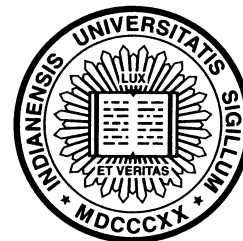


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Association of Indiana University Chemists



NEWSLETTER

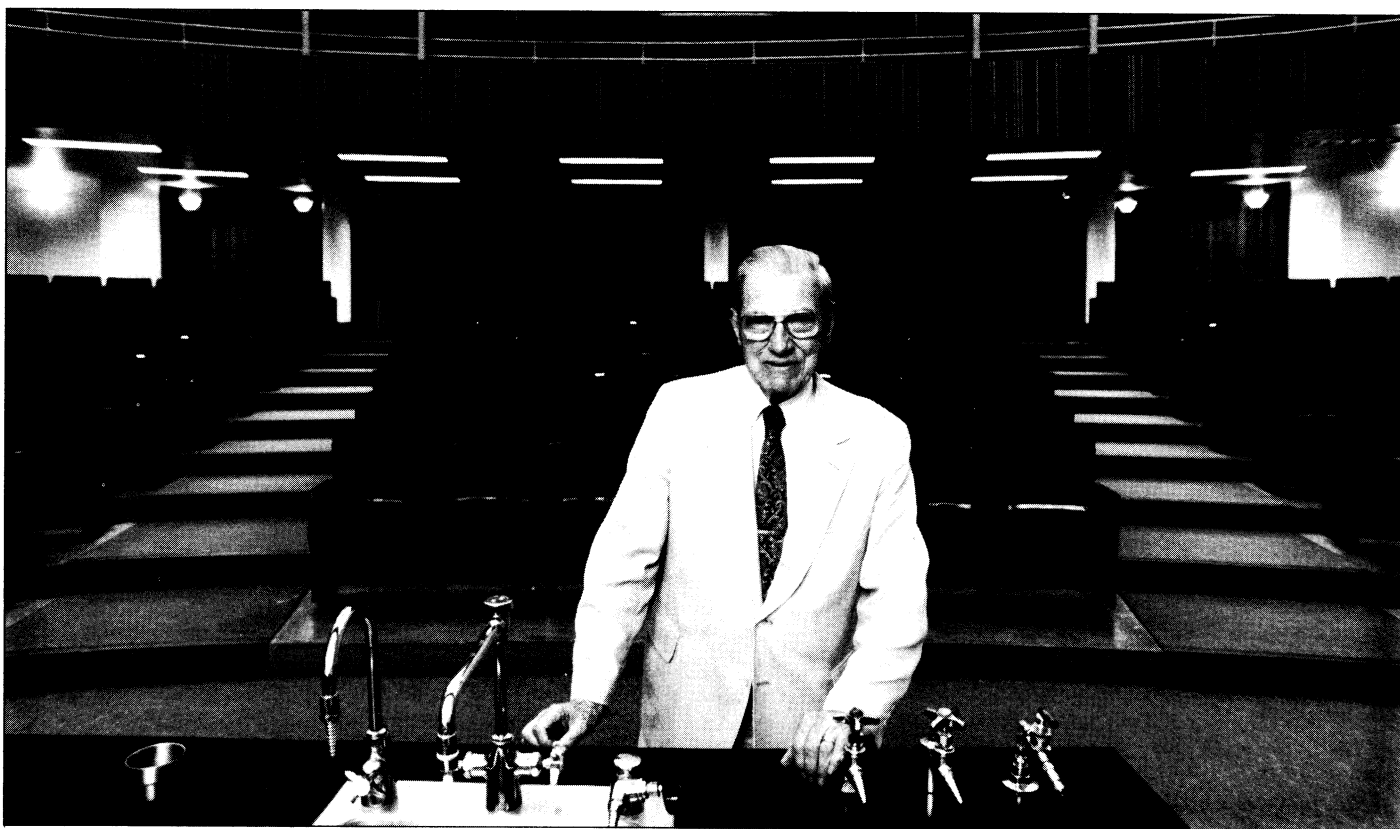


Vol. XLI, No. 1

College of Arts & Sciences Alumni Association

Winter/Spring 1996

HALL OF FAME NAMES DAY



Bloomington Herald-Times

Adding to his many scientific and civic awards, Professor Emeritus Harry G. Day has been named to the Monroe County Hall of Fame. Readers of the Bloomington Herald-Times voted to select Day from a list of prominent candidates. Day's contributions to nutrition science and dentistry are well known; less publicized have been his many community services including a seven-year stint on the Bloomington City Council. Here Day is shown in the Chemistry Building auditorium named in his honor.

NOTES FROM THE CHAIR

For those of you who could not attend the banquet and symposium on Oct. 27 and 28 honoring Jack Shiner, I am pleased to report the celebration was a huge success. It was indeed a pleasure participating in such a joyous occasion. A more detailed description is provided on page seven.

Three of our faculty have been honored since our last newsletter. **Andrew Ellington** was selected to receive a **1995-96 Indiana University Outstanding Junior Faculty Award**. These highly selective awards are given each year to faculty whose academic records of research and teaching clearly indicate

a career of excellence and significance. Part of Andy's research accomplishments involve isolation of molecules that selectively block the development of certain viruses and others that can specifically inhibit a key regulatory enzyme.

The George E. Crouch Foundation
(continued on page 12)

GRADUATE SCHOOL AT IU IN THE EARLY FIFTIES

My first — and lasting — impression of the IU campus was its sylvan beauty, set as it was in the midst of a small wood or grove, with a stream running through it (the Jordan River) in the modest hills of southern Indiana. The buildings of Indiana limestone on the campus seemed to grow right out of the ground, so much a part of the landscape were they. As a very young man, almost immediately upon graduation from high school, it was my good fortune to spend one year in the Glacier National Park, courtesy of the Civilian Conservation Corps. A city boy from New York could not help but be impressed, overwhelmed actually, by the scenic splendor of the Northern Rockies literally surrounding our camp. So it was with the IU campus, albeit of a more subdued and sedate charm. While I had noticed the hilliness of the campus at the time, I did not *feel* it as I walked, unlike on some recent visits, when the hills have given me some pause. My impression of the beauty of the campus was later fortified by visits to many other campuses, none of which, except possibly Cornell University, which is quite hilly, matches IU's.

Almost immediately after my arrival in 1951, I was assigned by the department's new chair, Harry G. Day, to a two-person laboratory on the second floor just to the east of the stairwell on the south side of the building. The lab was then occupied by a student who was completing work for his master's and was ready to leave for an industrial job in the oil industry in Northern Indiana. The first thing I noticed in the lab was a crudely hand-printed placard posted above the inside of the doorway. It read: Abandon Hope All Ye Who Enter Here(!),¹ a rather encouraging welcome, I thought. During my tenure, the sign, which I could not avoid seeing upon leaving the lab and which I never took down, was an occasional doleful reminder of the harshness of the reality of organic chemistry research.

The distinguishing feature of the lab from the very outset of my occupancy of it was simply that I was able to work in it essentially by myself. This conferred upon me not only a sense of privacy and independence, but also an obligation as caretaker of the lab. It may sound trivial, but the idea of a

laboratory almost to myself, a sanctuary of sorts, instilled right off a feeling of independence in the pursuit of research, which is the way research is supposed to be carried out. I did have lab partners — but for the most part I was alone in the lab.

One aspect of the lab that attracted my attention almost immediately was its wooden benchtop. Heretofore, I had always worked on slate benchtops. But I could perceive an advantage to the wooden benchtop in that it would lessen the possibility of breakage of glass flasks when they were set down on the bench clumsily. Later, I discovered a disadvantage: mercury running into the thin cracks, a hazard readily remedied by a liberal sprinkling of sulfur. The benchtop also included a rack, which had been assembled by a previous occupant, that served me well as a support for carrying out reactions. Another inherited feature was an electrically heated and mechanically stirred Herschberg melting point apparatus, modified after the traditional Thiele melting point tube — an absolutely vital device in the prechromatography days for assessing the purity of organic compounds.² I later was able to introduce a minor modification in the apparatus,³ which was constructed by glass-blower *par excellence* and artist in glass Earl Sexton.

The lab also contained a hood adjacent to the doorway, with one weak light bulb; one dim overhead naked bulb and one jury-rigged bulb with a green shade for the lab itself; and two desks with a lamp for each. While the lighting in the lab and the efficiency of the hood may have left something to be desired, I was in hog heaven with all that benchtop space on which to work and all that privacy. It turned out I needed all of the benchtop I could get inasmuch as I was not the best organized researcher alive. My benchtop was invariably cluttered. To this day, I brag that even though I did not faithfully label each and every flask during the course of my work, I always knew what was in all of them — round-bottoms and mainly erlenmeyers, the *sine qua non* of organic chemistry — and on each of those pieces of clay plate and other detritus I managed to accumulate. In my opinion, the lowly clay plate is a highly underrated laboratory aid for the organic chemist. Many solid compounds

are purified by simply rubbing them with a spatula on clay plate, which must act something like a chromatographic adsorbent, transforming semisolids, for example, into dry powders. The table of the cluttered, chaotic benchtop, in contrast to a neat, uncluttered, and organized benchtop, is supposed to indicate frenetic activity. There was that, but certainly not all of it was fruitful. In the march of time, my old lab has long since become a storeroom. I miss the old lab.

Another thing that impressed me was being issued a key to the library, which enabled me to use it in the off hours (evenings, Saturday afternoons, and Sunday). This confidence in a graduate student was in contrast to my previous graduate institution, where graduate students were not so entrusted.⁴ Adjacent to my lab on the way to the chair's office was another lab, this one housing four graduate students, all from E. Campaigne's group. It did not take long before I came to know them and the graduate students of all the other faculty. Campaigne's group was later moved to the fourth floor next to his office, while I remained in the second-floor lab.

I have been fortunate in having compatible lab partners, even Fred Jacoby, who would start an evaporation of acetone solutions on a steam bath at the benchtop *outside the hood and then leave the lab!* What, I wonder, would OSHA have to say about that! Fred was also the one who alerted me to something that I found hard to believe at the time, but which was true. He told me that students in the introductory chemistry laboratory in which he and I were laboratory assistants would tell him that an experiment had failed to work. Rather than try to fathom what may have gone wrong, Fred advised me, I should ask the student to perform the experiment in my presence. Sure enough, the experiment would then work as described. What happened, Fred told me, was that students had dipped into the wrong reagent bottles! I had occasion to verify his advice.

(continued on page 3)



DEPARTMENTAL NEWS

Around IU Chemistry

The fall semester's list of speakers in the Distinguished Lecture Series included Pierre Gilles de Gennes, William A. Goddard III, and Charles L. Wilkins. The subjects of the lectures were quite diverse.

Pierre Gilles de Gennes spoke about "Polymers at Interfaces" at a DuPont Distinguished Lecture. A theoretical physicist, he has done research on superconductivity, liquid crystals, colloids, and polymers. A professor at the College de France, he was awarded the Nobel Prize in physics in 1991.

A Distinguished Lecture in Computational Chemistry was given by **William A. Goddard III**, of the California Institute of Technology. His title was "Recent Progress in Methods for Atomistic Simulations: Applications to Chemical, Biological, and Solid State Materials." Goddard is the Charles and Mary Ferkel Professor of Chemistry and Applied Physics in the Beckman Institute at Cal Tech.

Charles L. Wilkins presented the Eli Lilly Distinguished Lecture on "Matrix Assisted Laser Desorption/Ionization Mass Spectrometry for Characterization of High Mass Biomolecules and Polymers." He is director of the Analytical Chemistry Facility and associate dean of physical and mathematical sciences at the University of California, Riverside.

There is a full schedule of Distinguished Lectures for the spring semester:

- Feb. 7 - **Lawrence F. Dahl**, University of Wisconsin, "New Frontiers in High-Nuclearity Transition Metal Cluster Chemistry"



de Gennes



Goddard



Wilkins

- Feb. 21 - **Richard N. Zare**, Stanford University, "Advances in Capillary Electrophoresis"

- Feb. 28 - **Jerry R. Mohrig**, Carleton College, "Teaching and Learning Chemistry — What Have We Learned?" (a Briscoe Lecture in Chemical Education)

- March 6 - **Michael A. Marletta**, University of Michigan, "Molecular Mechanisms of Signalling with Nitric Oxide"

- April 3 - **Richard J. Puddephatt**, University of Western Ontario, "Models for Platinum — Rhenium Bimetallic Catalysts"

Three Name Lectures by Distinguished Scientists will also be given:

- April 10 - **Susan Solomon**, Aeronomy Laboratory, NOAA, Boulder, Colo., "Ozone Depletion at the Ends of the Earth and Points in Between (Frank T. Gucker Lecture)"

- April 24 - **H. Gobind Khorana**, Massachusetts Institute of Technology, "Light

Transduction in Two Systems: Bacteriorhodopsin and Mammalian Rhodopsin" (Harry G. Day Lecture)

- May 8 - **Edward C. Taylor**, Princeton University, "Inhibitors of Folate — Dependent Enzymes as Antitumor Agents" (Marvin Carmack Lecture)

The department continues to enjoy significant financial support for the Distinguished Lecture Series from Dupont, Lilly, Amoco, the Quantum Chemistry Program Exchange (QCPE), Dow, and Shell.

Inorganic alumni meet

The Inorganic Chemistry Alumni Minisymposium, held on Sept. 29, brought together some of our alumni for the sake of friendship and nostalgia, but also let some of

(continued on page 4)

Alumnus reminisces

(continued from page 2)

Another lab partner was the late George Bulbenko. George's family was from the Ukraine and Germany and must have experienced some distressing circumstances during the war. George never talked about it. George stuttered. From his speech disability, I learned a valuable lesson. Early on, I understood, instinctively, I guess, never to try to finish a word over which he was laboring. George thus taught me to be a better listener, a lesson it took me a long time to learn. After we had gone our separate ways, George and I resumed our friendship several years later when, I was astonished to discover, he had lost his stutter — but not his slight Russian accent! I dared not ask him, however, about his absence of stuttering after all those years for fear of reminding him of his earlier difficulty and possibly causing a re-

lapse. I am still amazed at his recovery because I gather it is not an easy disability to treat. George was drafted, as were a number of other graduate students, in the wake of the Korean Conflict and lost two years of graduate time, returning to complete his work begun under Professor Campaigne. George and his wife, Lena, invited me to stay at their apartment when I returned to the campus for my orals.

— *Burton L. Appleton, Oct. 9, 1995*

¹ The exclamation point is mine. The quotation is presumably from Dante's *Inferno*, which according to Bartlett's *Familiar Quotations*, 13th Edition, page 75, reads, "Leave all hope, ye that enter" (Canto III, Line 9). Berthold Brecht's play *Galileo*, however, gives it (Scene 8) as it was in the lab. A previous occupant of the lab, Ted Largman, whom I did not know, was responsible for posting the Dante quotation.

² Certain individuals — and organizations like the United States Pharmacopeia (USP)

— who should know better, aver that chromatography has replaced the melting point (range) as a measure of purity of organic compounds. The USP, under pressure from the pharmaceutical industry has gone so far as to have eliminated the melting point range from an array of specifications delineating the purity of organic compounds. Chromatography has, however, only supplemented, not supplanted, thermal analysis.

³ By immersing the coiled wire heating element in the silicone oil bath, rather than wrapping the wire around the outside of the tube and covering it with asbestos, the apparatus became exceptionally sensitive to changes in the rheostat setting, thus enabling close control over the rate of heating near the melting point. I am grateful to Paul Dorain, a physical chemistry graduate student, for pointing out that the wire could be coiled permanently.

⁴ See Harry G. Day, *Development of Chemistry at Indiana University in Bloomington*, 1992, privately printed, p. 458; see also p. 525. I am indebted to this book for refreshing a sometimes clouded memory.

Departmental news

(continued from page 3)

our present students find out more about professional life after the PhD. Speakers included **Eric Lundquist**, PhD'88, Rohm & Haas; **Allen Siedle**, PhD'73, 3M; **Bill Buhro**, postdoc'85-'87, Washington University, St. Louis; and **Hsin-Tien Chiu**, PhD'86, National Chiao Tung University, Taiwan.

Margaret Cavanaugh, of the National Science Foundation, lectured on the current status of women in the profession ("Is There Life after Access" was her title!).

Ian Rothwell, postdoc'79-'81, of Purdue University, finished the symposium and then gave not his scheduled research lecture but a humorous retrospective of the career of **Malcolm Chisholm**, who was in the process of turning 50 years of age. Chisholm was presented with a rocking chair to use as he enters his post-50 career.

There followed a banquet at Le Petit Cafe, attended by alumni **Bob Tatz**, PhD'84, **Roger Cayton**, postdoc'88-'91, **Andy Ratermann**, PhD'83, **Dave Clark**, PhD'86, **Bryan Eichhorn**, PhD'87, **Joey Money**, PhD'87, **Kazi Ahmed**, PhD'85, **Elena Putilina**, PhD'95, **Ben Xue**, postdoc'91-'93, **Vince DiStasi**, PhD'93, **Gina Fry**, BS'88, **Nancy Marchant**, PhD'86, **Stephanie Chacon**, PhD'92, and **Lief Olson**, PhD'92.

Malcolm Chisholm turns 50



"Ol' rockin' chair's got 'im!"

All present — graduate students, postdocs, and faculty — exchanged stories with alumni visitors at a picnic at Lake Monroe the next day.

ACS honors 50-year members from IU

In 1995, at least two IU alumni and two retired faculty members were among the more than 600 ACS members honored by local sections and the national society for reaching 50 years of membership in the society. Those alumni known to be IU-connected are **Edward G. Howard**, PhD'48, and **Paul N. Rylander**, PhD'48. The others with IU connections are **Edward J. Bair**, who joined the chemistry faculty in 1954 and became professor emeritus in 1992, and **Lyle V. Beck**, who joined the pharmacology faculty (School of Medicine Bloomington campus) in 1961 and became professor emeritus in 1976.

One of Howard's notable recognitions came with being awarded DuPont's Lavoisier Medal in 1991. This included induction into the Lavoisier Academy, as signified on a bronze plaque on display in the DuPont Experimental Station. Rylander is noted for his extensive publication, books, patents, and other contributions regarding catalytic hydrogenation over platinum metals.

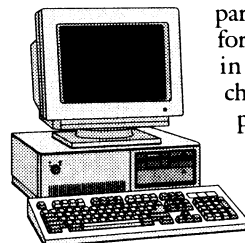
If any IU honoree in 1995 has been overlooked, we regret the omission.

First workshop on chemistry, computers, information enlivens Parents Weekend

A blustery Parents Weekend (Nov. 11) coincided with the first workshop on Chemistry, Computers, and Information, a joint effort of the departments of Chemistry and Computer Science and the School of Library and Information Science. Delivering papers at the morning session were **Andrew Ellington**, on "Combinatorial Chemistry and Its Information Needs," **Gary Wiggins**, on "Current Chemical Structure Information Systems," **Ed Robertson**, on "Trends in Data Models and Queries," and **Arijit Sengupta**, on "Prototype for Querying and Visualizing Complex Information." The workshop also featured a Beilstein CrossFire demonstration and hands-on session.

The workshop was well received by the participants. **Todd Hamilton**, a current chemistry PhD student, wrote: "It was interesting to hear from people in the different areas who are working on the next generation of chemical data bases."

The workshop was part of an ongoing effort to assess interest in enhancing the chemical information program at IU.



National Chemistry Week Open House succeeds once again

Another year old and something new to the more than 300 visitors on Nov. 4. Junior and senior high school students presented posters on the topic "Chemistry in Your Household," with prizes awarded to the first-, second- and third-place winners at both grade levels.

Visitors of all ages had the opportunity to tour a laser laboratory, an inorganic laboratory, the glassblowing shop and the Molecular Structure Center, while our younger guests participated in many hands-on activities, including "Classification of Some Mysterious Powders," "Oobleck Slime Made from Cornstarch," and "Making Ink for Quill Pens."

Two new open house traditions made their debut this year. Undergraduates from the chemistry departments' many research groups were invited to present their work at the Undergraduate Poster Presentation. Also, area Boy and Girl Scouts were invited by this year's event chair, **Matt Lynn**, to come to IU and earn their Chemistry Merit Badges.

A new feature of the Educational Resource Room was a computer with instructions on how to obtain resource material from the World Wide Web. A NCW home page was developed (<http://nickel.ucs.indiana.edu/~mlynn/ncw.html>), which contains a link to an educational resource page at (<http://nickel.ucs.indiana.edu/~heppley/ncw.html>). The page contains links to science museums, multimedia projects, and the American Chemical Society.

To top off the day, Professor **Dennis Peters** and **Alice Dobie-Galuska** presented the ever popular "Wonders of Chemistry" magic show/demonstration. Demos included iodine clocks set to the "William Tell Overture," bubbling ooze, cascading luminol, and bananas used as hammers.

Thanks to the NCW Open House Committee — **Kimberley Love**, local section chair; **Matt Lynn**, event chair; **Stacy MacDonald**, treasurer; **Hilary Eppley**, educational resources; **Dan Teff**, building tours; **Kaj Olsen** and **Sandra Tagg**, high school poster contest; **Nadine Gruhn**, merit badges; and **Sara Leisure** and **Ann Olson**, hands-on activities — for their time and effort in putting this event together.

— Kimberley Love

FACULTY NEWS

E. Campaigne gave a lecture on "H. Rider Haggard and His Books" at the Lilly Library in October. The library featured an exhibit of Haggard first editions, some of which had been contributed by Campaigne, who has been collecting Haggard works for many years.

M. Carmack is the author of a review of his work in "Fifty Years of Research in Sulfur Chemistry," published in *Sulfur Reports*, Vol. 16, pp 299-342, 1995. He has also donated his extensive collection of research samples to the DuPont Co. for the benefit of Friends of Chemistry.

Ken Caulton lectured at the ACS meetings in Anaheim and in Chicago and at a meeting on hydride compounds at Santa Fe, N.M., as well as at Iowa State University, the University of Illinois (Chicago), Rutgers, Yale, and Missouri, and the Université de Paris-Sud. Ken hosted sabbatical-leave visitor Professor **S. Komiya** (Tokyo University of Agriculture and Technology) in July-December 1995. Komiya (postdoc with Jay Kochi, 1974-76) brought with him, in series, five Japanese graduate students who worked here for seven-week visits on different phases of a collaborative research project. In spite of the challenge of such a project, a publication will result from the work. **Dan Teff**, a graduate student in Ken's group won a position in the NSF Summer Institute in Japan, in which participants study Japanese language, history, and culture while simultaneously doing research there. **Roger Kuhlman**, another graduate student in Ken's group, won a national award for his graduate research, sponsored by Union Carbide Corp.

In 1995, **Malcolm Chisholm** gave 20 invited lectures at international symposia, universities in the U.S., Germany, the U.K., and Mexico. The lectures included subjects such as molecular routes to advanced materials, the development of single site catalysts for the ring opening of cyclic ethers and esters, the synthesis and properties of one-dimen-

sional metalloorganic polymers and metallomesogens, and the reactivity of compounds with multiple bonds between metal atoms. In 1996, he takes up his appointment as associate editor of *Chemical Communications* for inorganic chemistry, in addition to maintaining his editorship of *Polyhedron*.

Andrew Ellington served as chair of the organizing committee for the ninth Indiana Molecular Biology Symposium, presented by the Indiana Institute for Molecular and Cell Biology on Oct. 12-15. The symposium dealt with "The Exploration of Sequence Space: Selecting Functional Molecules from Combinatorial Libraries."

In August, **Paul Grieco** traveled to the R.W. Johnson Pharmaceutical Research Institute, Raritan, N.J., to present a lecture on "Organic Chemistry in Polar Media." In November, he traveled to Britain to present a lecture at the Society of Chemical Industry's Symposium on Organic Synthesis in Water. While in London, he also presented lectures at the University of Cambridge and the Imperial College of Science, Technology, and Medicine.

Frank and Ruth Gurd write that all is well in Albuquerque. Their daughter, Martha, has moved there, and both Frank and Ruth are actively pursuing their music, Ruth on the piano and Frank blowing his own French horn.

Ron Hites has attracted lots of attention lately with his report on finding chlorinated organic compounds in the bark of some 200 species of trees worldwide. This is of general interest, since some of the many organochlorine compounds used as insecticides and fungicides have been shown to be carcinogenic. Hites and his graduate student, **Staci Simonich**, have collected tree bark from some 90 sites throughout the world. Although high concentrations were found in tree bark in the U.S., measurable levels were found as far away as the Orinoco rain forest of Venezuela, the Marshall Islands, Tasmania, and New

Zealand. Detectable levels were found in trees near the Arctic Circle. Hites believes global distillation may be the process moving these compounds from relatively warm atmospheres to condense at the colder latitudes. The research suggests the rate of migration is directly related to the volatility of specific compounds.

Lawrence Montgomery presented invited lectures on his organic superconductor research at several major conferences recently: the Polymeric and Organic Materials Symposium, sponsored by the Division of Polymeric Materials Science and Engineering at the Anaheim ACS meeting; the International Symposium on Crystalline Organic Metals, Superconductors, and Ferromagnets, held in Mittelberg, Austria, in August; and the Advances in Chemistry and Properties of Novel Low-Dimensional Conducting or Superconducting Solids at the Pacificchem 95 meeting in Honolulu in December. Montgomery's research is supported by the NSF and the AFOSR.

In May 1995, **Dennis Peters** attended the Electrochemical Society meeting in Reno, Nev., where his graduate student, **Christopher Dahm**, presented an invited paper. In October, Peters gave an invited paper in Cincinnati at a special symposium on electroanalytical chemistry in the Midwest, which was held as a part of the annual FACSS meeting. In December, Peters presented an invited lecture at Pacificchem 95 in Honolulu, at which meeting one of his undergraduate research students, **Adrian Butler**, also gave a paper. In March, Peters will be attending a two-day international symposium on organic electrochemistry at Fontevraud, France, as an invited speaker.

William Roush is chair of the Organic Division, as readers of *C&E News* discovered on seeing his smiling face in the Sept. 4 issue.

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Department hosts seventh Midwest Organic Solid State Chemistry Symposium in Bloomington

Since 1988, several Midwestern Universities have co-sponsored annual symposia in this broad field of organic and organometallic chemistry. Noted for the diversity of topics and for the opportunity given to graduate students to present their research, MOSSCS has steadily grown in popularity.

This year's program, co-chaired by **Mark Hollingsworth** and **Mike Montgomery**, was held on June 9 and 10 in the Harry G. Day Lecture Hall. The response to requests for presentations was overwhelming, with a regrettable requirement to limit the number of

papers that could be presented. More than 130 participants were present for the sessions. Among the many subjects discussed were crystal structure and engineering, optical properties of solids, clathrates and inclusion compounds, and solid state NMR.

Previous hosts for the symposium have been the universities of Illinois, Minnesota, Nebraska, and Purdue. Symposium sponsors included Eli Lilly and Co. and the Department of Chemistry, the College of Arts and Sciences, and the Graduate School of Indiana University.

CORRECTION:

Dennis Peters sent in this comment:

"On page 4 of the summer/fall 1995 newsletter, it was stated that **Jack Shiner** was the last regular faculty member appointed in chemistry at the rank of instructor. In fact, **Eugene Cordes**, **Lawrence (Mike) Montgomery**, and **Dennis Peters** were the last to be so appointed in 1962. The following appointments in 1964 to **George Ewing** and **Charles Parmenter** were at the assistant professor level, the same year that Cordes, Montgomery, and Peters were promoted to assistant professorships."

Thanks, Dennis!

Former faculty

An absorbing half-page article on **Fritz Arndt** (1885–1969) was published in *Chemical Heritage* (13: p. 34, Winter 1995–96). It includes a striking likeness of Arndt at the lectern in former Room CH203, where he lectured regularly during the semester in 1954 that he was visiting professor in this department. This distinguished organic chemist from Germany, and later Turkey, was the first visiting professor to serve on the chemistry faculty at IU. Readers of the AIUC newsletter would be enriched by regular attention to this twice-a-year publication of the Chemical Heritage Foundation. **Frank P. Popoff**, BA'57, MBA'59, the widely appreciated CEO of Dow Chemical, is a member of the Chemical Heritage Foundation.

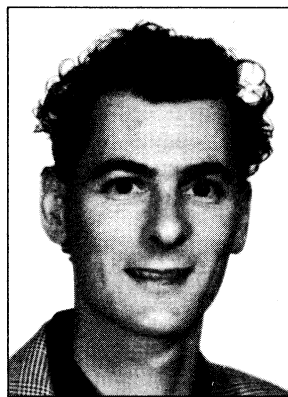
Gene Cordes, at IU'62-'78, has been appointed professor of chemistry and medicinal chemistry at the University of Michigan. After leaving IU in 1978, Cordes was employed by Merck and Co., and later by Sterling Drug after it became a division of Eastman Kodak. In addition to his research activities, Cordes is a member of numerous advisory boards. Among them are Fogarty International Center, NIH Division of Chemistry and Chemical Engineering, California Institute of Technology, and Pharmacopeia. He is also a member of the board of directors of Millennium Pharmaceuticals Inc. Cordes served as chair of the IU chemistry department from 1972 to 1978.

New faculty

Martin J. Stone joined the department as associate professor of biochemistry in 1995. He was born and raised and received BSc and MSc degrees in Auckland, New Zealand. In 1991, he earned a PhD in bio-organic chemistry at the University of Cambridge, England. He was an American Heart Association postdoctoral fellow in Peter Wright's laboratory, Scripps Research Institute, La Jolla, Calif., 1991–95.

Stone's research interests focus on the application of structural biology and biochemistry techniques in order to understand the relationships of protein structure and dynamics to function. In particular, he utilizes multidimensional and multinuclear NMR spectroscopy for determination of protein structure and dynamics. His projects include structural and biochemical analysis of chemotactic cytokines, a class of proteins that mediate inflammatory responses in a wide variety of diseases, and a relationship of protein flexibility to the binding and catalytic activity of the enzyme glyoxalase I.

David E. Clemmer grew up in southern Colorado. He attended Adams State College, where, in 1987, he obtained a BS in chemistry. In 1992, he earned a PhD in Peter



Stone



Clemmer

Armentrout's laboratory at the University of Utah. His thesis research included studies of the activation of C-H, N-H, and O-H bonds by transition metal ions in the gas phase. Following his PhD, Clemmer spent a year as a JSPS fellow at the Himeji Institute of Technology in Japan using lasers to detect and promote chemical reactions in the gas phase. He then spent two years at Northwestern University working with Martin Jarrold before joining the faculty at Indiana University as assistant professor of analytical chemistry last August.

Research in the Clemmer group is directed at understanding the three dimensional structures of macromolecular systems in the gas phase. The group is especially interested in gas-phase proteins. Gas-phase proteins can be made entirely solvent free and thus become structurally defined by intramolecular constraints. Studies of these species may help sort out the roles of intramolecular and solvent interactions important in protein folding. The group utilizes mass spectrometry, ion mobility, and molecular modeling techniques for these studies.

STAFF NEWS

The director of chemistry business, **Jim Allen**, was awarded a 1995 university-wide Staff Merit Award. These annual awards are given to IU Bloomington staff employees who demonstrate a positive attitude toward their positions and the university, exemplary work performance, and a good attendance record. Additionally, they must demonstrate special effort toward improving Indiana University for the benefit of students, faculty, staff, alumni, and other university associates. Jim has served on numerous committees outside chemistry, as well as on those dictated by his position in the department.

Stephanie Liffick joined the Ellington group as a research technician in July. She has a BS in biology and a BA in psychology from IU. **Peter Rudolph** came from Munich, Germany, to join the Ellington group as a research technician in November. He has been a technical assistant in Munich and at Phillips University at Marburg.

Vanessa Wellington has left Professor Ortoleva's office to start a graduate program at Harvard. Her replacement is **Rhonda Mikel**, who has a BS in psychology from Bethel College in Tennessee.

Chung Ping Yu has left his position as senior mass spectroscopist and has joined

Smith Kline Beecham pharmaceutical company in Pennsylvania. Yu joined the staff at IU in 1989. Recruitment is under way for his replacement.

Both **Holly Willett** and **Carole Lettelleir** retired in December. Holly began working in the department as a research secretary in 1973 and became undergraduate advisor in 1976. Carole has been the senior secretary in the freshman office since 1978. Both have witnessed much departmental growth and change during their tenure at IU.

In January, the functions of the freshman office and the undergraduate office were combined under one manager, the coordinator of instructional programs. Recruitment for this new position is under way. The name of the office has changed to instructional support office. Carole Lettelleir has been replaced by **Karel Dolnick**, who will be the senior secretary for the instructional support office. Karel has previously been the recorder for the College of Arts and Sciences and has experience in this type of office environment.

A tiny addition to the chemistry family occurred on Oct. 26 when **Lee Ann Mobley** gave birth to a daughter, Taylor Ann. Mobley is research secretary for professors Hollingsworth and Widlanski.

LIBRARY NEWS

Beilstein CrossFire has been a great hit among the chemistry graduate students and faculty. Introduced in April 1995, the data base is potentially accessible from any networked campus microcomputer via a server at the University of Wisconsin. The excitement over CrossFire was tempered by the fact that the subsidy for CAS online searching had to be eliminated on Jan. 1, 1995. This ended more than 10 years of "free" CAS online searching at IU. Linked to the IU Libraries' budget problems is a requirement to cancel another \$38,000 worth of serial subscriptions early in 1996, part of a \$208,000 cancellation target assessed on all IUB science libraries.

The Internet continues to provide new opportunities for service and teaching. We are in the process of converting the Chemistry Library gopher to a Web page at (<http://>)

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Shiner retirement symposium brings alumni, friends from afar



From left: Wallace Cleland, Richard Schowen, V.J. Shiner, Dionis Sunko, Max Wolfberg, Joe Gajewski

A symposium and gala dinner party honored V.J. Shiner Jr. on Oct. 27–28, 1995. Shiner, an internationally famous chemist in the field of deuterium isotope effects, retired last summer. More than 120 alumni, former students, and colleagues congratulated Jack and Reva, and two of their children, David and Diana, at a dinner in the Tudor Room of the Indiana Memorial Union, where master of ceremonies **Joe Gajewski** introduced a variety of speakers, who recalled some of Jack and Reva's great moments. Among the speakers were professors **Paul Grieco**, **Harry Day**, **George Ewing**, **E. Campaigne**, **Charlie Parmenter**, and **Mike Montgomery** of the IU faculty; Professor **Ernie Wenkert**, University of San Diego; **Zafra Lerman**, Columbia College, Chicago; and Professor **Kreso Humski**, University of Zagreb. The group was also addressed by Jack's former students **Mike Rapp**, PhD'68, **Carl Verbanic**, PhD'56, and **John Jewett**, postdoc'62-'64.

On the following day, the group heard a series of lectures, featuring:

- Professor **Richard L. Schowen**, University of Kansas, "V.J. Shiner and the Development of Solvent Isotope Effects in Chemistry and Biochemistry;"
- Professor **Wallace Cleland**, University of Wisconsin, "Isotope Effects on Acyl and Phosphoryl Transfer;"
- Professor **Dionis Sunko**, University of Zagreb, "The Golden Age of Isotope Effects in Retrospect, A Personal View;" and
- Professor **Max Wolfberg**, University of California, Irvine, "The Full Theoretical Evaluation of Isotopic Fractionation Factors."

Among the alumni and other colleagues attending were **Burt Appleton**, PhD'58; **Doug Armstrong**, BS'63, **Linneaus Dorman**, PhD'61, and his wife, Phae; **George Kriz**, PhD'66; **Ted Lewis**, Rice University; **Jim McChesney**, PhD'65; **Brown Murr**, PhD'61; **Tom Neumann**, PhD'82, and his wife, Melinda; **H. Robert Pinnick**, PhD'73, and his wife, Roseanne; **Bill Saunders**, Cornell University; **James Tai**, PhD'80; **Chris Vogel**, PhD'67; and **Joe Wilson**, PhD'62. Joe Gajewski chaired the event.

Library news

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www.indiana.edu/~libchem) and a gateway to chemistry Internet resources at (<http://www.indiana.edu/~cheminfo>). The introductory chemical information course, C400, was taught on the Web this fall at (<http://www.indiana.edu/~cheminfo/400home.html>).

All three one-hour chemical information

courses were recently revised and now include more structured, in-depth training in computer techniques in the two advanced courses. A proposal has been made to develop a PhD minor in chemical information science that would entail two new three-hour graduate courses. A dual master of library science/MA in chemistry program is also in the planning stages. Enriching the chemical information environment at IU during the fall semester was a two-month stay by **John**

Barnard, an expert in chemical structure searching. **Roger Beckman** spent part of his sabbatical leave at the Beilstein Institute in Frankfurt and at Cambridge, where he worked with the staff of the Cambridge Crystallographic Data Centre.

Students who recently completed the MLS-Chemical Information Specialist Program are **Marilynn Dunker**, now a science reference librarian at Auburn, and **Paul Schulwitz**.

STUDENT NEWS

Graduate

PhD recipients, with area, research professor, and first position accepted for the 1994–95 academic year, are:

Timothy P. Burgin (organic, L.K. Montgomery), University of South Carolina, Columbia, postdoc.

Gary L. Casty (organic, J.M. Stryker), University of California, Berkeley, postdoc.

Paul J. Coleman (organic, D.R. Williams), Harvard University, Cambridge, Mass., NIH Postdoctoral Fellow.

Charles A. Crawford (inorganic, G. Christou), Harvard University, Cambridge, Mass., postdoctoral fellow.

Ekaterini Dimitrou (inorganic, G. Christou), returned to Greece and works in a hospital lab.

Andrew Fong (analytical, G.M. Hieftje), Mid Continental Labs, Memphis, Tenn., research scientist.

Erin L. Foxford (physical, V.E. Viola), Microsoft Corp., Seattle, Wash., software tester.

Gennaro J. Gama (inorganic, M.H. Chisholm), Georgetown University, Washington, D.C., postdoc.

Brian D. Gilbert (physical, C.S. Parmenter), Massachusetts Institute of Technology, Cambridge, postdoc.

Paul T. Grover (organic, W.R. Roush), Dupont-Merck, Wilmington, Del., research scientist.

Scott T. Haubrich (inorganic, M.H. Chisholm), Monash University, Australia, postdoctoral fellow.

Mark J. Heintz (analytical, G.M. Hieftje), EOSHI, Piscataway, N.J., postdoc.

Paul A. Jass (organic, D.R. Williams), Bristol-Myers Squibb Pharmaceuticals, New Brunswick, N.J., research scientist.

Keith S. Kramer (inorganic, M.H. Chisholm), Humboldt Fellow at Anorganisch-Chemisches Institut der Universität, Im Neuenheimer Feld, Germany, and now at Harvard University, Cambridge, Mass., postdoc.

Zhen Lin (physical, J.P. Reilly), Columbia University, New York, postdoc.

David J. Madar (organic, W.R. Roush), California Institute of Technology, Pasadena, postdoctoral fellow.

Eric D. Moher (organic, P.A. Grieco), Eli Lilly & Co., Indianapolis, senior scientist.

David P. Myers (analytical, G.M. Hieftje), Leco Corp., St. Joseph, Mich., research scientist.

Voon S. Ong (analytical, R.A. Hites), Abbott Labs., Chicago, research scientist.

Jeffrey W. Orr (biochemistry, A.C. Newton), Massachusetts Institute of Technology, Cambridge, postdoc.

Elena F. Putilina (inorganic, M.H. Chisholm), returned to Russia.

Christian M. Rojas (organic, D.R. Williams), Massachusetts Institute of Technol-

ALUMNI NEWS

Charles H. Bibart, PhD'73, in 1995 was appointed vice president and general manager for chemical operations of the Upjohn Co. His bachelor's in chemistry from Hope College was in 1969. His major at IU was in physical chemistry under the direction of George E. Ewing. After four years at the University of Texas (Odessa), he joined Upjohn in 1977 as a research scientist, control division. After one year, he became associate director, product control. Two years later, he was named director, control development. In 1986, he became executive director, control division. Three years later, he was named vice president, drug delivery research and development. Then in 1991, Charles was named vice president, preclinical and pharmaceutical development. Thus during his first 18 years at Upjohn, he rose through six consecutive areas of responsibility to his present high position. At IU, his high recognitions included a chemistry teaching award and a National Science Foundation fellowship.

George M. Bodner, PhD'72, is continu-

ing to serve as ACS tour speaker at local section meetings during 1995–96. His topics are "Cooperative Learning: An alternative to teaching at medical universities," "Eternal Verities: How research can improve the way we teach," and "Ethics in Science." He is a veteran in speaking at local section meetings and elsewhere on such topics and others. At Purdue, he devotes much time to teaching.

Ralph A. Bradshaw, postdoc'66–'67, came into a position of high responsibility in July 1995 when he passed from vice president to president of the Federation of American Societies for Experimental Biology. The federation membership includes 45,000 selected biomedical and biological scientists in 10 scientific societies. Nine persons in chemistry at IUB are members. While in Bloomington, Ralph worked in the prolific F.R. Gurd group in protein biochemistry. As reported in the August/September FASEB newsletter: "Dr. Bradshaw has initiated discussions with several (other) societies concerning the possibility of membership, and one of the societies he approached very early in his term as president was the Protein Society." Ralph is a founding member and past president of that society. In late October, as FASEB presi-

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ogy, Cambridge, NIH postdoctoral fellow.

Richard J. Sciotti (organic, W.R. Roush), University of Notre Dame, Notre Dame, Ind., postdoc, and now at Abbott Labs, Chicago, research scientist.

James M. Vander Roest (organic, P.A. Grieco), Wyckoff Chemical Co., South Haven, Mich., research chemist.

Carol K. Wada (organic, W.R. Roush), California Institute of Technology, Pasadena, American Cancer Society postdoctoral fellow.

Jodi L. Wesemann (inorganic, M.H. Chisholm), Harvey Mudd College, Claremont, Calif., Dreyfus fellow.

Recipients of master's degrees are **Michele R. Fischer** (G.M. Hieftje), **Aaron B. Frederick** (M.H. Chisholm), **Marsha E.R. Jones** (R.A. Hites), **Tanya R. Myers** (R.A. Hites), **Leanne M. Nieu Kirk** (R.A. Hites), **Kathryn A. Perrin** (T.S. Widlanski), **Thomas R. Sattelberg** (D.R. Williams), and **Richard L. Simoneaux** (D.R. Williams).

Eric Ban received a MAT degree.

— *Pat Stapleton*

Undergraduate

This fall, **Dennis G. Peters**, Briscoe Professor of Chemistry, continued as coordinator of undergraduate studies. **Holly Willett** continued as academic counselor and manager of the Chemistry Placement Office.

In 1994–95, we graduated 134 students (139 graduated in the 1993–94 school year). Of these students, 27 received BS degrees in chemistry, 43 received BS degrees in biochemistry, and 64 received BA degrees in chemistry. Again this year, the number of BS

chemistry and BS biochemistry degrees awarded exceeded the number of BA degrees awarded. Medical and dental schools continue to attract about a third of our graduating seniors, another third find employment in industry, and the remainder go to graduate school in chemistry or related fields. Twenty-nine students participated in our Chemistry Honors Program and 44 students engaged in undergraduate research.

Chemistry student athlete **Jason C. Ehret**, track and field, received special recognition from Alpha Beta Honorary for having earned a B or better grade point average.

Twenty-three companies recruited at the Chemistry Placement Office this fall. These companies conducted a total of 293 interviews. The companies included Abbott Laboratories, Baxter Healthcare, Cargill Inc., Ciba-Geigy Corp., DowElanco, Eli Lilly & Co., General Electric Co., Great Lakes Chemical Co., Lubrizol Corp., Merck & Co. Inc., National Starch & Chemical Co., Occidental Chemical Co., PPG Industries, Pharmacoepia Inc., Procter & Gamble Co., Radian Corp., Reilly Industries, Rhone Poulenc-Rorer, Sigma Chemical Co., Stepan Chemical Co., Upjohn Co., Wyeth Ayerst Research, and Zeneca Pharmaceuticals.

Nineteen of the companies recruited PhD and postdoctoral candidates; 17 recruited MS candidates; and 13 recruited BS chemistry and biochemistry candidates. A total of 28 graduate students and 24 undergraduates used the placement service. PhD and postdoctoral-level candidates are seeing an improved job market this year, while employment opportunities for BS and MS level candidates continue to be strong.

Alumni news

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dent, he presided over a "Consensus Conference on FY 1997 Federal Funding in the Biomedical and Related Life Sciences" at the FASEB campus in Bethesda, Md. Leaders in Congress and the administration were invited to address the conference. In the newsletter (8 pages), Bradshaw's name is used 12 times, largely in connection with his meetings with members of Congress and their staffs to discuss NIH funding for its diverse biomedical and related needs. The recent reports (late 1995) indicate that Ralph Bradshaw and those around him are surely handling their high responsibilities very effectively and responsibly.

Stanley L. Burden, PhD'66, has been elected to a second term on the Foundation Committee of the Indiana Academy of Science. He is currently associate dean in the Division of Natural Science and chair of the Department of Chemistry at Taylor University. Frequently, he and one or more of his students make research presentations in the chemistry section of the IAS. His son, Daniel, is a graduate student in this department, working under the direction of G. Hieftje.

Frank Cheng, PhD'57, in 1994-95 was president of the noted and now-historic Triangle Club in Iowa City, Iowa. Membership in the organization "is open to men and women (at the University of Iowa) who hold the rank of full-time instructor or above, to administrative staff members with comparable responsibilities, and to invited leaders in Iowa City activities." The club began in 1899. It "helps to promote a high quality of university life, both intellectually and socially. It also promotes diversity." At least one or two presidents prior to Frank have been members of the Iowa chemistry faculty. Frank joined the faculty in the Department of Radiology in the School of Medicine in 1964. When he retired in 1994, he was professor of radiology. Throughout his time at Iowa, his primary focus was in radiobiology. He also belongs to the American Academy of Allergy and the Society for Nuclear Medicine. Of course, he has retained his membership in the IUAA.

Oliver Michael Colvin, BA (with highest honors)'57, in July 1995 became the director of the Duke University Comprehensive Cancer Center. This followed many years of service at Johns Hopkins University, ending notably as chief of the Division of Pharmacology and Experimental Therapeutics at the University's Oncology Center. He is a continuing member of the Scientific Advisory Board of the IU Cancer Center. Following his brilliant three-year undergraduate career (120 credit hours, including 27 in chemistry at IU) in 1961, he received his MD at Washington University. At IU, he was one of the five Outstanding Premedical Students. Also, he won the Phi Eta Sigma Freshman Chemistry Award, Phi Beta Kappa Freshman Recognition, and was named Outstanding Junior. Dr. Colvin is a native of Princeton, Ind. At IU, he had strong attachments to the

Department of Zoology, where he excelled as well as he did in chemistry. In our department, one of his contributions was in focusing helpful attention to the high importance of stimulating in teaching greater "interest in and awareness of the importance of chemistry in medicine." That was written in August 1957, a month before he began his medical studies. Then in 1995, he wrote in a letter to H.G.D., "It is my firm belief that our understanding of biology and medicine is moving progressively toward an understanding at a chemical level."

Michael P. Deganutti, BS'90, joined the U.S. Navy Reserves before graduating with a concentration in biochemistry. Continuing in the Navy, Ensign Deganutti in 1993 completed flight training, including take-offs aboard an aircraft carrier. He was awarded the coveted Wings of Gold.

R. Bruce Dunlap, PhD'68, in 1995 became chair of the Department of Chemistry and Biochemistry at the University of South Carolina, where he joined the faculty in 1971, becoming the first biochemist on the faculty. In 1990, he was named the Fred M. Weissman Palmetto Professor of Chemical Ecology. He has published more than 150 articles and presented his research results more than 130 times at regional, national, and international meetings. In 1987 at USC, he won a Russell Award for outstanding research. E.H. Cordes directed his

research program at IU. **Jerry Odom**, PhD'68, is also a USC faculty member.

Thomas R. Fink, BA'65, from 1978 to 1990 held positions of ascending responsibility with ARCO Alaska Inc. in Anchorage. By the time he left he had become a director on environmental, safety and health issues. This included responsibility for coordinating and developing response on major technical, legislative, and regulatory environmental issues. Then for the next two years, he was the general manager for environmental services in the Veco Environmental and Professional Services Co. in Anchorage. This included responsibility for business development and general management in environmental services such as oil spill cleanup and site remediation. Then, since 1992, he has been in charge of his own company: Fink Environmental Consulting Inc., Anchorage. Their focus is on problems of general environmental management consulting, clients range from nonprofit research foundations planning oil field pollution prevention research to Alaska native (ANCSA) corporations securing contracts on oilspill restoration projects. At IU, he was throughout a high-rating honors student, and in chemistry M. Carmack was his principal mentor. Finally, he is not the only Fink in Anchorage. The mayor-elect in late 1995 is also Tom Fink! So always include the initial R. in writing or speaking about this Hoosier alumnus and his family.

Orpha Dickey Ford, BS'45, and many other alumni were on campus in June 1995 for the annual alumni weekend. Of course, for Orpha this year was special because it was the golden anniversary of her class graduation. World War II caused various housing dislocations at IU. For one semester, Orpha and others gave up their dormitory rooms to help meet the needs of servicemen taking courses and assigned to such housing. During that interval, Orpha and some other students had rooms in the Indiana Memorial Union. Now Orpha's home is in Colorado Springs, Colo.

Rebecca Wolinsky Galante, BA'80, MD'84, was recently named a fellow in the American College of Physicians. She practices internal medicine in Hammond, and teaches a course in the IU Medical Center at the Northwest Campus. Like many chemistry alumni, she and her husband, **Gustavo Edwards**, MD'85, are members of the IUAA.

Lisetta M. Oelker Garrett, BS'87, MD'91, is a resident in pediatrics at Methodist Hospital in Indianapolis. She maintains membership in the IU Alumni Association.

Minas P. Georgiadis, PhD'64, and his wife, Vasso — natives of Greece — and their four children (**Gregory**, **Rosina**, **Taxiarchis**, **Katy**), plus the spouses of the latter two (**Millie** and **James Krom**, respectively) have one PhD degree and six BS degrees in chemistry, in addition to one MD degree, all from IU. Besides this, three of the children and two of the spouses completed one or more years of postdoctoral work in chemistry areas at four different universities. Presently, all the children and two spouses have busy and

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AIUC BREAKFAST HELD IN CHICAGO

A small but lively group of intrepid members overcame the difficulties of early rising and getting from one place to another in the spread-out Chicago American Chemical Society meeting to attend the AIUC Breakfast in the Gold Coast Room of the Hyatt Regency Hotel on Tuesday, Aug. 22.

Among the early-rising attendees not seen at previous recent AIUC breakfasts were **William F. "Flick" Coleman**, PhD'70, **Kathleen Cornely-Moss**, MS'84, **James Martin**, PhD'91, **Ray Ng**, BS'92, **Jody Wesemann**, PhD'94, and **Allan Blackman**, former postdoc with George Christou.

We were also pleased to have **Ted Logan**, BA'53, the first to arrive on the scene, to help get the proceedings off to a good start.

Several current graduate students in the department, including **Bjorn Borup**, **Dejian Juang**, and **Kent Renkema**, and one current postdoc, **Masamichi Oga-sawara**, were in attendance. Also present to enjoy the gourmet, continental-style Hyatt breakfast fare were current chemistry faculty members **Milos Novotny**, **Victor Viola**, and your reporter.

— Jack Shiner

ALUMNI PROFILE

Gill in vanguard of leadership, sharing

Jack M. Gill, PhD'63, following nearly a decade of imaginative and highly productive work that began at Monsanto's laboratories in St. Louis — several patents, publications, the adaptation of computers in the laboratory — became director of research and engineering in a small company. Soon Jack and those around him diversified the company into new market areas "including lab computers and high performance liquid chromatography instrumentation." Within two decades after graduating from IU, Jack, with a few scientist-partners, founded a high-tech venture firm, now identified as Vanguard Venture Partners. "The partnership concentrates on originating early stage companies on the West Coast and in other selected technology centers." The evidence in late 1995 indicates that "Vanguard ranks among the top performing venture capital firms in the United States." Jack is now a director of several Vanguard companies. Among his various "sharing of self" activities with not-for-profit institutions is his membership on the Dean's Advisory Boards of both the IU School of Business and the IU College of Arts and Sciences. M. Carmack directed Jack's doctoral research at IU. Like many chemistry graduates, Jack is a member of the IU Alumni Association.



fuels." He was born in Salem. At IU, Professor F.C. Mathers soon recognized Hottel's high potential in science and its applications. Hottel's prestigious memberships include the National Academy of Sciences, the National Academy of Engineering, and Phi Beta Kappa. Of course, he belongs to the ACS, Alpha Chi Sigma, Sigma Xi, and various other organizations. At MIT, the Hottel Development Chair exists to provide close contact for one week per year between the selected scholar and graduate students focusing on energy-related problems. Among his diverse and productive contributions is the more effective use of energy on a long-term global level. Hottel's long record in solar energy study is indeed balanced and significant.

Keith M. Howell, postdoc'60-61, and his wife, Shirley, traveled extensively in 1995, both in their native England and in Italy. This included productive genealogical trips for Keith in different parts of England. The retired couple is active in the Norfolk Industrial Archaeological Society. At IU, Keith was in the H. Shull research group.

Gregory C. Kasper, BA'90, has a residency appointment in general surgery at Good Samaritan Hospital in Cincinnati.

Charles C. Kirkpatrick, PhD'82, has become dean of Parks College (engineering, applied science, and aviation), Saint Louis University. Prior to this, he was chair in the Department of Science and Mathematics. At IU, Malcolm Chisholm was his research director. At IU in 1981, he was the recipient of the Nebergall Memorial Award. Charles and his wife, Denise, live in St. Louis.

Ted J. Logan, BA'53, was a 1995 nominee, in a field of three, for the position of director, Region II of the ACS. But he was second from the top. Good try. During approximately the first half of his professional career, he was involved in industrial basic and applied research. Following this, the focus was on technical recruiting in the Procter

& Gamble Co., where, beginning in 1991, he became technical recruiting manager. His various related activities included the co-founding and charter membership of the National PhD Recruiting Managers Organization. Through this and related channels his in-depth actions have helped to strengthen bridges among industry, academia, and different levels of government.

William G. Mays, BA'70, as reported in the *Indianapolis Recorder* in February 1995, was one of eight "African-American men who have excelled in their professions as successful entrepreneurs" in Indiana in recent years. The selection and recognition was made by the *Living Legends in Black* organization in Indiana at its fourth (1995) annual Legends in Black Awards and Recognitions Banquet. Bill is the founder and highly recognized developer of the Mays Chemical Co. in Indianapolis. He has widespread involvement in other commercial enterprises, as well as major responsibilities in various public institutions, such as membership on the board of the IU Foundation.

James D. McChesney, MA'64, PhD'65, is one of 273 AAAS members distinguished for contributions to science, who were elected as fellows in 1995. James and the other new fellows will be recognized for their high attainments in February 1996 at the AAAS annual meeting. His graduate research here was under the direction of Ernest Wenkert. A native of Mississippi, he is director of the School of Pharmacy at the University of Mississippi.

Raj N. Misra, PhD'80, has been employed in research at the Bristol-Myers-Squibb Co. at Princeton, N.J., most of the time since he left IU. Recently, he has been promoted to principal scientist in drug discovery chemistry in the anticancer area. His faculty director at IU was Stephen R. Wilson, who has left the department.

P.K. Nargund, postdoc'61-'63 in E.

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meaningful professional responsibilities. Although living in different parts of the United States and Greece, the family is closely knit. What a record! The four children are:

- **Gregory M.**, BS'80 (with honors), MD'84. Undergraduate recognitions include membership in Phi Beta Kappa, the Courson-Greeves Award, R.J. Grim Scholarship, Ira E. Lee Scholarship, Dow Chemical Co. summer research scholarship, and recognition for outstanding performance granted by the Southern Indiana Section of the ACS. Following medical school at IU, there were several years of Orthopedic Surgery Residency in Detroit. Then, with his wife, Patricia, and their three small children, the next move was to Toledo, Ohio, where he is a faculty member in the Department of Orthopaedic Surgery, Medical College of Ohio. Before graduating at IUB, his faculty mentor in undergraduate research was Stephen Wilson.

- **Rosina M.**, BS'82 (with honors). PhD from UC Berkeley and a postdoc at U. of Oregon at Eugene, now a member of the chemistry faculty at George Washington U in Washington, D.C. At IU, recognitions include a R.J. Grim Scholarship and two years of undergraduate research in chemistry under the direction of J. Bartmess.

- **Taxiarchis M.**, BS'83. PhD'89 UC Los Angeles, postdoc for two years at Columbia U. At IU, he held a Dow Chemical Co. summer undergraduate '82 research scholarship. During much of his time here, he gave strong leadership to Alpha Chi Sigma. By early '93, he had accepted a position at Ortho McNeil Pharmaceuticals, a division of Johnson & Johnson. In 1984, he married Millie, a fellow graduate student in chemistry at UCLA. After both had received their degrees in chemistry at UCLA, Millie went with Tax to Columbia U., where she also had a postdoc appointment. About the time that he began his chemical work at Ortho McNeil, Millie joined the chemistry faculty at Rutgers U., where her research is in X-ray crystallography.

- **Katy E.**, BS'86. PhD'93 UC Santa Cruz, postdoc in physical organic chemistry at Cornell. At IU, her awards included an Ira E. Lee Scholarship. Her extensive undergraduate research was in pharmacology and toxicology (School of Medicine at Bloomington) under the direction of C. Oday. At IUB, she met and later married **James Krom**, BS'86 (PhD UC Santa Cruz). He also went to Cornell U. for postdoc work in chemistry. She is an associate member of the American Biophysical Society.

- **Jerrold J. Harter**, BA'84, MD'88, is now a psychiatrist at the South Central Community Mental Health Center in Bloomington. He is a member of the IUAA.

- **Hoyt C. Hottel**, BA'22, professor emeritus at MIT, received the prestigious John Fritz Medal "for seminal contributions to the theoretical understanding and to engineering applications in the fields of combustion, radiant heat transfer, and nonconventional

Campaigne's group, has recently informed Campaigne that all of P.K.'s immediate family are now in the U.S. This includes his son, **Ravi P. Nargund**, PhD'88. Ravi's doctoral research — *The Total Synthesis of a Highly Oxygenated Quassinoid*, (±)-Klaineanone — was under the direction of P. Grieco. It is of special interest that Ravi was born in Bloomington in 1963 while his father and mother lived here.

Elsa Proehl Paulsen, MA'45, in 1995 became a member of the International Society for Pediatric and Adolescent Diabetes. Soon thereafter, she attended the society's 1995 workshop on autoimmune diseases related to insulin-dependent diabetes mellitus (IDDM), held in Edinburgh, Scotland. She presented and discussed some of her group's work relating nephropathy, that may occur in IDDM, to the autoimmune process striking the renin cells of the endocrine juxtaglomerular body.

Frank P. Popoff, BA'57, MBA'59, ScD'88, is frequently in news reports from his alma mater. For example in the Nov. 17, 1995, issue of the *IU Newspaper*, it was reported that he was "honored at the annual College of Arts and Sciences awards dinner Oct. 20." In further elaboration, it was pointed out that he serves "on the Deans' Advisory Committee in the School of Business..." (and that) he was also instrumental in Dow's gift of \$260,000 to the IUB Chemistry department for a computer laboratory instruction facility that allows interactive simulations of laboratory experiments."

John R. Rumble Jr., PhD'76, is now acting chief of the Standard Reference Data Program in the National Institute of Standards and Technology, at Gaithersburg, Md. During 1993-94, he gave considerable time in the Office of Science and Technology Policy at the White House, helping to prepare President Clinton's address on "Science in the National Interest." At IU, John's work was in chemical physics. Stanley Hagstrom directed his research.

The late **William J. Sparks**, BA'26, MA'29, was selected as one of 550 highly notable scientists or science-related workers, during the past approximately 500 years, whose contributions significantly affected the welfare of mankind. A few others listed who at some time had connections with IU include Salvador Luria, H.J. Muller, and J.D. Watson. At least 22 of those active during a portion of the 20th century have given one or more lectures in this department. Each selectee was designated in a special wall calendar called *Milestones in Chemistry 1996*, the location for each being on the page and in the space appropriate for the month of birth along with the birth year and citation. For Sparks, it was on the February page, in the space for the 26th day: "b1905 William J. Sparks; innovator & developer of synthetic rubber." The widely recognized Chemical Heritage Foundation, division of Milestones in Chemistry, produced and distributes the calendar: 315 Chestnut Street, Philadelphia, PA 19106.

Bradley M. Stone, PhD'84, spent a part of the '94-'95 year on sabbatical leave in

chemical physics research at Imperial College in London. In 1993, he became associate professor in the Department of Chemistry at San Jose State University in California. C.S. Parmenter directed his graduate work in chemical physics at IU.

Margaret Rose Walsh, BA'93, in 1995 was appointed to the position of senior consultant at the firm of Kendall & Davis in Bloomington. Since graduating she has worked as a physician recruiter.

Robert L. Waters, BA(with Honors and High Distinction in Chemistry)'62, since 1988, has been medical director at Rancho Los Amigos Medical Center and, since 1979, has continued as director at the Regional Spinal Cord Injury Care System of Southern California. He is principal or co-principal investigator of research grants exceeding \$320 million in the fields of functional surgery, spinal cord injury, rehabilitation, bio-engineering, and injury prevention. During the past year or two, his leadership contributions in orthopedic surgery have taken on international importance, through lecturing and consultation in Germany, Argentina, Brazil, Chile, Singapore, Tunisia, Switzerland, and England. His hospital in Southern California is now perhaps the most advanced facility for spinal injury treatment and rehabilitation in this country. And like many IU chemistry graduates, he is a member of the IUAA.

Neil A. Weikart, BA'72, JD(magna cum laude)'75, in 1995, was announced to have been selected by 2,000 Minnesota attorneys as one of Minnesota's "Leading Attorneys." Those selected represented fewer than five percent of practicing attorneys in that state. He is a partner in a law firm at Minneapolis.

Dale F. Wolfgram, MAT'69, was in 1995 "accepted into NOAA's Teacher at Sea Program." This involved serving "aboard *Albatross IV* out of Woods Hole for two weeks in July." During the first 28 years, he has been an outstanding chemistry teacher in Grand Blanc, Mich. He keeps in touch with IU.

NECROLOGY

Irving S. Sigal, BS(with Distinction/Departmental Honors)'73, died in 1988, along with 269 other victims, when their airliner crashed in Scotland, owing to a despicable act of terrorism. In 1995, he was lovingly memorialized by his widow Catherine T. Sigal through the establishment of the Irving Sigal Postdoctoral Fellowship Program to support basic research in which Irving and his close colleagues had made stimulating and basic advances. As stated in part in a full-page editorial in *C&EN* on Nov. 6 1995: "Fellow researchers praise Sigal for his many contributions to understanding the chemistry and biology of proteins. Sigal was one of the pioneers in introducing site-directed mutagenesis into enzymology and in demonstrating the vital importance of the process in understanding the mechanism of enzyme action." This fellowship, to be administered by the American Chemical Society, is the first

action of this kind by the ACS. H.R. Mahler directed the honors research (C409) that clearly marked the beginning of Irving's fertile career in science. Concerning this beginning, on May 3, 1973, Mahler wrote in part "Irving Sigal is one of the brightest and most gifted undergraduates I have had the good fortune to direct in undergraduate (or any other) research." Irving was born and raised in Indianapolis, where his late father had been a director of research at Eli Lilly & Co. His graduate education was at Harvard. This was followed by postdoctoral work, at Cal Tech, then at MIT, and briefly back at Harvard. His industrial research was first at the DuPont Co. Then, in 1983, he joined the Merck Sharp & Dohme Research Laboratories. Less than a year before his death, he was promoted to senior director of molecular biology. The deeply perceptive In Memoriam soon after the tragedy [Proteins: Structure, Function, and Genetics 6:217-221 (1989)] was prepared by his widow, and his brother, Elliott Sigal, M.D. The accompanying bibliography fully cites 60 scientific publications — all in major journals — in which Irving was a co-author; in 15 of which he was the senior author. All appeared between 1978 and 1989! As stated in this most informative but succinct tribute: "Irving's most recent project involved AIDS research. When challenged to develop a pharmacological approach to AIDS therapy, he developed a program to target the HIV protease. Irving reasoned that Merck's experience with protease inhibitors combined with sufficient knowledge of the biochemical and biological actions of the HIV protease would lead to effective therapy." A full page article on the nature and purpose of the special fellowship is in the Nov. 6, 1995, (p.9) issue of *C&EN*.

John F. Christman, MA'46, died on Oct. 11, 1995, in Touro Hospital in New Orleans. He was professor emeritus of biochemistry at Loyola University in New Orleans. From 1950 to 1966, he was on the faculty of biochemistry at Louisiana State University. During 1964-65, he was an associate program director at the National Science Foundation. He had received his bachelor's degree in chemistry from the University of Notre Dame and PhD from the University of Tennessee. He was born and raised in Terre Haute. The survivors include his wife, Neale, one son, a daughter, and one brother. One of his notable activities between 1979 and 1995 was being an ACS local section tour speaker. During 16 years, he traveled on 35 tour circuits and delivered a total of 171 lectures. In 1993, the Southern Indiana Section of the ACS was his host in this department. Since 1978, his biographical sketch has been included in *Who's Who in America*.

• We also have learned of the following deaths, all reported in the *Hexagon of Alpha Chi Sigma*, Fall 1995, but we have no further information:

Darwin E. Badertscher, BA'29;
Foster L. Pepper, BA'31; and
Lindley R. Ricketts, BA'25.

— Harry Day and Elizabeth Greene

VISITORS ALWAYS WELCOME AT OUR ALUMNI OFFICE

Among those of you who visited the department during the past year and dropped in to the alumni office to sign our guest book were **Al Borders**, PhD'37; **Thomas Fink**, BA'65; **George Kriz**, PhD'66; **Guenther** and **Christine Kuehl**, postdoc'57-'59; **William LeSuer**, PhD'48; **John**, MA'34, and **Dorothy McKenzie**; **John Meisenheimer**, PhD'63; **Michael**, PhD'68, and **Sharon Rapp**; and **J. Edmund White**, PhD'58.

A number of other alumni visited the department but either did not come to the office or else found neither of us present. I hope we may see you on your next visit.

— *Harry Day and
Elizabeth Greene*

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**IU trustee ballots will be
mailed in May. Please vote
and return your ballot by
June 29.**

Notes from the chair

(continued from page 1)

awarded **Distinguished Professor Charles Parmenter the 1996 Earle K. Plyler Prize**. The prize recognizes Parmenter's novel developments in the electronic fluorescence spectroscopy of polyatomic molecules.

Distinguished Professor Norman Pace will receive the **1996 Procter & Gamble Award in Applied and Environmental Microbiology** given by the American Society for Microbiology (ASM). Professor Pace was selected to receive the award for his leadership in the development and application of molecular phylogenetic methods in the study of natural microbial ecosystems. He will deliver the Procter & Gamble Award Lecture at the ASM General Meeting in New Orleans later this year. Congratulations to all!

On the faculty recruiting front, the department has continued its high level of activity. Joining us this year are two new assistant professors, David Clemmer an analytical chemist and Martin Stone a biochemist (see page 6). Our recruiting efforts continue this year, with hopes of hiring junior faculty mem-

bers in analytical, biochemistry, inorganic, and organic chemistry. We are likewise recruiting at the senior level in physical chemistry.

A new report issued in September by the National Research Council of the National Academy of Sciences offers the most comprehensive assessments of the nation's research-doctorate programs to date. The study examines the quality and effectiveness of more than 3,600 doctoral programs in 41 fields at 274 universities across the United States. I am happy to report that the Department of Chemistry at Indiana University ranks in the top 10th percentile moving from 18th to 16th place since the last report in 1982.

Following tradition, the department will host a complimentary **AIUC breakfast** at the New Orleans ACS meeting on Tuesday, March 26, 1996, at 7:30 a.m., Sheraton Hotel, Bonnie Burn Room. Please make reservations with me by March 4, at (812) 855-6239.

I want to thank all of you who, through your generous donations, supported the Department of Chemistry during 1995. Your enthusiastic support continues to amaze me!

— *Paul A. Grieco*