

# Cornell Chemistry

December 1992  
Issue 55

## New Coordinator for Freshman Chemistry

Steve Russo came to Cornell as a graduate student in 1973 after graduating from St. Francis College in Brooklyn. He began graduate study with Professor Marc Loudon, and then worked under the direction of Professor Charles Wilcox in the area of theoretical organic chemistry. As a teaching assistant, Steve was noted for the clarity and ingenuity with which he guided his students, winning both the Du Pont and Clark teaching awards. After earning his PhD in 1979, Steve remained at Cornell for two years as a "lecture commentator" for Chem 207 and instructor of Chem 104.

In 1981 Steve moved to Indiana University to become the associate coordinator for freshman chemistry. He helped design an "electronic" lecture hall for the chemistry department during a major renovation project. He also created a resource center for freshman chemistry where students could study, get help from TAs and professors, and use computer stations with interactive video disk capability for drill and practice and to perform simulated lab experiments.

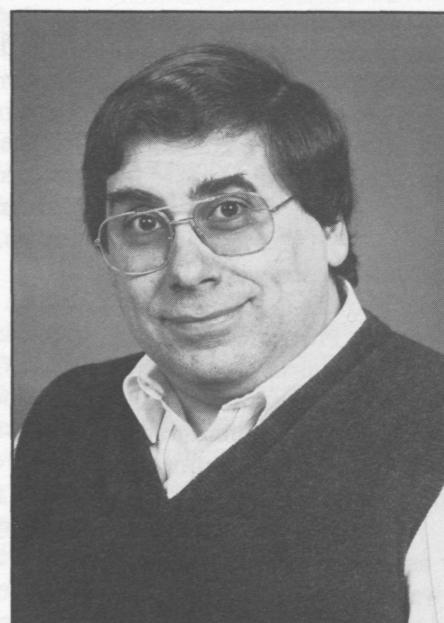
Meanwhile, back at Cornell Chemistry, enrollment figures for the introductory organic lab courses, Chem 251 and 252, were climbing steadily. At the same time, questions arose about the best way to teach the courses under new regulations restricting the use and disposal of hazardous materials. The faculty decided to hire a coordinator for this effort who would also develop new teaching methods. Fortunately, Steve was interested in taking on the assignment, and he returned to Cornell during the summer of 1992.

"Some schools are looking at the regulations and developing microscale laboratory methods," he explained, "but the student works a long time to get only a very tiny sample of product. We're

continuing to develop the small-scale approach to doing experiments, which means we may use 1 to 2 grams of material, as opposed to the 20 grams used in the old days, or the tenth of a gram used in microscale experiments."

Steve is interested in modernizing our lecture halls with up-to-date video projection. His first step was the purchase of an LCD panel for an overhead projector in Baker 200. The panel will enable lecturers to show videotapes and computer images with a reasonably high-quality resolution on the large screen. "It's a special challenge teaching kids who take a lecture course concurrently with the lab course, which is often the case with introductory organic chemistry here at Cornell. Anything we can do to make students better understand what they're seeing and hearing is a big plus," he commented.

When he's not in the classroom, Steve collaborates with other scientists, doing computational calculations for publications. But his primary interest is teaching. "I always enjoy watching the light bulbs light up," says this newest member of our instructional staff.



# Chemists as Administrators

Robert A. Plane

Robert Plane was born in Evansville, Indiana and attended Evansville College. After receiving his PhD from the University of Chicago in 1951, Plane worked as a chemist at Oak Ridge National Laboratory. He came to Cornell University as an instructor of chemistry in 1952. Plane was a bioinorganic chemist and spectroscopist whose specialties were metal ions in biological systems and in aqueous solution. He is still remembered by thousands of undergraduates as co-author, with Michell J. Sienko, of "Chemistry," at one time the most widely used introductory chemistry text in the world.

Plane's chairmanship of the department lasted only from 1967 to September 1969, when he agreed to serve as acting university provost. His skill as an administrator made him the best choice for the position, and he served as university provost from 1970 until 1973. During that period, he served as acting president in the absence of President Corson.

Plane left Cornell in 1974 to become president of Clarkson College of Technology in Potsdam, New York. He remained in that post until 1985, returning to Cornell in 1986 as Director of the New York State Agricultural Experiment Station in Geneva. He retired from that post in 1990 as Professor Emeritus, and redirected his energies to the operation, with his wife, Mary, of their highly successful winery on the west side of Cayuga Lake. But he didn't stay in "retirement" for long: when Wells College found itself in need of a leader in 1990, Plane was only a boat ride away. Once again, an interim presidency turned into a permanent position, and the consummate administrator became the sixteenth president of Wells College on October 8, 1991.

Below he shares his thoughts on why so many chemists end up in administrative positions, particularly in academia. We are most grateful for his contribution to the newsletter.

In the course of my career I have encountered several chemists who became administrators, primarily at universities, but also in industry. I have spent much time puzzling over this connection, and what it takes to be an effective administrator, but never more than during my trial period as Cornell University Provost.

In 1969, when Dale Corson was promoted from University Provost to President, he asked me to become Provost. I had been chairman of the Department of Chemistry for about two years, enjoyed the job, and really was not seeking an administrative post of any kind, especially not in the troubled atmosphere of Cornell at that time.

The primary arguments against accepting this position were that I would be giving up chemistry and scholarship, and I wasn't sure I'd be a good administrator.

Consequently, I moved cautiously. After pondering the matter for several days, I told Dale that I would do the job only on an interim basis while remaining Chemistry Department Chair; this way I could see whether I could be an effective provost. The trial period lasted for six months, after which Dale and I were both convinced I could do the job.

While considering the chemistry-administration connection, I learned that Bryce Crawford, a fellow spectroscopist and longtime Dean of the Graduate School at the University of Minnesota, shared my interest in the subject. He believed that a major reason chemists turn up in odd places is that so many chemists are awarded the PhD. But I think there is more to it than that and would like to examine here the question of whether the essences of administration and chemistry overlap.



Photo courtesy of Wells College

To me the essence of administration is making decisions for other people. This immediately raises the question, why would they let one do this? Many faculty members are critics who really enjoy nothing more than second-guessing other people's decisions, so they are happy to let someone else try. Scientists, on the other hand, tend to spend little time looking backwards; while they may well be critical, they are not usually second-guessers.

Scholars tend to be at least 99% certain before they publish. Administrators, by contrast, are rarely even 50% certain before making decisions. Consequently, many people with academic training are extremely uncomfortable with the great amount of ambiguity and uncertainty that administrative decisions entail. Because of the uncertainties of administrative decision-making, timing becomes crucial. A decision

must never be postponed until it "makes itself," as such decisions are often wrong. The other extreme is making decisions too quickly, before they are required. If one waits, more facts will surface, the situation may change, and the right course may be obvious. Thus an important rule in decision making is to make the decision *as late as all options remain open*.

The essence of administration, then, is decision making. The rest of the job simply involves telling other people of the decision, why it was made, and why it is best for everyone.

It is harder to define the essence of a chemist. For working purposes, let's say that a chemist is one whose interests lie between the concerns of a theoretical physicist or pure mathematician at one extreme, and those of an engineer at the other. This "intermediate" position of chemists in the world of physical scientists is analogous to the medical profession. Hugh Luckey, Vice President for Medical Affairs at Cornell while I was Provost, once told me that in choosing a medical dean it was important to avoid psychiatrists, who could never make up their minds, as well as surgeons, who made up their minds much too quickly. Hugh felt that

the perfect dean was one from the field of medicine, which lies halfway between these two extremes. To carry this analogy to chemistry, the theoretical physicist is the

Another aspect of chemistry should be noted, since it places real emphasis on considerations of timing. Probably more than any other physical scientists, chemists are concerned with rates at which phenomena occur. An entire branch of our science is devoted to kinetics. We learn early that it is important not only that a reaction be thermodynamically favorable, but that it can occur at a finite rate. Anyone so trained is likely to be aware of the importance of timing in making administrative decisions.

Finally, I would note that perhaps the essence of chemistry that best matches the essence of administration is the *other* meaning of the word "essence." Certainly administration involves many foul-smelling situations and hence requires a strong stomach. Perhaps, at least for us older chemists, it is our days in laboratories saturated with hydrogen sulfide and other equally bad smells that equipped us for life in administration.

All of this brings me to one of my favorite stories that applies very well to many of the administrative chores I've had in the past, and perhaps summarizes most of my administrative career. The story concerns a wild cat who, while making love to a skunk, was heard to say, "I'm enjoying as much of this as I can stand!"

super-cautious psychiatrist, the engineer is the quick-to-act surgeon, and the chemist is halfway between.



John Terry (left) helps Andre Foreman and Keno Barksdale of New York City play chemical detective.

## 4-H Teens Visit Chemistry

Cornell University was the scene of three days of intense and energetic activity as 4-H teens from all over New York State attended a program called "4-H June Events" on the Ithaca campus.

Over one hundred young people between 14 and 17 years of age were able to attend programs in a dozen Cornell departments, including the Department of Chemistry. Frank DiSalvo, Saundra McGuire, Jerry Meinwald, Laura Philips, John McMurry, and John Terry led sixteen students and two adult chaperones from 4-H groups across the State through hands-on experimental laboratory sessions in the Department of Chemistry.

## Faculty News

Professor **Héctor D. Abruña**, a Guggenheim Fellow, is visiting Professor G. Materlik at the Hamburger Synchrotronstrahlungslabor at Deutsches Elektronen-Synchrotron.

The United States Department of Agriculture (CSRS) will fund Professor **Andreas C. Albrecht**'s project, "Nonlinear Optical Studies of Energy and Electron Transfer Dynamics in Photosynthetic systems."

The September 1992 issue of Cornell Alumni News described the work of Professor Emeritus **Simon H. Bauer** and his postdoctoral associate, **Huy-Zu Cheng**. According to the article, the two used a computer model to study a process for capturing methane and upgrading it to higher-molecular-weight hydrocarbons, which could be easily transported as compressed, or liquified, gases.

Professor **Jon Clardy**'s research on "Structures of Immunophilins and Their Complexes" and "New Anticancer Drugs from Cultured and Collected Marine Organisms" is being funded by the National Institutes of Health/National Cancer Institute.

The National Science Foundation will sponsor Professor **Frank DiSalvo**'s project, "Ternary Nitrides from Inorganic and Organometallic Molecular Precursors."

Professor **Jack Freed** has received a grant from the National Institutes of Health for "Modern ESR Techniques for Biological Studies."

**Earl Peters**, Executive Director of the Department, is on a special assignment in Hamburg, Germany, for Cornell Abroad until the end of January. He is helping to initiate a program for Cornell engineering students who wish to spend a semester in Germany.

Assistant Professor **Laura Philips**' studies of "The Role of Vibrational Mode-Coupling in Chemical Reactions" are being funded by the American Chemical Society-Petroleum Research Fund.

Professor Emeritus **Harold A. Scheraga** is taking part in an NSF-funded, U.S.-Argentina cooperative science program on the origin of helix stability.

Professor **Peter T. Wolczanski**'s project, "C-N Bond Cleavage Reactions Relevant to Hydrodenitrogenation," has been funded by the American Chemical Society-Petroleum Research Fund.

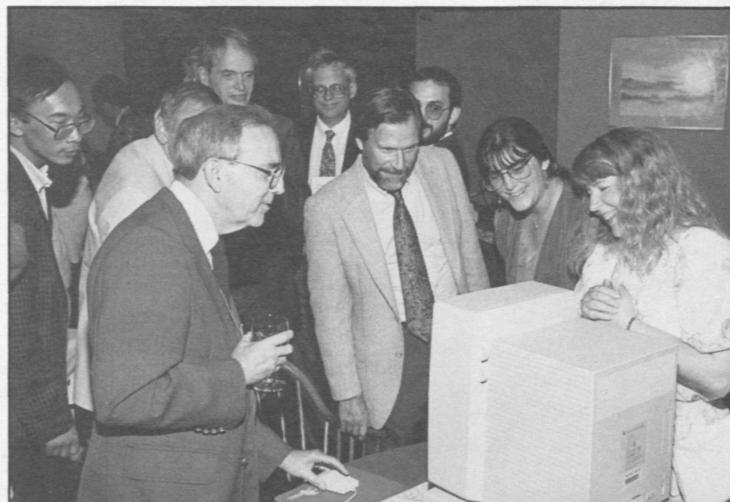
## Postdoctoral News

We're pleased that two of our new postdoctoral associates have received NSF fellowships: **Robert J. Hinde**, a member of Professor Greg Ezra's research group, received his PhD from the University of Chicago; **Elizabeth M. Sanford**, from UCLA, is working with Professor Jean Fréchet.

## Graduate Student News

**Karen Wooley**, a fifth-year graduate student in Professor Jean Fréchet's research group, received the Robert W. Work Award for 1992-93. The award is made annually to a graduate student in the field of polymer or fiber chemistry, and is made possible by a gift from Robert W. Work, PhD '32.

Karen also presented a paper for the 1992 Sherwin-Williams Student Award Symposium as part of the 1992 Fall ACS meeting in Washington, D.C.



## Ben Widom Honored

Former graduate students and postdocs attended a symposium and dinner in honor of 65th-birthday celebrant, Professor **Ben Widom**, on September 5. Speakers included Cornell Chemical Engineering Professor **John Zollweg**, PhD '69, principal organizer of the event, **Michael E. Fisher**, now at the University of Maryland, **Michael Widom**, a physicist from Carnegie Mellon, **John Wheeler**, PhD '68, from the University of San Diego, and **John S. Rowlinson**, from Oxford University.

## Alumni News

### 1930-1939

Vera M. Austin sent us news of the death of her husband, **Paul**, PhD '30, in mid-July (see Alumni Deaths). Dr. Austin was retired from his position as research director at Du Pont. He had been president of the boards of the Wilmington Music School and the Wilmington Symphony Orchestra. Austin's research led to medical and commercial uses for chitin, the material from which invertebrate shells are composed. Memorial contributions may be made to the Dr. Paul R. Austin Sea Grant Student Fellowship, University of Delaware.

**Eugene Rochow**, '31, PhD '35, was one of several alumni inventors featured in the June 1992 issue of the Cornell Alumni News. Rochow, who was a student of Professor Laubengayer, now lives in Florida. His discovery of dimethyl silicone and a process now known as the Rochow synthesis made possible the development of the modern silicone industry. Rochow assigned the patents for the material and the process to General Electric.

### 1960-1969

**Satya S. Talwar**, PhD '69, is a professor of chemistry at the Indian Institute of Technology in Bombay.

### 1970-1979

**David M. Lubman**, AB '75, has received the 1992 University of Michigan Faculty Recognition Award. Congratulations, David!

### 1980-1989

**Cynthia Burrows**, PhD '80, has been promoted to Full Professor at the State University of New York at Stony Brook.

Somehow we missed sharing the news that **Angelica Stacy**, PhD '81, was one of six chemists to receive 1992 National Science Foundation Faculty Awards for Women. Angie is now at the University of California, Berkeley.

**Bob Hamers**, PhD '86, was one of 30 scientists and engineers to be selected for the new National Science Foundation Presidential Faculty Fellows awards for 1992. Bob is an associate professor of chemistry at the University of Wisconsin. He was a postdoctoral fellow and subsequently a permanent employee at IBM Yorktown before joining the faculty at Wisconsin.

**Randy Lauffer**, PhD '84, is chairman and CEO of Metasyn, Inc., a start-up company engaged in the discovery and development of new diagnostic and therapeutic pharmaceuticals based on inorganic chemistry, the chemistry of metal ions and organic complexing agents. Randy was previously an assistant professor of radiology at the Massachusetts General Hospital and director of the hospital's NMR Contrast Media Laboratory. Metasyn is initially focusing on tissue-specific, injectable diagnostic agents for use in magnetic resonance imaging. The company recently entered into an agreement with Nippon Shoji Kaisha to develop a novel contrast agent to improve the detection of cancer that has spread to the liver. Metasyn also plans to begin development of a "blood pool" MRI contrast agent for use in diagnosing cardiovascular and brain disorders and in tumor imaging.

**Sara Majetich**, a postdoctoral associate in John Wiesenfeld's group from 1987 to 1990, is now an assistant professor of physics at Carnegie Mellon University.

### 1990-1992

**Katherine J. Covert**, PhD '90, is an assistant professor at the University of West Virginia. After leaving Cornell she was a postdoctoral associate with David Tyler at the University of Oregon.

**Evan Williams**, PhD '90, now an assistant professor at UC Berkeley, was one of 202 scientists and engineers to win National Science Foundation Young Investigator awards for 1992. Evan's current work will have applications in the sequencing of large proteins and DNA. He has developed a mass spectrometric technique for detecting single ions of large biomolecules.

**Charles Randall Robinson**, MD, AB 'xx, is married to the former Ann Murray and has two children, Charles Patrick (four) and Jennifer Abigail (nine months). He is an ophthalmologist in private practice in Bristol, Connecticut. Charles received his MD from the University of Pennsylvania in 1982, did a residency in ophthalmology at Temple University from 1985-88, and did further study under a retina fellowship at the Washington Hospital Center in 1988-89.

## Alumni Deaths

**Paul R. Austin**, PhD '30, July 18, 1992, in Wilmington, Delaware (see Alumni News).

**Arley T. Bever Jr.**, PhD '52, March 22, 1992, in Bethesda, Maryland.

**C. Gordon Ellis**, BChem '32, August 30, 1992 in Chula Vista, California.

**Robert M. Herbst**, BChem '26, February 26, 1992, in Southern Pines, North Carolina.

**Marjorie Hunter Humphrey**, AB '45, date of death unknown, in Winnetka, Illinois.

**Dixon C. Philips**, BChem '16, April 12, 1992, in Hightstown, New Jersey.

**Joyce Swartzman-Andert**, AB '75, MS '77, May 5, 1991, in Vacaville, California.

## Other Deaths

We were all saddened to hear of the September 13, 1992 death of **Marion Long**, wife of Professor Emeritus **Frank Long**, in Claremont, California.

Former building supervisor **Owen R. (Bud) English** died on August 30, 1992 at Tompkins Community Hospital. He had joined the department as stockroom supervisor in 1961 and became building supervisor in 1967, remaining in that position until he left the department in 1970.

The Society of Cornell Chemists asks you to support the cost of printing and mailing this Newsletter with your voluntary annual dues of \$10. Please make your 1992 check payable to "Cornell Chemistry" and mail it to The Society of Cornell Chemists, G-03 Baker Laboratory, Department of Chemistry, Cornell University, Ithaca NY 14853-1301.

*Cornell Chemistry is published by the Department of Chemistry at Cornell University.  
Jon Clardy, Chair; Earl Peters, Executive Director;  
Donna Middleton, Editor; Kelly Strickland, Editorial Assistant.*

This newsletter is printed on  
recycled paper.

Cornell University  
Department of Chemistry  
Baker Laboratory  
Ithaca, New York 14853-1301

Nonprofit Org.  
U.S. Postage  
**P A I D**  
Cornell  
University