



PUGET SOUND CHEMIST

BULLETIN OF THE PUGET SOUND SECTION OF THE AMERICAN CHEMICAL SOCIETY

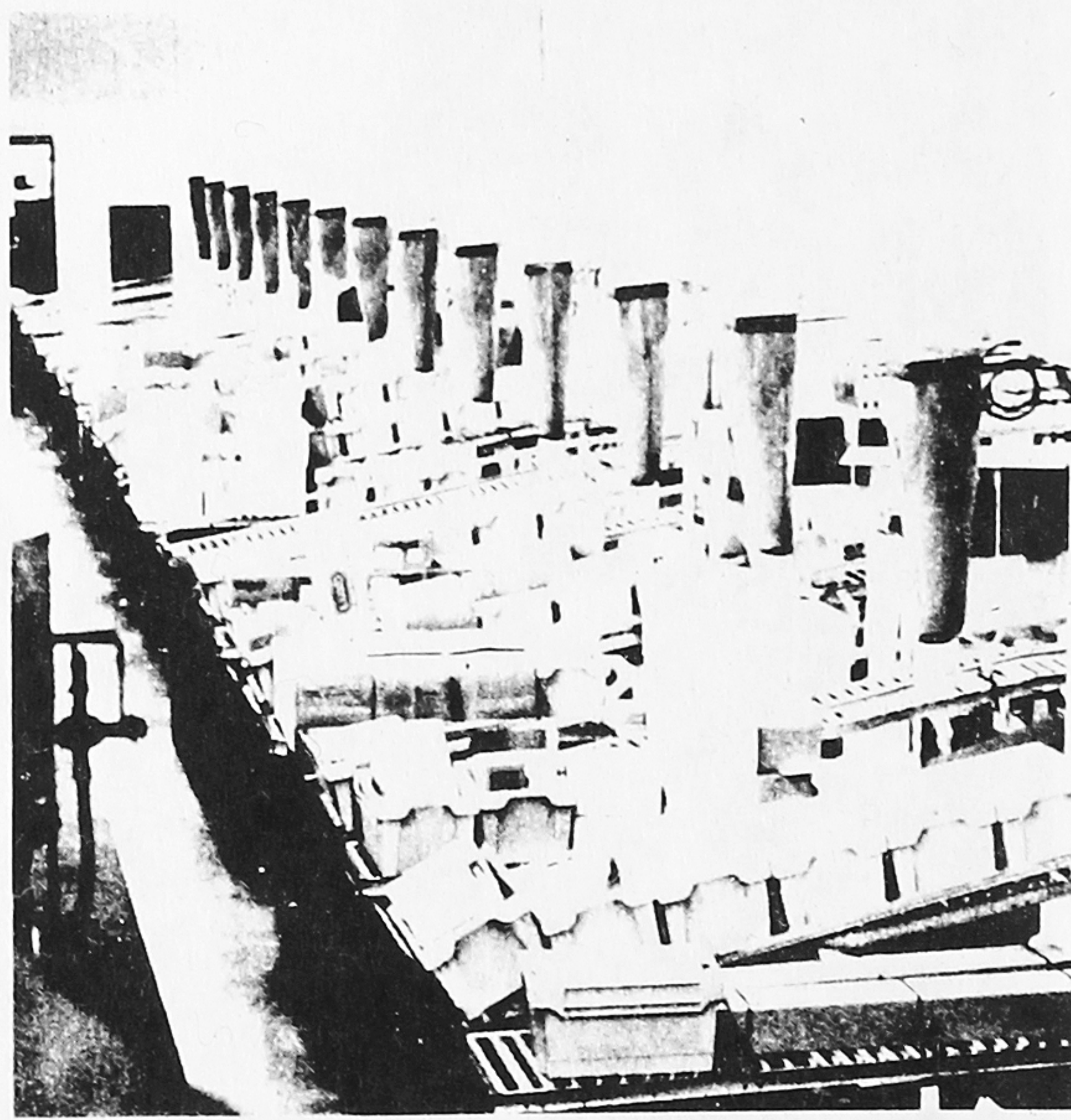
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On the cover: Dr. Derek Davenport, Purdue University, will be the ACS Tour Speaker for the October meeting of the Puget Sound Section of the American Chemical Society (see related articles in this issue).

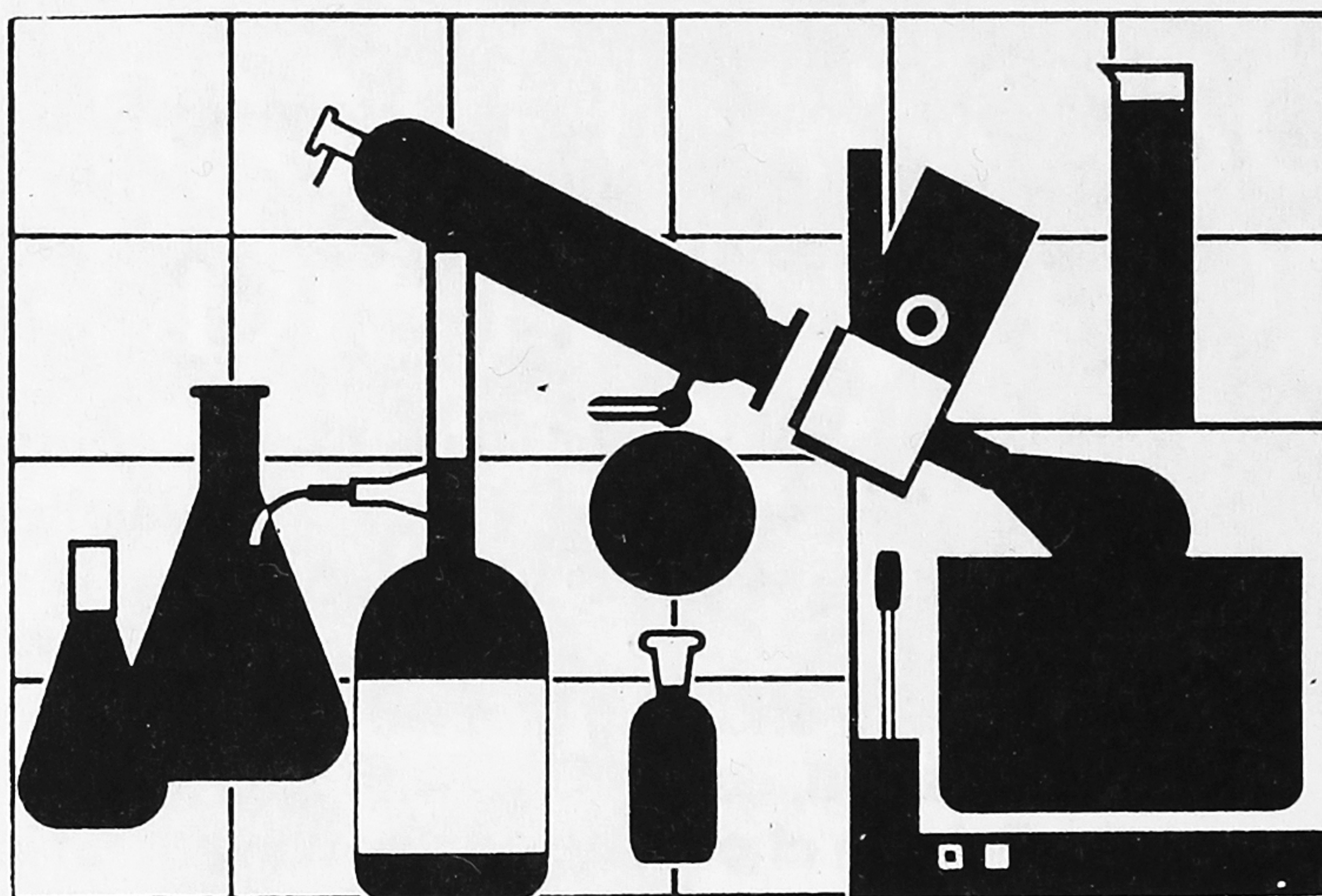
OCTOBER MEETING

- DATE:** Friday, October 25, 1991
- SPEAKER:** Dr. Derek Davenport
Purdue University
ACS Tour Speaker
- TOPIC:** Early Vindications of the Rights of Women Chemists
- LOCATION:** Pacific Luthern University
SOCIAL HOUR—Faculty House
DINNER—University Center, Regency Room
PROGRAM—University Center, Scandinavian Center
Please feel free to join us for the program even if you don't attend dinner.
- SCHEDULE:** 5:30 pm - no-host social hour, Faculty House
6:30 pm - dinner, Regency Room, University Center
8:00 pm - program, Scandinavian Room, University Center
- DINNER:** Salmon, wild and long-grained rice, fresh green beans, spinach salad, cucumbers with sour cream, whole wheat rolls, Belgian chocolate or fresh cream cheesecake
- COST:** \$13, includes tax and gratuity
- NOTE:** When you reserve your dinner, you have an obligation to pay. Once the food is ordered, the section is billed even if you do not show up.
- DIRECTIONS:** To the Faculty House: Take I-5 southbound Exit 127, south of downtown Tacoma. This exit is marked Puyallup/ Mt. Rainier and Highway 512. Go east on 512 to second exit (Parkland/Mt. Rainier) which will put you on Pacific Avenue. Go south on Pacific approximately 1.5 miles to 121st St. Turn right on 121st St. and go west 2.5 blocks. The Faculty House is at 715 121st St.
To University Center: Follow above directions, but go south on Pacific Avenue to Garfield St. Turn right on Garfield (west). Go 2 blocks to the campus (Park Ave.). The University Center is at 122nd and Park, one block south of Garfield. Park in any available lot. For further help of directions contact Sherri Tonn at 535-7552.
- RESERVATIONS:** Make reservations by NOON, Monday, October 21, 1991.
Seattle: 543-1610
Tacoma: 535-7530
Bellingham: 676-3070
- OFFER TO STUDENTS:** The Section will pay half the cost of dinner for the first ten students (graduate, undergraduate, or high school) who call 543-1610.

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DEREK A. DAVENPORT TO ADDRESS OCTOBER MEETING OF PUGET SOUND SECTION

Derek A. Davenport, ACS Tour Speaker, was born in Leicester, England, and obtained his early education there and in London. He received the B.Sc. and Ph.D. degrees from the University of London, the latter under Professors C. K. Ingold and E. D. Hughes at University College. In 1950 he came to the U.S. for what he expected to be a short stay. Not for the last time he was badly mistaken. After a year at Reed College in Portland, Oregon, and two years at The Ohio State University in Columbus, he joined Purdue University, where he is now Professor of Chemistry. In 1962-63 he spent a year in India helping in the establishment of the Indian Institute of Technology at Kanpur. A brief visit to Nigeria in 1964 was followed by sabbatical leave at the University of California, Santa Cruz in 1968. From January 1970 to June 1971 he returned to the Indian Institute of Technology, by then a flourishing institution. In the spring of 1977 he was a Visiting Professor at the University of Wisconsin in Madison and in 1984 spent a sabbatical leave at the Center for History of Chemistry on the campus of the University of Pennsylvania.

His primary interests are in undergraduate and beginning graduate teaching and he was for many years head of Purdue's very large general chemistry program. He writes sparingly and lectures unsparingly on chemical education, the history of chemistry, and various mixtures of the two. From 1966 to 1979 he served on the Editorial Board of the *Journal of Chemical Education* and from 1979 to 1983 on its Board of Publication. In 1983 he became Technical Review Coordinator of, and regular contributor to, CHEM MATTERS, a new American Chemical Society publication for high school students of chemistry. During 1979 he was Chairman of the Division of Chemical Education and in 1985 served as Chairman of the Division of History of Chemistry. He presently sits on the Advisory Boards of CHEMCOM, of Project SERAPHIM, and of the Center for History of Chemistry.

In 1970 he won the Standard Oil Undergraduate Teaching Award, in 1973 the Visiting Scientist Award of the Western Connecticut Section of the ACS, and in 1974 the Manufacturing Chemists Association Award in Chemical Education. In March 1976 he was a Visiting Scholar of the University Center in Virginia and later that year was chosen Lecturer-of-the-Year by the Indiana Academy of Sciences. In 1981 he received the American Chemical Society Award in Chemical Education. Later that same year he shared Purdue's Frank D. Martin Award, thus becoming an official prophet even in his own country. With his receipt of the 1985 James Flack Norris Award he completed the traversal of the four national awards in chemical education.

ABSTRACT EARLY VINDICATIONS OF THE RIGHTS OF WOMAN CHEMISTS

Madame Lavoisier-Rumford (1758-1836), Mrs. Jane Marcet (1769-1858) and Mrs. Margaret Fulhame (17??-18??) were, in their various ways, all active in the early history of chemistry. Marie Anne Pierrette Paulze was the daughter of Jacques Paulze, a prominent member of the *Ferme-Generale*, an association which was to contribute to the sentencing of her future husband, Antoine Lavoisier, to the guillotine and to her being widowed and orphaned on the same May morning in 1794. As translator, amanuensis and illustrator she was a close chemical associate of her husband, and after his death she fought hard, even bitterly, to restore his fortune and to sustain his memory. Her later marriage to Count Rumford was one of the most glorious mismatches in marital history. Mrs. Jane Marcet, the wife of a wealthy physician/chemist, was a less formidable, even reticent, woman but her "Conversations in Chemistry," first published anonymously, was one of the most influential of early chemistry texts. The work was intended to introduce chemistry "to the female sex, whose education is seldom calculated to prepare their minds for abstract ideas, or scientific language." Little has survived of Mrs. Fulhame save her book, "An Essay on Combustion with a View to a New Art of Dying and Painting wherein the Phlogistic and Antiphlogistic Hypotheses are Proved Erroneous," published in London in 1794 and reprinted in Philadelphia in 1810. Married to a physician, "possibly Irish," she was a Dissenter, a friend of Joseph Priestley, an early feminist, and, quite probably, an acquaintance of Mary Wollstonecraft. An attempt will be made to describe and contrast the contributions and styles of these strikingly different woman chemists.

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ACS HONORS ITS 50-YEAR MEMBERS

Ten members of the Puget Sound Section of the ACS have been recognized by the section and the national society this year for their 50 years of membership. Each member is to receive a certificate, a special pin, and a permanent badge good for free registration at all national and regional meetings. They will be honored at a local section meeting later this year. They are:

Maurice Bender
Bellevue, WA
Robert L. Clark
Sequim, WA
Albert G. Cozza
Shelton, WA
Arnold Gahler
Manchester, WA
William Gleim
Seattle, WA

Richard W. Gormly
Vaughn, WA
P. Erwin Malson
Anacortes
Vincent S. Podbielancik
Bellevue, WA
J. Norton Wilson
Richmond, BC
Peter N. Zopolis
Shelton, Wa

AMERICAN ASSOCIATION OF CLINICAL CHEMISTRY PACIFIC NORTHWEST SECTION 1992 OFFICERS AND 1991-92 SEMINAR PROGRAM ANNOUNCED

The PNW Section election was held last spring for officers to assume office January 1992. Elected were Chair: Elizabeth Teng Leary, Chair-Elect: Ginny Haver, Treasurer: Jim Baldwin, Secretary: Kathy Dugaw, and Delegate: Bert Toivola.

Mark Your Calendars!!

PNW-AACC Seminar Program for 1991-1992

Day & Date	Speaker and Topic
Tues. 10/08/91	Dr. Michael Brawer, Urology Service, VAMC, and Dr. Robert Vasella, Urology Dept., Univ. of WA: PSA update—clinical utility as a screening test; issues of test sensitivity
Thurs. 11/21/91	Dr. Gillian Lockitch, British Columbia Children's Hospital, Vancouver, BC, and Dr. Bob Labbe, Dept. Lab Med, Univ. of WA: Lead toxicity and methods of analysis
2nd week 12/91	Dr. Michael Hauer: Boehringer Mannheim Diagnostics: Utility of streptavidin/biotin in immunoassays
Wed. 01/15/92	Dr. Greg Clark, SmithKline Beecham Clinical Laboratories: Treatment and recidivism for drug abuse
Wed. 02/26/92	Dr. Irena King, Fred Hutchinson Cancer Research Center: Assessment of RBC Fatty acids in myocardial injury
Thurs. 03/19/92	Dr. William Hamlin, Laboratory of Pathology: CAP response to CLIA '88
Fri. 04/11/92	Dr. Richard Stephens, Battelle NW Labs, Richland, WA: Electromagnetic fields and markers of tissue injury
Fri. 05/ /92	Clinical Chemistry Potpourri: An update from our local section members on items of interest

This is a tentative schedule (i.e., some dates/speakers to be confirmed) of events that will occur in the Seattle area in the coming year. We hope this will aid members in their advance planning and we look forward to seeing as many of you as possible! For more information, please contact Dr. Ginny Haver, local section chair, at (206) 764-2174.

PERKIN-ELMER NEW FACILITY OPEN HOUSE

The Perkin-Elmer Corporation has moved from Southcenter/Tuckwila to a new Training and Technical Center in Renton which includes two laboratories that are equipped for Atomic Absorption, ICP, Gas and Liquid Chromatography, FT-IR, Biotechnology, UV/Vis, Fluorescence and Thermal Analysis. They are hosting an OPEN HOUSE there on October 17 from 2 to 6 p.m. Refreshments will be served. To register for this event, call Anita Kelley at (206) 251-1933 by October 11th.

The new facility, located at 405 S.W. 41st St. in Renton, may be reached by taking the S.W. 41st St. Exit from Highway 167, and going west two blocks.

ACS ACTING TO AID LABORATORIES IN SUPPORT OF FEDERAL POLICY AGENDA

The American Chemical Society has long been a leader in pursuing the development of hazardous waste regulations that are appropriate to the laboratory research environment. Pursuing this goal is listed in the *ACS Federal Policy Agenda* as one of the major objectives of the Society's government relations programs for 1991. The ACS White Paper on "*Management of Laboratory Wastes: Recommendations for Regulatory Change*," developed by the Society's CEI/CCS Task Force on Laboratory Waste Management (formerly, the Task Force on RCRA), serves as a guide for the Society's efforts in this area. Attempts over the last few years to obtain appropriate regulations for laboratories primarily had been focused on the Environmental Protection Agency (EPA). After several discussions with the Agency, it became clear that while the EPA agreed that laboratories are not served well by the current regulations, other issues were more pressing. Without a congressional mandate, regulatory relief would not be forthcoming. As such, the ACS turned its attention to Congress and the scheduled reauthorization of the federal hazardous waste management and disposal law, the Resource Conservation and Recovery Act (RCRA).

The Task Force took the initial step of drafting legislative language that would require EPA to develop regulations to allow laboratories to better minimize and manage their chemical wastes. The legislation is based on the ACS *White Paper* and relies on the precedent set by the 1990 Clean Air Act in calling for "equitable treatment" of research facilities. It borrows the definition of a laboratory from the OSHA Laboratory Standard—which most laboratories already are having to comply with. Task Force members working on the project represented industrial, academic, and consulting concerns. Work is now under way to have this draft bill, "*The Laboratory Equity and Waste Minimization Act*," included in comprehensive RCRA reauthorization legislation.

To aid the Society in these efforts, ACS Department of Government Relations and Science Policy (GRASP) staff established the *Laboratory Waste Coalition*, now numbering some forty member organizations. Efforts to add Coalition members have focused on organizations located in areas represented by the Representatives and Senators sitting on the congressional committees charged with RCRA reauthorization. Founding Coalition members include the ACS, the American Council on Education, NACUBO, and the University of California. The membership has grown to include industrial representatives such as AT&T Bell Laboratories, Merck & Company, Proctor & Gamble, and Battelle Pacific Northwest Laboratories. Among the schools participating are the Universities of California, Illinois, Minnesota, Montana, Pennsylvania, Texas, Virginia, and Washington, as well as Yale. A number of laboratory and education groups also have joined, such as the American Council of Independent Laboratories and the Campus Safety Association.

If you would like additional information on this project, you may contact David Schleicher of GRASP at (202) 872-4384, or write to him at GRASP, American Chemical Society, 1155 Sixteenth St. NW, Washington DC 20036.

CHEMICAL SCIENCES GROUP SEEKS LARGER IMPACT ON THIRD WORLD

The International Organization for Chemical Sciences in Development (IOCD), now 10 years old and chartered in Belgium, is currently trying to attract more grassroots chemical support in the U.S. and abroad. IOCD, whose president and founder is long-time chemical stalwart Glenn T. Seaborg of the University of California, Berkeley, will be calling on the chemical community hoping that thousands will throw in \$15 apiece to become IOCD sponsors and eventual participants. Its executive board discussed a solicitation format at the American Chemical Society meeting in New York City in August. IOCD's unpaid director, Robert Maybury, says the organization tries to apply the chemical sciences in the Third World to the solution of not abstract but practical problems. "Everyone in IOCD is a volunteer," he said. "We have no overhead money. It all goes directly to the grantees." IOCD, despite its size, is the main link between chemists in the developed countries with those in universities and research institutes of the Third World. Currently it consists of three working groups—tropical disease treatment, fertility regulation, and plant chemistry as applied to medicine and agriculture. A fourth on analytical chemistry for environmental monitoring is in the works.

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PLANNED WSU PROGRAM WOULD ADVANCE CHEMISTRY TEACHING

Washington State University plans to launch a new degree program next summer aimed at enhancing chemistry teaching in the public schools. Funded in part by a \$650,000 National Science Foundation grant and with the cooperation of the Pacific Northwest Battelle Laboratories, the program would bring 90 Washington high school chemistry teachers to WSU, 30 enrolling each summer for the next three years. Targeted are teachers conducting chemistry classes who did not major in chemistry as undergraduate students. They will enroll in two summers of instruction and spend a third working at Battelle laboratories in Richland. They would earn Master of Arts in Chemistry degrees. The University will present the concept to the Washington Higher Education Coordinating Board for approval this fall.

The NSF grant will pay student expenses—tuition, fees and a monthly stipend—during the first summer. Additional funding is being sought for the second summer for each group and for a postgraduate portion of the program. "This project is so innovative that it will serve as a prototype for others across the nation," said Dean of Sciences Leon J. Radziemski. "These 90 teachers represent nearly a quarter of all high school chemistry teachers in the state. Through this program, we should see a quantum jump in the effectiveness of high school chemistry programs."

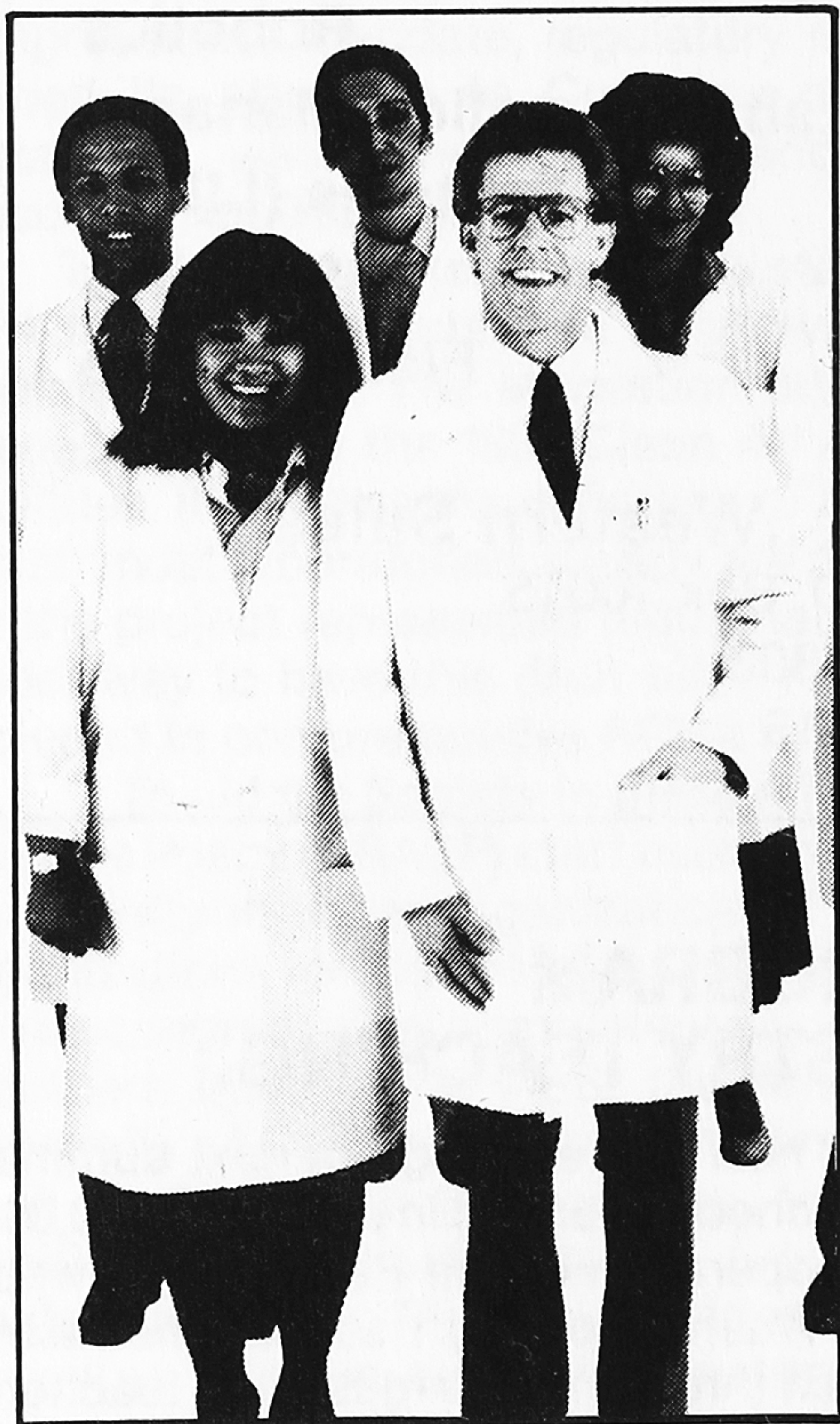
The instruction and training experiences will assist teachers who run laboratories, maintain inventories, observe new safety regulations and revise the curriculum to reflect new developments in the field. After receiving their degrees, teachers also will spend two years working with their school districts and WSU to improve both the courses they teach and their facilities. Chemistry Professor Glenn Crosby and the Department of Chemistry proposed the program. A long-time advocate of improving public school science instruction, Crosby said the program is innovative in combining the resources of a public university with those of private organizations.

(by Sharon Hatch)

From Washington State University August/September "HILLTOPICS"

Submitted by Despina Strong

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FUTURE MEETINGS

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High School Teacher Awards

December

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Pauling Award Symposium

Executive Committee Meeting Puget Sound Section, ACS

October 9

Place: Seattle University

Engineering Building

Dinner: 5:30 PM in Cafeteria (optional)

Meeting: 6:30 PM in Room 511.

Meetings are open to all members.

Want to Talk to the Puget Sound Section?

Chuck Mainard, one of our Alternate Councilors, has volunteered one of his lines at All World Scientific for messages to the Puget Sound Section. Calls may be left at this number for members of the Executive Committee as well as other committees. The Section will try this arrangement for the next few months. The number at All World Scientific & Chemical for Section messages will be **206-672-4228**.

Chemistry Around Puget Sound

□ **Two CPAC Researchers at University of Washington Receive Top Product Innovation Awards**—Lloyd Burgess and Pat Carey, researchers at the Center for Process Analytical Chemistry (CPAC) at the University of Washington, were honored with two R&D 100 Awards, presented annually by *R&D Magazine*. The **Planar Waveguide Spectrometer** and the **Optical High-Acidity Sensor** were chosen to be two of the hundred top innovations for 1991 by a panel of 21 judges. Researchers from CPAC and Pacific Northwest Laboratory who developed the Planar Waveguide Spectrometer include: Lloyd Burgess, Mike DeGrandpre, Don Goldman, Norm Anheier, and Patty White. Development of the Optical High-Acidity Sensor was done at Los Alamos National Laboratory by Howard Nekimken, Betty Jorgensen, and Pat Carey, currently a postdoctoral research associate at CPAC. Now in its 29th year, the R&D 100 Awards program was held at Chicago's Museum of Science & Industry on September 19, 1991.



Christopher L. Getchell
Oceanographer / Biologist

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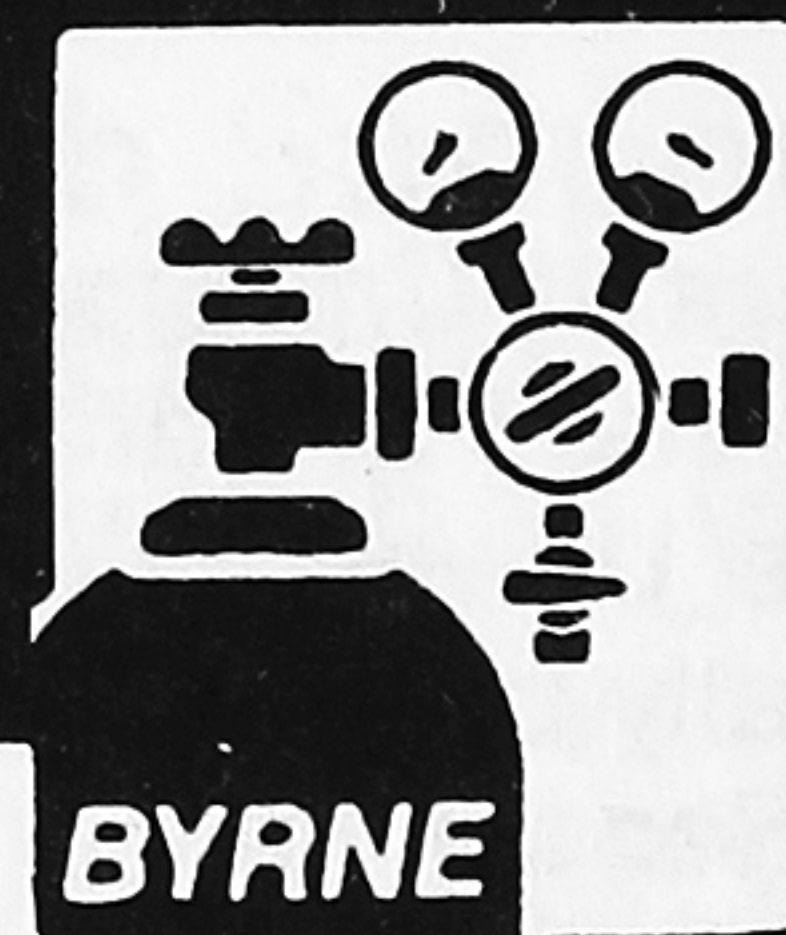
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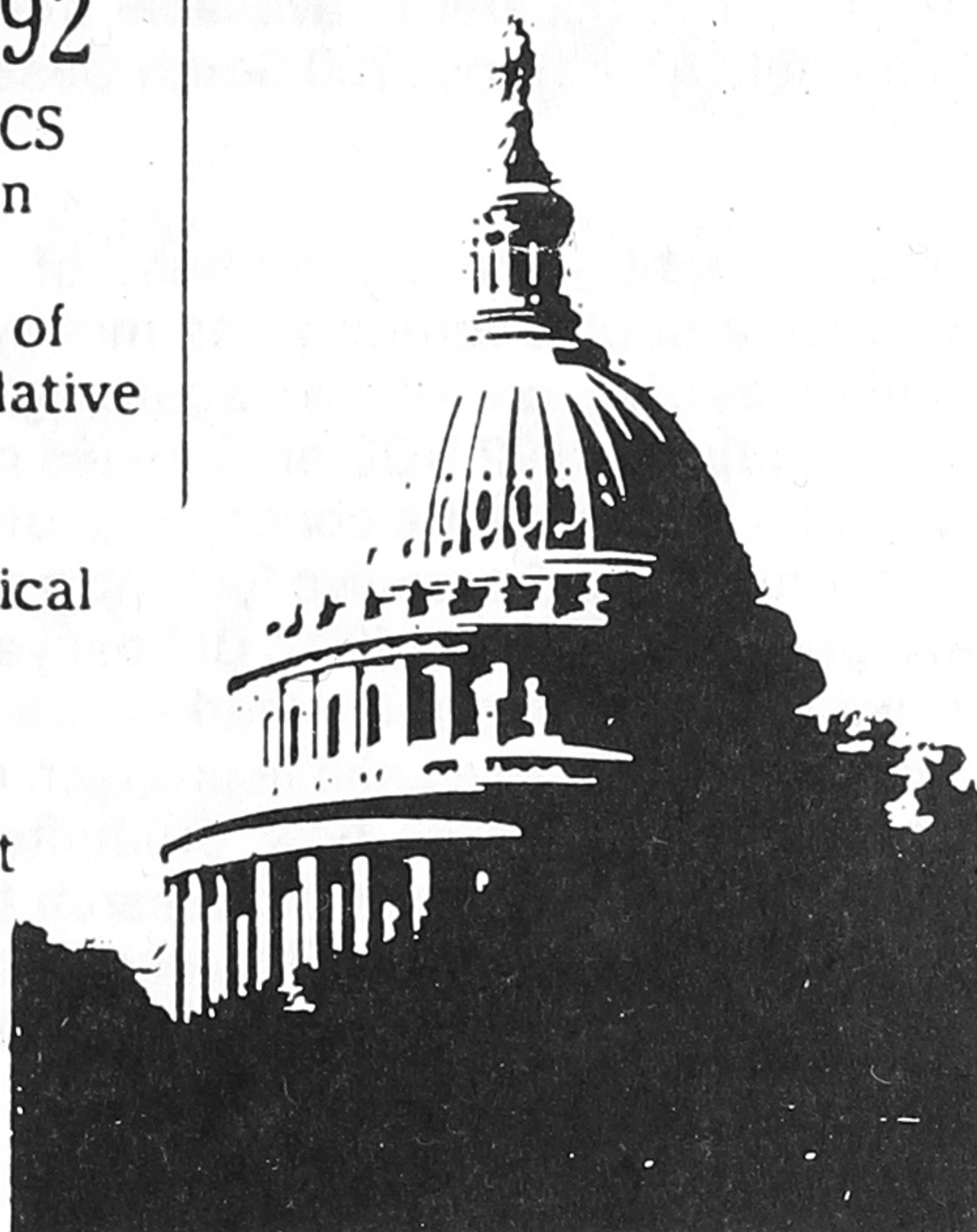
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- Make scientific and technical expertise available to the government, and
- Forge links between the scientific and government communities.



ACS ANNOUNCES CONGRESSIONAL FELLOWSHIP PROGRAM

The American Chemical Society is proud to announce that it is accepting applications for the ACS Congressional Fellowship. The Fellowship program is intended to place persons with backgrounds in science and public policy in the office of a U.S. Senator, Representative, congressional committee or subcommittee. The objectives of the ACS Congressional Fellowship are: to provide an opportunity for scientists to gain firsthand knowledge of the operations of the legislative branch of the federal government; to make available an increasing amount of scientific and technical expertise to the government; and to broaden the perspective of both the scientific and governmental communities regarding the value of their interaction.

ACS fully funds each fellow's stipend and associated costs, but other sources of funding are acceptable (e.g., the fellow's employer, private foundations, etc.). The Program calls for the first fellow to begin work in September 1992. The stipend for the 1992-93 Fellow is \$33,000, with an additional \$2,000 in relocation expenses available. The fellow will be selected on a competitive basis from among members of the ACS who have significant familiarity with one of the chemical sciences or engineering (e.g., a doctorate or equivalent work experience), a working understanding of the chemical community, and experience in civic activities or public affairs. A candidate for a fellowship may either submit an application or be nominated (e.g., by his or her employer). The selection committee is composed of members of the Society's Committee on Chemistry and Public Affairs. **Applications are due January 1, 1992**, and consist of a letter of intent and two letters of reference. Arrangements should be made to send the letters of reference directly to ACS. Candidates should contact ACS prior to submitting an application to determine the type of information needed in the letter of intent. For more information contact: Gene Voegtlin, Department of Government Relations and Science Policy, American Chemical Society, 1155 Sixteenth Street N.W., Washington DC 20036, (202) 872-4467.

Chemistry In The News

□ **Booklet on science careers for women**—Undergraduate women interested in science careers can get practical advice from women scientists in a new booklet called "Graduate School and Beyond." The booklet offers guidance on selecting a graduate school, supporting oneself through graduate school, choosing a thesis advisor, combining a career with family life, and other topics. "Women should make sure there is a support group of other women graduate students at the school," says physicist Natalia Kalfe Meshkov of Argonne National Laboratory, who cochairs an annual conference on science careers for women. Meshkov adds that "women tend to be more retiring in a male environment. That's the wrong way to be a scientist. It's important to come forward, to be noticed, and to speak out." The booklet is available free from Division of Educational Programs, Argonne National Laboratory, 9700 South Cass Ave., Argonne, IL 60439.

(from August 19, 1991 C&EN)

□ **Uses for waste CO₂ sought**—The Department of Energy's Office of Industrial Technologies is looking for a double return on its money. It is seeking ways to reduce generation of waste carbon dioxide, one of the so-called greenhouse gases, and conserve energy at the same time. In fiscal 1992 DOE anticipates making several awards totaling \$550,000 for initial R&D work on innovative concepts to utilize waste CO₂ produced by, or resulting from, industrial processes. To receive funding a proposed concept must have an annual net energy savings greater than 1 trillion Btu per year by 2010, if implemented on a national scale and with an appropriate market penetration. DOE cites use of biotechnology to convert waste CO₂ to a salable product, changes to process systems to utilize waste CO₂, and development of new products whose manufacture utilizes significant amounts of waste CO₂ as areas of research that might serve as a basis for funding application. Cost sharing at a rate of 50% or greater plus participation or support from the affected industry are requirements for DOE funding. For more information, call DOE's automated telephone service at (708) 972-2090.

(from August 26, 1991 C&EN)

IUPAC-ITS AIMS AND ORGANIZATION

The objectives of the International Union of Pure & Applied Chemistry are the same now as when the body was founded in 1919. These are to: Promote cooperation among chemists of member countries; Study topics of international importance to pure and applied chemistry that need regulation, standardization, and codification; Cooperate with other organizations that deal with topics of a chemical nature; Contribute to the advancement of pure and applied chemistry in all its aspects. To satisfy these aims, IUPAC's work is shared among divisions, commissions, and committees. There is a division for each of the seven broad areas of chemistry: analytical, applied, clinical, inorganic, macromolecular, organic, and physical. (There also is a medicinal chemistry section that as yet lacks divisional status.) Each division has a number of commissions whose members carry out specific tasks. The organic chemistry division, for example, has commissions responsible for nomenclature, physical organic chemistry, and photochemistry. The applied and physical chemistry divisions each have six commissions, whereas the analytical chemistry division has eight.

Of the nine standing committees, two work on IUPAC programs; one coordinates the work of the divisions on the Chemistry & Advanced Materials Program, the other coordinates the Chemistry & Environment Program. The other seven deal with databases, publications, Chemical Research Applied to World Needs (CHEMRAWN), teaching, finance, chemistry and industry, and nomenclature and symbols at the interdivisional level. Membership in IUPAC is through countries' National Adhering Organizations. An NAO may be a scientific academy, learned body, or chemical society. The U.S., for instance, is represented in IUPAC by delegates sent by the National Academy of Sciences, its NAO.

(from Sept 2, 1991 C&EN)

PUGET SOUND CHEMIST



BULLETIN OF THE PUGET SOUND SECTION AMERICAN CHEMICAL SOCIETY

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Chemistry In The News

□ “‘Sugar cube’ can store 1 million novels... *New York Times*... IRVINE, Calif.—Tinkering with lasers as windows into chemical reactions has yielded a potentially major advance in computer science for Professor Peter Rentzepis. The chemistry professor and researcher at the University of California at Irvine has invented a laser-based device that can store 6.5 trillion bits of information—the equivalent of 1 million novels—in a computer memory unit the size of a sugar cube. That is 2,000 times more data than top-of-the-line personal computers can store on their hard disks. The device uses laser beams to record and read information inside a light-sensitive plastic cube that measures a mere centimeter on each side. The device can also get access to the information in a matter of nanoseconds, many thousands of times faster than computers today need to do so. Rentzepis has made a working prototype of his computer-memory unit in his campus laboratory, receiving a patent for it a few months ago... (He) is studying how laser lights affect molecules during chemical reactions. A few years ago, he discovered that a certain technique that uses two laser beams to study high-speed chemical reactions could be modified to alter physically a class of light-sensitive chemicals....”

(*Seattle Times*/PI 9-1-91)

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