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BULLETIN OF THE PUGET SOUND SECTION OF THE AMERICAN CHEMICAL SOCIETY

Volume 54, Number 3



May 1993



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JUNE MEETING

- DATE:** Saturday, June 12, 1993
- PROGRAM:** Tour of METRO Environmental Laboratory
- LOCATION:** 322 W. Ewing Street, Seattle, WA
(206) 684-2300
- SCHEDULE:** 12 noon: Tour of the laboratory, to last about an hour
- LUNCH:** Picnic Lunch in the park next to the laboratory. Boxed lunches provided at \$7.00 each, or bring your own.
- DIRECTIONS:** Take the Mercer Street/Seattle Center exit (No. 167) off I-5. Take a right onto Fairview Ave. N., and a left onto Valley St. Then a right onto Westlake Ave. N. Travel north on Westlake Ave. N. until W. Nickerson. Go straight on W. Nickerson until 3rd W. (Do not go over the Fremont Bridge!) Take a right on 3rd W. (the second with traffic lights after the Fremont Bridge/Nickerson intersection). Go over the railroad tracks and take a left. The lab is the white building just west of the park. If possible, park on the street or in the park parking lot east of the park.
- NOTE:** When you make reservations for lunch, you have an obligation to pay. Once the food is ordered, the section is billed even if you do not show up.
- RESERVATIONS:** Please specify tour and/or boxed lunch. All reservations must be made by NOON, Friday, June 4, 1993. For reservations, please call:--
Seattle: 543-1610 Bellingham: 676-3070
Tacoma: 535-7530

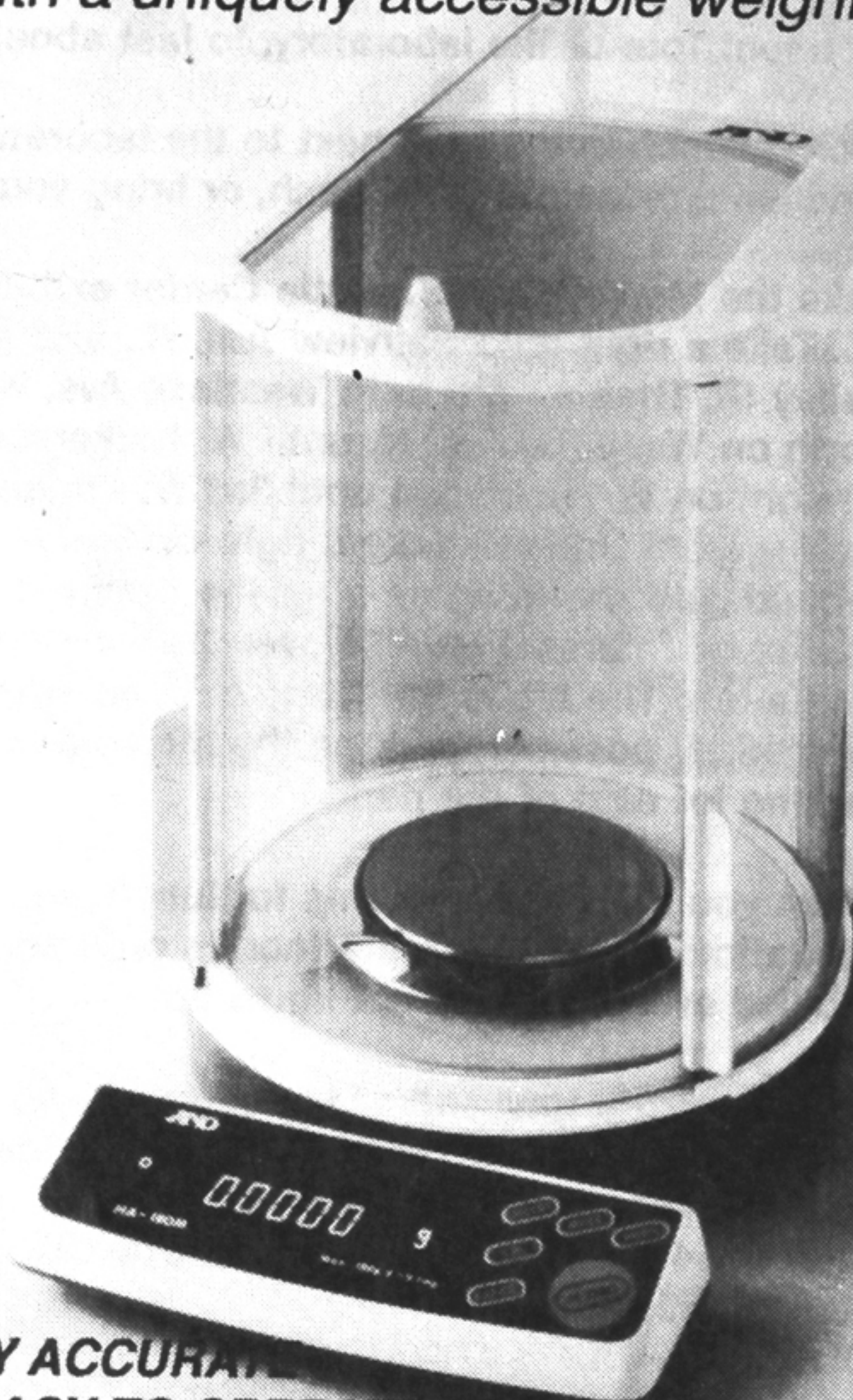
FUTURE MEETINGS 1993

- June 12 Tour of METRO Environmental Laboratory
- June 17-19 NORM93
48th ACS Northwest Regional Meeting
Laramie, Wyoming

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METRO ENVIRONMENTAL LABORATORY

The Environmental Laboratory provides field, laboratory, information, and advisory services in support of Metro and other publicly sponsored programs that protect and enhance water quality.

Field specialists collect samples from marine and fresh waters, industries, and water treatment plants. Lab personnel analyze those samples in the trace metals, trace organics, conventionals, microbiology, and aquatic toxicology laboratories.

Lab staff advise and assist Metro project managers and other public agencies with laboratory and sampling procedures, current regulations and interpretation of results. In 1991 alone, the Lab served more than 150 Metro projects. The Lab analyzes samples for other public agencies and provides training by special arrangement.

A central computer system consolidates results from various lab tests into reports that characterize each sample. This information forms a database that is used to monitor trends in regional waters. Metro uses Lab information to:

- design and operate wastewater treatment plants
- enforce industrial waste regulations
- formulate plans and action programs to protect and enhance local water bodies
- Participate in cooperative studies with other governmental and research agencies.

The Washington State Department of Ecology accredited the Lab in 1991. To meet the department's stringent requirements, the Lab passed more than 75 separate tests.

DATA MANAGEMENT AND ANALYSIS

Each year, the Lab collects and processes several million pieces of data. The Lab's data management and analysis section organizes, manages and reports from this vast database. The Lab provides a wide range of statistical support in project design and implementation, data characterization and analysis. The Lab now uses a Laboratory Information Management System that runs on a state-of-the-art computer network. LIMS makes it easier to manage samples and use and retrieve data.

ENVIRONMENTAL SERVICES

Field specialists in the environmental services section use a variety of equipment and techniques to obtain samples truly representative of the environment. The 48-foot research vessel, *Liberty*, moored at the Lab's waterfront site, collects Puget Sound water and sediments using specialized sampling bottles or sediment grabs lowered from a hydraulic boom.

Other collection equipment includes automatic samplers that can be installed in storm drains or sewer lines, and special pumps and devices for drawing subsurface or groundwater samples. In all cases, lab specialists take great care to avoid contaminating samples they collect and send to the laboratory for analysis.

TRACE ORGANICS

The trace organics lab measures trace levels of organic (carbon-containing) compounds found in air, liquids, or solids. The section routinely analyzes for federally-designated priority pollutants and hazardous substances such as pesticides, PCBs, volatile solvents, byproducts of fuel combustion and other potentially toxic or hazardous organic contaminants.

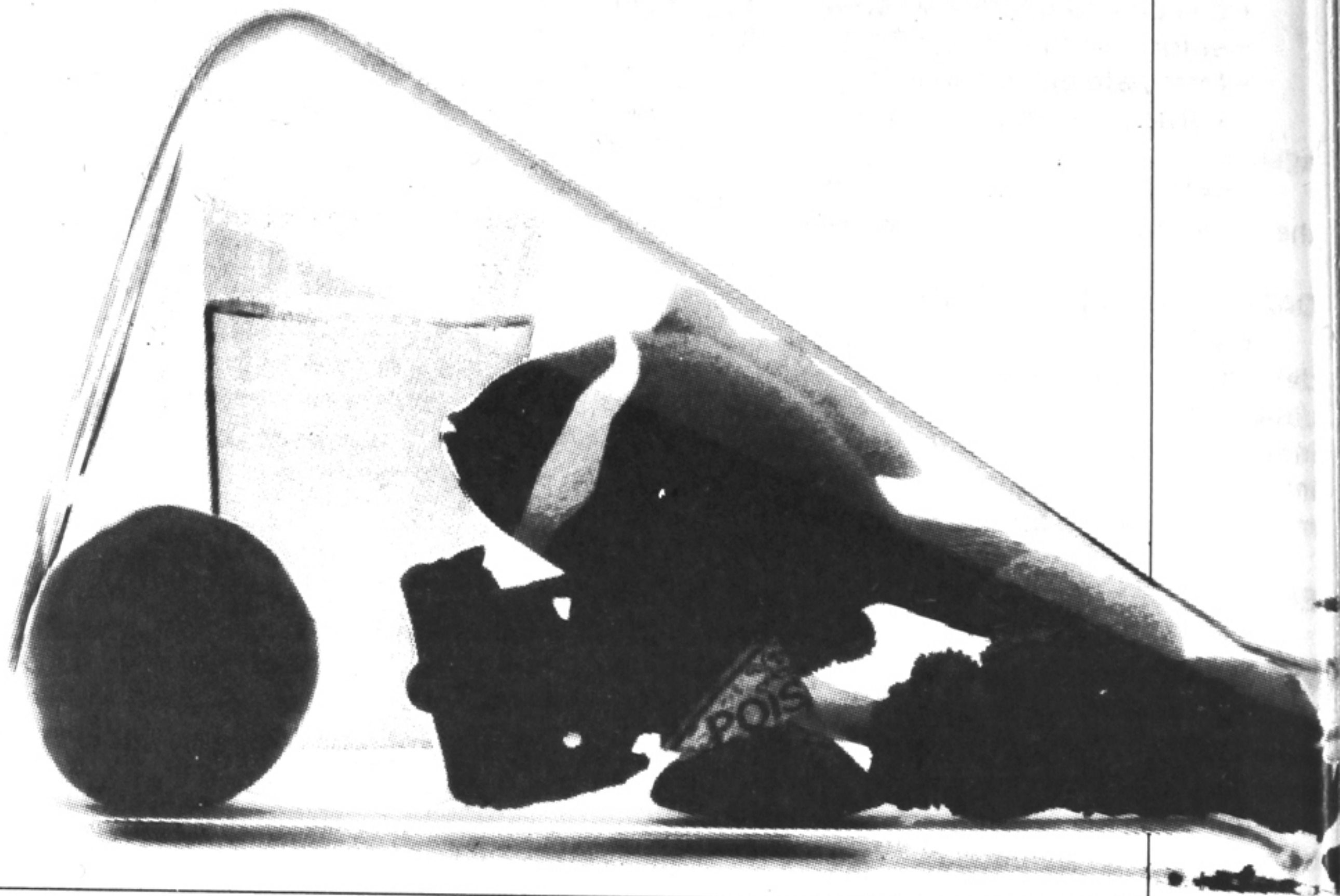
Using sophisticated instrumentation, chemists in the trace organics lab can fingerprint and identify unknown organic compounds in a matter of seconds. The fingerprint, called a spectrum, can be searched against a library containing reference spectra for more than 100,000 potentially toxic organics.

AQUATIC TOXICOLOGY

The aquatic toxicology lab conducts toxicity tests by exposing test organisms such as algae, tiny crustaceans and rainbow trout fry to environmental samples and monitoring

(Continued on page 7)

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METRO ENVIRONMENTAL LABORATORY

(Continued from page 5)

their response. This information helps Metro understand and assess the impact of pollutants on the aquatic environment.

In a series of toxicity tests and experiments, for example, lab personnel found chlorine and ammonia discharged into the Duwamish River by Metro's regional treatment plant at Renton was harmful to fish. Metro used that data to develop a long-range facility plan to expand the plant and divert its discharge from the river to Puget Sound.

TRACE METALS

The trace metals lab analyzes environmental, wastewater and industrial samples for more than two dozen potentially toxic metals. Of the many metallic elements found in the environment, some (such as calcium, magnesium, zinc and copper) are essential nutrients at low concentrations, but may be hazardous at higher levels. Others, like arsenic, lead, mercury and cadmium, are toxic even at relatively low concentrations.

As scientists learn more about the effects of these elements on living organisms, regulatory agencies such as the U.S. Environmental Protection Agency and the state Department of Ecology are imposing increasingly lower concentration limits.

CONVENTIONALS

The conventionals lab analyzes for a variety of inorganic parameters that are indicators of water quality. Tests for turbidity, dissolved oxygen and pH, and measurements of nutrients such as nitrogen and phosphorous, alert scientists to changes in the ecological balance of area waters.

In addition to water quality measurements on samples from regional waters, the conventionals lab analyzes industrial samples, measures oil and grease levels in industrial discharges, and characterizes contaminated drainage from construction sites.

MICROBIOLOGY

The microbiology lab analyzes water, sediment and tissue samples for indicator and pathogenic bacteria, viruses, algae and parasites, and conducts rapid toxicity screening using the Microtox system. This data is used primarily to help assess and minimize the public health impacts of Metro operations. In the future, this lab hopes to take advantage of emerging technologies such as DNA hybridization, nucleic acid amplification and fatty acid analysis to improve service to their customers. The lab is certified for microbiological analysis by several states and federal agencies.

The 1993 DAUBEN LECTURE
sponsored by the University of Washington,
Department of Chemistry

"Antibodies by Chemistry"

will be presented by Dr. Richard Lerner
President, Scripps Institute

Thursday, May 6, 1993, 4:30 p.m.
Room 154, Bagley Hall, University of Washington

For disability accommodations, please contact the Office of the ADA Coordinator at least ten days in advance of the event; phone: 543-6450 (voice); 543-6452 (TDD); 685-3885 (FAX).

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OBITUARIES

GEORGE HAMILTON CADY, an active member of the Puget Sound Section of the American Chemical Society since 1938, died suddenly on March 18, 1993. He will be remembered with great respect and much affection by all who had the good fortune to know him as a teacher, as a colleague, as an international figure in the field of Fluorine Chemistry, or as a friend.

George was born in Lawrence, Kansas, on January 10, 1906, the son of Hamilton Cady, a Professor of Chemistry at the University of Kansas. After earning his B.S. and M.S. degrees at Kansas, he went to the University of California, where he earned his Ph.D. degree in 1930, under the supervision of Professor Joel Hildebrand.

For eight years he developed, teaching at the University of South Dakota and M. I. T. and working as a research chemist at the U.S. Rubber Company and at Pittsburgh Plate Glass Company. He came to Seattle to the University of Washington in 1938, where he remained, except for two years with the Manhattan Project in New York (1942-1943). He became Professor Emeritus in 1972.

At the University, he was one of the most popular and respected teachers, particularly remembered by his students for his informative demonstrations and for his obvious regard for his students, as well as for his outstanding knowledge of Inorganic Chemistry. In 1961-1965 he served as Chairman of the Department of Chemistry.

He was also active in the Puget Sound Section, serving as an Alternate Councilor and as a Councilor, and as a Section Chairman in 1955. He also served in the Divisions of Inorganic Chemistry and Fluorine Chemistry.

He published well over 100 research papers and six special chapters in books, gave many invited lectures in many countries, and received many honors, including the Puget Sound Section Award (1962), the ACS award for Distinguished Service to Inorganic Chemistry (1966), the ACS award for Creative Research in Fluorine Chemistry (1972), and the French Prix Moisson Prize.

He is survived by his wife, Irene, his two sons, Howard, a chemist and Carl, a chemical engineer, 8 grandchildren, and 4 great grandchildren.

KEITH O. BERRY, 54, a long-time member of the Puget Sound Section, died unexpectedly on March 30th while attending the ACS meeting in Denver. Keith obtained his B.A. at Colorado State, his Ph.D. at Iowa State, and joined the University of Puget Sound Chemistry Department in 1965 as professor of chemistry. Keith had been active in the Puget Sound Section since 1965, serving as editor of the *Chemist*, on the executive committee, as a councilor, and as the section chair in 1979.

Keith was also very active in chemical education and was the current secretary of the Chemical Education Section of the ACS. He was instrumental in developing ChemCom and had been working on a grant from the Superintendent of Public Instruction to help high schools develop their Chemical Hygiene Plan. Keith was named the 1993 "Region IV Higher Education Science Teacher of the Year." His chemical demonstrations and Halloween chemical magic show were notorious. Keith is survived by his wife, Marian, his two daughters, Krista and Jana, and his mother, Ruby Berry.

Contributions in Keith's memory may be made to a memorial fund in the Department of Chemistry at the University of Puget Sound.

CALL FOR NOMINATIONS FOR 1994 SECTION OFFICERS

Suggestions for nominations for 1994 officers of the Puget Sound Section of the American Chemical Society should be made to Dr. Despina Strong, Chair, Nominating Committee, at Metro, 206-684-2322, by May 13, 1993. We need more members taking part in the activities of the Section. Please call.

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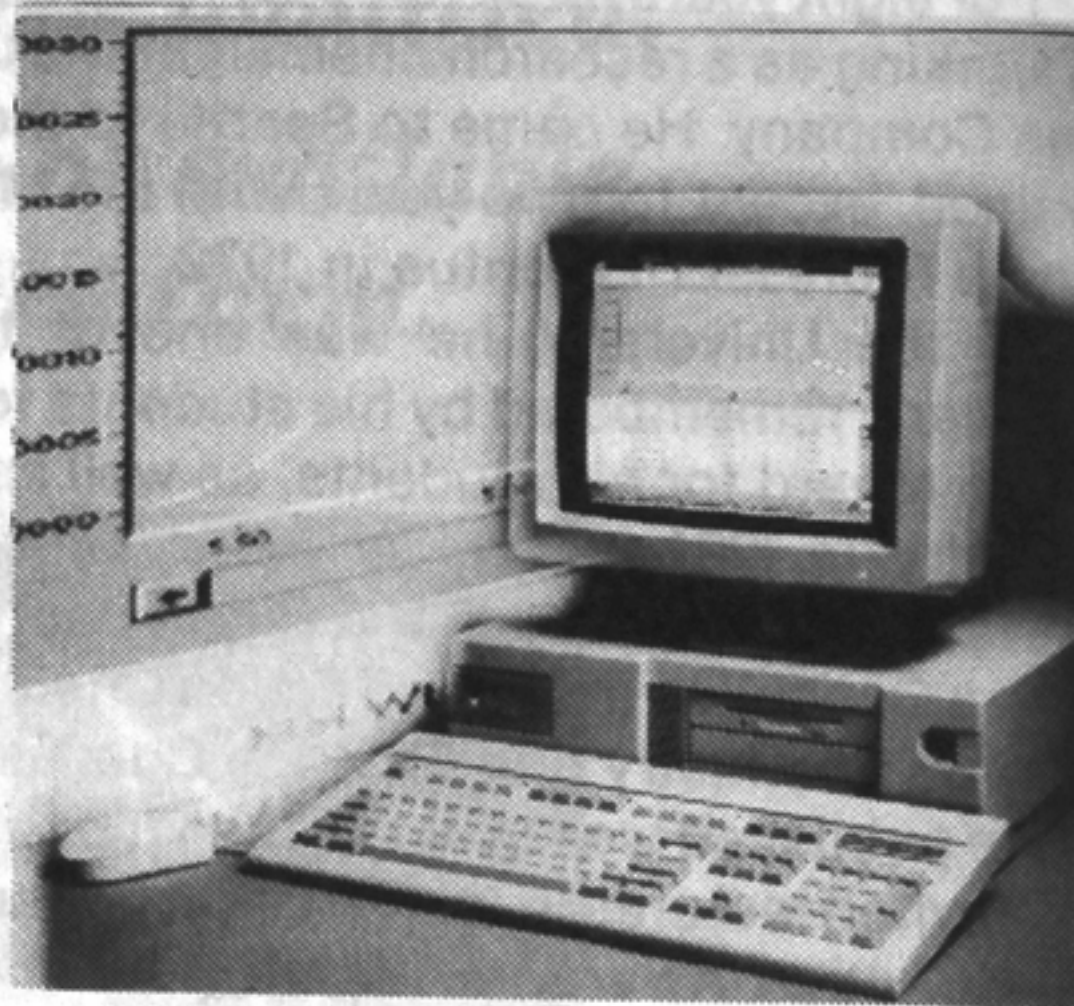
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NORM 93

The 48th American Chemical Society Northwest Regional Meeting will be held at University of Wyoming in Laramie, Wyoming, June 17-19, 1993. There will be a strong emphasis on environmental issues in this year's program. Program highlights include a workshop on "Regulatory Compliance: Waste Minimization," the 3rd annual symposium on "Hazardous and Mixed Wastes," and a general session on "Environmental and Atmospheric Chemistry."

Please note that the preregistration deadline for the meeting is May 17, 1993. Those wishing to attend NORM93 are strongly encouraged to register in advance. For information or to register by phone with your credit card number, please call 1-800-448-7801; (307) 766-2124; or FAX # (307) 766-3914. (For application for registration, see page 13.)

LABORATORY WASTE MINIMIZATION WORKSHOP

A workshop on laboratory waste minimization will be held on June 18, 1993, from 9:00 a.m. to 4:00 p.m. as part of the ACS Northwest Regional Meeting in Laramie, Wyoming. Topics will include: 1) The Need For and Regulatory Aspects of Laboratory Waste Minimization; 2) Developing and Implementing a Waste Management/Chemical Purchasing Plan; 3) The State Perspective of Waste Minimization; 4) How to Develop a University-Wide Waste Minimization Plan; 5) Specific Waste Minimization Techniques. Other topics may be added. Each topic will be followed by a discussion session, open to questions from the floor. The workshop also will include an afternoon tour of the University of Wyoming's new, state-of-the-art regulated materials management center, located on the Laramie campus. For further information on the workshop program, contact Bill Gray at 202-872-4467. For registration information, contact Dottie Lane at 307-721-2267.

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NORM 93

Accommodations:

A block of rooms has been reserved at the Laramie Inn at the special conference rates of \$42 per night—single and \$48 per night—double. Please call the Laramie Inn directly at 1-800-642-4212 to make your reservation before May 15th, and mention NORM93. Shuttle service from the Laramie Inn to the University can be arranged.

As an alternative, you may stay in the University Residence Halls. Your room will be reserved upon receipt of advance payment which you may include with your registration fee (please see registration form). Room rates are \$15 per night—single and \$10 per night per person—double. Residence halls have centrally located bathrooms on each wing.

NORM93 Registration Form June 17 - 19

Name _____
(as you would like it on nametag)
Business Address _____
City/State/Zip _____
Daytime Phone # _____

☐ The University of Wyoming is committed to making this program accessible to all individuals. If you have a disability and may require accommodation in order to fully participate in this activity, please check here. You will be contacted by someone from the Conferences Office to discuss your specific needs.

Registration Fees:	Before May 17	After May 17 /On-site
<input type="checkbox"/> ACS Member	\$50	\$65
<input type="checkbox"/> Non-Member	\$60	\$75
<input type="checkbox"/> Retired	\$20	\$25
<input type="checkbox"/> Student (Post Doc excluded)	\$15	\$20
<input type="checkbox"/> High School Teacher	\$15	\$20
<input type="checkbox"/> One Day		\$30

Registration Fee	\$ _____
Residence Hall	\$ _____
Events (total)	\$ _____
Tour (total)	\$ _____
TOTAL Enclosed	\$ _____

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Events
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& Keynote Speaker
☐ Extra tickets for banquet @ \$20 ea. x # _____ = \$ _____
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☐ Saturday PM trip to Snowy Range @ \$25 ea. x # _____ \$ _____

Make checks payable to: University of Wyoming	For information or to register by phone with your credit card number: 1-800-448-7801; (307) 766-2124; FAX # (307) 766-3914
Mail registration form and payment to: Conferences and Institutes P. O. Box 3972, Laramie, WY 82071-3972	VISA/MasterCard # _____ (circle one) Expiration date _____ Signature _____

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MORE ABOUT OUR 50 YEAR MEMBERS

Donald W. Turnham

A graduate of Oregon State (1942), he worked as chemist and quality control manager for Swift & Company in San Francisco, Portland, OR, and National Stock Yards, and later transferring to the Chicago headquarters as division manager in the Quality Assurance Department. After serving in the Swift and Company Research and Development Center in Oakbrook, IL, he was assigned to the Swift Chemical Division in Hammond, IN. In 1971 he became the corporate quality control manager for Farmland Foods in Denison, IA. He retired in 1981 and moved to Kent, WA, in 1985.

While employed in Portland, OR, he served as chairman of the Oregon Section of the ACS.

Lloyd E. Van Blaricom

I was born in Newberg, Oregon, on May 1, 1912. I earned my B.S. in Chemistry (1937) and M.S. in Physical Chemistry (1939), both at Oregon State University, before joining Rayonier Incorporated (now ITT Rayonier). I stayed there for 38 years until retirement in 1977. My work at Rayonier included the use of surfactants in viscose rayon process and the development of by-products from the waste streams from wood-pulping processes. My work in these areas has resulted in several patents.





My community work included volunteer activities with Boy Scouts, Golf Club, Kiwanis Club, and my church.

Dirk Verhagen

I am a Seattle native and attended the University of Washington. I received a Bachelor's degree in 1941. Then I spent two years at the University of Kentucky and obtained a Master's degree in Biochemistry (1943). I returned to Seattle and was employed as a research chemist by Lyle Branchflower Company, a major producer of Vitamin A in what was then called the free world. I was promoted to chief chemist in 1944 and remained with the company until 1957. At that point, chemical sales seemed more interesting than laboratory work, so I joined Van Waters and Rogers here in Seattle as an outside salesperson. I enjoyed the work very much, so in 1960 they promoted me to a sales management position—not nearly as much fun. In 1963, I became department manager. In 1969, I was transferred to Denver as Vice President and area manager with responsibility for Van Waters and Rogers operations in several states in the Rocky Mountain area. After ten years, I was transferred to Los Angeles as industrial chemical department manager for southern California. I retired in 1984.

I served as section chairman in 1957.

Note: Have we heard from you? We know the list was longer! We would like to hear from all of you who became 50 year members of the ACS in 1993. Please submit, in your own words, a brief description of your life as a chemist.



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Puget Sound Section, ACS Executive Committee Future Meetings in 1993

Meetings are open to all members and are held on the second Wednesday each month.

May 12 September 8

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