

Alumni Newsletter

School of Chemical Sciences

The Future for Chemical Engineering

Chuck Eckert, Head, Department of Chemical Engineering

Chemical Engineering is maturing as a profession, and it is imperative for us to evaluate clearly our goals and opportunities for the next decades. After a growth boom in the 70s, enrollments in chemical engineering curricula have peaked, both nationally and here at Illinois. We must recognize the changing needs of industry and society in order to reshape our educational process to the new, emerging technologies, and see where the broad training of the chemical engineer can make the greatest contributions. This should be reflected both in our curriculum and in our students' employment patterns.

Let me highlight some of the areas that I think will be important:

— *Biotechnology.* Everybody is talking about biotechnology, and although it has not produced much yet, sooner or later it will. Chemical engineers' contributions in this area will range from gene-splicing to increased utilization of natural products as chemical feedstocks. Certainly in the field of separation technology we will have to learn better methods of extracting valuable biological products from very dilute solutions. Further applications will come in the processing of food and pharmaceuticals.

— *Separations.* With all of the feedstocks available in the Middle East, much of the heavier commodity chemical business may move there. If America is to maintain a strong presence in the chemical process industry, we will have to become experts in specialty chemicals. The big contribution chemical engineers will make here is in novel separation processes and perhaps processing under extreme conditions.

— *Materials and Catalysis.* In the future, we will be treating biological products, doing more involved sep-

arations, going to more extreme conditions or going back into the synthetic fuel business. In these situations, the efficiency of our processes will depend very strongly on the catalysts we can use to create changes, and the materials that will let us work under the best possible conditions.

— *Microelectronics Fabrication.* The translation of the achievements of solid state physics into useful devices depends on the fabrication process, much of which is nothing more than a series of problems in mass transfer. Many chemical engineers are already getting into the "chip" business and making major contributions.

— *Computers.* Optimizing our use of computers will be crucial in the chemical process industry since experimental research is becoming so expensive. Today's sophisticated computers make it frequently possible to do meaningful simulations at a fraction of the cost, and in a fraction of the time, of the laboratory or pilot plant experiment. In addition, computer aided design (CAD) will certainly be a growth area because of the changes in our traditional sources of raw materials and the enormous capital investment for new large-scale processes. CAD methods also provide a great leverage to our ability to evaluate a wide variety of complex options and make wise engineering decisions.

— *Environmental Control.* The recent disaster at Bhopal has certainly heightened both public and political awareness, even fear, of environmental hazards. Chemical engineers have the double challenge in the future not only of maintaining a safe environment, but also of communicating responsible information about this to the public.

This is certainly not an all-inclusive
continued on page 2



*Speed Marvel at his retirement,
January 1961*

'S Marvelous

"Speed" Marvel stopped for a few days in Urbana last November for the third lecture in the Marvel series, given by renowned scientist Professor Albert Eschenmoser, of the Swiss Federal Institute of Technology. Dr. Marvel, who has just celebrated his 90th birthday, was on his way from Arizona to consult at DuPont and visit the University of Pennsylvania. He told colleagues "when you can't play anymore, you might as well work."

Visitors to the lecture included Marvel's son, John, now manager of research at Monsanto Agricultural Products Co. in St. Louis, and a friend of long standing, Dr. Schreiber, Ph.D. 1935, from Kalamazoo, Michigan.

The Carl Shipp Marvel Lecture in Organic Chemistry is supported by the contributions of friends and alumni to the C.S. Marvel Fund — University of Illinois Foundation.

continued

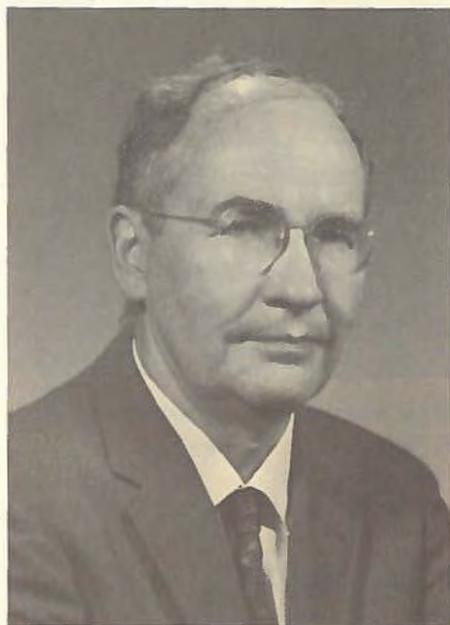
list, but I think it is sufficient to show that we have a lot of work ahead of us. We have to couple our traditional training with previews of a variety of new fields, and the faculty of our department is striving to do this now.

We are introducing new courses in areas ranging from electrochemical engineering and catalysis, to microelectronics, polymers and optimization. We are seeking new faculty to broaden us in some of the non-tradi-

tional areas, and above all, we are teaching our students how to learn, so that they may continue to grow throughout their careers.

The Faculty

AIChE Award to Westwater



James Westwater

James Westwater has won the 1984 Founders Award of the American Institute of Chemical Engineers, presented at the November meeting of the Society in San Francisco. The award recognizes outstanding contributions to the profession of chemical engineering and is traditionally given to members whose careers of scholarly achievement have been combined with long and distinguished service in both technical and professional activities.

Dr. Westwater joined the Chemical Engineering faculty at Illinois in 1948 and was head of the department from 1962-1980. He is renowned for his work in the area of heat transfer, specifically the heat effects accompanying

Fusion Research to Elemental Analysis?

Dr. Alexander Scheeline and co-workers at Illinois are turning a device originally conceived as a high-temperature source to induce thermonuclear reactions into a new instrument for elemental chemical analysis of high melting solids. The theta pinch, a magnetically compressed and heated plasma discharge, was invented at Los Alamos National Laboratory in 1948. It allowed measurements to be made on low pressure plasmas with temperatures of millions of degrees. However, if deuterium is excluded from the discharge, there is insufficient energy to allow any nuclear reaction, and the high temperatures that remain can be put to use to vaporize and excite atomic vapor from a variety of materials.

According to Dr. Scheeline, "the history of emission spectroscopy indicates that every time a hotter discharge has been designed, analytical behavior has improved. Chemical interferences have decreased and reliability has increased." From this point of view, the use of a theta pinch for chemical analysis makes sense, as the theta pinch is one of the simplest devices

available for generating megadegree temperatures. Construction is reasonably inexpensive since "leftovers" from the building of fusion research facilities can serve as components for pinch sources.

Initially, Scheeline found the emission data disappointing, since plasma compression and heating were insufficient to adequately sample anything higher-melting than aluminum. A redesigned compression coil allowed delivery of a greater fraction of the stored electrical energy to the plasma and discharges are now being produced with one kilojoule being dissipated in 100 microseconds. Useful analytical data on emission from ceramics, stainless steels and other "difficult" samples are expected shortly.

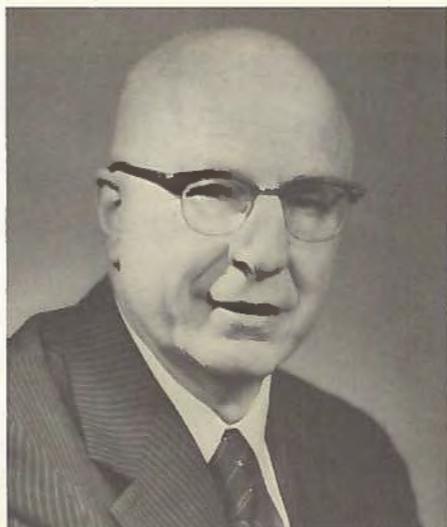
Research groups at three other universities (Michigan, Vermont and South Carolina) are also studying the use of pinch discharges. All principal investigators can trace their lineage to the University of Illinois through the common 'academic ancestry' of Professor Emeritus Howard V. Malmstadt.

phase transitions, and for his definitive studies on boiling heat transfer.

In 1972, Dr. Westwater won the coveted Max Jacob Award administered by the American Society of Mechanical Engineers and the American Institute of Chemical Engineers. He has earned several other awards from the

institute, including the Walker Award and the Conference Award, and is a member of the National Academy of Engineering.

Harry Drickamer, John Scott Medalist



Harry Drickamer

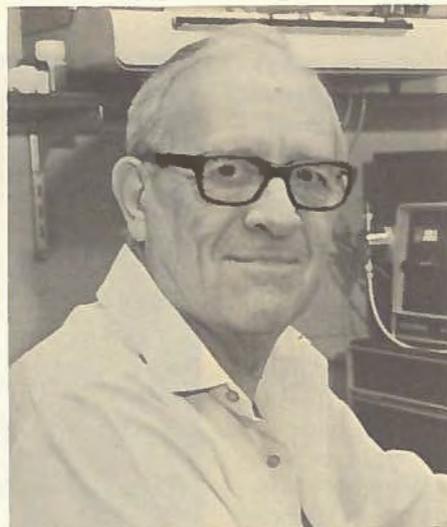
Harry Drickamer, professor of chemical engineering, chemistry and physics at the University of Illinois, was chosen to receive the 1984 City of Philadelphia John Scott Award, given for exceptional discoveries in science and technology.

Drickamer was cited for the "development of high-pressure tuning of electronic orbitals," a concept developed through his use of high pressure to study electronic phenomena. The fundamental thesis of Professor Drickamer's research is that high pressure is a powerful and essential variable for understanding electronic structure and electronic behavior in condensed systems. His technique of pressure tuning, now used by research groups around the world, has been important to the understanding of a wide variety of scientific problems, ranging from the band structure of solids, the spin states of magnetic ions, insulator-conductor transition, solid state reactivity and mechanisms of luminescence to the properties of the interior of the earth and the understanding of protein denaturation.

In receiving the John Scott Award (established in 1816 by a Scottish chemist), Drickamer joins an impressive list of American scientists and inventors which includes Marie Curie, Thomas Edison, Orville Wright and John Bardeen.

Professor Drickamer, widely regarded as the world's leading high pressure scientist and engineer,

Emeritus Professors Honored



Irwin C. Gunsalus

For half a century, **Irwin Clyde Gunsalus**, professor emeritus at Illinois and one of the nation's leading biological scientists, has pioneered research in microbial biochemistry and molecular biology. In October, 1984, in recognition of his work, Gunsalus was awarded an honorary doctor of science degree from Indiana University, where he held a professorship in bacteriology from 1947-1950. He was credited with "designing innovative approaches to biological experimentation and inspiring students and colleagues to pursue research of distinguished quality."

Professor Gunsalus, who has lived and worked in Urbana since 1950, is known internationally for his studies of the mechanisms of chemical and energy transfer reactions in microorganisms and on the genetics and transfer of plasmids.

At the University of Illinois, "Gunny" has served as professor of microbiology and of biochemistry and as chairman of the Department of Biochemistry. He became an emeritus professor in 1982.

joined the Illinois faculty in 1946. He holds ten other awards from seven organizations, including the Buckley Solid State Physics Prize, the Langmuir Award in Chemical Physics, the Michelson-Morley Award and the first P.W. Bridgman Award for



Howard Malmstadt

Howard Malmstadt, professor emeritus of chemistry at the University of Illinois, was the 1984 recipient of the ACS Analytical Division Award for Excellence in Teaching, sponsored by the Procter and Gamble Company. One of his former students has said that Malmstadt's "enthusiasm, brilliance and jovial spirit undoubtedly led numerous graduate students toward academic life." As a result, almost a third of Malmstadt's 62 Ph.D. graduate students have gone on to academic positions at major universities in the U.S. and Canada.

After joining the Illinois faculty in 1951, Malmstadt worked with commercial companies to develop suitable textual materials and electronic equipment for the teaching of electronics to scientists anywhere in the world at low cost. As a result of his efforts, a course on electronics for scientists is part of the University of Illinois graduate program in chemistry.

Since his retirement from the University of Illinois in 1978, Dr. Malmstadt has been vice-president for academic affairs at Pacific and Asia Christian University in Hawaii.

high pressure science. He is a member of the National Academy of Engineering, and a fellow of the American Academy of Arts and Sciences.

"Great and Exciting Years" — Illinois Chemistry in the Twenties

In the first of a series of articles by alumni, Bill Lycan remembers the chemistry professors in the nineteen twenties, and the unique relationship he shared with them.

My memories of student days in chemistry at Illinois span the decade of the 1920s. I was an undergraduate from 1920-24 and in the graduate school from 1925-29. Those were the closing years under the leadership of Professor Noyes and the opening years under that of Roger Adams. They were great and exciting years.

I remember the excitement of the lectures in freshman chemistry under Professor Hopkins. He was a superb teacher and lecturer with a strong flair for the dramatic — his lectures were illustrated with demonstration experiments delivered on cue by a funny little man who could have made a great success as an actor. Together, they dispelled any idea that chemistry had to be dull.

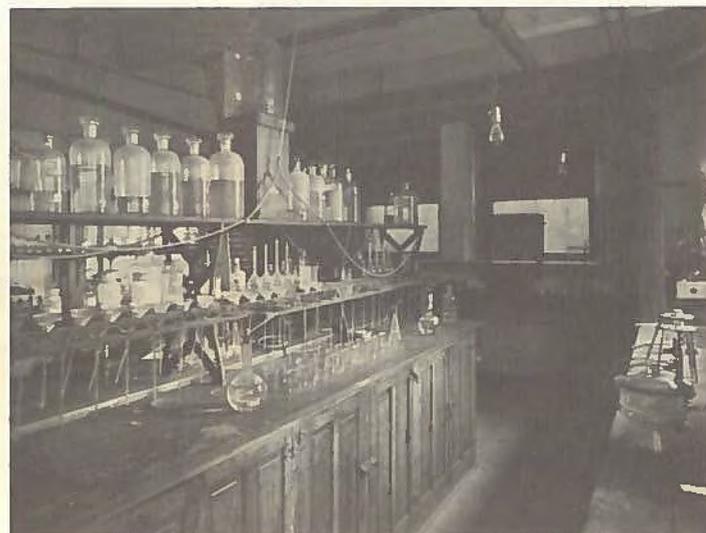
I remember Organic in my second year, the quiet, pedantic but beautifully structured lectures of Professor Noyes and the clear, down-to-earth laboratory sessions under Speed Marvel, whom I had the good fortune to come to know early and well. Professor Noyes might easily have been dull, but he avoided it by being anecdotal and bringing the science into close relationship with life and living. Rodebush, slow of speech but with lots to say, had always a sneaky little sense of humor that popped up at the most unexpected times. And Professor Parr, of distinguished appearance, was a truly "professorial" man with a great talent for invention.

It seemed that the whole staff managed to convey a feeling of interest and concern for all the undergraduate students. Who will forget Duane Englis, friendly, a fine teacher and a faithful loyalist to Illinois. Or Professor Reedy, homespun, witty, perceptive and compassionate, a friend whenever one was needed. Or George Frederick Smith, gregarious, outgoing and a model of what can be done solely by individual initiative.

I had a full measure of the spirit of fierce pride that was shared by undergraduate and graduate students alike in chemistry at Illinois in the early twenties.

And then there were two others who were already becoming living legends, Professor Rose and Roger Adams. As an undergraduate, I never got to know either of them very well. That did not keep me from being fully aware of their contributions to the national reputation of the department. I had a full measure of the spirit of fierce pride that was shared by undergraduate and graduate students alike in chemistry at Illinois in the early twenties.

There were many other "personalities," Marion Sparks for example, librarian par excellence and friend of every Illinois chemist from 1914-1929; Red Dalton, chemical storekeeper and keeper of departmental secrets (gossip); and Justa Lindgren, a fine chemist and a pipeline to what was what with Illinois football.



Chemistry laboratory in the Noyes building, 1920s

After graduation and a year of teaching at Tennessee, I returned to Urbana and enrolled in the graduate school. I was a "walk-on" of sorts — that is, I enrolled with no assurance of financial support and without discussion of my aspirations with a research adviser. I barged in and registered, elected a major in organic chemistry, a first minor in physical chemistry and a second minor in English literature. As far as I know, I was the first, and remain the only student in the history of the graduate school in chemistry to elect an English second minor. I signed up that summer for two courses, "Comparative English Literature" under Professor Birnbaum, and "Review of Organic Chemistry for Graduate Students" under Roger Adams. I had a wonderful summer.

I had no more than appeared in the old chemistry building when Professor Hopkins sought me out and offered me a part-time job for the summer, cleaning up the untouched debris of many years of bad housekeeping in research laboratories assigned to him. He had remembered me as an undergraduate classmate of his son, Harvey Hopkins. The job was a janitorial assignment involving mainly glorified dishwashing. There was not much intellectual challenge but it paid 40 cents an hour.

In Tennessee, I had made up my mind that I wanted to work for Roger Adams and before the summer's end, with careful attention to timing, I approached him and asked him to accept me as a research student. Roger must have been surprised by my determination, if not by my qualifications. I shall never forget the more than two hours we spent talking about graduate research. With no intimation that there was anything presumptuous either in my approach to him or in my "walk-on" registration, Adams talked for quite a long time about alternatives. It was only later that I realized that he had very probably been quite close to kicking me out of his office. But he did not, and, in the end, he accepted me and I went out walking on air.

Registration in the undergraduate courses that fall (1925)

exceeded all expectations. Early in the morning following the second day of registration, I received an SOS call asking if I would accept an appointment as a graduate assistant at \$65/month for the school year of 1925-26. Not only was I going to work for Roger Adams, I was going to eat regularly. 1925 was one of my best years.

Not only was I going to work for Roger Adams, I was going to eat regularly. 1925 was one of my best years.

I shall not try to memorialize my joy in working with Roger for four years in these brief notes. Stanley and Ann Tarbell, in their book *Roger Adams — Scientist and Statesman*, have done a superb job for all of us who are beholden to him. It is mandatory reading not only for Illinois chemists but for chemists everywhere who are interested in the history of the science. It was my great good fortune to have been working for him when he succeeded to the chairmanship and to have watched as he continued to build the great department he had inherited.

Roger Adams strengthened the University of Illinois in every aspect of chemical science. In organic, in my time alone, he brought in successively John R. Johnson, Wallace Carrothers, Ralph Shrinier and Bob Fuson. Seldom has one short era seen such a succession, giants all of them, coming to join a super giant, Speed Marvel. I am thankful for having had the opportunity of knowing them all well.

Doc Corrothers chose me as his graduate assistant in Chemistry 38, Organic Analysis, and we were later to spend many hours and evenings together at DuPont. Bob Fuson shared with me his tastes for reading and gourmet cooking and joined me in frequent visits home where he enjoyed the wit and wisdom of my country doctor father. With Speed Marvel and Ralph Shrinier, I shared innumerable fishing and hunting excursions, a feature of extracurricular activity of Illinois chemists for many years. We fished regularly at the Polywogs near Danville, a series of deep finger lakes left behind by abandoned strip mining operations, and hunted over a wide area — on property out in the Dutch Flats, on farms owned by friends of Speed near Fithian, on the Marvel family farm at Waynesville near Lincoln, and on land my father owned near Paris. None of us except Speed was very good with a gun. Our chief rivalry consisted in avoiding being one of those who, all too frequently, was "skunked" and had to come home with no fall tales to tell.

In spite of the diversions, it was not all play and no work in the roaring twenties. We worked long hours, days and evenings and over weekends. We looked forward to Roger's daily rounds which were made without fail except when he was out of town. On Saturdays and Sundays, we could expect longer sessions. It was not all about our own work. It was a running commentary on the state of the science — what they were doing in Madison and Cambridge and in Munich and Zurich. It was reminiscences about Kohler's laboratory at Harvard and accounts of consulting visits at

DuPont and Abbott Laboratories. It was a form of teaching that was Roger's hallmark as long as time permitted such luxury.

I remember the summer of "preps," Organic Chemicals Manufacturers, at 40 cents an hour, where I learned a lot of laboratory technique. I remember crowded Organic Seminars, usually conducted by Adams, and attended by everyone with even a remote interest in organic. I remember the fear and trembling of preparation for "prelims" and the blessed relief when they were behind me. I remember the final rush of finishing a thesis and circulating it to get the signature of my committee. And then, suddenly, on a bright day in June, 1929, in Memorial Stadium, we had our degrees and I thought it was over. I was wrong, it wasn't really over, and here I am after 55 years remembering every minute of it with unadulterated pleasure.



Bill Lycan and colleagues on the steps of Noyes Lab, summer of 1926. From left to right: bottom row — S.V. Puntanbeker ('26), D.D. Coffman ('30), J.M.M. Peterson ('27), W.H. Lycan ('29), S.G. Ford ('29); middle row — E.W. Bousquet ('29), Ray (?), G.H. Coleman ('28), S.C. Hussey ('30), S.S. Rossander ('30); top row — M.E.P. Friedrich ('30), W.M. Stanley ('29), C.S. Marvel, R. Merchant ('28), W.W. Moyer (?)

Dr. Leonard E. Miller, former chemistry professor at the University of Illinois, died on July 4, 1984, at his home in Chagrin Falls, Ohio. He was 64.

Dr. Miller, a 1943 Ph.D. graduate of the University of Michigan, came to Illinois in 1944 as a research associate of Roger Adams. He became a chemistry instructor in 1946 and served as Adams' administrative assistant from 1948 to 1951.

Miller was made head of the chemistry department at the University of North Dakota in 1951, but returned to Illinois the following year as associate professor and director of

laboratories.

From 1956-1964, Dr. Miller was involved in exploratory research of polymers at the California research labs of the Standard Oil Company and was director of polymer research at Lubrizol Corp. in Cleveland, Ohio, until 1983. After his retirement, he continued to serve as a consultant and lecturer and gave two series of lectures on polymer chemistry in India in 1982 and 1983.

Dr. Miller was a member of the American Chemical Society and the American Association for the Advancement of Science. He leaves a wife and four children.

SCS Events

12th Bailar Lecture

Harry B. Gray, professor of chemistry at the California Institute of Technology, was the 12th recipient of the Bailar Medal, named in honor of John C. Bailar, Jr., emeritus professor of chemistry at Illinois. Professor Bailar, still active in academic and professional affairs, was a member of the faculty from 1928 until his retirement in 1972. It was on this occasion that Bailar's former students, friends and colleagues established the John and Florence Bailar Fund to support an annual John C. Bailar, Jr., Medal and Lectureship at the University of Illinois.

Harry B. Gray is one of Bailar's many chemistry grandchildren. He received his Ph.D. in 1960 at Northwestern University, while working for Fred Basolo, a 1943 Ph.D. student of Professor Bailar.

Gray's current research interests are in the areas of bioinorganic chemistry and inorganic photochemistry. He was the winner of the 1983 American Chemical Society Award for Distinguished Service in the Advancement of Inorganic Chemistry and has published 14 books and over 300 research papers. Gray's two lectures were given at SCS in December.

Flygare Memorial Lecture

The first memorial lecture in honor of the late Willis H. Flygare was given by Professor Benjamin Widom in Noyes Lab on October 18, 1984.

The lecture 'The Structure of Liquid Surfaces' was attended by faculty, colleagues and friends and by Dr. Flygare's wife, Ruth, and their four children.

Benjamin Widom, chairman of the Department of Chemistry at Cornell, was the winner of the 1982 Irving Langmuir Award in Chemical Physics. He is a fellow of the American Physical Society, a member of the National Academy of Sciences, and a fellow of the American Academy of Arts and Sciences. Widom's current research centers on thermodynamics and statistical mechanics of phase equilibria and critical phenomena.

Bill Flygare, who died in 1981, is remembered for his contributions to the understanding of molecular structure and dynamics.

Distinguished Alumni to be Honored Annually

Jiri Jonas, director of the School of Chemical Sciences, has announced a new program of awards to recognize the accomplishments of the School's alumni. The 'distinguished alumnus award' will acknowledge this impressive record of achievement which speaks so highly for the strength of the programs in chemical sciences at Illinois. In the new awards program, five of our graduates will be chosen each year to be honored for their outstanding careers.

The first awards will be presented next May at the School's Commencement ceremonies, to which the awardees will be invited as special guests. Nominations may be submitted by any interested party on behalf of an alumnus. The selection committee will require at least one letter of nomination describing the nominee's special achievements. One or two supporting letters and a biographical sketch (in the form of a resume or *curriculum vitae*) would be helpful. These materials should be addressed to Mrs. Sara Arndt, School of Chemical Sciences, 103 Noyes Laboratory, 505 South Mathews Avenue, Urbana, Illinois 61801. To assure full consideration, they should be received by March 1, 1985.

The selection committee for the first group of awardees will consist of faculty in the School. In future years, we hope that the most recent awardees will join the faculty in each year's selection process.

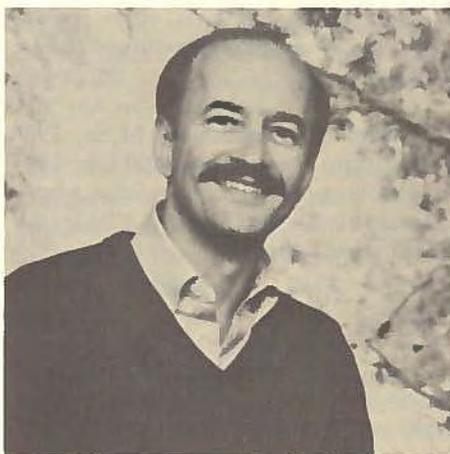
There is a genuine hope in the School that this program will be received enthusiastically and that a healthy number of nominations will be made. There is certainly a record great enough to justify them.

Schmitz Elected to National Academy

Roger A. Schmitz, dean of the College of Engineering at the University of Notre Dame, has been elected to the National Academy of Engineering. It is the highest professional honor that can be conferred on an engineer.

Schmitz is especially recognized for his leadership in research in the field of chemical reaction engineering. He taught at the U. of I. Chemical Engineering Department for 17 years before joining Notre Dame in 1979 as chairman of the Department of Chemical Engineering. He became dean of his college in 1981.

Hieftje Wins Anachem Award



Gary Hieftje

Gary Hieftje, Ph.D. '69, chemistry professor at Indiana University, received the Anachem Award at the Conference of the Federation of Analytical Chemistry and Spectroscopy Societies in Philadelphia last September.

Dr. Hieftje, who studied at Illinois with Dr. Malmstadt, is one of the leading scientists in atomic spectroscopy in North America. He was cited for research accomplishments in investigating the basic mechanism of atomic emission, absorption and fluorescence spectrometric analysis, and for his subsequent development of new approaches in atomic methods of analysis.

Homecoming for Meredith Sparks



Meredith Sparks in 1976

It has been 30 years since Meredith Sparks visited the campus at Urbana-Champaign, and 50 since she earned her Ph.D. degree in organic chemistry. An invitation from Illinois students to the 'Illini Com-back Weekend' last November brought her from her home in Coral Gables, Florida, to talk to undergraduates about her successful career as a lawyer.

Meredith Pleasant Sparks (Ph.D. 1936), is one of only three women lawyers known to hold a doctoral degree in chemistry. She studied as a teenager at the Indiana College of Music and Fine Arts and gave up a promising career as a pianist to major in chemistry at Indiana University. With an M.A. degree, she worked for several years as a chemist at DuPont's Electrochemi-

cal Division in Niagara Falls, New York, where she met and married Bill Sparks. The two stayed on at DuPont until Meredith's book on 'Sodium' was finished and, in 1934, arrived at the University of Illinois to study under Roger Adams. At that time, Marvel and Adams were consultants to DuPont and the University of Illinois had a reputation second to none for its graduate teaching in chemistry.

Meredith Sparks was possibly the only woman at Illinois ever to get a Ph.D. in chemistry in two years. William Sparks was later president of the American Chemical Society and became internationally renowned for his part in the invention of butyl rubber, developed during World War II.

Dr. Meredith Sparks continued to work as a chemist for almost another 20 years, raising a family of four (all now in professional fields) and, in 1958, earning a law degree from Rutgers. The combination of her scientific and legal training has formed the basis for an enormously successful career in patent law. Owning her own private practice in Florida, Dr. Sparks claims a batting average of nearly 1000 in the federal government's acceptance of the patents she writes. For the year 1981-82, she was President of the National Association of Women Lawyers and, a couple of years ago, Meredith Sparks had the honor of moving the admission of her daughter Kathy to practice before the United States Supreme Court.

Alumni Loyalty Awards

Two alumni of the Department of Chemical Engineering have received the University of Illinois Alumni Association Loyalty Awards. Mr. Robert S. Frye, B.S. 1933, the 1984 recipient of the award, has been editing the Class of 1933 newsletter for over 50

years. Mr. David J. Porter, B.S. 1930, who received the award in 1982, produces a newsletter for the Class of 1930. He has been its editor for 54 years. The newsletters are compilations of annual letters sent in by class members.

Letters From Overseas

The following letters are taken from some of the mail we receive from our many alumni who returned to prestigious positions in their own countries after graduating from Illinois.

After 36 years, I returned to Urbana for the first time in April 1980, as a guest in the home of my old friend Professor Nelson Leonard. I found that the house on West Illinois Street where I used to take meals and rest with my Chinese schoolmates no longer remains. The old Noyes Laboratory has been rebuilt and enlarged and the wooden staircase at the front entrance of the old building, of which my dear, great teacher Dr. Roger Adams once talked, has been replaced by concrete. The chemical laboratories and the library have been enlarged and modernized, and the relatively new Roger Adams Laboratory has some admirable facilities. The Union Building where I used to spend my leisure time had been enlarged enormously and equipped with many kinds of electronic toys.

Many things were new to me. Mrs. Leonard took much time showing me the museum, art gallery, Performing Arts Center and other places. Sometimes I could not recognize the direction in which we were going. I noticed, however, that the bend section of the "broadway" behind the Union Building has been straightened, and that the row of huge elm trees along the old bend road has disappeared.

Although so much time has passed, I can never forget my great teacher Roger Adams, my professors, such as Dr. C.C. Price and Dr. R.C. Fuson, my good friends, like Nelson Leonard, and many other people; nor can I forget the place where they helped me to lay the foundation for my career as a physical organic chemist.

Since I left Urbana in 1944, the University and the Chemistry Department have made tremendous progress and the gap in the level of chemical research work between our two countries has become even wider than before.

Many Chinese students have studied at the University of Illinois and perhaps more than 20 have obtained their Ph.D. degrees from the

School of Chemical Sciences. In fact, of the 67 members in the Chemistry Division of Academia Sinica (the Chinese Academy of Sciences), eight are alumni of the U. of I., including three students of Dr. Adams. I hope this fruitful and happy relationship between Chinese students, especially chemists, and my alma mater, will continue in the future.

Ming-Chien Chiang
Ph.D. 1944, University of Illinois
Professor of Physical Organic Chemistry
Member of Academia Sinica
Peking, China

In the fall of 1980, I had the opportunity to return to my alma mater after a separation of nearly half a century. I was met by Professor Coates at the impressive new Student Union which symbolizes the great changes in student activities since my days there. I had lunch with Professor Gutowsky and other faculty members of the Organic Division in an upper story of the tallest building in Champaign which is 21 stories high. In my time, the tallest building was about six stories. But, on the whole, Urbana-Champaign still retains the characteristics of the old college towns. Noyes Laboratory and the "Annex" are functioning at their full capacities. In the library, the portraits of Professor Paar and Professor Noyes are still there, with the addition of one of my former teachers, the great Roger Adams. The new laboratory named after Adams is splendid and one of the best in the world. It will keep fresh the memory of this great man's works and the contributions he made to American chemical education and industry. Even without this building, his students all over the world will remember him always with gratitude.

Hsing Chi-yi
Ph.D. 1936, University of Illinois
Professor of Chemistry
Peking University
Peking, China

Alumni News

So many alumni wrote in response to our request for news that not all could be included this time. If your name, or a colleague's, does not appear in this issue, please look for them in the summer '85 Alumni Newsletter.

1935

Charles R. Naeser, Ph.D. 1935 (inorganic chemistry), is an emeritus professor of George Washington University, where he was a teacher, researcher and administrator for many years.

1936

Miles E. Hess, B.S. 1936 (chemistry), an expert in all facets of soft drink production, was formerly technical director of Moxie Industry. A past president of the Society of Soft Drink Technologists, Hess is now retired and acts as an expert witness in law suits.

Daniel H. Goodman, M.Sc. 1936 (chemistry), became an M.D. in 1941 and now works as a specialist physician at the Allergy Asthma Clinic Ltd. in Phoenix, Arizona.

1939

Hermann E. Jass, B.S. 1939 (chemistry), acts as an independent consultant to the pharmaceutical and cosmetic industries on technical management and product development. Until 1976, he was the vice president for research and development for Carter Products Division of Carter-Wallace, Inc. He now writes a monthly column on regulatory affairs for the *Cosmetic and Toiletries* magazine. In April of 1984, Jass delivered a paper on "Status and History of Formaldehyde in the Cosmetic Industry" at the ACS National Meeting in St. Louis.

1941

Gilbert Gavlin, B.S. 1941 (chemical engineering), is president of Custom Organics Inc. in Lincolnwood, Illinois.

1942

Richard A. Reck, B.S. 1942 (chemistry), director of commercial development at Arnak Chemicals, recently received his 139th patent for a new quaternary ammonium compound. Reck's earliest U.S. patent was issued in 1952 for preparation of naphthalene-methylol esters. Since then, he has received 138 additional patents in the U.S., Canada, Europe, South America and Japan. His patents cover a wide area of fatty amine chemistry including preparation, process, applications and new molecules.

1946

Robert B. Fischer, Ph.D. 1946 (analytical chemistry), became University Provost at Biola University, California, in 1979. He was an instructor at Illinois for two years after graduating, then became professor of chemistry at Indiana University. In 1963, Dr. Fischer was made Dean of the School of Sciences at California State University at Dominguez Hills, where he worked until 1979. He is an *emertus* professor of California State.

In 1982, **Minor J. Coon**, Ph.D. 1946 (biochemistry), won the Distinguished Faculty Lectureship Award in Biomedical Research from the University of Michigan. In 1983, he was made a member of the National Academy of Sciences and Victor C. Vaughan Distinguished University Professor of Biological Chemistry at the University of Michigan. In 1984, Coon was awarded a fellowship in the American Academy of Arts and Sciences.

1949

At the University of Virginia Medical School, **Joseph Larner**, M.S. 1949 (chemistry), (Ph.D. Washington University, St. Louis, MO), is head of the Department of Pharmacology and of the Diabetes Research and Training Center. He won the Diaz Christobal Award from the International Diabetes Federation in 1982 for fundamental work on the mechanism of action of insulin and an honorary doctoral degree in 1983 from the University of Barcelona, Spain, for fundamental studies on the mechanisms of control

of glycogen synthesis. Larner was an assistant professor of biochemistry at Illinois from 1953-1957.

1953

Dr. Moses Passer, who studied polymer chemistry as a research associate with Professor C.S. Marvel in 1952-53, is the director of the Education Division at the American Chemical Society.

Research associate in chemistry with Professor Audrieth in 1953, **Dr. Hans Zimmer** is a professor of chemistry at the University of Cincinnati. He studies organic and phosphorus organic synthesis and was recently appointed to the editorial board of *Phosphorus and Sulfur*.

1954

Wayne State University chemistry professor **Stanley Kirschner**, Ph.D. 1954 (chemistry), was named one of six national winners of the Chemical Manufacturers' Association's Catalyst Awards for 1984 which recognize and reward superior teachers of chemistry and chemical engineering. Dr. Kirschner has served, for the last few years, as chairman of the Society Committee on Chemical Education of the American Chemical Society. He has been honored previously by the Academy of Sciences, Brazil and the Japan Society for the Promotion of Science. Kirschner was the official U.S. delegate to the Golden Jubilee of the Indian Chemical Society, Calcutta.

1957

C.W. Schimelpfenig, Ph.D. 1957 (organic chemistry), is a professor of chemistry at the Dallas Baptist College in Arlington, Texas.

1960

Tetsuo Suami was a postdoctoral research associate from 1958 to 1960, working with Professor Herbert E. Carter. Now a professor of organic chemistry at Keio University, Japan, he won the 1983 Award of the Chemical Society of Japan for a paper on 'Synthetic Studies on Aminocyclitol

Antibiotics and Antineoplastic Agents.' Suami's major field is the total synthesis of biologically active compounds.

1961

Frank Miles, B.S. 1961 (chemistry), received a Ph.D. in mathematics from the University of Washington in Seattle in 1972. Since then, he has held the position of mathematics professor at California State University, Dominguez Hills, near Los Angeles.

1962

Formerly president of Celanese Canada, Inc., **Ernest H. Drew**, Ph.D. 1962 (organic chemistry), was recently promoted to president of the Celanese Corporation synthetic fibers unit, the largest in the Celanese group. He studied at Illinois with Dr. J.C. Martin.

Carl F. Abegg, B.S. 1962 (chemical engineering), was recently appointed professor of chemical engineering at Rose-Hulman Institute of Technology in Terre Haute, Indiana.

1963

James R. Vanhise, Ph.D. 1963 (physical chemistry), teaches chemistry at Pacific Union College in Angwin, Napa Valley, California.

1964

Georgia-Pacific's resin division has promoted **John P. Petrovich**, Ph.D. 1964 (physical-organic chemistry), to business manager of tall oil and specialty chemicals. He joined the company in 1983 after 18 years experience in specialty resins, particularly research, technical service and commercial development.

Karen Kuhlman, B.S. 1964 (chemistry), is an analytical chemist with the Sigma Chemical Co. in St. Louis, Missouri.

Brian R. O'Connor, Ph.D. 1964 (chemistry), was recently named director of marketing for the DuPont Company's Printing Systems Divi-

sion, in the Photosystems and Electronic Products Department. O'Connor has been with DuPont since he graduated, working as a research chemist and holding a variety of managerial and professional assignments.

1965

Last year, **John M. Harlow**, B.S. 1965 (chemical engineering), joined Moore Financial Services as president of the Mortgage Banking Division in Portland, Oregon. He has had more than 12 years experience in senior management with mortgage companies in the Bay area and the Pacific Northwest.

1966

A scientist at Monsanto, **M.J. Sabacky**, Ph.D. 1966 (organic chemistry), was chosen, in 1981, as one of the first three recipients of the company's Charles A. Thomas and Carroll A. Hochwalt Award for outstanding scientific or technical achievement. He was honored for his role in the invention of asymmetric phosphine-rhodium catalysts which can produce single isomers of amino acids by direct chemical synthesis.

Carl W. Vermeulen, Ph.D. 1966 (biochemistry), is a professor at the College of William and Mary in Williamsburg, Virginia. In 1984, he was awarded the Grace J. Blank prize for teaching microbiology — the first time for ten years that this prize had been offered. Citation mentioned the intense involvement of his students in his research and the number of undergraduates appearing as co-authors of published articles.

1967

Professor of chemistry at the University of Vermont, **Christopher W. Allen**, Ph.D. 1967 (inorganic chemistry), is also acting chairman of the Department of chemistry at Vermont for the 1984-5 year. He was named a university scholar in Physical Sciences in 1982-3. Allen's research activity is divided between main group inorganic and polymer chemistry.

Bassam Z. Shkhashiri was a post-doctoral research associate in Dr. G.P.

Haight's chemistry group in 1967-68. He is now professor of chemistry and director of the Institute for Chemical Education at the University of Wisconsin, Madison. He has served on many ACS committees and co-authored several publications in chemical education. In 1984, Shkhashiri was appointed to the position of assistant director of the National Science Foundation, Directorate for Science and Engineering Education.

1968

Stephen T. McLin, B.S. 1968 (chemical engineering), is now senior vice president for the Bank of America, strategic planning department. McLin, who is in charge of mergers and acquisitions, helped put Bank of America into the discount brokerage and insurance business.

1969

Alice K. Chen, Ph.D. 1969 (physical chemistry), is a teacher and researcher in clinical chemistry at the University of Pittsburgh.

Steve Rothblatt, B.S. 1969 (chemical engineering), is deputy director of the U.S. Environmental Protection Agency's Chicago-based Region V Air Management Division. In 1984, he was awarded the agency's Bronze Medal during ceremonies in Washington, D.C., for his contribution to an EPA-developed comprehensive interpretation of the Clean Air Act, the country's blueprint for attaining national clean air goals.

1970

Owens Corning Fiberglas Corporation has named **William A. Schneider**, B.S. 1970 (chemical engineering), to the position of plant manager of the company's facility in Conroe, Texas.

C. Ronald Lindberg, M.S. 1972 (analytical chemistry), (1976 M.D. of the University of Chicago), is an ophthalmologist in Westchester, Illinois.

1973

A scientist at Armstrong World Industries, **Ronald S. Lenox**, Ph.D. 1973 (chemistry), has been appointed research unit manager for exploratory research at the Research and Development Center. Before joining Armstrong, Dr. Lenox was an assistant professor of chemistry at Wabash College.

Randy Guschl, Ph.D. 1973 (chemistry), was recently promoted to Laboratory Director of DuPont's Sabine River Laboratory, Orange, Texas.

1974

Paul K. Schlesinger, B.S. 1974 (chemistry) (1978 M.D. from the U. of I. College of Medicine in Chicago), is now an instructor in medicine in the Section of Gastroenterology at the University of Illinois College of Medicine.

Also a 1978 M.D. of the U. of I. Medical School in Chicago, **David B. Hyman**, B.S. 1974 (chemistry), is an assistant professor of pediatrics (genetics) at the State University of New York at Stony Brook.

1975

Charles A. Berglund, Ph.D. 1975 (chemistry), is a researcher at Dow Chemical Company in Midland, Michigan.

1977

In a recent move from Indiana to Pennsylvania, **Maurice J. Baillargeon**, Ph.D. 1977 (organic chemistry), became associate team leader of chemical manufacturing at Smith Kline Beckman.

1978

J.L. Morris, Ph.D. 1978 (analytical chemistry), works in electrochemical research and development at the Pinnacle Research Institute in Cupertino, California.

1979

Jorge R. Barrio, Ph.D. 1979 (chemistry), teaches and directs research as professor of pharmacology and radiological sciences at the UCLA School of Medicine, California.

Linus H.M. Horcher II, B.S. 1979 (chemistry) (1983 M.S. of the University of Nebraska), is involved with process research and development at Eli Lilly and Co., Indianapolis, Indiana.

1981

After working since 1981 for Rohm and Haas, **Michael R. Ross**, Ph.D. 1981 (organic chemistry), recently moved to M. and T. Chemicals, Inc., Rahway, New Jersey, to work in plastic additives research.

1982

James M. White, Ph.D. 1982 (organic chemistry), does basic research in

product development at Owens-Corning Fiberglas in Newark, Ohio.

Montgomery Alger, Ph.D. 1982 (chemical engineering), works at the Chemical Engineering branch of the General Electric Corporate Research and Development Center in New York.

After working as a technical service engineer for Mead Paper, **Lucy M. Mazurek**, B.S. 1982 (chemical engineering), recently became a student in business administration.

1983

Michael K. Antenore, B.S. 1983 (chemistry), is a chemical salesman for Nalco Chemical Company in Cedar Rapids, Iowa.

Matthew E. Struve, B.S. 1983 (chemistry), works as a technical sales representative for the Stepan Co. in Ann Arbor, Michigan.

Kevin Jones, B.S. 1983 (biochemis-

try), is a graduate student at Berkeley, California.

1984

Suzanne Scarlata, Ph.D. 1984 (chemistry and chemical engineering), is a materials research scientist at AT and T Technologies, New Jersey.

Chi-Mi Tai Hayward, Ph.D. 1984 (inorganic chemistry), has joined Engelhard Corporation as research chemist, petroleum research group, Specialty Chemicals Division. She is involved in the research and development of fluid cracking catalysts for the petroleum refining industry.

KEEP IN TOUCH

Return to: Sara Arndt, Editor
SCS Alumni Newsletter
106 Noyes Laboratory
505 South Mathews Ave.
Urbana, IL 61801

NAME _____

ADDRESS _____

STATE & ZIP _____

DEGREE & YEAR _____ FIELD _____

COMPANY AFFILIATION _____

TYPE OF WORK YOU DO _____

Please check here if above address is new.

ALUMNI NEWS (please include photos, newspaper clippings, extra sheets, etc.)

Are You a Member of the Alumni Association?

More than 90,000 alumni are — including 55,000 who are life members. When you join the University of Illinois Alumni Association, you automatically become a member of the College of Liberal Arts and Sciences Alumni Association Constituent. As a member of the Alumni Association, you receive:

- the Illinois Alumni News
- notification of all alumni activities in your area
- invitations to special events for alumni

This issue is being sent to nonmembers of the Association as well as members. If you're already a member, thanks for your support. If you're not a member, you can join by completing the form below.

One year single membership — \$11

One year husband-wife membership — \$14

Single life membership — \$175 (installment plan: \$185 total: \$10 down, 4 yearly payments of \$43.75 each)

Husband/wife life membership — \$200 (installment plan: \$210 total: \$10 down, 4 yearly payments of \$50 each)

Name _____ S.S. # _____

Spouse's name (if an alumnus) _____

If female, list maiden name. Does spouse have a U. of I.

degree? _____

Address _____

College and Dept. _____ College yr _____

Please fill in and return with your check for membership to:
School of Chemical Sciences, University of Illinois at Urbana-Champaign, 103 Noyes Lab, 505 South Mathews Ave., Urbana, IL 61801. (Make your check payable to the University of Illinois Alumni Association.)

SCS Alumni Newsletter
School of Chemical Sciences
University of Illinois at Urbana-Champaign
106 Noyes Laboratory
505 South Mathews Ave.
Urbana, Illinois 61801

Non-Profit Org.
U.S. Postage Paid
Permit No. 75
Urbana, Illinois 61801