

Cornell Chemistry

December 1993

Issue 58

Invisible Support

by John Terry, Associate Director for Technical Operations

When Robert Frost wrote that he "took the [road] less traveled by, and that has made all the difference," he was applying thermodynamic principles to life. In thermodynamics, a state function is defined as a property whose change is dependent only on the initial and final states and independent of the pathway followed in progressing from the initial to final state. Frost is asserting that life is not a static function independent of the pathway taken and the work performed. Education, likewise, is independent of neither the paths chosen nor the work done.

If we were to follow the progress of a Cornell Chemistry student by examining the transformation in knowledge and reasoning skills that occurs during four years, we would expect to find a dramatic increase in both. This expansion of the mind is directly related to the work performed by the student and the efforts extended by our faculty.

There is another factor involved that is invisible to someone considering only the initial and final states of the educational process. The Chemistry Department is blessed with a very talented support staff. In our analogy of education as a path or

road, the task of the "invisible" support staff is to keep the available roads safe and free from clutter and to open new ones should the need arise.

Of course the "invisible" support staff is quite visible to those involved with the teaching of undergraduate chemistry courses. The range of visibility to students and non-Chemistry personnel varies significantly, however. Mr. Tom

McCarrick, Director of Physical Chemistry laboratories, is an integral part of the life of every Chemistry major. The other laboratory directors, Dr. Stanley Marcus for General Chemistry and Dr. Steve Russo for Organic Chemistry, are well known to the students in the introductory and organic lab courses. Even the author is visible to most General Chemistry students who have seen him in his role of Dr. Demo, producer of flashes, bangs, and other feats of chemical "magic."



Left to right: Tom McCarrick, John Terry, Steve Russo, and Stanley Marcus

Course coordinators Mrs. Virginia Marcus and Miss Constance Adams provide the administrative support crucial to the smooth operation of these courses. This semester 3,663 students registered for the general, organic, and analytical courses offered to undergraduates. Mrs. Marcus and Miss Adams are the unsung heroines responsible not only for maintaining accurate records for each student but for dealing with the requests, questions, and problems these students have on a daily basis. Mrs. Marcus also maintains the records for Chemistry majors.



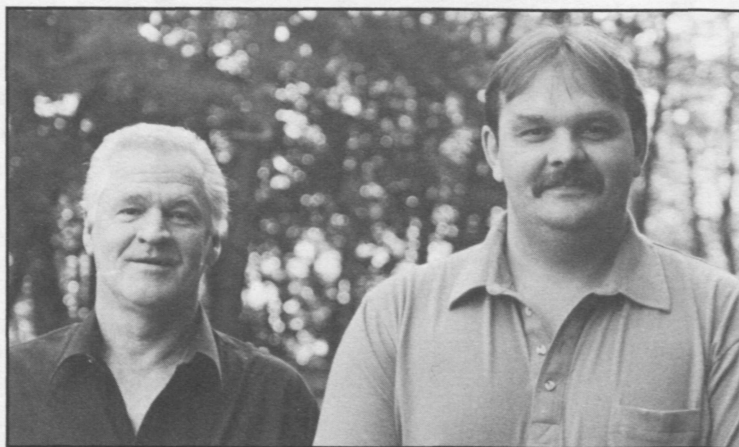
Constance Adams (left), and Virginia Marcus (right)



Linda Fields

Problem sets, quizzes, and examinations are facts of life for students enrolled in chemistry courses. The thousands of copies that are required on a weekly basis for our undergraduate courses do not magically appear the day they are needed, although students might think this is the case. One of the responsibilities of Mrs. Linda Fields, our mailroom operator, is overseeing the production of printed material. She and her staff keep the duplicating machine humming to keep pace with requests for copies of lecture notes, announcements, quizzes, problem sets, and exams for chemistry courses. Mrs. Fields is "invisible" to all but the faculty and graduate students who rely on her ability to get things done "yesterday."

Mr. Bernie Cook, our machinist, and Mr. Dave Wise, our glass artisan, have provided us with props for demonstrations, laboratory glassware and equipment, and advice about matters on which their expertise has proved invaluable. Tucked away in the basement of our research facility are the Machine and Glass Shops, out of sight of the undergraduates who reap the benefits of their skilled operators.



Bernie Cook (left), and David Wise (right)

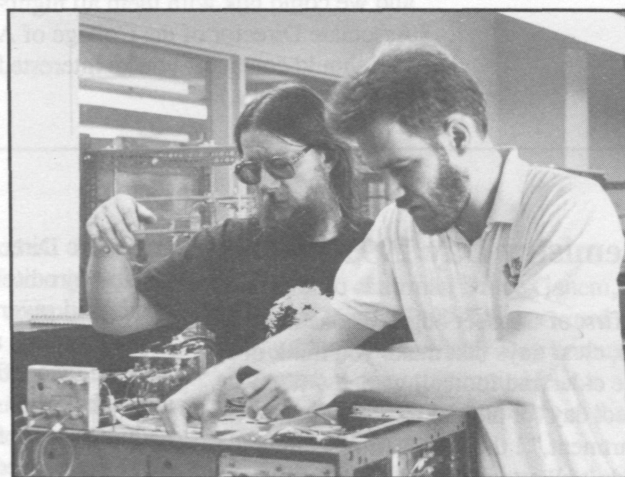


Left to right: Peter Damian, Lois Herweck, and Kathleen McCracken

When students in General, Organic, and Analytical Chemistry courses arrive at their laboratory sections, they find that all of the equipment and chemicals necessary for the day's work have already been delivered to the laboratory. Ms. Kathleen McCracken, Manager of Laboratory Services, Ms. Lois Herweck, Technical Coordinator, and Mr. Peter Damian, Technical Assistant, with the assistance of several student employees, are responsible for the scheduling, preparation, and distribution of chemicals and equipment required in each of the laboratory courses taught (there are presently eleven courses). The planning and preparation of the Lab Services staff is taken for granted by the students and the teaching staff who arrive at the lab to do experimental work and find everything has been prepared for them.

The Age of Technology has brought an increased use of instrumentation to the Chemistry laboratory program. Mr. Lars Washburn manages the Instrument Shop with the able assistance of Mr. David Jones. They are responsible for the maintenance and distribution of the electronic equipment used in both lecture and laboratory settings. Their expertise has been instrumental (pun intended) in allowing the instructional level to move forward with the times. They, too, are members of the "invisible" group of employees who work behind the scenes to ensure that students in our Chemistry courses receive the exceptional educational experience the Cornell name implies.

The Chemistry Department is fortunate to have a contingent of extremely dedicated "invisible" employees whose efforts are dedicated to maintaining the paths chosen by all students in their quest for an education that will, in the words of Robert Frost, "make all the difference" in each of their lives.



David Jones (left), and Lars Washburn (right)

Did you know that your gift to Cornell Chemistry can add substantially to the support services available for instruction and research?

Last year, Chemistry alumni and friends gave individual gifts totalling \$46,675. Most of those gifts were matched by employers or former employers, so that the total amount of gifts from individuals came to over \$100,000! Some of those gifts were under \$100, and some were over \$1,000. Some people specified what they wanted done with the money; others just said, "spend it where you need to."

Most of the money went to support graduate students, either with full tuition and stipend or by supplementing corporate fellowships. We also have a special fund for helping students attend conferences and seminars when their research advisors aren't able to pay their way from grants.

Many alumni designate their gifts for graduate students in specific fields of study, such as polymers or analytical chemistry. The proceeds from gifts of some stocks and securities will be used to buy equipment for analytical facilities and teaching labs.

Alumni News

Alumni Careers Panel

A Report by Donna Middleton,
Manager of External Relations

Earl Peters moderated the September 30 panel discussion, during which local physicians **Lowell Garner AB '76** and **Lorrie Penfield BS '74** explained how chemistry helps them understand professional journal articles and drug inserts, and, just as importantly, how studying chemistry trained them in problem solving. Lorrie's emergency room anecdotes were gripping! **Joerg Pfeifer PhD '91** was always sure he wanted to do chemistry, but just how and where to do it demanded research and perseverance, finally resulting in his position as a scientist at Eli Lilly. What do you do when you discover you're not cut out to be a bench chemist? **Steve Mirsky MS '85** provided a glimpse of how he became a science writer, and what it takes to be successful in the field. My co-host, Chrissie Schelhas-Miller, and I agreed this was a truly interesting group of people, and we could talk with them all night. Chrissie gets to meet lots of interesting alumni as Associate Director of the College of Arts and Sciences Career Center. (She's the person you should contact if you're interested in being an Externship sponsor during semester break in January.)

Chemistry Day 1993

The first of October began as one of those crisp, clear days that make you think of apple cider and football games. "What a perfect day for alumni to come back to the department," I thought. "Too bad they couldn't all attend the Alumni Careers Panel last night."

Anyway, as the sun gradually warmed the chilly morning, the Cornell chemists began to arrive: **John Whitney PhD '45** and wife, Isabella, from Hockessin, Delaware; **Andrea Roberts Smith AB '90**, who took some time off from Ciba-Geigy and grad study at NY Polytechnic Institute; **Judy and Don Sullenger PhD '69** came all the way from Centerville, Ohio; **Arthur Sucsy PhD '48** and wife Jean, up from Rydal, Pennsylvania; **Elaine and Lawrence Cerny PhD '55** drove over from Utica; **Steve Godleski AB '71** travelled from Rochester with his son, Mathew, and their friends Gary and Stephan Shaw. Mathew and Stephan are looking at colleges; hope they liked what they saw.

Executive Director Earl Peters and *Cornell Chemistry* editor Kelly Strickland conducted several tours of the department in the morning, and Professor Charles Wilcox gave a fascinating illustrated talk about the origins of Cornell University, including a brief summary of the buildings that have housed the Department of Chemistry. As he pointed out, it is difficult to imagine two more disparate people than Ezra Cornell and Andrew D. White, who nonetheless joined their considerable financial and political forces to create this institution. It was particularly interesting to see the "Frontier" maps of the period. If you think Ithaca is in the middle of nowhere now, those maps would change your perspective!

Late in the morning the caterer called to ask my decision: would we picnic inside or outside in the evening? Ever the optimist, I chose *al fresco*, not knowing what the isobars had in store. Colgate-Palmolive scientist **John Labows PhD '67** and his wife, Mary Lou, arrived to tell me the wind was really picking up.

Dave Dauplaise PhD '77 and his wife, Lupe, brought children Daniel and Diane, who assisted Dr. Demo in the afternoon. Speaking of Dr. Demo, Professor Tadhg Begley thought it would add to the general excitement if we invited his daughter Eileen and her classmates at Lansing Elementary School to join us for that part of the day, and it certainly did. Another helper for Dr. Demo came just in the nick of time, when Robert Kubisen arrived from Niskayuna with his parents, Steven AB '74 and Jean.

Wyeth-Ayerst recruiter **Jay Wrobel PhD '83** joined us for lunch, where several hungry undergraduates talked with alumni about the real world of chemistry. One of those alumni was **Debbie Leckband PhD '88**, who is now on the faculty at SUNY Buffalo. Debbie brought some material on their program in Chemical Engineering.

The afternoon program began with presentations by Professors Bruce Ganem and Jerry Meinwald, who described their new courses for nonmajors. Alumni

careers panelists **Joerg Pfeifer** and **Steve Mirsky**, local realtor **Elaine Quaroni**, and **Richard Haggard** PhD '65, who was up for Chimes Council meeting, came for the afternoon program. Driving up from Mount Kisco, Tom and **Jean Mischenko Condon** AB '79 brought along daughters Jordana and Melanie.

Bruce Ganem, wearing his chairman's hat, also talked about the future of Cornell Chemistry. Our undergraduate enrollment is exploding, while graduate enrollment remains steady, with about thirty new students arriving each year. Changes are occurring in undergraduate curriculum, where we've designed courses specifically for nonscientists, revised the introductory organic courses to reflect modern practice,

and are cooperating with the Education Department in training future science teachers. Research focus has shifted in recent years to include many interdisciplinary problems. Structure-based drug design now involves synthetic organic and biophysical chemists as well as x-ray crystallographers and computational scientists. Chemistry faculty in new areas of inorganic, organometallic and polymer chemistry are leading the cutting edge of research into modern ceramics, materials science, and nanofabrication. And of course, Cornell's distinguished group of theoretical chemists continues to provide the key underpinnings necessary to our fundamental understanding of chemical phenomena.

Later in the afternoon, graduate student **Wayne Schultz** provided a brief demonstration of some new molecular modeling software and hardware. As labs and office hours ended for the day, a few faculty members joined the group for a predinner reception. **Emily Ehrenfeld** AB '89, and **Tibby** and **Fred McLafferty** PhD '50 joined us for our picnic supper, which we moved INDOORS, because the wind was gusting to 25 mph by that time!

It was a long and busy day, filled, I hope, with good memories and new information for everyone to take home. We're already looking forward to reunion in June.

Alumni Notes

1931–1950

Alfred W. Bennett AB '33 missed Chemistry Day for a very good reason: he and his wife, Natalie, were on the S.S. Rotterdam to the Orient, in celebration of their fifty-fourth wedding anniversary.

Brad Bond AB '51 writes: "I was sorry to hear of Keith Shillington's death in your last newsletter. He was the lab instructor of my favorite chemistry course at Cornell—Qualitative Organic Analysis. I've not seen him since my senior year, 1951, but he was larger than life then. He used to walk into the lab singing 'All of me, why not take all of me. . . ' looking for whom he could help. He made the lab course entertaining and fun.

"The second item of bad news was J.L. Hoard's death. . . I didn't do as well in his course, nor did I have as much fun, but I learned a lot. Someone at the end of the year snatched my laboratory notebook with

all the results I was so proud of. I liked to think it ended up in some fraternity's files, and chose to take that as a compliment.

"Finally, a reminiscence about **Walter C. McCrone**. When I was a kid with a chemistry set growing up in Ithaca, I looked for freebies and advice on more exciting experiments from grown-ups at Baker Laboratory. What I remember best is an experiment recommended to produce hydrogen from zinc and hydrochloric acid designed by doctoral student **McCrone**. It was a basement success with a very satisfying pop when the hydrogen was ignited."

And a letter from **Gordon L. Evans**, AB '51, ". . . it seemed the article on Dr. **McCrone** and Prof. **Chamot** (May, p.7) was incomplete without at least a passing reference to Prof. **Clyde W. Mason**. As Professor of Chemical Microscopy and Metallography and co-author with **Chamot** of "Handbook of Chemical Microscopy," he carried on most ably after **Chamot's** retirement, greatly benefiting his students (myself included)."

1951–1970

In a letter to chairman **Bruce Ganem**, **Victor J. Hruby** PhD '65 sent word that he would miss Chemistry Day because of professional commitments. He is a Regents Professor of Chemistry at the University of Arizona.

1971–1993

Vandana (Arora) Bindra PhD '93 gave birth to a baby boy on October 1. Welcome to **Angad Bindra**.

Carole L. Moran AB '90 sent regrets for missing Chemistry Day. She is studying polymer science in the Department of Macromolecular Science and Engineering at Case Western Reserve University, under the guidance of Dr. **Hatsuo Ishida**. **Carole** worked in the labs at **Sherwin-Williams Company** in Cleveland for two years after graduating from Cornell, and there developed an interest in polymers.

Continued on the next page

Alumni notes continued

Hope College professor **Mike Silver** PhD '82 was recently honored with a Dreyfus Scholar-Fellow Award, which makes it possible for him to support a postdoctoral associate for two years. Mike chose to hire **Chris Schaller** PhD '93 who aspires to an academic career. The Scholar-Fellow Award specifically supports fellowships at four-year liberal arts colleges as part of an effort to encourage young scientists to enter academic careers. "We're keeping it in the Cornell family," said Mike, who was on campus last summer to teach Chem 103.

Kathy Liu '92, MA '93, received the first R. Brinkley Smithers Student Award for Substance Abuse Prevention for her work with Alcohol and Other Drugs Education Referral Training (ALERT). Kathy, who is from Yorktown Heights, New York, became involved in ALERT as a sophomore. She plans to teach high school science.

—In Memoriam—

Robert G. Engel AB '53, August 17, 1993.

Gerald Oster PhD '43, October 8, 1993.

Donal Tuthill Smith AB '51, July 1993.

Lost Alumni

If you know how to contact any of these people, please let us know.

Harold Aaning AB '62
Carleton Barbour AB '86
Arthur Block AB '61
Charles Bottomley PhD '61
James Buhner PhD '51

Student News

Awards and Prizes

Two Chemistry and two Materials Science and Engineering graduate students were awarded prizes for the research they presented during last spring's Polymer Outreach Symposium on campus. Dr. **Michael Jaffe**, a senior research associate at Hoechst Celanese, announced that company's decision to fund annual prizes for outstanding polymer research conducted through the Polymer Outreach Program. **Josh Golden**, a member of **Frank DiSalvo's** research group, presented a talk entitled "Organic-Inorganic Nanocomposites." **Ming Lee**, who works in the **Fréchet** research group, spoke on "Chemical Amplified Resist Materials." **Scott McNamee**, a member of **Chris Ober's** group, was principal author of two papers: "Synchrotron X-ray Study of the Alignment Kinetics of Liquid Crystalline

Siloxanes" and "Electric Field Induced Changes in the Packing Behavior of a Cyclic Siloxane Thermotropic Liquid Crystal." **Laura Norton**, who works with **Ed Kramer**, presented a talk entitled "Tailoring Polymer—Polymer Interfacial Adhesion: Effects of End-grafted Chains." Norton was also principal author on two papers entitled "Separating Surface Effects from the Bulk Thermodynamics in Isotopic Polymer Blends" and "Using Terminally Grafted Chains to Enhance Polymer—Polymer Interfacial Fracture Energy."

The American Crystallographic Association chose fifth-year graduate student **Angela Lee** for Honorable Mention among Pauling Prize winners at the association's annual meeting last June. Angela is a member of Professor **Jon Clardy's** research group.

Hao Li, a graduate student in Professor **Philips's** research group, has been awarded the Rao Prize of the International Symposium on Molecular Spectroscopy.

Brian Gruber, a junior chemistry major, was the 1993 recipient of the New York City Chemists' Club Undergraduate Award. Brian, who spent last summer at Union College working in their chemistry department through the Pew Program, will receive a \$3,000 scholarship for each of his final two years at Cornell. How many of you NYC area alumni are members of the Chemists' Club? Thank you for your support of this fine young scholar!

Endowed Chemistry Professorship



President Frank Rhodes with Mr. and Mrs. Rognlien

The Franz and Elisabeth Roessler Professorship in Chemistry was established by the Board of Trustees in June. The professorship is named after a leader in the chemical industry and his wife. Franz Roessler emigrated from his native Germany to the United States in 1882, when he was twenty-six, and married Elisabeth in 1890. With a partner, he established the Roessler and Hasslacher Chemical Co. in Perth Amboy, New Jersey. It became one of the largest chemical development plants in the country, manufacturing methyl chloride refrigerants, insecticides, fungicides, and other specialty chemicals. Mr. Roessler was president until weeks before his death on March 24, 1926. In 1930, the plant was bought by the DuPont Co. and became the H&R Chemical Works Division.

The Roesslers' ties to Cornell were established through two of their children. One of their sons, Hans Friedrich Roessler, attended Cornell from 1911 to 1913 to study chemistry. Their daughter Emmy was married to Jacob Mertens '19. Recently, another daughter, Lillie, died and her trust fund—\$1.7 million—has come to Cornell. In April, Lillie's daughter and son-in-law, Marleen and Bruce Rognlien, visited Cornell and toured the Department of Chemistry facilities. They suggested that the money from the trust fund be used to endow the Franz and Elisabeth Roessler Professorship in Chemistry.

Professor Bruce Ganem is the first occupant of this new chair. Trained in organic chemistry, he is engaged in a variety of interdisciplinary research

projects including synthesis, enzymology, and the design of new drugs. He also studies the metabolism of cells at the chemical level in order to design drugs that will aid in cancer therapy. With a colleague, he is engaged in studying the structure of cell receptors and other therapeutic targets. He said that he understood from Mr. and Mrs. Rognlien that the Roesslers were very interested in the interface between chemistry and medicine, and he observed, "It is exciting that their work is being carried on in a way through this professorship."

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from "Communique".*

Ganem to Speak at Program on Manufacturing Technology

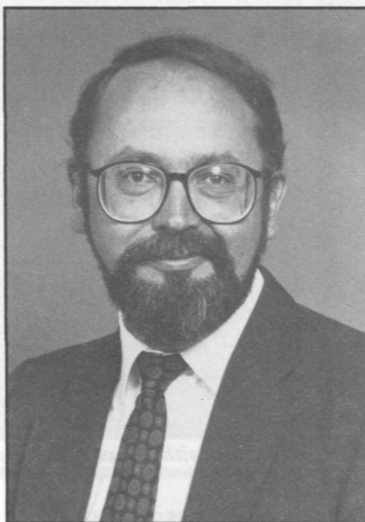
Bruce Ganem, the Franz and Elisabeth Roessler Professor of Chemistry and department chairman, will be one of several distinguished Cornell faculty members participating in an executive management symposium on new and emerging technologies this fall.

About fifty U.S. executives are expected on the Cornell campus for the week-long program, *Managing the Next Generation of Manufacturing Technology*, which is scheduled for November 29 to December 3 and cosponsored by the College of Engineering, the S. C. Johnson Graduate School of Management, and the School of Continuing Education and Summer Sessions. Senior managers in engineering and manufacturing from many of the country's larger industrial firms have been invited to attend. The program will include lectures, case studies, computer exercises, and group discussions.

The way modern drugs and pharmaceutical agents are developed and manufactured represents an important area of emerging technology, according to Professor Ganem, who will describe the impact of biotechnology and rational drug design on the next generation of pharmaceutical (and biopharmaceutical) products. As a consultant to several ethical drug and biotechnology companies, both emerging and established, Professor Ganem is in a unique position to report on how new research strategies and regulatory issues in biomedical science are likely to affect this important sector of the U.S. economy.

Miscellaneous News

Barry Carpenter recently presented the Louis Jacob Bircher Lecture at Vanderbilt University.



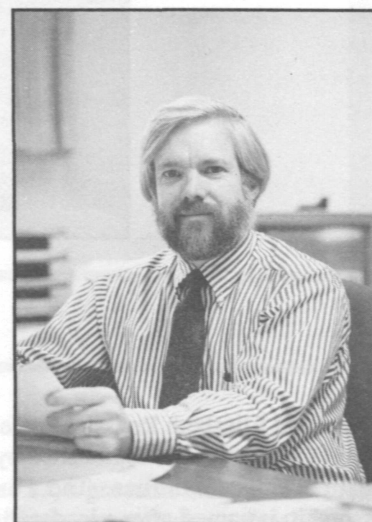
Barry Carpenter

The July/August issue of *Science Watch* ranks a paper listing M. Konishi and co-authors H. Ohkuma, T. Tsuno, T. Oki, G.D. VanDuyne, and J. Clardy as the second most cited paper in organic chemistry in 1990. In an article titled "Special Report: Organic Chemistry's Hottest Hits, 1988-91," author John Emsley notes that the paper, Crystal and Molecular Structure of Dynamicin-A: A Novel 1,5-Diyn-3-ene Antitumor Antibiotic, *J. Amer. Chem. Soc.*, 112:3715-6, 1990, was cited fifty-three times through 1991.

In the same article, a publication by R. Noyori and M. Kitamura, "Enantioselective Addition of Organometallic Reagents to Carbonyl Compounds: Chirality Transfer, Multiplication, and Amplification," *Angew. Chem.*, 30:49-69, 1991, was ranked second most cited organic chemistry paper for 1991, with fifty

citations. Noyori was the 1990 Baker Lecturer at Cornell. A book based on those lectures will be published by John Wiley and Sons later this year.

Paul Houston has received a new grant from the DOD/Army-ARO for his work on *Combustion Diagnostics for Understanding and Monitoring Chemical Weapons Incineration*.



Paul Houston

Fred McLafferty will be participating in the James L. Waters Fourth Annual Symposium Recognizing Pioneers in the Development of Analytical Instrumentation: Mass Spectrometry.

In 1990 James L. Waters, the founder of Waters Associates and prime mover in the commercialization of high performance liquid chromatography, made arrangements with the Society for Analytical Chemists of Pittsburgh to arrange annual symposia to explore the origin, development, and implementation of analytical instrumentation and methodology, with the goal of ensuring preservation of the early history associated with analytical

techniques. The symposium recognizes pioneers in the development of analytical instrumentation. Topics in previous symposia have covered gas chromatography, atomic absorption, infrared spectroscopy, and nuclear magnetic resonance.

Professor McLafferty also presented the James W. Neckers Lecture at Southern Illinois University on November 5.

Jerrold Meinwald has received a grant from the Camille and Henry Dreyfus Foundation to help develop an introductory chemistry course for students who are not committed to a major in any science. "The Language of Chemistry," as the course is known, shows how chemists study problems encountered in nature. Basic concepts in general and organic chemistry are explored in the course of examining a few interesting problems at the interface between chemistry and biology or medicine.

In the area of research, Professor Meinwald and Dr. Athula Attygalle, have brought together scientists from the Sankyo Co, Ltd. of Japan and Sri Jayewardenapura University in Sri Lanka in a cooperative agreement aimed at the discovery of new drugs and the conservation of biodiversity.

Sankyo will provide all funds for the research. The Sri Lankan group will gather and extract natural products, and

Sankyo will screen these extracts for useful medicinal activity. The Cornell share of funding will be used to upgrade analytical instrumentation in the Cornell Institute for Research in Chemical Ecology (CIRCE).

If leads from any of the natural products give rise to drugs of economic significance, royalties based on sales will be returned to Sri Lanka, earmarked for helping conserving biological resources.

Sabbatic Leaves

Barbara Baird is on a sabbatical leave that includes studies in two different locations. Until September 1993, Barbara and David Holowka were working at Los Alamos National Laboratory in New Mexico. As part of the theoretical biology and biophysics groups they learned theoretical and computational methods for evaluating the binding of ligands to cell surface immunoreceptors. From September through December, Barbara and David are at the Immunex Company in Seattle, Washington, where they will continue their work with interleukin receptors. The whole Holowka clan will return to Ithaca in January 1994.

Jon Clardy is spending the fall semester in Stuart Schreiber's laboratory at Harvard University where he will be working on cytoplasmic signal transduction. He will return to Ithaca in early January.

Frank DiSalvo is on sabbatical leave for this academic year. Frank and his wife, Barbara, will spend three months in Nantes, France, where Frank will be working at the Institute of Materials with Professor Jean Rouxel (1991 Debye Lecturer). Frank will be working on the synthesis and properties of solid state chalcogenide compounds. The DiSalvos plan to return to Ithaca for four months (he says he doesn't want to miss the winter!), departing in April for the Max Planck Institute in Stuttgart, Germany, where Frank will spend two months with Professor Arndt Simon working on solid state nitrides.

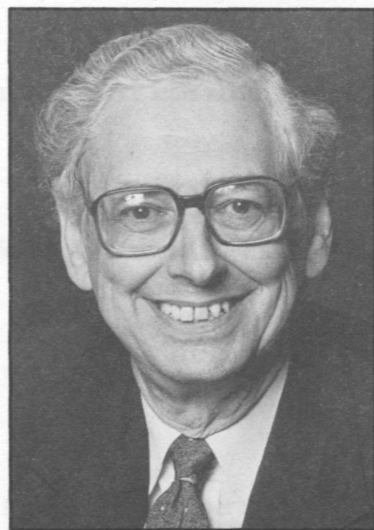
Roald Hoffmann began his sabbatical with his longest stay in Japan, five weeks at the Institute for Fundamental Chemistry in Kyoto. Roald and Eva then spent a week, their first, in Korea. From January to May they will be in the Big Apple, at New York University.



Christina Bailey

Visiting Professor

Chemistry 211 is being taught this semester by visiting professor **Christina A. Bailey**, a professor of chemistry at California Polytechnic State University in San Luis Obispo. Professor Bailey received her PhD from Purdue University. She is the author or co-author of several textbooks and study guides and has received numerous teaching awards. In 1990 she represented the State of California on the National Governors' Association Project Advisory Committee on Women and Minorities in Engineering. Professor Bailey's office is in Room 138 Baker Laboratory. She'll remain with us for the spring semester, teaching Chemistry 251.



Jerrold Meinwald

From the Chairman's Office

As many of you know from the last issue of *Cornell Chemistry*, my friend and colleague Jon Clardy has just completed a five-year term as department chair. Jon holds the distinction of being the first organic chemist ever to serve in that capacity in the history of Cornell, and has begun a much-deserved sabbatic leave. Now another experimental organic chemist writes to you from the chairman's office in Baker 122. . . Can "two in a row" herald a dynasty in the making?

Seriously, it will be difficult to match the energy and commitment Jon brought to the job, and the prospect of following in his footsteps is a daunting one. For example, under Jon's vigorous and thoughtful stewardship, the department strengthened its ranks with several strategic faculty appointments. Dotse Sogah's transition from DuPont has added breadth and depth to the field of polymer chemistry, which is currently enjoying an extraordinary renaissance at Cornell in the great tradition of Paul Flory. In a quite different area, the unique applications of NMR spectroscopy being developed by David Zax are forging important interdisciplinary links between analytical, inorganic, and solid state chemistry. With Roger Loring's promotion to tenure this past year, the department has ensured that theoretical chemistry will remain prominently represented for many years to come. In all these developments Jon may take great pride.

Overall, last year was a good one for Cornell Chemistry. We moved up from eighth to sixth place in the annual U.S. News and World Report survey of graduate fields. Despite tough times for basic science in the federal budget, the department continued its dynamic growth in research funding. Federal government

awards to the twenty-eight chemists currently on the faculty increased some 20 percent during the past year. While we will undoubtedly have to compete even harder for research support during the deficit-reducing, budget-balancing nineties, one key to continued success may lie in interdisciplinary ventures such as the Polymer Outreach Program, the Materials Science Center, and several NIH Training Grants in which many chemists participate.

Individual faculty members continue to garner well-deserved recognition in their fields. Barbara Baird was recently named as a John Simon Guggenheim Fellow. Fred McLafferty won one of NIH's prestigious MERIT Awards, which includes ten years of research support. Congratulations are also due Benjamin Widom, who was elected a member of the American Philosophical Society.

For a new chairman, the job ahead demands movement on many fronts. Among my top priorities, three stand out as most immediate. First, we need to make several new appointments to bring our faculty back to its authorized size of thirty-four. The most pressing situation exists in the areas of experimental physical and biophysical chemistry, but we also have important unmet needs in analytical and inorganic chemistry.

Second, and not completely unrelated, is the need to strengthen our department's role in other strategic campus-wide alliances. Chemistry is, after all, the "central science," and our interactions with the Biotechnology Center, CHESS, the National Nanofabrication Facility, and the Theory Center (to name just a few) are likely to profit from wide-ranging interdisciplinary activities already under way in such partnerships.

Third, and by no means last, is a much-needed curriculum reform, for both chemistry majors and nonmajors. Even as we debate the need to improve scientific literacy among nonscientists, many of us who teach the majors' sequence have discovered that the course content, laboratory program and overall teaching methodology seem disorganized and out of touch with present-day pedagogy. Fortunately, NSF has just launched a new grants program to help engineer a fundamental review of all chemistry courses, and I've appointed a departmental curriculum committee to prepare a preliminary proposal for funding of this important initiative. The time is long past due, and in the memorable words of Lee Iacocca, we must "lead, follow, or get out of the way."

The job ahead holds many challenges; however, the opportunities and rewards promise to be most gratifying. I look forward to working with all concerned alumni, faculty, staff, and students to maintain and enhance the department's great tradition of excellence. Of course, I welcome your comments and suggestions.

—Bruce Ganem

Alumni and Friends Survey Fall 1993

Please help us maintain an accurate, up-to-date mailing list by filling out this survey, tearing it out, and mailing it back to us.

Name and Address: _____

(If alumnus)

Year of Graduation

from Cornell: _____ Degree(s): _____

Faculty adviser in Chemistry: _____

Degrees received since leaving Cornell: _____

(If not alumnus)

Affiliation with Cornell Chemistry: _____

Employer: _____

Business Address: _____

Title: _____

Do you prefer to receive the *Cornell Chemistry Newsletter*

(a) at home or (b) at your business address?

By which of the following titles do you prefer to be addressed? (Please circle)

Dr. Mr. Ms. Mrs. Miss none

What do you like most about the newsletter?

What do you like least about the newsletter?

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My signature grants permission for the use of this information in
Chemistry Department publications and the Alumni Directory.

Signature

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