

# Alumni Newsletter

## School of Chemical Sciences

### Farwell's: An Institution Remembered

"Farwell's is an institution almost as much a part of Illinois Chemistry as the immortal odor of Noyes laboratory. It is a restaurant across the street where at mid-morning staff and students gather for coffee and conversation and to relax and to discuss chemistry and football and sex and last night's poker game and almost every other subject under the sun. Speed is almost always there and has been for the thirty years or so that I have been going back to Illinois.

"Farwell's is getting close to the other important matters I want to mention, the informality of Illinois and the building of lasting friendships between faculty and students and among the students themselves. It is close because the gatherings there are spontaneous and informal — nobody comes because Speed is there, or Bob Fuson, or Fred Wall, or anybody else. They all come because it is fun to come and that is all there is to it."

Bill Lycan, Ph.D. 1929, in a professional address, 1955

Since the little coffee shop on the corner of Mathews and California closed to university developers in 1971, nothing has quite taken its place in the affections of Illinois faculty or alumni, and few have forgotten Charlie, chemistry student turned shopkeeper, who set the scene for the social life in chemical sciences here for almost forty years.

Charlie Huette (pronounced 'hitty') started working at Farwell's as a student in 1934 when the business had already been going for ten years. He liked the place and the people, and, since money was scarce in the Depression, he stayed on, eventually dropped



After prelims at Farwell's, 1951

chemistry and married Ruth, the former Mrs. Farwell, in 1941. They rented out the shop between 1942 and 1948, while Charlie was in service at Orange County Airport, Southern California, but, for the next 23 years, Farwell's and the chemistry crowd were his life. Charlie and Ruth worked long hours — he was 'up front' and she kept the show going in the back. How did he like the life? "Your feet get sore," Charlie says, but the customers were "good guys," and, he adds, "you can't get along with all the people all the time, but I got along with most."

Students, faculty and the guys from the storeroom all passed through his

door on a regular basis, carried out 35¢ quart bottles of beer in brown paper bags and sometimes watched the game or 'As The World Turns' on a little black and white TV. Al Saldeen recalls a time he drove back into town from a trip. It was three o'clock on the afternoon of November 22, 1963, and the chemistry building was deserted. President Kennedy had been assassinated and everyone was at Farwell's watching the only TV in the area. Saldeen remembers the place with great affection, except for the plastic coffee cups, which got so stained that they would

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Marvel, Smith, Curtin and others — coffee at Farwell's



Charlie, "The Farwell"

be soaked over the weekend in bleach — "on Monday morning, you thought you were drinking Clorox."

Charlie, now a robust 76, has forgotten little about his former patrons, their opinions, their humor or the way they liked their eggs. People like 'Daddy' Noyes — "a small man, who drank lemon cokes, as I recall," and Dr. Bailar, Huette's former instructor, who would come to the beer bashes after prelims and have a butter-pecan ice-cream cone. Charlie remembers Speed Marvel, with his photographic memory, reciting passages of Virgil remembered from high school. Speed was a man who "never curbed his use of words." As for gentlemen, Charlie talks often of Sherlock Swann (have you got another hour? he wants to know). "Sherlock was different. . . he used to call me Charles, in that Baltimore accent." A very intense man, who was "made to be a bachelor," Swann would eat breakfast with Charlie most days — "orange juice, puffed rice with half and half, and coffee — you could set the clock by him."

A collection of mementos at Huette's house includes even the flyers that made the rounds of the coffee tables in the early '70s — 'Strike Against U.S. Involvement in Cambodia' and 'Bury Nixon in Mail.' Charlie recalls the time Dr. Gutowsky tried appeasing student rioters from a fire escape on the east side of the Chemistry Annex, and the

recruiter from Dow Chemical Company who came in for a coffee while students outside were protesting Dow's part in the manufacture of napalm for Vietnam.

By the late 1960s, Farwell's was entirely surrounded by university property, but, in spite of an offer from McDonalds in 1968, the shop continued to hold out, and survived on trade from chemistry, biology and music. Someone else who had been interested in Farwell's was a journalism student who approached Charlie sometime in 1950 about setting up in the back room to edit an on-campus magazine. Charlie and Ruth were concerned about partitioning the shop and about "all-night sessions" and so they turned him down. The student's name was Hugh Heffner.

By 1971, the shop had become 'eminent domain' for the university. Ruth and Charlie were not far from retiring age, and didn't contest the inevitable — "that only benefits the lawyers anyway."

Mr. Huette now lives in west Champaign. He cultivates amaryllis and says that one of these days he'd like to do some travelling.

## Distinguished Staff Award to Al Saldeen

Mr. John A. Saldeen, electronics engineer and supervisor of the SCS Electronic Shop and Photographic Facility, was the winner of a 1986 Distinguished Nonacademic Staff Award this spring from the university's chancellor, Thomas Everhart.

Saldeen was one of eight staff members on campus who were honored with a plaque of appreciation, a \$200 award and a recognition dinner in April.

"Al" Saldeen joined the chemistry staff in 1960 as electronics technician and has managed the Electronics Construction and Repair Shop and Photographic Service since 1970. Supervising a facility which processes over 2000 work requests a year (including more than 15,000 slides for instruction and 12,000 prints for publication) is a role of critical importance to both faculty and students in the school. The shop and its services have become indispensable to some of the best chemical sciences research programs in the world.

It is his genuine involvement and a real commitment to the school that have endeared Al Saldeen to faculty and peers. He has given his \$200 award to the Flygare Memorial Fund.



# The Faculty

## Gregorio Weber Wins Biochemistry Award



Professor Gregorio Weber, who retires this year

Gregorio Weber, professor of biochemistry, has been selected as the first recipient of the 1986 Repligen Award for the Chemistry of Biological Processes — a new award administered by the Biological Chemistry Division of the American Chemical Society. The award recognized Dr. Weber's "outstanding contributions to the understanding of the chemistry of biological processes, with particular emphasis on structure, function and mechanism."

The Repligen Award is sponsored by the Repligen Corporation of Cambridge, Massachusetts, and carries a silver medal and a \$3,000 honorarium. It was presented to Dr. Weber at the joint meeting of the ACS Division of Biological Chemistry and the American Society of Biological Chemists in Washington, D. C., this June. Weber's award lecture was entitled "Use of High Pressure in the Study of Macromolecules."

A two-day symposium and banquet were held in Urbana this June to honor Professor Weber on the occasion of his retirement from teaching at the university. Dr. Weber received his M.D. from Buenos Aires University in 1943 and his Ph.D. from Cambridge University in 1947. His research interests have centered on biochemistry and biophysical chemistry, most recently on ultraviolet absorption and fluorescence emission of light by proteins.

## "The Last One Left to Get"

*Speed Marvel receives National Medal of Science*

At 91, Carl Marvel, emeritus professor of Illinois and one of the century's great organic chemists, says his National Medal of Science is "a very nice honor." When the award was announced in February, Marvel told reporters, "it's about the last one left to get," but added, "it's also the highest one I've received."

Professor Marvel accepted the award (the nation's highest recognition for achievement in engineering or science) from President Reagan during ceremonies at the White House on March 12. He is one of about 185 scientists who have received the medal (and certificate signed by the president) since it was first presented in 1962.

Carl 'Speed' Marvel joined the faculty at the University of Arizona after a 46-year career at Illinois. His research here in the 1930s led to the creation of polybenzimidazole, used in synthetic rubber and in the flame-repellent suits worn by astronauts.

Professor Marvel still works at Arizona and has maintained a close consulting relationship with DuPont since 1928. Today, in collaboration with the U.S. Army and Air Force, he is conducting research on heat-stable



polymers in order to develop a lighter-weight material that could be used to replace metal in airplane wings.

Only three other SCS faculty have received the medal; they are Roger Adams, William Rose and Herbert Gutowsky.

## Scott Wins Sloan Fellowship

Robert Scott, assistant professor of chemistry, has been awarded a Sloan Fellowship, worth \$25,000, for outstanding promise in his research field.

The awards are made every year to 90 young scientists nationwide (selected from 450 nominations) to provide stimulus at a critical stage in the development of independent research projects. Sloan fellows are permitted to use the funds in a wide variety of ways, affording great flexibility to pursue original work.

Dr. Scott's research into biological electron transfer reactions aims to understand the mechanisms employed by living systems and to create synthetic means of storing energy.

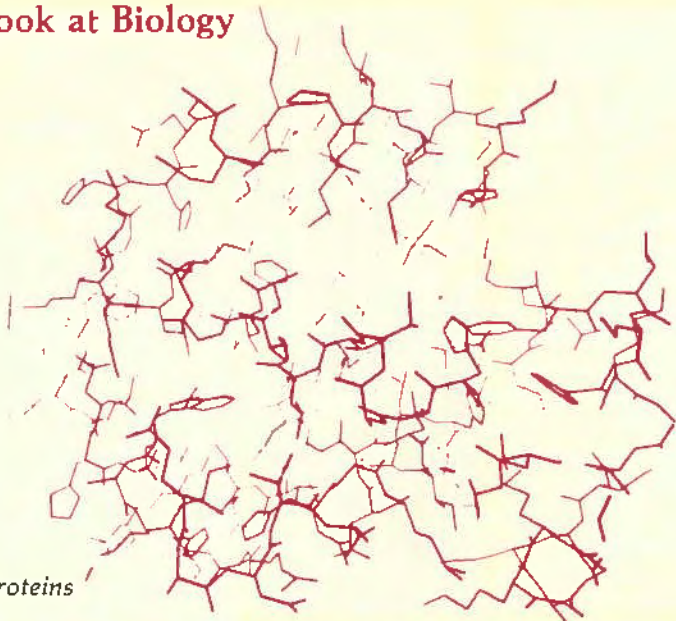
## Yankwich Elected to ACS Board

Peter E. Yankwich, professor of chemistry, has been elected to the American Chemical Society's board of directors to serve a three-year term beginning January 1, 1986. Professor Yankwich is on loan this year to the National Science Foundation as program executive of the Directorate of Science and Engineering Education.

Yankwich joined the faculty at Illinois in 1948 and has been a member of the ACS since 1945. He has served on numerous ACS committees, and is past chairman of the Division of Physical Chemistry. Dr. Yankwich was director-at-large of the ACS from 1982-1984.



## A Chemical Look at Biology



*Electron paths in proteins*

Chemical reactions govern all aspects of biological processes, from enzyme catalysis to transfer of charge, matter and information. According to chemistry professor Peter Wolynes, any deep understanding of biological reactions must be based on a sound theory of chemical reaction dynamics. As part of their research program, he and his group at Illinois, in collaboration with professor of physics and chemistry, Hans Frauenfelder and postdoctoral researcher Atsuo Kuki, are using their knowledge of chemical reaction theory as a basis to understand biology.

Until now, Wolynes explains, most of the knowledge of reaction dynamics has come from studies of two-body interactions of small molecules in the gas phase — a very simple system. Biomolecules, by contrast, provide a complex and highly organized environment that can profoundly affect the course of the reaction. It is this complexity which provides such a rich field for study of the fundamental aspects of reaction dynamics.

In a recent paper which appeared in *Science* magazine, Wolynes and Frauenfelder say they based their ideas on the premise that kinetic control is at the heart of many biological processes and that an assessment of the relative importance of nuclear and electronic motions is desirable. They showed that the binding of dioxygen ( $O_2$ ) and carbon monoxide (CO) to heme proteins is a situation where the problem can be studied in detail. Their investigation of these reactions is aimed at constructing a qualitative framework for under-

standing the general issue of nuclear and electronic motions in biomolecular reactions.

Wolynes' research has found that friction and steric effects which change nuclear motions may play a far more important role in proteins than in simpler systems. He believes that, if successful, the study of biomolecules will teach us much more about reaction theory in general. It is a knowledge which may also be applied to other systems and reactions, and which could eventually help clarify biological functions such as photosynthesis in plants and energy conversion in animals.

Using the supercomputer at the University of Illinois, Wolynes and Kuki have looked at the other aspect of the reaction problem, by modeling electron motion in proteins, an important step in many life processes. The supercomputer calculates possible paths of electrons within a protein molecule (more than one path is involved because of the uncertainty principle in physics). "In this way," Wolynes says, "we visualize which parts of the intervening medium are important in the electron transfer process."

Professor Wolynes has been selected to receive a 1986 Guggenheim Fellowship for his work in disorder physics and the chemistry of liquids and biomolecules. Guggenheim fellows are chosen for "unusually distinguished achievement in the past and exceptional promise for future accomplishment," the foundation said.

## Three SCS Faculty Named 'University Scholars'

Jiri Jonas, Gary Schuster and Peter Wolynes, professors of chemistry, were among the first recipients of the University Scholars prize, a campus award given last year for the first time at the University of Illinois.

The program is designed to identify outstanding members of the faculty and to provide them with annual funds for discretionary use rather than for a specific project. As such, the awards are a recognition of individual excellence and are made through nominations, not by application.

As 'Senior University Scholars,' professors Jonas and Schuster were cited as being 'among the very best in their fields' and were awarded \$10,000 per year on a 3-year basis, for 'clearly superior' work.

The 'University Scholar' prize which awarded \$5,000 to Dr. Wolynes is designed to recognize younger faculty members "who show great promise."

## 1986 Rose Award to Gunsalus

I.C. Gunsalus, professor emeritus of biochemistry, was this year's recipient of the William C. Rose Award in Biochemistry and Nutrition which recognizes distinguished scholars who have made outstanding contributions to these fields.

Professor Gunsalus has won international recognition for his work on the mechanisms of chemical and energy transfer reactions in microorganisms and on the genetics and transfer of plasmids. His lecture, given on May 2, was entitled "Oxygen An Essential Danger, The P450CAM Model."

The lectureship was held this year in Urbana and honored the memory of Professor William Rose, emeritus professor of biochemistry at Illinois, who died last year. The fund was established in 1977, on the occasion of Professor Rose's 90th birthday, by former students, friends and colleagues to honor the pioneering biochemist who discovered threonine, the last major amino acid to be identified.



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## Coming Back. . . An Interview with David Paisley

*Visiting professor of chemistry, David Paisley, expresses some thoughts on returning to Illinois to teach after 25 years in industry*

David M. Paisley, Ph.D. 1961 (organic chemistry), has joined the School of Chemical Sciences as a visiting professor of chemistry after a 25-year career in the pharmaceutical industry and on Wall Street. Dr. Paisley has long been regarded as a leading analyst of the drug industry and, for 12 consecutive years, was named to *Institutional Investor's* "All American Team" of security analysts. For a decade, as a vice president of Merrill Lynch and Co., Paisley headed the group responsible for the firm's investment analyses of pharmaceutical and biotechnology companies and helped initiate Merrill Lynch's coverage of the Japanese pharmaceutical industry.

"Contemporary New-Drug Science" is the title of the new special topics course which Paisley suggested, designed and taught last semester as Chemistry 391. Dr. Paisley says:

"After speaking with Larry Faulkner, I somehow conceived of the course as a 'chatty tutorial' for perhaps a dozen students. I envisioned sitting around a table discussing quaint papers from the medical literature and affecting a pipe and tweeds. It was a shock to learn that instead of a dozen, 121 students had registered. Either there is great interest in new drugs, or word of a 'gut course' travels fast.

"Many professionals of my age are rethinking what they want to do with the next 15 years. This is 'burnout time.' I found that the pressures of Wall Street, including more than 100 days of travel a year, had become a real pounding, and there was also a sense of "deja vu" — of having been everywhere twice and done everything once.

"My children are all away at school; I'm 50 and a new grandfather — it seemed like an ideal time for a repotting. I had been wonderfully happy at Illinois as a graduate student with Speed Marvel. I kept in touch with the



*David Paisley*

university, and followed the teams, and I have many friends in Champaign-Urbana. I've watched the campus mood become more and more upbeat. Illinois is definitely on a roll — you see signs of that everywhere, from the high national departmental rankings throughout the university, to the supercomputer, to the successful campaign for Illinois, to the fine football and basketball teams that have galvanized alumni. Spending three days a week here teaching a new course sounded like a perfect change of pace, and I thought my unusual perspective might be valuable to SCS students."

In the fall semester, Paisley will conduct a seminar course designed to "explore the interface of business and science" — another new offering.

After leaving Merrill Lynch last year, Dr. Paisley established an active consulting practice with several drug

and biotechnology companies. He also retains a major association with Merrill Lynch's Securities Research and Investment Banking Divisions and continues to publish reports on the drug industry.

"Umbilicals to Wall Street and the pharmaceutical industry are still attached, and my professional interest is as great as ever. But I can't say that I've ever done anything quite as much fun as teaching at Illinois. I spoke with Dr. Bailar the other day and he told me how much he had always enjoyed lecturing — 'I just loved it,' he said. Of course, he speaks from enormous success and experience, but I know the feeling. I'm so impressed with my students. They're smart, savvy, interested and very courteous — really good kids. But I think they've made it clear that they're eager for news of the outside world, and Jiri Jonas and Larry Faulkner recognize that.

"By the way, there must be a fountain of youth in the Chemistry Department — everyone looks, talks, and comports himself exactly as he did 25 years ago. It's amazing how little the people and the ambience have changed. Sitting at morning coffee with immortals of Illinois chemistry is like being caught in a time warp.

"Oddly, it wasn't unusual for members of my class to have careers somewhat off the beaten track. Just to mention a few of my friends: Bill Adcock coordinates Shell Chemical's environmental legal forces, John Witt scaled up aspartame for G.D. Searle, and Jack Kampmeier is in the Dean's role at the University of Rochester. Perhaps the experiment of my appointment will catch the attention of other Illinois chemists with a unique perspective that they might consider sharing with our students in seminars, or even on a sabbatical-of-sorts. I can assure them that the experience of returning to Illinois is, well, awesome."



## Profile—Professor Nelson J. Leonard

Professor Nelson J. Leonard's retirement later this year might occasion some pomp and circumstance in the School of Chemical Sciences, but it won't make much difference in the Leonard labs. The 'retirement' is, as his friend Herb Carter comments, "a semantic word for slightly modified activities." After a 44-year career at the University of Illinois, Nelson Leonard has directed 120 graduate students and 80 postdocs and published 400 papers. The research, he says, is "going so well, I can't stop now."

Internationally acclaimed for his talent as an organic chemist, specifically for his skill in synthesizing molecules, Dr. Leonard has evidenced a tremendous breadth of approach in his work which, over the years, has answered questions of fundamental importance in biochemistry and life processes.

In organic chemistry, Leonard is known for the invention of new functionality by means of transannular reactions across medium rings and for the elucidation of the interactions that play an important role in intramolecular and intermolecular associations and transformations. He has also been responsible for the addition of new families of reactions, including those based on the iminium group, a fast-reacting, ionic carbonyl-equivalent. Applications of his work to biochemistry have included the fluorescent derivatization of nucleosides, nucleotides, and coenzymes, the concept of dimensional probes of enzyme-coenzyme active sites, and the construction of covalent DNA-RNA double-helical cross-sections. In the field of plant biology, Leonard has isolated, identified and synthesized cytokinins — plant hormones that bring about cell-division, cell-growth and differentiation — and he has supervised the synthesis and binding to plant tissue of photoaffinity-labeling auxins — plant hormones for cell elongation and root growth. These two classes of plant hormones are basic to the magnification and modification of plasmid production which together hold the key to genetic engineering applications in plant tissue culture.

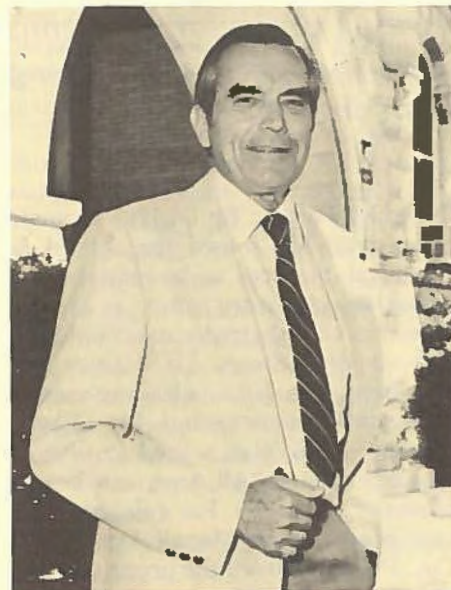
*"The retirement of Nelson J. Leonard marks the ending of that golden age of organic chemistry at the University of Illinois which is associated with Roger Adams, C.S. Marvel, R.C. Fuson, and H.R. Snyder. Nelson has been a worthy successor to Adams in his leadership role for chemistry at the University of Illinois and for "Organic Syntheses." It is important that Nelson is not retiring from science because one of the extraordinary things about him is the way in which he continues to grow, to expand his areas of interest, to make highly significant contributions to basic organic chemistry, biochemistry and molecular biology. At an age when many have laid down the gauntlet, Nelson is making new discoveries with seeming ease, and yet with meticulous care and attention to detail.*

*... I have been impressed particularly by his progression from organic syntheses and alkaloid chemistry to studies of kinases (with his 'stretched substrates'; whoever suspected they would work so well?), plant growth hormones, biotin-avidin complexes, fluorescent lifetime studies of NADH and photoaffinity labeling.*

*Nelson is a great chemist (albeit a too modest one), a great person and richly deserving of the appreciation and affection of his many friends and colleagues."*

Jack Roberts, Professor of Chemistry, California Institute of Technology.

Leonard's early fascination for chemistry was derived from the "explosions, stinks, fire and color" that he concocted on the kitchen stove with a boys' chemical set. Looking back, he says, "My mother was very tolerant." They lived in Mount Vernon, New York, where Leonard went to high school. His father, who had had to leave school to work at the age of fourteen, was in the retail trade and commuted to New York City until he was 72. Leonard recalls, "His major bit of advice to me was 'don't commute.'"



At age 8, Nelson took up an interest which was to match his love for chemistry and rival his academic career for more than 30 years — he began singing in a Mount Vernon boys' choir. The choirmaster, a man from Sheffield, England, claimed he could teach any boy to sing in spite of Mrs. Leonard's comment "not this one — he can't carry a tune." He learned to, and became a solo performer at the age of ten. In later years, Leonard was a soloist of the Lehigh University Glee Club while an undergraduate, soloist of the Lincoln Chapel Choir in Oxford, and secretary of the Oxford Opera Club, while a Rhodes Scholar, and sometime bass soloist of the Calvary Episcopal Church, New York, while pursuing graduate studies at Columbia University. He studied voice extensively in England and America, and, during his first 10 years on the faculty at Illinois, he did recital and oratorio work throughout the Midwest.

Leonard's early singing helped pay for tuition at Lehigh University where he won a Rhodes scholarship to Oxford in 1937. His father, who thought that after a college degree it was time for his son to go to work, had to be persuaded that this was an offer not to refuse. After his studies at Oxford were curtailed by the war in Europe, Leonard returned to take his Ph.D. at Columbia University. After nine years



of college life and a Ph.D. degree in 1942, Nelson's father finally asked him "Now are you going to work?"

Chemistry did eventually start to earn him some money — the princely sum of \$2,000 a year as a research assistant for Roger Adams at Illinois. He was even able to send money home. At the same time, Leonard's singing career flourished. Solo appearances with the Chicago, Cleveland, and St. Louis Symphony Orchestras, in Bach festivals, at other universities, and with many different choruses were interspersed with recitals at the University of Illinois.

An offer of becoming a Professor of Voice at another major university jolted Leonard into making a clear career choice. The offer came at about the time of his election to the National Academy of Sciences and Leonard felt that, if his peers had chosen to recognize him as a chemist, then he had "better do something about it." He realized that there was more scope for originality in full-time devotion to chemistry and a more lasting contribution through the literature of science. Besides, to make any kind of living through singing, he would have had to go into opera — "a bit late to make such an attempt," he says. The family joke is that he made the decision between chemistry and music the day that the honorarium from a chemistry lecture equalled that he made singing. At any rate, there were no doubts after 1955, and the heavy professional demands of chemistry meant that there were no more singing performances.

**Leonard's research:**

*"spans an impressive range of heterocyclic chemistry, of molecular rearrangements, and of contributions to the organic chemistry of nitrogen. In first class research extending over one third of a century, [he] has woven a strong and durable part of the fabric of modern organic chemistry."*

University of Illinois colleague.

**D**r. Leonard's academic career was one which, as he puts it "stumbled all the way along." He started off in college taking courses in chemical engineering because he had two uncles who were engineers and engineering seemed most like a 'career.' It was only when, on the dean's advice, he shifted



*Nelson Leonard with Roger Adams*

to chemistry and so could apply for a Rhodes Scholarship, that he realized chemistry might actually be a profession as well as fun. Taking chemistry as a major meant he could also finish his senior year by taking enjoyable courses in English, History and International Politics.

At Oxford, Leonard did research in physical chemistry on inorganic and organic compounds of nitrogen with Professor Neville Vincent Sidgwick and Dr. Leslie Sutton. He found he was not suited to the physical chemistry part — "not smart enough to design apparatus" — but he liked to make compounds. Much later, during a Guggenheim sabbatical in Switzerland in 1960, Leonard again shifted his area of interest from organic chemistry toward biochemistry and became an innovator in the new area of bio-organic chemistry.

Dr. Leonard's many professional honors include membership in the National Academy of Sciences, fellowship in the American Academy of Arts and Sciences, foreign membership in the Polish Academy of Sciences, the American Chemical Society Award for Creative Work in Synthetic Organic Chemistry (1963), the Medal for Creative Research in Synthetic Organic Chemistry of the Synthetic Organic Chemical Manufacturers' Association (1970), and the Roger Adams Award in Organic Chemistry (1981). Leonard also has an honorary Sc.D. from Lehigh, a D.Sc. from Oxford University and is Doctor Hon. Causa, Adam Mickiewicz University, Poland. Best of all was the Roger Adams Award in 1981 and the

feeling, Leonard says, of "living up to Adams." He felt that a huge inherited load had been taken off his shoulders — "I think he might even have approved."

Adams and Leonard got along famously although, Leonard says, Adams would never compliment him, though he apparently spoke well of him to others. Dr. Leonard recalls that when he was "young and obstreperous," he used to get annoyed with people in the office or storeroom for not ordering equipment or chemicals on time — he once climbed over the transom to change the priority of orders and get something faster. Adams' advice was to "come and pound on my desk — not anyone else's."

Dr. Leonard's long-standing involvement with *Organic Syntheses* has continued an Illinois/Adams tradition (the annual volumes were started by Adams after World War I) and reflects his intense loyalty to the department and the university. Now in its 64th volume, the journal publishes the results of preparations checked by eight editors around the world, and maintains investments that originated from the royalties of sales of the volumes of *Organic Syntheses*. Leonard was editor from 1951 to 1958, and has been on the Board of Directors since 1969 and its president since 1980. Over the past 5 to 6 years, investments have tripled in value, so that *Organic Syntheses* is able to perform a generous role in the support of organic chemistry in the United States. Professor Leonard's membership on the Selection Committee of the John Simon Guggenheim Foundation is also a testament to his long-standing involvement with the journal.



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genheim Foundation since 1977 has also involved a great amount of time and effort, but is a tremendously important service to the academic community at large. A colleague at Illinois says that Nelson has always been absolutely committed to seeing that other chemists, particularly younger ones, receive due recognition within the chemical community.

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On the lessons learned from Nelson Leonard:

*"Among these I include the distinction between science and the best science. . . I have tried to follow Nelson's example in training my own students through teaching by personal example, encouraging professionalism and tolerating a diversity of individual styles."*

Sidney M. Hecht, former Leonard student, who now holds joint appointments as Professor of Chemistry and Biology at the University of Virginia and as Vice President of Chemical Research and Development at Smith Kline and French Laboratories.

*"With Nelson, I learned to appreciate the difference between effort and commitment — my work was a commitment; I gave it everything I had, and Nelson has a lot to do with that."*

George Barrio, former Leonard student, and now Professor and Head of Chemistry in the Division of Nuclear Medicine at the University of California, Los Angeles.

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Leonard's interest in the careers of his own graduates has formed lasting student-professor relationships throughout his teaching career. In March, April and May of this year, the Nelson J. Leonard Seminar Series was held to honor Dr. Leonard's retirement. Seven former students gave technical presentations and all credited their former professor with enormous influence at the start of their careers in industry or academia. The seven were Dr. Seemon Pines, of Merck, Professor Donald E. Bergstrom, University of North Dakota, Professor Michinori Oki, University of Tokyo, Professor David F. Wiemer, University of Iowa, Professor Sidney M. Hecht, University of Virginia, Professor A.J. Kresge,

University of Toronto, and Professor Carl R. Johnson, Wayne State University. The eighth and final lecture in the series was given by Professor Stanley Cristol of the University of Colorado, an early postdoc of Roger Adams.

George Barrio, a Doctor of Biochemistry from Argentina, did postdoctoral work with Professor Leonard during the period 1970-72 and worked with him again in 1975 and 1976, picking up a Ph.D. in chemistry from the University of Illinois almost by acclaim. Knowing of Leonard by reputation, Barrio says it was a tremendous honor to come to work for him, and, in retrospect, "an absolutely unbelievable opportunity." The reception Leonard gave him and his family when they first arrived in the U.S. was a show of humanity Barrio will never forget. He says the support Nelson has always given his students is "emotional as well as technical."

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*"Nelson's contributions as a role model and a friend to younger faculty members did much to maintain the standards and the atmosphere of our Department necessary to keep it in the top group of Chemistry Departments in the country."*

J.C. Martin, Professor of Chemistry, Vanderbilt University, and Emeritus Professor at Illinois.

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As a teacher, Nelson is a natural. To him, teaching is "a magic thing," a "young-keeping experience" which has thrust him into instant friendships with young people from all over the world. He appreciates especially the excitement of watching undergraduates, observing again and again how they catch on to the interrelationships of science and, with graduate students in the final doctoral year, how "the student's mind rushes on ahead of the professor's and the experiments suggested to be performed next month were actually completed yesterday."

**A**t 69, Dr. Leonard travels as voraciously as ever. He and his wife have always loved traveling together — its "romantic" and "enlivening" Leonard says. Until 1968, they took separate transportation on account of their four children. Then in Israel once, they were confronted with

the problem of taking a DC 3 airplane that was so ancient and dilapidated that Nell decided if it had been kept together this long, it must be safe. They visit Holland, Nell's home, at least once a year and still have many friends in England. Of their four children, two now live in Seattle, one in Los Angeles, and one in New York, and the family maintains a ski lodge in Snowmass Village, Colorado, and a summer cottage near Manistee, Michigan.

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*". . . you're not the retiring sort  
When it comes to hard work and sport."*

Leonard children, from a poem on the occasion of his retirement

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The ski lodge is well loved among chemistry colleagues, many of whom have attended the 'Aspenyl Conference in Chemistry and Biochemistry,' held every year during Spring Break. Visitors (up to four couples in addition to the Leonards) ski during the day, finishing at about 4 o'clock, and attend a seminar — given by each chemist in turn — in the evening. Dr. Robert Coates, professor of chemistry at Illinois, says it's an opportunity for professional interaction amongst senior chemists which is not often afforded during term-time when communications tend to be limited to the administrative and social. The Aspenyl Conference also allows Dr. Leonard to maintain long-standing friendships with chemistry skiing colleagues such as Jack Roberts, from UCLA, David Kearns, from the University of California, San Diego, and Jiri and Ana Jonas, from the University of Illinois.

Relinquishing his teaching responsibilities will give Dr. Leonard "a little more time" to spend in Colorado and Michigan, which he'll enjoy. As for retirement, Professor Leonard doesn't talk about it much. Barrio says the two things he never would talk about were retirement and his birthday. Current research grants will last another two or three years, and he will continue to direct a group of five or six postdocs. In addition, the rest of life continues apace. Two of Leonard's skiing colleagues have asked him (although he has "some question as to their motives") to join them in a ski-racing camp in California next January. He says he's considering it.



# The Alumni Alumni News

## Volwiler in Hall of Fame



Ernest H. Volwiler, Ph.D. 1918, was one of five inventors named to the National Inventors' Hall of Fame in Arlington, Virginia, in February.

Dr. Volwiler, 92, retired chairman of the board of Abbott Laboratories, was Roger Adams' first Ph.D. student. His place in the National Inventors' Hall of Fame, along with co-inventor, Dr. Donalee L. Tabern, honors their discovery of Pentothal, a barbiturate compound that rapidly and smoothly induces anesthesia for major and minor surgery. More than 50 years after its development, Pentothal is still the most widely used induction anesthetic in the world.

Dr. Volwiler joined Abbott Laboratories as a research chemist after graduating from Illinois in 1918. His collaboration with Dr. Tabern resulted in the production of sedative and anesthetic compounds which contributed significantly to better medical and surgical treatment worldwide. Volwiler became chairman of the board of Abbott Laboratories in 1958. He retired in 1959.

Volwiler joins an august company in the National Hall of Fame. Fellow inventors inducted this year were co-inventor Tabern (deceased), plant breeder Luther Burbank (posthumously), Harold Egerton, for electronic flash equipment for photography, and Wilson Greatbatch, for the medical cardiac pacemaker. Earlier inventors honored include Thomas Edison, Alexander Graham Bell, Orville and Wilbur Wright and Henry Ford.

## 1931

**Tsi-Yu Kao**, Ph.D. 1931 (organic chemistry), is a chemistry professor at Nanjing University, Nanjing, China.

## 1933

**Arthur G. Holstein**, B.S. 1933 (chemistry), has been awarded the first Melville L. Wolfram award, given by the carbohydrate division of the American Chemical Society. Holstein, retired chairman of Pfanstiehl Laboratories Inc., of Waukegan, Illinois, was honored for "distinguished service to the division and to the field of carbohydrate chemistry." Holstein lives in Beaufort, South Carolina.

## 1935

**Glen Tilbury**, M.S. 1935 (chemistry), professor emeritus of the University of Wisconsin-Platteville, has completed the fourth edition of his book, "Problem-Solving in Chemistry" (Houghton-Mifflin, 1985). Professor Tilbury recently received a Phi Delta Kappa Award for outstanding service to education.

## 1938

**William B. Katz**, B.S. 1938 (chemical engineering), has been named a fellow of the American Institute of Chemical Engineers, which cited him for outstanding contributions to the prevention and clean-up of oil and hazardous material spills. Katz is president of the Illinois Chemical Corporation in Highland Park, Illinois.

**Glenn C. Finger**, Ph.D. 1938 (chemistry), has been voted an honorary member of the Illinois State Academy of Science. A retired chemist of the Illinois Geological Survey, Finger made discoveries in aromatic fluorine chemistry which provided a basis for advancements in agriculture,

toxicology, microbiology, and theoretical chemistry. Dr. Finger lives in Urbana.

## 1941

**Eugene L. Ringwald**, B.S. 1941 (chemistry), recently retired from Monsanto after 40 years and joined the International Executive Service Corps. On a recent posting, he was a technical advisor in Taiwan in the area of polyester fibers. Ringwald's home is in Raleigh, North Carolina.

**William J. Shannon**, Ph.D. 1941 (chemistry), was among 16 food scientists and food technologists inducted as fellows of the Institute of Food Technologists at its annual meeting last year. Shannon is president of Shannon Consulting Co., Northbrook, Illinois.

## 1944

**Rudolph R. Deanin**, Ph.D. 1944 (organic chemistry), founded and directs the graduate programs in plastics at the University of Lowell, Massachusetts. Deanin received the Society of Plastics Engineers 1985 Award for Outstanding Achievements in Education. He is the author of seven books, 190 papers and 36 patents on polymers and plastics.

## 1945

**Paul V. Smith**, Ph.D. 1945 (chemistry), has been re-elected chairman of the board of directors of the American Chemical Society. Smith is manager of education and professional society relations at Exxon Research and Engineering Co., Annandale, New Jersey.

**Kuan Hsu Chen**, Ph.D. 1945 (organic chemistry), is a professor of chemistry at Peking Normal University in China. His research is in the area of organic synthesis.



## 1947

**Henry F. Holtzclaw**, Ph.D. 1947 (chemistry), is dean of Graduate Studies at the University of Nebraska, Lincoln, Nebraska.

**Robert L. Myers**, Ph.D. 1947 (organic chemistry), has been named vice president of technology by Champion International Corp., Stamford, Connecticut. Myers is a fellow of the Technical Association of the Pulp and Paper Industry and a trustee of St. Thomas Aquinas College.

**R. Byron Bird**, B.S. 1947 (chemical engineering) (Ph.D. 1950, University of Wisconsin), is Vilas Professor and MacArthur Professor at the University of Wisconsin. Professor Bird holds honorary doctorates from Lehigh University, Washington University, Clarkson University and the Technische Hogeschool Delft, The Netherlands. He was recently elected a foreign member of the Royal Netherlands Academy of Arts and Sciences. At last year's fall meeting of the American Chemical Society, there was a special symposium honoring the 25th anniversary of the publication of his book, *Transport Phenomena*.

## 1948

**Marcus Gordon Grodberg**, M.S. 1948 (biochemistry), is director of research at Colgate-Hoyt Laboratories in Norwood, Massachusetts. In over 40 years of research and development in the pharmaceutical industry, he has concentrated mostly on the evaluation of fluorides in diseases of teeth and bones.

**Gunther S. Stent**, Ph.D. 1948 (physical chemistry), is professor and chairman of molecular biology and director of the virus laboratory at the University of California, Berkeley. Professor Stent returned to Illinois this year for the first time since he graduated to give the keynote speech at the University of Illinois Allerton Faculty Conference in February.

## 1949

**Ralph M. Robinson**, B.S. 1949 (chemical engineering), has been named a fellow of the American Institute of Chemical Engineers, for achievements in the design and development of high pressure processes leading to efficient production of specialty chemicals such as nicotinic acid. Robinson is operations manager of pharmaceutical manufacturing with Abbott Laboratories, North Chicago, Illinois.

## 1950

**Robert L. Bohon**, Ph.D. 1950 (physical chemistry), has been appointed director of the Analytical and Properties Research Laboratory, Central Research Laboratories, at 3M in St. Paul, Minnesota.

## 1953

**James W. Berry**, Ph.D. 1953 (organic chemistry), is professor and department head of nutrition and food science at the University of Arizona, Tucson, Arizona.

**Merland W. Grieb**, Ph.D. 1953 (analytical chemistry), has retired from the University of Idaho and is living in Seattle.

## 1954

**L. Bryce Andersen**, Ph.D. 1954 (chemical engineering), is dean of the College of Engineering at Southeastern Massachusetts University, North Dartmouth, Massachusetts. He was recently selected a fellow by the American Institute of Chemical Engineers for his contributions to chemical engineering education as a teacher, administrator and author. Dr. Anderson has authored more than 20 technical publications including two widely used texts, *Principles of Unit Operations* and *Introduction to Chemical Engineering*.

## 1956

**James S. Kaltenbronn**, B.S. 1956 (chemistry), (Ph.D. 1960, M.I.T.), received an award last year for excellence in industrial chemical research from the Huron Valley Section of the American Chemical Society. Kaltenbronn's past work includes the synthesis of Meclomen, Parke-Davis'

leading nonsteroidal drug. He has made significant contributions to the antiinfective and antihypertensive programs at Warner-Lambert/Parke-Davis Pharmaceutical Research in Ann Arbor, Michigan.

**Edward G. Perkins**, B.S. 1956 (chemistry), (Ph.D. 1958 in food science, Illinois), was honored with the 1986 Alton E. Bailey Award, from the American Oil Chemists' Society, in February. The award is given each year by the North Central Section of AOCS to recognize outstanding research and exceptional service in the fats and oils industry. Perkins is a professor of food chemistry and nutritional sciences at the University of Illinois, Urbana.

## 1958

**Roberto Lee**, B.S. 1958 (chemical engineering), is engineering group consultant for the Monsanto Company in St. Louis, Missouri. He was recently elected a director of the American Institute of Chemical Engineers to serve a three-year term on the society's governing council. Lee specializes in process design and reaction engineering.

## 1962

**George A. Samara**, Ph.D. 1962 (chemical engineering), has been elected to the National Academy of Engineering. Samara, who is manager of the condensed matter and device physics department of the Sandia National Laboratories in Albuquerque, New Mexico, was cited for contributions to the understanding of dielectric, ferroelectric, and ferromagnetic materials applications.

## 1963

**Carl W. Vermeulen**, M.S. 1963 (biochemistry) (Ph.D. 1966, microbiology, Atwood), teaches microbiology at the College of William and Mary, Williamsburg, Virginia. His research concerns the rationale of the *E. coli* chromosome. Vermeulen recently received a prize from the college for involving so many undergraduates in research.



Thomas M. Warne, M.S. 1963 (organic chemistry) (Ph.D. 1970, Northwestern,) was recently named associate editor for *Lubrication Engineering*, and *Transactions of the American Society of Lubrication Engineering*. Warne is senior research scientist at the Amoco Oil Company, Research and Development, in Naperville, Illinois.

## 1970

James W. Pickett, M.S. 1970 (analytical chemistry), has been the chief chemist for Olin Corporation's Winchester Ammunition Group, East Alton, Illinois, for four years. His lab supports ammunition manufacturing, non-ferrous metal casting and rolling and environmental engineering.

## 1971

John L. Anderson, Ph.D. 1971 (chemical engineering), is professor and head of the Department of Chemical Engineering at Carnegie-Mellon University, Pittsburgh, Pennsylvania.

## 1972

Frank L. Slejko, Ph.D. 1972 (chemistry), publishes a trade journal for the high-tech industries on "obtaining the ultimate in water purity." His company, Tall Oaks Publishing, is based in Voorhees, New Jersey.

Marty Aschauer, B.S. 1972 (chemical engineering) (Ph.D. environmental engineering at Illinois), recently became director of research and development and quality assurance at the Hardy Salt Division of the Diamond Crystal Salt Company, Manistee, Michigan. Aschauer joined the Hardy Salt Company in 1976 as a project engineer.

## 1973

Beth Lepinski, M.S. 1973 (biochemistry), is group leader in applied research on paper coatings at Appleton Papers, Inc., Appleton, Wisconsin. She coordinates research projects related to synthetic and paper substrates predominantly in the converter and graphic arts products areas. Lepinski joined the company in 1976 as a senior chemist.

## 1978

Glenn H. Lewis, B.S. 1978 (organic/analytical chemistry), was recently promoted to leader of the advanced physical technology group in the Research and Development Division of Helene Curtis, Inc., in Chicago.

## 1980

Robert J. McMahon, B.S. 1980 (chemistry), received his Ph.D. in organic chemistry from the University of California, Los Angeles. During his career at UCLA, McMahon held NSF and IBM Graduate Fellowships, and was named a UCLA Distinguished Scholar. McMahon has accepted a postdoctoral position with Professor M.S. Wrighton at M.I.T.

## 1982

Michael Bova, B.S. 1982 (chemistry), was the 1985 recipient of the Blackledge award at Southern Illinois University School of Medicine. The grant was established to encourage students to return to practice medicine in Southern Illinois.

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