ACS 1994 Award Winners

Following are vignettes of the second group of 10 recipients of awards administered by the American Chemical Society. Winners will receive their awards during the spring 1994 207th ACS national meeting in San Diego, with the exception of the Cope Medalist and the Cope Scholars, who will receive their awards at the fall 1994 208th ACS national meeting in Washington, D.C., at the Arthur C. Cope Symposium. The awards in San Diego will be presented at a banquet on Tuesday, March 15, 1994. Vignettes of the remaining awardees will appear in successive October and November issues of C&EN.

ACS Award in the Chemistry of Materials

sponsored by Du Pont Co.

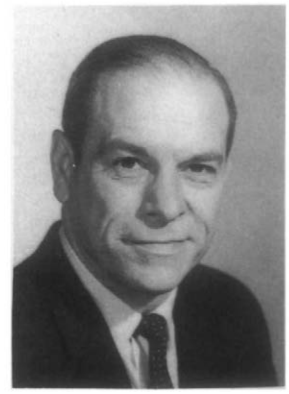
ADAM HELLER, Ernest Cockrell Senior Chair in Engineering at the University of Texas, Austin, is best known for his pioneering work in electrochemistry. His achievements have been in the area of liquid lasers, of which he built some of the first; lithium thionyl chloride batteries, that are manufactured worldwide; electrochemical solar cells; biosensors based on electrical "wiring" of redox enzymes; and, most recently, sunlight-initiated oxidative elimination of marine oil spills and organic pollutants from water.

Heller's research on the materials chemistry of semiconductor liquid contacts resulted in his building the first efficient electrochemical solar cells. In experiments in the early 1980s, Heller increased to 10% the efficiency of both electrical power and hydrogen generating electrochemical solar cells.

The award winner established a novel interface between enzymatics and microelectronics by electronically connecting oxidation-reduction centers of enzymes to current-collecting metal electrodes. In 1987, he diverted to circuits electrons and electron-vacancies that transiently reside in catalytic centers of redox enzymes, and thus directly transduced the turnover of enzymes into electron currents.

He has "wired" a number of redox enzymes, and, in collaboration with physicians in the U.S. and in Europe, is evaluating the use of wired enzyme glucose electrodes, which have no leachable components, in diabetes maintenance. His recent work in materials chemistry of semiconductor liquid junctions is aimed at the cleanup of marine oil spills. Heller showed that crude oil spills can be dissolved in a sunlight-assisted oxidation process using titanium dioxide-coated cenospheres. Cenospheres are aluminosilicate-based ceramic bubbles that are formed during the combustion of coal in electric power generating plants. They are also a major component of the fly ash that is now electrostatically collected in all power plants in industrialized countries.

Heller



Herbert

Heller received an M.Sc. degree in chemistry and physics in 1957, and a Ph.D. degree in chemistry in 1961 from Hebrew University, Jerusalem.

James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public

Known to several generations of children and their parents as "Mr. Wizard," **DON HERBERT** is still working on new projects to bring science into the hearts and minds of television viewing audiences.

Having received a B.S. degree in 1940 with a double major in science and drama from the University of Wisconsin, La Crosse, Herbert began his career as a science persona in 1951 with the NBC series "Watch Mr. Wizard." During this half-hour program, which Herbert created, he and a young assistant entertained viewers by using common household items to explore the magic and mystery of science in everyday living. By the time the show went off the air in 1965, the award winner had conducted 4500 science demonstrations.

From 1952 to 1960, he also served as the progress reporter for "General Electric Theatre," which was hosted by Ronald Reagan and broadcast on Sunday nights. In this capacity, Herbert appeared in three-minute reports detailing scientific and technological advances made by researchers at GE.

In 1965 and 1966, Herbert was the executive producer, cowriter, and host of "Experiment," a half-hour public television series for adults that featured the contributions of individual scientists and which was funded by the National Science Foundation and the Alfred P. Sloan Foundation. About this program, *Time* magazine said, "The children's loss is the adults' gain. Each program is a masterpiece."

Another NSF grant allowed Herbert to write and produce 50 30-second "Mr. Wizard Close-Ups" for children. These were shown Satuday mornings on NBC in 1971–72 and were characterized by an *L.A. Times* media critic as "diamonds in the rough of Saturday morning television."

The 1980s brought "How About"—a series of 90-second news reports on developments in science and technology—to 140 TV stations. And from 1984 to 1991, "Mr. Wizard's World" provided young viewers of cable TV's Nickelodeon channel with an updated version of the original black-and-white "Watch Mr. Wizard" in a magazine show format.

From his experience and expertise in

Hirschmann

Hulet

combining science teaching with entertaining, Herbert has for many years given demonstrations during school assembly programs and has spun-off a series of videocassettes for teachers. Throughout his career "Mr. Wizard" has appeared as a guest on both late-night and early-morning talk shows.

Herbert is also the author of four books, including "Mr. Wizard's Experiments for Young Scientists," published by Doubleday in 1959 and updated in 1990. Among the long list of awards Herbert has received are four journalism awards from the American Association for the Advancement of Science and the National Education Association's Award for Advancement of Learning through Broadcasting.

A new project in the works for Herbert is "Teacher-to-Teacher with Mr. Wizard," an NSF-Nickelodeon project highlighting exemplary elementary teachers who use hands-on, inquiry-based techniques to teach science. The program will be telecast as part of "Cable in the Classroom" for schools to record and reproduce without restriction.

Alfred Burger Award in Medicinal Chemistry

sponsored by SmithKline Beecham

RALPH F. HIRSCHMANN, research professor of chemistry at the University of Pennsylvania, has had a profound impact on chemical research in the biomedical sciences and on both academic and industrial chemistry. He is particularly distinguished for his research in two diverse areas of natural products chemistry—steroids and peptides. All of his research in the biomedical sciences has mechanistic organic chemistry as its basis.

One of his most notable achievements was the codirection, with Robert G. Denkewalter, of the first successful solution synthesis of an enzyme (ribonuclease), which was announced simultaneously with a solid-phase synthesis by Merrifield in January 1969. These chemical syntheses of active enzymes were achieved at a time when it was still widely believed that the total chemical synthesis of an enzyme without use of a template was not feasible. These two syntheses have been regarded as major milestones in both synthetic organic chemistry and in biochemistry.

In the early 1950s, Hirschmann's discovery of the "C-nor D-homo rearrangement" of a steroid enabled him to suggest a biosynthetic pathway that related the veratrum alkaloids, which had just been chemically characterized, to the much better known steroids. At least as important was that in this publication in 1952, Hirschmann explicitly described the rearrangement to be under stereoelectronic control. Another important discovery was the first recognition, jointly with N. L. Wendler, that the direction of enolization of steroid ketones is not solely determined by the degree of substitution. Equally unorthodox was his demonstration with M. Tishler that the 3-keto-4-pregnene structure of steroids is not required for anti-inflammatory activity, in that the [3,2-c] steroid pyrazoles are the most potent glucocorticoids known.

In the 1960s, Hirschmann introduced a novel rational bioorganic concept into medicinal chemistry. He showed that the therapeutic index of a biologically active compound can be improved by drug latentiation; this involved the enzymatic conversion of an inactive prodrug into the active drug preferentially at the desired site in vivo.

In the 1970s, Hirschmann's associates, under the direction of D. F. Veber, established the bioactive conformation of somatostatin by a combination of molecular modeling, sophisticated intuition, and creative synthesis. Using this information as a springboard, a cyclic hexapeptide was designed that was completely stable to proteases and therefore possessed a longer biological half-life and that was also more potent than the tetradecapeptide somatostatin.

Hirschmann received an A.B. degree in 1943 from Oberlin College and M.A. and Ph.D. degrees from the University of Wisconsin, Madison, in 1948 and 1950, respectively, under the direction of W. S. Johnson. He joined Merck Research Laboratories in 1950 as a process chemist and advanced steadily until his promotion to senior vice president of basic research in 1978. In 1984, he became senior vice president for chemistry. After retiring from Merck in 1987, at the mandatory age of 65, Hirschmann was appointed research professor of chemistry at the University of Pennsylvania, where he initiated collaborative research with A. B. Smith III and K. C. Nicolaou in 1988 in the areas of peptidomimetics with novel scaffolding, in peptide synthesis, and—in collaboration with Smith and Stephen J. Benkovic at Pennsylvania State University—in antibody research. He holds a concurrent appointment as University Professor of Biomedical Research at the Medical University of South Carolina, Charleston.

Awards that he has received include an honorary D.Sc. degree from Oberlin College, the Alan E. Pierce Award of the American Peptide Society, the Board of Directors Scientific Award from Merck & Co., the Nichols Medal of the ACS New York Section, a Chemical Pioneer Award of the American Institute of Chemists, and the 1993 gold medal of the Max Bergmann Kreis. The latter award is given for outstanding research in peptide chemistry carried out during the past five years. He will receive the Carothers Award of the ACS Delaware Section in 1994. He is a member of the American Academy of Arts & Sciences.

ACS Award for Nuclear Chemistry

Throughout a career that began in the early 1950s, **E. KENNETH HULET** has researched the chemical and physical properties of the actinide and transactinide elements—the heaviest in the periodic table. His work as leader of the heavy elements group at Lawrence Livermore National Laboratory from 1966 until his retirement in 1991 enabled him to accomplish "firsts" in nuclear science that few scientists are able to match.

The discovery of bimodal symmetric spontaneous fission in the heaviest elements by Hulet and coworkers came from studies of a series of nuclides in the regions of atomic numbers 100–104 and mass numbers 258–260. Although the low-energy and spontaneous fission of most heavy elements produces an asymmetric division of masses, in the 1970s Hulet found a small proportion of symmetric fission in the neutron-induced fission of ^{257}Fm and in the spontaneous fission of ^{255}Fm. Further investigation of the fission properties of five very heavy isotopes revealed that the energies of the fragments formed two distinct distributions, an unexpected and startling result.

In 1974, Hulet was the codiscoverer, with Albert Ghiorso, of element 106. Contributing to this discovery, however, was Hulet's work with Ronald Lougheed to produce a californium-249 target with extreme chemical purity. Their publication of this accomplishment provided proof for discovery of the element in that the researchers found evidence for the alpha decay of ^{263}106 through both direct observation and time-correlated decay of the daughter and granddaughter alpha activities.

Throughout more than four decades, the award winner and his collaborators discovered 26 new transplutonium isotopes, including several each for the elements curium, berkelium, and californium, and continuing with several among einsteinium, fermium, mendelevium, and nobelium with neutron numbers 156 to 159. Hulet has been a leader in the experimental search for superheavy elements (atomic number greater than 110), but so far these studies have shown that a barrier exists beyond which evidence for heavier nuclides has not yet been found.

A wealth of research by Hulet on the chemistry of the actinide elements as well as on the separation chemistry of this group has led to his publication of nearly 200 papers, book chapters, and more on the subject.

Hulet received a B.S. degree in chemistry from Stanford University in 1949 and a Ph.D. degree in nuclear chemistry from the University of California, Berkeley, in 1953. Among his professional affiliations are memberships in the American Chemical Society, the American Physical Society, and the American Association for the Advancement of Science.

ACS Award for Creative Invention

sponsored by Corporation Associates

HOWARD W. JACOBSON, Du Pont fellow and first to hold the title of distinguished scientist at that company, has made contributions as an inventor that, according to a colleague, "had major impact across a broad front of Du Pont technologies." Jacobson's focus now is on research and development of fine-particle technology directed at new products with unique surface properties. Since joining Du Pont in 1955, however, his research has included extractive metallurgy, catalysis, photochromic pigments, dispersion, and superconductors.

Although other scientists may hold more patents than Jacobson's 31, few have possessed his ability for translating invention into innovation. The products to which he has contributed are widely used to enhance the performance of papers, plastics, and pigments.

To take one example, Jacobson's recent work on titanium dioxide surfaces modified to promote electron/hole recombination represents an innovative advance that has led to an improvement in the photostability of these pigments in many applications. Titanium dioxide became widely used as the preferred white pigment in coatings, plastics, and papers. These pigments are environmentally benign, have a high refractive index, and can be produced at the optimum particle size for maximum opacification. However, TiO_2 is a semiconductor and becomes photoactive when exposed to ultraviolet light. To counterattack these photodegradation reactions, Jacobson was able to develop a commercially practical method of preparing a dense alumina coating as an alternative to silica. Then, he further improved the photostability by discovering a method to stop formation of the hydroperoxide radicals by interfering with the primary electron-transfer process. The resulting pigments have proven exceptional for color stabilization in systems that have significant exposure to UV light, such as paper laminates in rigid polymer matrices used in countertops, cabinets, and surfaces with exterior exposure.

Known for his almost uncanny chemical intuition, Jacobson has been generous with his time and advice to professional scientists, technicians, and students alike.

The award winner received B.S. (1949) and M.S. (1950) degrees in chemistry from the University of North Dakota, and a Ph.D. degree in physical/inorganic chemistry (1953) from Pennsylvania State University. He is the 1992 recipient of the Lavoisier Medal for Technical Achievement, Du Pont's highest award, and is a member of the American Chemical Society and the American Ceramic Society.

Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry

sponsored by Extrel Mass Spectrometry

The discovery of the ability to measure association and solvation equilibria for ion molecules in the gas phase using mass spectroscopy by University of Alberta emeritus professor **PAUL KEBARLE** has revolutionized the qualitative and quantitative thinking of chemists who deal with ions. This discovery has also made it possible to examine in detail each of the steps of solvation and show how they influence chemistry of the system.

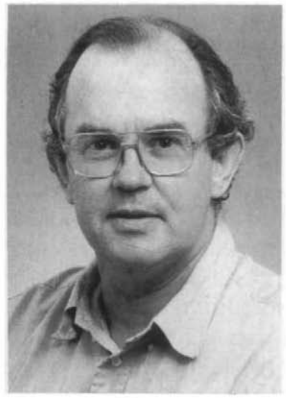
Ion-molecule equilibria hold a central role in the gas phase, similar to that of ionic equilibria in solution. They provide data on acidities, basicities, oxidation-reduction, and ion-ligand and ion-solvent molecular interactions. These data find application in analytical mass spectrometry and in ionospheric and atmopsheric reactions involving ions. Comparisons of the gas phase equilibrium data with those in solution increases the understanding of the reactions in solution that are more complex because of solvent participation.

Kebarle's most recent work on multiply charged ions generated by electrospray has led to a novel method for the production and study of multiply charged transition-metal ion-ligand complexes in the gas phase, a technique of importance in ion-cluster studies.

He received his first degree in honors chemistry from the Eidgenössische Technische Hochschule, Zurich, in 1952, and a Ph.D. degree in physical chemistry from the University of British Columbia in 1955. After completing a postdoctoral fellowship at the chemistry

Jacobson

Kebarle



Kent

division of the National Research Council of Canada from 1955 to 1958, he joined the department of chemistry, University of Alberta, as an assistant professor. He was promoted to associate professor in 1962 and became a full professor in 1967.

Kebarle has taught at all levels during the 30 years he has been at Alberta. He remains an active invited lecturer, most recently giving talks at the annual meeting of the American Society for Mass Spectroscopy and the annual meeting of the Canadian Chemical Society.

Among the awards and honors he has received are the Chemical Institute of Canada Medal in 1986 and the Kaplin Award in Excellence in Research, University of Alberta, 1989. He is also a fellow of the Royal Society of Canada and of the Chemical Institute of Canada.

Ralph F. Hirschmann Award in Peptide Chemistry

sponsored by Merck Research Laboratories

The focus of **STEPHEN B. H. KENT**'s research is to understand the structural origins of the activities of proteins, particularly enzymes. To that end, Kent, a chemist at Scripps Research Institute, La Jolla, Calif., has set out to develop and make use of a broad spectrum of novel protein chemistry techniques. The most important of these has been the application of total chemical synthesis to the study of enzyme action.

Kent received a B.Sc. degree in chemistry and biochemistry from Victoria University, Wellington, New Zealand, in 1968; an M.Sc. degree from Massey University, New Zealand, in 1970; and a Ph.D. degree in organic chemistry from the University of California, Berkeley, in 1974. Before joining Scripps in 1991, he held positions at Rockefeller University, New York City (1974–1981); Molecular Genetics, Minnesota (1982); California Institute of Technology (1983–1989); and Bond University, Queensland, Australia (1989–90). He has more than 100 publications and 15 patents and patent applications to his credit.

Kent's investigations into the fundamentals of solid-phase peptide synthesis have led to improved methodologies for the stepwise synthesis of peptide chains. He has pioneered the use of synthetic protein chemistry for studying a number of important biological systems, most notably the HIV-1 (the AIDS virus) viral proteinase.

In 1989, Kent's research group achieved the total chemical synthesis of the HIV-1 protease. The enzyme prepared by total chemical synthesis was used (by Maria Miller and Alexander Wlodawer at the National Cancer Institute, Frederick, Md.) in the first 3-D molecular structure determination of an AIDS virus component. The protease is the focus of intense drug design activity worldwide, and the structural data from the chemically synthesized enzyme and its complexes have become the reference standard in the field.

More recently, Kent's laboratory has developed the use of chemoselective ligation of large unprotected synthetic peptide segments. This work has led to a new class of analogs—backbone engineered proteins—for the study of structure-function relationships. The laboratory has also used total chemical synthesis to prepare and study the properties of mirror-image enzyme molecules, that is, enzymatically active proteins made up entirely of nonnatural D-amino acids.

"Kent's body of work is without parallel in the study of cutting-edge biological systems by means of novel synthetic and analytical chemistry," says a colleague. "His research accomplishments have already had a major impact on the application of the chemical synthesis approach to the study of proteins, and have laid the groundwork for major developments in this field in the future."

Peter Debye Award in Physical Chemistry

sponsored by Du Pont Co.

WILLIAM KLEMPERER, Harvard University professor, has made important and unique contributions to molecular beam resonance, infrared and microwave spectroscopy, and the characterization of weakly bound molecular complexes. His design and construction of a method and apparatus for measuring molecular constants of small molecules yielded a wealth of data for tests of quantum mechanical theories of chemical bonding.

For example, his observation of the transition associated with the reorientation of angular momentum of lithium hydride yielded dipole moments of several individual vibrational states. In addition, he and his students have established values of quadrupole coupling constants, spin rotation constants, scalar and tensor components of the electron-coupled spin-spin interaction constants, anisotropy of molecular polarizability, and electric quadrupole moments.

Klemperer's extraordinary intuition is shown by his conjecture that the radio-astronomical spectral line, called "Xogen" for want of identification, was due to formyl cation in interstellar clouds. This idea stimulated both theorists (Fritz Schaefer) and experimentalists (Claude Woods) and fostered the field of ion-molecule reactions as the means of forming molecules in interstellar molecular clouds. This work led to the discovery of the isomer COH^+ both in the laboratory and in interstellar regions.

For the past 20 years, Klemperer's major research has been in the nature of weakly bound complexes. His pioneering work has given rise to a thriving field, and his determination of structures of molecular complexes with large-amplitude motions has been key in the continuing development of understanding of intermolecular interactions. His work with hydrogen fluoride dimer, which displays rapid tunneling between equivalent configurations, has yielded particularly detailed information. Klemperer's insight has allowed many of these systems to be understood in chemical terms and has thus enlarged the concept of the chemical bond to include these "weak" or "long" bonds.

Klemperer received an A.B. degree in 1950 from Harvard University and a Ph.D. degree in 1954 from the University of California, Berkeley, where he studied with George Pimentel. He joined the faculty at Harvard University as an instructor in analytical chemistry in 1954.

Klemperer is a member of the National Academy of Sciences, the American Academy of Arts & Sciences, the American Chemical Society, and the American Physical Society. He has received the Wetherill Medal from the Franklin Institute, the Irving Langmuir Award in Chemical Physics from ACS, the Earle K. Plyler Award from the American Physical Society, the Bomem Michelson Award from the Coblentz Society, and the Distinguished Service Medal from the National Science Foundation.

E. V. Murphree Award in Industrial & Engineering Chemistry

sponsored by Exxon Research & Engineering Co. and Exxon Chemical Co.

Practical and insightful solutions, each with a sound theoretical basis, have been the hallmark of **EDWIN N. LIGHTFOOT**'s scientific career, which to date has spanned four decades. He worked in the areas of bioseparations and bioreactor engineering long before they were recognized as disciplines. Lightfoot is Hilldale Professor in the department of chemical engineering at the University of Wisconsin, Madison.

He is a recognized leader in the field of separation methods. Lightfoot's investigations of membrane transport, multicomponent diffusion, and chromatography are enabling the development of new technology for low-cost biochemical separations. His far-sighted classification of separation strategies in a three-dimensional diagram has suggested new approaches that are being investigated by Lightfoot and other researchers. The award winner's classic research on mass transfer at mobile interfaces has provided a solid kinematical framework for understanding fluid-fluid contacting operations.

Klemperer

Lightfoot

Lippard

In the late 1980s, Lightfoot led a team of industrial and academic scientists in research to develop a process for converting cheese-industry waste into biodegradable polymers. A $20 million chemical plant using this process went on stream in eastern Wisconsin in July 1992.

Lightfoot's work is guided by his desire to develop tools and insights that are directly of use to biotechnologists, medical doctors, and patients. He also encourages students to be involved in selecting and shaping their research projects. For example, one of Lightfoot's current research areas is the application of systems analysis to metabolic regulation, and work on control strategies for insulin therapy was being conducted by one of his students who is diabetic.

He received B.S. and Ph.D degrees in chemical engineering from Cornell University in 1947 and 1951, respectively. Lightfoot was employed by Chas. Pfizer & Co., Brooklyn, N.Y., until 1953, when he joined the faculty of the University of Wisconsin. He has coauthored four books and more than 170 research publications, and he is credited with three patents.

Lightfoot received the 1991 Warren K. Lewis Award, given by the American Institute of Chemical Engineers; the Benjamin Smith Reynolds Teaching Award of the University of Wisconsin College of Engineering; and the Hilldale Career Award of the University of Wisconsin. He is a fellow of the American Academy of Arts & Sciences and a founding fellow of the American Institute of Medical & Biological Engineers.

ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry

sponsored by Mallinckrodt Specialty Chemicals Co.

STEPHEN J. LIPPARD, Arthur Amos Noyes Professor of Chemistry at Massachusetts Institute of Technology, has made extraordinary contributions to the field of inorganic chemistry. Lippard's interests are broad, and over the years he has made several major breakthroughs. He designed and synthesized the first metallointercalation reagents, a class of platinum and palladium complexes with polypyridine ligands, that bind double-stranded DNA by insertion between the base pairs and unwind the helix. He solved the structure of platinum blues.

He discovered how the antitumor cisplatin drug, *cis*-diamminedichloroplatinum(II), binds to and alters the structure of double-stranded DNA. More recently, he identified the proteins involved in the recognition of double-stranded DNA modified by the cisplatin.

Lippard also synthesized and characterized multinuclear metal-containing molecules that are the models for biochemical systems such as hemerythrin. He made an important contribution to the problem of how the iron-containing core of ferritin might be constructed by an ingenious synthetic approach to well-defined model systems. This work also led to a series of polynuclear iron compounds including a circular decamer known as the "molecular ferric wheel."

In further displays of his versatility, he discovered and worked out the mechanism of reductive coupling of carbon monoxide and isocyanide ligands using early transition-metal complexes.

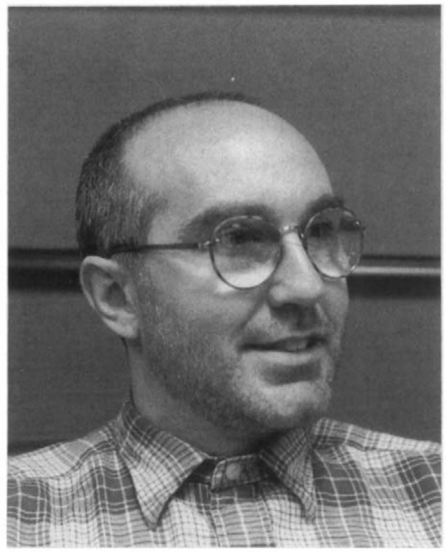
In addition, Lippard has trained 55 Ph.D. students and more than that number of postdoctoral associates. He was editor of *Progress in Inorganic Chemistry* for 25 years, was founding associate editor for the subfield of bioinorganic chemistry in the journal *Inorganic Chemistry*, and is associate editor of the *Journal of the American Chemical Society*.

Lippard received a B.A. degree from Haverford College, Haverford, Pa., in 1962 and a Ph.D. degree from Massachusetts Institute of Technology in 1965. Among his awards are an Alexander von Humboldt Senior U.S. Scientist Award, the ACS Award in Inorganic Chemistry, the Remson Award of the ACS Maryland Section, and the Henry J. Albert Award of the International Precious Metals Institute. He has been elected a fellow of the American Association for the Advancement of Science, the National Academy of Sciences, and the National Institute of Medicine. □

Schreiber to receive 1993 Baekeland Award

The ACS North Jersey Section will present the 25th Leo Hendrik Baekeland Award to Stuart L. Schreiber at a symposium to be held Oct. 25 at Schering Plough Research Institute, Kenilworth, N.J. The award, which consists of a gold medal and $1000, is presented in odd-numbered years to an American chemist under 40 years of age in recognition of accomplishments in pure or industrial chemistry. Schreiber, who is a professor of chemistry at Harvard University, will receive the award for pioneering research that has created a bridge between the fields of organic chemistry and cell biology.

Schreiber's research program reveals the potential of multidisciplinary research. He has effectively integrated synthetic organic chemistry; protein biochemistry; and molecular, structural, and cellular biology. His current research is focused on protein-ligand interactions relevant to the intracellular signal transduction pathways that regulate the cell cycle. He is attempting not only to define the molecular events that constitute these signaling pathways, but also to manipulate these pathways in a manner that could allow for the regulated synthesis of therapeutic proteins in human gene therapy.



Schreiber received a B.A. degree from the University of Virginia in 1977 and a Ph.D. degree in synthetic organic chemistry from Harvard University in 1981. He has received a number of honors and awards including the ICI Pharmaceuticals Award for Excellence in Chemistry (1986), an ACS Arthur C. Cope Scholar Award (1986), the ACS Award in Pure Chemistry (1989), the Thieme-IUPAC Award in Synthetic Organic Chemistry (1992), the Ciba-Geigy Drew Award for Biomedical Research (with Richard Lerner and Peter Schultz) (1992), and the Eli Lilly Award in Biological Chemistry (1993). He will receive the ACS Award for Creative Work in Synthetic Organic Chemistry in 1994. □

1994 Technician of the Year nominations

Nominations are sought for the 1994 National Technician of the Year Award. Cosponsored by the ACS Committee on Technician Activities and the Division of Chemical Technicians (probationary), the award is intended to publicize and reward the contributions and achievements of technicians as a vital part of the scientific community. The award consists of a plaque and travel expenses for the award recipient and spouse or guest to the 207th ACS national meeting to be held March 13–18, 1994, in San Diego.

The award will be presented to a chemical technician who has demonstrated a high degree of professionalism. Nominees will be judged on the basis of job and communication skills, publications and presentations, professional activities, reliability, safety and housekeeping, relationship with colleagues, and community activities.

Technicians working in any chemistry-based field in industry, research, academe, government, or other areas are eligible. Nominees need not be members or affiliates of ACS. Send letters of nomination by Nov. 1 to Theresa Brown, Hercules Inc., Research Center, 500 Hercules Rd., Wilmington, Del. 19808-1599. Nominations, including seconding letters, must not exceed six pages and must include the work address of the nominee. For more information, contact Brown at (302) 995-3257 or fax (302) 995-4117. □

Call for nominations for 1994 Unilever Award

The Polymer Education Committee (POLYED) of the ACS divisions of Polymer Chemistry and of Polymeric Materials: Science & Engineering is soliciting nominations for the Unilever Award for Outstanding Graduate Research in Polymer Chemistry. The award recognizes a graduate student or a recent graduate who has completed an outstanding Ph.D. thesis in research accepted by a U.S. or Canadian university during the three-year period prior to Jan. 1, 1994.

Nominees will be judged on the basis of their contribution to the thesis research, the quality and level of innovation demonstrated, and the impact of the research on the science of synthetic polymers or biopolymers. The award will be presented at the ACS national meeting next August in Washington, D.C., and consists of a $2000 prize, a plaque, and travel expenses to the meeting. In addition, the research adviser will be recognized in all publications about the award and during the award presentation.

Nominations must be made by the thesis supervisor or others familiar with the nominee's work. The nominating document must include the nominee's biography, a synopsis of the work, and a letter of nomination from the thesis adviser. Relevant publications based on the thesis work may be submitted. Supporting documents and testimonials may also be included. Send five copies of the nomination, postmarked no later than Jan. 15, 1994, to J. A. Moore, Department of Chemistry, Rensselaer Polytechnic Institute, Troy, N.Y. 12180-3590. □