of major improvements to the house. This Spring, he served as president.

Beyond his heavy involvement in research and extra-curricular activities, George has also been an enthusiastic teacher. He finds that he learns from teaching because it requires him to rethink basic ideas and integrate them into the advanced subjects he is studying. While teaching chemistry, he tries to relate other disciplines to broaden the

interests of students. His teaching methods reflect his outlook on science, which he summarized quoting Francis Bacon:

"To expand the mind according to its capacity, to the grandeur of the mysteries, and not contract the mysteries to the narrowness of the mind."



The reception after commencement with the Henry Administration Building in the background

KEEP IN TOUCH

Return to: Ellen Handler, Editor
SCS Alumni Newsletter
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Urbana, IL 61801

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Your news (Please include newspaper clippings, photos, extra sheets, etc.)

Faculty Honors

Andrew A. Gewirth and Eric N. Jacobsen, both Professors in the Department of Chemistry, have been selected as 1990 Presidential Young Investigators.

Peter Beak, Professor of Chemistry, delivered an invited lecture on "Complex Induced Proximity Effects: A Useful Guide in the Search for Synthesis" at the IUPAC 8th International Conference on Organic Synthesis, Helsinki, Finland.

William H. Pirkle, Professor of Chemistry, received the Martin Award of The Chromatographic Society at the 14th International Symposium on Column Liquid Chromatography.

Professor Pirkle was also an invited participant at a "Table Ronde" on "Chirality and Drug Action", sponsored by the Roussel Scientific Institute, in Oxford, England.

Richard C. Alkire, Professor and Head of Chemical Engineering, was the 1991 recipient of the E.V. Murphree Award in Industrial and Engineering Chemistry, sponsored by the Exxon Research and Engineering Company and the Exxon Chemical Company.

Professor Alkire also received the Technical Achievement Award of the National Association of Corrosion Engineers.

Jo Ann Wise, Professor of Biochemistry has been appointed a Beckman Fellow in the Center for Advanced Study for the 1990-91 academic year. The appointment will allow her to continue her studies of the function of small ribonucleoprotein particles.

Robert L. Switzer, Professor of Biochemistry, was principal speaker at the annual convocation and research day at the UIC College of Medicine in Chicago. He spoke on "A Novel Function for Iron-Sulfur Clusters in Proteins: Control of Protein Stability *in vivo*."

Alexander Scheeline, Professor of Chemistry, is a visiting scientist at the National Science Foundation for 1990-91, serving as program officer in charge of the Chemical Analysis and Surface Science Program in the Chemistry Division.

Paul C. Lauterbur, Professor of Medical Information Sciences and Chemistry, received the first Outstanding Chemistry Alumnus Award from Case Western Reserve University.

Professor Lauterbur received an honorary doctorate from the State University of New York at Stony Brook. He was also named the Charles and Martha Hitchcock Professor at the University of California at Berkeley for the 1990-91 academic year.

In Memoriam

We have received word of the death of **Edward W. Comings**, B.S. '30 (Chemical Engineering). Dr. Comings received a Ph.D from M.I.T. in 1934. He was a chemical engineer for the Texas Co. and served on the faculties of the Universities of Illinois, Purdue, and the College of Petroleum and Minerals in Dharain, Saudi Arabia. He was a Fellow of the AIChE, a former chair of the ACS Division of Industrial and Engineering Chemistry and recipient of the AIChE's William H. Walker Award in 1956.

Ralph A. Conner, B.S. '29 (Chemistry) died on May 1, 1990. He received his Ph.D. from the University of Wisconsin and taught at Cornell University and at the University of Pennsylvania before joining the Rohm & Haas Co. He became vice president for research in 1948 and served in executive positions until his retirement in 1972. He received the Gold Medal of the American Institute of Chemists in 1963, the Chemical Industry Medal of the Society of Chemical Industry in 1965, and the ACS Priestley Medal in 1967.

Edward P. Czerwin, B.S.'31 died on April 7, 1990. He had received a Ph.D. from the University of Virginia in 1936 and worked for 40 years at the DuPont Company.

James R. Eiszner, B.S. '50 (Chemistry) died on September 13, 1990. He had been chairman and CEO of CPC International since 1987 but gave up the CEO post last August.

Linda A. Halas, M.S. '77 (Chemical Engineering) died on April 3, 1990.

Mary O. Hillis, Ph.D. '44 (Chemistry with Reedy) died on September 9, 1990. From her graduation until her retirement in 1981 she taught chemistry at Vassar College in Poughkeepsie, NY and she earned many awards and distinctions for excellence in teaching.

Wade L. Jones, B.S. '84 (Chemical Engineering) died in an automobile accident on January 27, 1990. He obtained an M.S. degree from Northwestern University in 1985 and was employed as a systems engineer with IBM.

Louis Navias, Ph.D. '23 (Chemistry with Parmelee) died on May 17, 1990. Since 1924 he worked for the General

Electric Research and Development Laboratory where he was an expert in the field of industrial ceramics, porcelains, enamels, and glasses. He contributed to GE projects dealing with electronic tubes used in radio, television and radar.

Leonard C. Smith, Ph.D. '49 (Biochemistry with Rose) died on January 18, 1990. At the time of his death, he was a professor of chemistry at Indiana State University at Terre Haute, where he had been on the faculty since 1966.

Samuel W. Sopp, Ph.D. '65 (Chemistry with Piper) died on February 17, 1990. Immediately after graduation he joined Merck & Co. as a research associate and was named senior R&D group leader before joining Chemicon Associates in 1984. In 1987 he became technical director at the Barcroft Co. in Lewes, DE. He twice received a Calgon/Merck Corporate Award for outstanding achievement in research and development.

Virgil R. Sullivan, Ph.D. '39 (Chemistry with G.F. Smith) died on August 10, 1990. He worked for the federal government as a chemist and educator.

Alum News

'20 Arnold Beckman, M.S. '23 (Chemistry) received an honorary Doctor of Humane Letters degree from Illinois State University at Normal, IL.

'30 In honor of his 80th birthday, the family of John L. Gring, Ph.D. '36 (Chemistry with Clark) has given a gift to the University of Illinois for a one time graduate award in inorganic chemistry. The gift was divided between our two top graduates in the field.

George E. "Doc" Symons, Ph.D. '32 (Sanitary Chemistry with Buswell) was the first editor of *The Diplomate*, the magazine of the American Academy of Environmental Engineers, and a long article reviewing his career as "The Great Communicator" was in the April, 1990 issue of the magazine.

'40 A memorial symposium was held at the ACS meeting in Washington, D.C. in honor of William J. Bailey, Ph.D. '46 (Chemistry with Marvel). Dr. Bailey was Research Professor of Chemistry at the University of Maryland at the time of his death and a past president of the ACS.

R.B. Bird, B.S. '47 (Chemical Engineering) has been elected an honorary member of the Society of Chemical Engineers, Japan. Only one other non-Japanese has received this honor, Professor Olaf Hougen, also of the University of Wisconsin. Professor Bird is the J.D. MacArthur Distinguished Professor of Chemical Engineering at the University of Wisconsin in Madison.

Clayton F. Callis, Ph.D. '48 (Chemistry with Bailar) received the 1990 Henry Hill Award from the Division of Professional Relations of the ACS. He was cited for "his longtime activities on behalf of the professional interests of chemists and chemical professionals." He was president of the ACS in 1989.

Ernest L. Eliel, Ph.D. '48 (Chemistry with Snyder) has had his autobiography published in the *Autobiographies of Eminent Chemists* series of the ACS. It is called *From Cologne to Chapel Hill* and, according to Professor Nelson Leonard, it "makes for fascinating reading."

Gordon O. Guerrant, Ph.D. '49 (Chemistry with Englis) received the Alumni Achievement Award from

Westminster College in Fulton, Missouri. Since 1978 he has been a research chemist with the Analytical Chemistry Laboratory of the Center for Disease Control in the Meningitis and Special Pathogens Section, Division of Bacterial Sciences.

Charles (Chuck) J. Prizer, B.S. '44 (Chemical Engineering) gave a series of lectures to the seniors in chemical engineering at the University of Illinois based on his experience as Vice President of Rohm & Haas Company.

'50 James P. Collman, Ph.D. '58 (Chemistry with Fuson) won the ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry, sponsored by Mallinckrodt, Inc. Dr. Collman is professor of chemistry at Stanford University and was the first N.J. Leonard Distinguished Lecturer at the University of Illinois in 1987.

E. Phillip Horwitz, Ph.D. '57 (Chemistry with Moeller), a senior chemist at Argonne National Laboratory, has received the US Department of Energy's Distinguished Associate Award for his work in developing the TRUEX process.

Paul L. Cook, Ph.D. '54 (Chemistry with Snyder) retired from Albion College, in Albion, Michigan, after 36 years on the faculty.

John Schaefer, Ph.D. '58 (Chemistry with Corey) along with his wife, Helen S. Shaefer, Ph.D. '78 (Chemistry with Yankwich) have received the City of Hope's highest honor, the "Spirit of Life" award in recognition for their many contributions to the Tucson, Arizona, community.

Earle S. Scott, Ph.D. '52 (Chemistry with Audrieth), professor emeritus at Ripon College, is administering a grant from the Institute for Chemical Education to revitalize science education in elementary and secondary schools.

A memorial symposium was held in conjunction with the August ACS meeting for **John K. Stille, Ph.D. '57** (Chemistry with Marvel), who died in a plane crash in July, 1989. Dr. Stille had been University Distinguished Professor at Colorado State University at the time of his death. He was a 1990 (posthumous) Cope Scholar Award winner.

George A. Williams, Ph.D. '56 (Chemistry with Gutowsky) received a Distinguished Teaching Award from the University of Utah, where he is a professor in the physics department.

'60 A. Wallace Cordes, Ph.D. '60 (Chemistry with Malmstadt) received a Burlington award, the University of Arkansas' highest faculty honor, for excellence in teaching. Professor Cordes has been at the University of Arkansas since 1959 and served as chairman of the chemistry and biochemistry department from 1984-1987.

Allen Hiebert, Ph.D. '67 (Chemistry with Hartley) received a five year service award from Tabor College where he has been teaching chemistry since 1984.

Carl R. Johnson, Ph.D. '62 (Chemistry with Leonard) has been appointed Distinguished Professor of Chemistry at Wayne State University in Detroit, Michigan.



Peter Y. Johnson

Peter Y. Johnson, B.S. '65 (Chemistry) has been named dean of undergraduate academic affairs at Illinois Institute of Technology in Chicago. Dr. Johnson received his Ph.D. from M.I.T. in '68 and is an associate professor of chemistry at I.I.T.



William H. Pittman

William H. Pittman, Ph.D. '60 (Chemistry with Snyder) has been named patent counsel for the Chemical Research Center at the GE Research and Development Center. Dr. Pittman attended Cleveland-Marshall Law School and received his law degree from Georgetown University. He has been with the GE R&D Center since 1982.

Malcolm Polk, B.S. '60 (Chemistry) received the 1990 Outstanding Teacher Award from the National Organization for Professional Advancement of Black Chemists and Chemical Engineers. Dr. Polk received a Ph.D. from the University of Pennsylvania and is currently a professor at Georgia Tech's School of Textile and Fiber Engineering.

'70 Sidney M. Hecht, Ph.D. '70 (Chemistry with Leonard) delivered an invited lecture, "Metal-catalyzed Polynucleotide Strand Scission" at the 9th International Round Table: Nucleosides, Nucleotides, and their Biological Applications, in Uppsala, Sweden.

Lydia E. Hines (formerly Moissides), Ph.D. '71 (Chemistry with Applequist) presented a paper on "Reflections on the value of science education for children" at a symposium during the ACS meeting in April. Since leaving Upjohn five years ago, she has devoted herself to teaching science/chemistry to children from preschool to sixth grade.

James MacMurdo, B.S. '75 (Chemistry), quality assurance manager with Ideal Industries, Inc. in Sycamore, IL has been elected executive secretary of the American Society for Quality Control.

Karel R. Schubert, Ph.D. '75 (Biochemistry with Switzer), has been named the George Lynn Cross Professor of Botany and Microbiology at the University of Oklahoma, Norman, OK.

Richard D. Varjian, Ph.D. '76 (Chemical Engineering with Alkire), currently a research associate with Dow Chemical Company, has been elected vice-chairman of the Industrial Electrolysis and Electrochemical Engineering Division of the Electrochemical Society. He was also selected to serve on the Guidance and Evaluation Board of the Advanced Industrial Materials Program in the Advanced Industrial Concepts Division of the US Department of Energy.

'80 Charles S. Baer, Ph.D. '82 (Chemistry with Faulkner) received a DuPont Accomplishment Award for his activities in technician training and development. He was also selected by the American Farm Bureau as one of 28 scientists nationwide to participate in the "Adopt-A-Scientist" program.

Charles A. Billstrand, B.S. '85 (Chemistry) has been promoted to research chemist at Sherwin Williams in the chemical coatings division, polymer research and development department.

Jeffrey Brodsky, B.S. '85 (Biochemistry) has finished his Ph.D. at Harvard and has received an ACS Fellowship to do research for three years at the University of California, Berkeley.

Douglas A. Burg, Ph.D. '88 (Chemistry with Beak) is now a senior research chemist with Lonza, Inc. in Annandale, NJ.

Richard Crooks, B.S. '81 (Chemistry) is an assistant professor of chemistry at the University of New Mexico in Albuquerque and received a Starter Grant Award from the Society for Analytical Chemists of Pittsburgh, PA.

James B. Gloer, Ph.D. '83 (Chemistry with Rinehart) has been promoted to associate professor in the department of chemistry at the University of Iowa. He has received a Burlington Northern Foundation Faculty Achievement Award (1989-90), an Alfred P. Sloan Foundation Fellowship (1990-1992) and an NIH Research Career Development Award (1990-1995).

Katherine Bechdolt Gloer, B.S. '81 (Chemistry) received a Ph.D. in chemistry from the University of Iowa in 1988. She is currently employed as a research scientist with Accel Catalysis, Inc. in Iowa City.

Jody Kaplan Hirsh, B.S. '80 (Biochemistry) received a Ph.D. in pharmacology from Northwestern University in 1989. She is now a research associate in the department of physiology at Rush Medical College in Chicago.

John Hoots, Ph.D. '84 (Chemistry with Rauchfuss) is a recipient of the Calco Chemical Company's 1988 Chemical Technical Achievement Award. He is a senior research chemist in the Naperville company's Water and Waste Treatment Division.

Kyle J. Kroha, B.S. '83 (Chemistry) is an analytical chemist/trainer for Finnegan MAT's Training Institute in Cincinnati, OH.

Thomas G. Larson, B.S. '82 (Biochemistry) received a Ph.D. in biochemistry from the University of Pennsylvania School of Medicine in 1990. He is a postdoctoral fellow at the Roche Institute of Molecular Biology in Nutley, NJ.

Andrea Marino, B.S. '88 (Chemical Engineering) has accepted a position as process development engineer at the Amoco Research Center of the Amoco Oil Co. in Naperville, Illinois.

Mark K. Ono, B.S. '86 (Chemistry) received his M.D. degree from the University of Illinois at Chicago in 1990 and is completing a residency in the Ob/Gyn program at the University of Minnesota in Minneapolis.

Martin Pomper, Ph.D. '89 (Chemistry with Katzenellenbogen) received an M.D. from the University of Illinois in '90 and has taken a medical internship at Johns Hopkins University to be followed by a residency in diagnostic radiology.

Joan M. Rolich, B.S. '84 (Chemistry) has been promoted to vice president of operations at ArRo Laboratory, Inc. in Joliet, Illinois.

Anne P. Wallin, Ph.D. '88 (Chemistry with Beak) and her husband, Sten A. Wallin, Ph.D. '87 (Chemistry with Scott) have both accepted new positions with Dow Chemical Company.

AXE House High Jinks



AXE has had a busy year and sponsored many activities, some serious and some just plain fun. In addition to the annual Krug Lecture and faculty chats, the house gave its traditional lobster dinner, inviting alumni and faculty, and organized its own formal dance.

Among its more informal events were the two pictured in the photographs. Above is a scene from its third annual barn dance. As Laura Bass, AXE house officer, described the event, "We had bonfires, hayrides, and dancing and we froze all night."

At right is a scene from the last Halloween party, showing some of the imaginative costumes of those who came.



The photo above shows Walter G. May, Professor of Chemical Engineering, receiving a still from Melissa (Missy) Cregier, designed and constructed by the class of 1990 in honor of Professor May's retirement. An enlarged photograph of the still is at right.

To mark the occasion, the department of chemical engineering established the "Walter G. May Award in Chemical Engineering" to be given annually to a student, based on scholarship and need.

This occasion is Dr. May's second retirement. In 1983 he retired as Senior Science Advisor from the Exxon Research and Engineering Company, where he spent 35 years. In his second career as faculty member at the U. of I., he has been an outstanding teacher and student advisor. He is a Fellow of the AIChE, a member of the National Academy of Engineering, and a 1989 recipient of the AIChE "Award in Chemical Engineering Practice".

A Still for Walter May



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