CHEM LETTER

University of Washington

Department of Chemistry

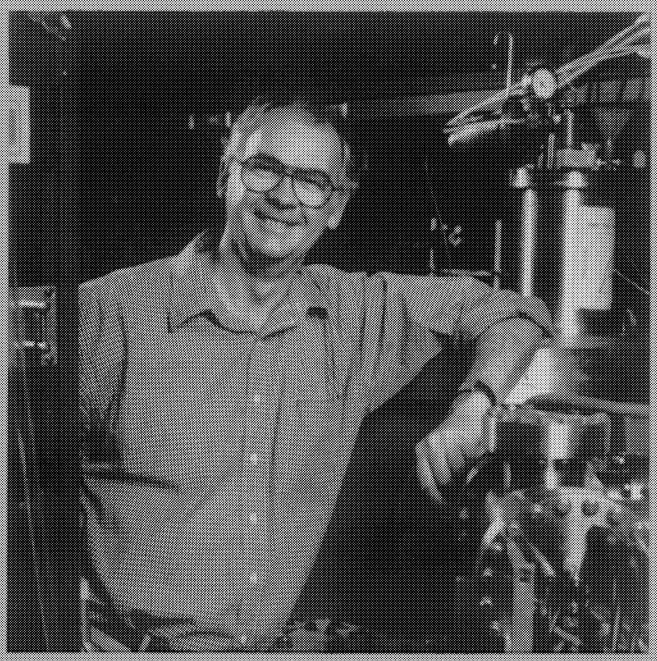
September 1994

Volume 20

Pain Medication Breaththrough

During the commencement exercises, Mark Eisenberg, a March 1994 biochemistry graduate, applied aspirin topically rather than relying on the traditional oral method. Later, at the Department's commencement luncheon, Mark was the source of a headache as he stumped an unnamed physical chemistry faculty member's attempt to identify the molecule.

Chairman's Message



Dear Alumni,

The most interesting events this year have been associated with the new chemistry building. We have watched it grow from a hole in the ground to a remarkably fine addition to the campus. As I write, much of the scaffolding has been removed from the exterior, the new teaching laboratories are having fume hoods and other equipment installed, and we are planning to begin teaching in the building from January 1995.

Last year I told you that Bill Reinhardt, Associate Chair for Undergraduate Education, was leading a team conducting a thorough investigation of our undergraduate curriculum. Surveys during the year produced some remarkable findings. Perhaps the most worrisome were that more than 50% of our upper level students need to work 30 or more hours a week to pay their bills and that, due to this need and other pressures, almost none of our students are able to take chemistry courses in the recommended sequence. We are now planning a very substantial revision of our undergraduate curriculum to make the department more responsive to these and similar issues.

On the research front, the department goes from strength to strength. We have just recruited one of the largest and best qualified graduate classes in the department's history. Thriving programs in biotechnology and related topics have gained federal funding for another five years. The Center for Process Analytical Chemistry (CPAC) has just celebrated its tenth birthday. In July, we heard that the NMR group has received about $1.5M in grants for a new instrument.

As the year ended we were pleased to hear that two of our graduate students have been given prestigious postdoctoral awards from the National Science Foundation. Also, we were told that Julie Kovacs has been granted tenure and promoted to Associate Professor. All in all, an excellent year for the Department.

Best Wishes,

Bob Watts

Robert O. Watts

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CHEM LETTER

Published by the
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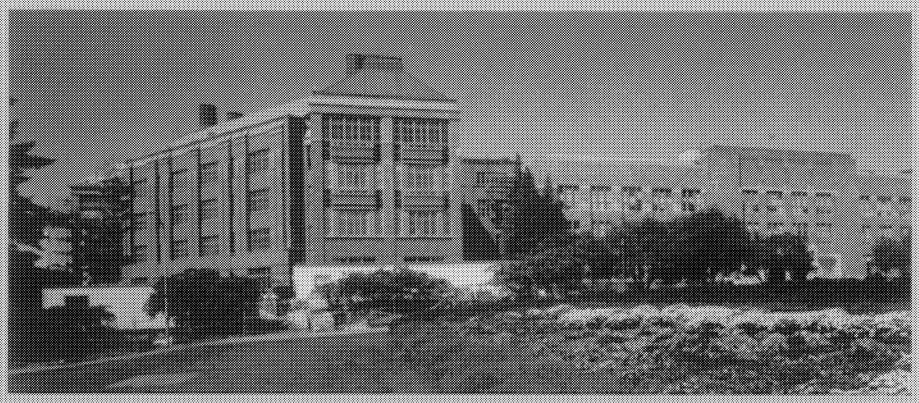


The $40 million addition to the chemistry building is part of an overall, science-facilities upgrade at the UW which is projected to cost more than $320 million. A $70 million physics and atronomy building and a $50 million health-sciences addition are recently completed. Also scheduled for new buildings are electrical engineering, computer sciences, and molecular biotechnology. Still in the early planning stages are new facilities for oceanography, fisheries, and public health.

Finishing Touches Are All That Remain

Research and teaching space in the Department of Chemistry will be augmented by 100,000 gross square feet when the new addition to Bagley Hall (extreme left of photo) is completed later this year. The five-story complex will connect to the existing building on every floor with totally enclosed walkways. The exception will be on the first floor, where there will be a covered walkway joining the two buildings, separated by a courtyard. The ground level will contain physical and analytical chemistry research facilities, organic teaching laboratories will be on the first floor, and synthetic organic and inorganic research laboratories will be on the second, third, and fourth floors. There will be a number of seminar and conference rooms. Renovation continues on the current Bagley Hall and the graduate student lounge will be expanded and updated when construction is completed.

Assessment and Change: UG Program Reviewed by Entire Faculty

Former New York City Mayor Ed Koch was famous for asking his constituents "howamidoin'?" as he roamed the streets of the city.

Now the UW Department of Chemistry has implemented formal steps to ascertain the same thing from *its* constituents, albeit on a more intellectual level. After months of faculty and staff committee meetings, data acquisition and interpretation, and the hiring of an outside educational consultant, the department has delineated a set of goals (see right) which advisers hand out to every new undergraduate chemistry and biochemistry major. Formal exit interviews are given to graduating seniors and plans call for a similar survey to be mailed to alumni from certain graduating years to to see how close the faculty has come in meeting these standards.

Associate Chair for Undergraduate Studies Bill Reinhardt has overseen the various assessment activities for the last year. He divided faculty into several groups to study the needs of the 4000 students per quarter the department was teaching.

The department's moves are in lockstep with actions that the University is considering or has already set into place. A presidential task force has recommended the creation of an undergraduate college at the University to place more emphasis on its teaching function, and for the first time, the College of Arts and Sciences has decided to offer minors to students. Previously, only the College of Education made this option available to people.

Martin Gouterman and Sara Selfe were responsible for drafting the requirements for the new minor. Several old courses were no longer seen as viable and have been replaced with six new courses which can also be taken by students earning the Bachelor of Arts degree in chemistry.

Assessment,
continued on page 9

Departmental Goals

Chemistry plays a central role in the sciences because the goal of chemical study is understanding natural processes on an atomic and molecular level. Thus, graduating chemistry and biochemistry majors should experience the excitement of relating molecular properties to the order they observe in nature. As teachers, our challenge is to emphasize the connections between the molecular level structure and properties and functions of macroscopic matter. This mission suggests the following outcomes for our educational process. At the end of their studies, graduating majors should

- ***have a general knowledge of the basic areas of chemistry (inorganic, organic, physical, analytical chemistry and biochemistry) with a working knowledge of at least one area. A working knowledge is demonstrated by the ability to apply formal knowledge in a problem-solving environment.***
- ***be proficient in basic laboratory skills (e.g., preparing solutions, chemical synthesis techniques, chemical and instrumental analysis, laboratory safety).***
- ***have the ability to formulate and carry out strategies for solving scientific problems.***
- ***have an understanding of principles and applications of modern instrumentation, computation, experimental design, and data analysis.***
- ***have had the opportunity to gain experience with a research project as part of an upper level course and the opportunity to participate in active, individual laboratory research within the university or in another appropriate setting.***
- ***have the ability to communicate scientific information clearly and precisely, both orally and in writing.***
- ***have the ability to read, understand, and use scientific literature.***
- ***have some awareness of the broader implications of chemical processes (e.g., resource management, economic factors, ecological considerations).***
- ***have had the opportunity to work with others as part of a team to solve scientific problems.***
- ***have had an introduction to the opportunities in, and requirements for, careers available to those with training in chemistry.***

Chemistry Outreach Activities Extended to Local High Schools, Native American Communities, and Others

Outreach has taken on such a prominent role in the department that a full-time outreach director, Nan Little, continues to coordinate the various activities of the faculty and staff involved in spreading the chemistry word.

NASON

One of the most innovative outreach projects is the Native American Science Outreach Network (NASON). Teachers of Native American students, as well as the students themselves and Native American paraprofessionals, were brought together this past summer for an institute which was designed to integrate Indian culture into science learning. The program used examples taken from Native American practices to demonstrate not only chemical principles but materials science in a way that is relevant to the students and teachers. What chemistry and biology, for example, must First Nations people know in order to manage their own forestry and fisheries resources?

The institute will run for three years, with current funding by the NSF, FIPSE, and 14 other sponsors. It is the brainchild of Chairman Bob Watts and Sara Selfe, a member of the Chemical Education Division. Project leaders made frequent trips to visit tribal leaders and elders throughout Washington State in order to gain support for the program. UW Native American faculty and graduate students helped to write cultural learning packets which were distributed on the first day of the institute. Facts about all the Indian nations represented at the institute were included.

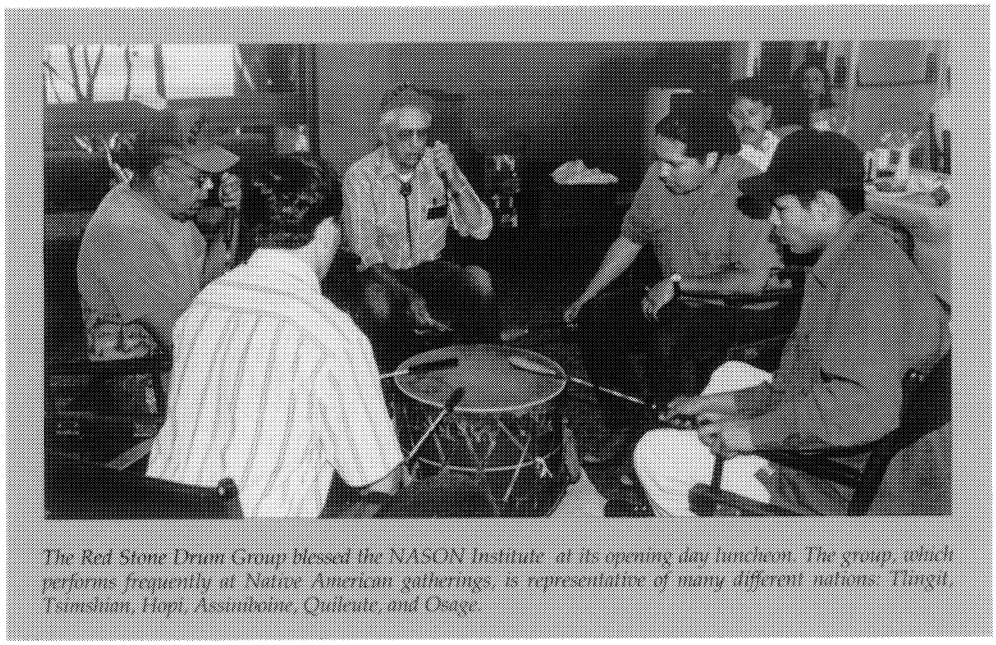
Participants lived together in a campus dormitory for a month and received college credit for their work. Field trips, to such as places at the Snohomish Public Utility District, Cedar River Watershed, UW Arboretum, and Blake Island's Tillicum Village, were an integral part of the program, as were various traditional Native American activities.

Science Outreach Day

More than 60 Washington high school science teachers and students attended the department's third Science Outreach Day last spring.

Held as part of a larger outreach program designed to recruit young people into science majors once they enter college, the day combined talks by faculty from a variety of scientific disciplines with tours at such places as the Nuclear Physics Laboratory, wind and water tunnels and the RAM accelerator in the Department of Aeronautics and Astronautics, the positron emission tomography imaging laboratory in the Department of Radiology, the Department of Geophysics' Seismology Monitoring Laboratory, and the infant primate laboratory in the health sciences complex.

The featured lunchtime speaker, Dr. Debbie Nickerson, was an assistant professor of molecular biotechnology who had previously worked for the Federal Bureau of Investigation. She talked about forensic chemistry, in general, and the advances being made in DNA testing, specifically, as a forensic tool in crime laboratories.



The Red Stone Drum Group blessed the NASON Institute at its opening day luncheon. The group, which performs frequently at Native American gatherings, is representative of many different nations: Tlingit, Tsimshian, Hopi, Assiniboine, Quileute, and Osage.

HS Teachers Summer Institute

For the tenth consecutive summer, high school chemistry teachers from across a six state region had the opportunity to attend a month-long program designed to expand their laboratory skills and knowledge of environmental chemistry.

The program's director, Professor Darrell J. Woodman, and the featured lecturer, Professor Norman J. Rose, built on the success of previous institutes in which Darrell augmented the instructional lecture/lab format with participant presentations and guest lecturers from other science departments on campus.

This year's institute was funded through grants from the National Science Foundation, the Discuren Foundation, and the Chevron Research Company. He also coordinates the chemistry portion of an academic year state-sponsored program for teachers, Science Enhancement for Teachers (SET).

Student Outreach

Professor William H. Zoller's nationally recognized project which teaches college students to give talks to high school students in science classes about environmental issues such as ozone depletion, NASA and the environmental impact of the space shuttle flights, Chernobyl nuclear accident, and the greenhouse effect is completing its fifth highly successful year.

The students have been able to speak at about 50 schools this last academic year, often giving more than one presentation per visit. Some of the costs for this program are underwritten by NASA and the Environmental Protection Agency, which agreed last year to fund the students' travel costs for future trips.

Special courses have been designed in the last year which enable students to now receive credit for their efforts in the outreach program.

Outreach, *continued on page 13*

CPAC Scientists Getting Bugged

Wastewater treatment is not only an ubiquitious problem in industry, it is one that is shared with city and country governments responsible for municipal sewage and wastewater. Seattle's sewage treatment program devotes over 70% of its energy expenditure on supplying oxygen for the degradation of this waste.

Chemists from the UW's Center for Process Analytical Chemistry (CPAC), in response to requests from industrial sponsors, are exploring biological ways that sewage and other wastes can be treated. CPAC has forged a relationship with Seattle's Metro to study this problem and once the process is fine-tuned, it can be applied industrially around the country.

CPAC's "Bugs are Us," otherwise known as the "Biological Wastewater Treatment Monitoring Project" is looking into ways that heterogeneous bacterial populations can be manipulated so that the treatment of waste becomes an inexpensive, automated process requiring only the constant infusion of bugs.

Oxygen is necessary for aerobic bacteria to degrade wastewater. Bacteria use electrons from carbon compounds which comprise the waste - alcohols, acids, foods, etc. The electrons pass through a series of proteins called cytochromes, with the final recipient of these electrons being oxygen. Thus, the bacteria degrade the carbon food sources to simpler compounds like CO_2 and water.

The maintenance and optimization of a continually viable biomass - waste-eating bacteria - can be tricky and is one of the questions that CPAC hopes to answer. Bacteria need to be nourished but at some point they can be fed too much, use up all the available oxygen, and switch over to anaerobic digestion, which does not optimally degrade the sewage. There is a very fine operating point between life and death on the growth curve for these bacteria and they need to be kept at an optimum range for the process to work. Given that the bug population is heterogeneous, they have different life spans, food requirements, and dissimilar tolerances for certain environmental conditions. Too high a population of bacteria also can exceed the oxygen levels in a stream (biological oxygen demand), thus suffocating other aquatic life.

CPAC staff are conducting their studies in a 14 liter, simulated wastewater treatment tank facility, affectionately known as "Camile." They are using a fiber optic probe, developed originally to monitor bloodstream oxygen by Department of Chemistry faculty Martin Gouterman and Jim Callis. In "Camile," the probe basically monitors how much oxygen the bugs are using and is studying the problem of biofouling. This occurs when bugs actually grow on and coat the probe's surface. Other tests are examining how well teflon-coated probes resist the growth of biological organisms. Additional parameters under investigation include turbidity and conductance.

CPAC staff working on this research include Lloyd Burgess and Betsy McGrath.

Another major CPAC project is funded by the Department of Energy through the National Science Foundation and is being done in collaboration with researchers at Sandia National Laboratories. The development of a miniature chemical analyzer system, known as a

CPAC, *continued on page 13*

Quitting Time !

Recent graduate Ziggy Uibel leaves Bagley Hall after spending a full day in laboratory with Professor Martin Gouterman. There, he worked on the development of pressure-sensitive and temperature-sensitive luminescent paints for use in wind tunnel research. Ziggy discovered and investigated the "induction effect" which shows that when certain paints are illuminated with ultraviolet light, the intensity of the luminescence rises over time. In addition to his chemistry, which he will pursue in graduate school next year, Ziggy has modeled GUTS sportswear on MTV ads and in print.

Kudos !

Top graduating seniors pose in front of the new Physics/Astronomy building. From left are Cynthia Wong, Shawn Lee, Nathan Carlson, and Susan Bray. Cynthia is the American Institute of Chemists Award winner and the other three students are recipients of the Merck Index Award. Not pictured is Katrina Rogers, the fourth Merck Index Award Winner.

Bagley Briefs

UG Research Symposium

The Chemical Reactionaries and the Free Radicals joined forces again for the second annual undergraduate research symposium, which attracted a dozen presenters last May. Students of at least junior standing, with majors in chemistry or biochemistry, gave short talks before a group of more than 60 faculty, graduate students, and other undergraduates during the day-long event. Each speaker was given a gift certificate to the University Book Store for their efforts and the Department of Chemistry hosted a luncheon for all those in attendance.

The Chemical Reactionaries is the name of the chemistry graduate student organization and the Free Radicals is its undergraduate counterpart.

Bequest Received

A fellowship endowment will be created from funds left the Department of Chemistry by the late Marjorie Hay Nordstrom Harris. Mrs. Harris was a 1923 Bachelor of Science and 1924 Master of Science degree graduate of the department who went on to eventually run her own clinical laboratory in downtown Seattle's medical/dental Stimson building. Born in Nebraska in 1909, Mrs. Harris' first marriage was to naval architect Carl Nordstrom, and in 1969 she married the late Bruce S. Harris, a former chairman of Seattle Federal Savings and Loan Association.

P. C. Cross Lecture Held

Richard Zare, the Marguerite Blake Wilbur Professor of Chemistry at Stanford University, gave the ninth Paul C. Cross Memorial lecture last fall on "No More Crossed Molecular Beams."

Zare received his degrees in chemistry, physics, and chemical physics from Harvard University. His academic appointments have included positions at the Massachusetts Institute of Technology, the University of Colorado, and Columbia University. He joined the Stanford faculty in 1977.

Graduate students critiquing the symposium speakers included Tom Crevier, Steve Moskowitz, Tim Bayburt, Paula Fischhaber, and Bill Cusworth.

His scientific prizes and awards are numerous: National Medal of Science, National Academy of Sciences Award in Chemical Sciences, Peter Debye Award in Physical Chemistry, Willard Gibbs Medal, Michelson-Morley Award, Irving Langmuir Prize, and Stanford Dean's Award for Excellence in Teaching.

The Gibbs Medal Citation refers to Zare as making "outstanding contributions through laser chemistry: in development of basic theories of angular distribution of products of molecular photo-dissociation and subDoppler spectroscopy; in development of experimental tools such as optical pumping and multiphoton ionization technique; in application of laser chemistry techniques to solve such diverse problems as basic energy distributions, reactions of aligned ions, and analysis of aromatic hydrocarbons in meteorites. As both experimentalist and theorist, his experiments and interpretations have led the way in understanding energy states of products of molecular dissociations. He has been called the leading laser chemist in the world for good reason."

Paul C. Cross was a distinguished physical chemist who served as chairman of the Department of Chemistry from 1949 until 1961, when he left to become president of the Mellon Institute.

Second Cady Lecture Given

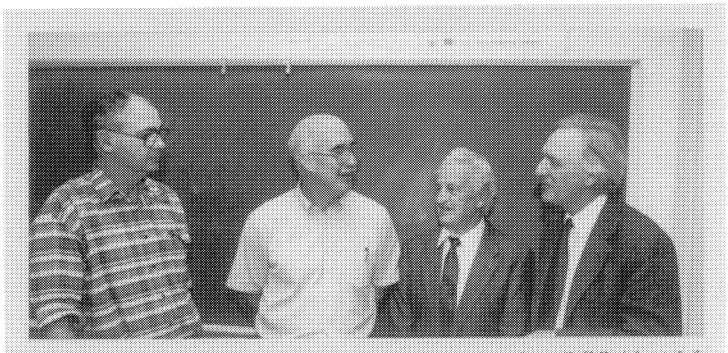
"Thermodynamically Unstable Transition Element Fluorides and Their Remarkable Oxidizing Properties" was the subject of Professor Neil Bartlett's George H. Cady Lecture last spring.

Bartlett is best known for his synthesis of the first true compound of a noble gas, in which he used platinum hexafluoride to oxidize Xenon. His research interests have continued to include noble gas compounds and high-oxidation-state fluorides. A number of binary fluorides, for instance RhF_5, were first prepared in his laboratory. His group has also prepared new synthetic metals from graphite and boron nitrides and is exploring the synthesis of novel B/C, C/N, and B/C/N relatives of graphite.

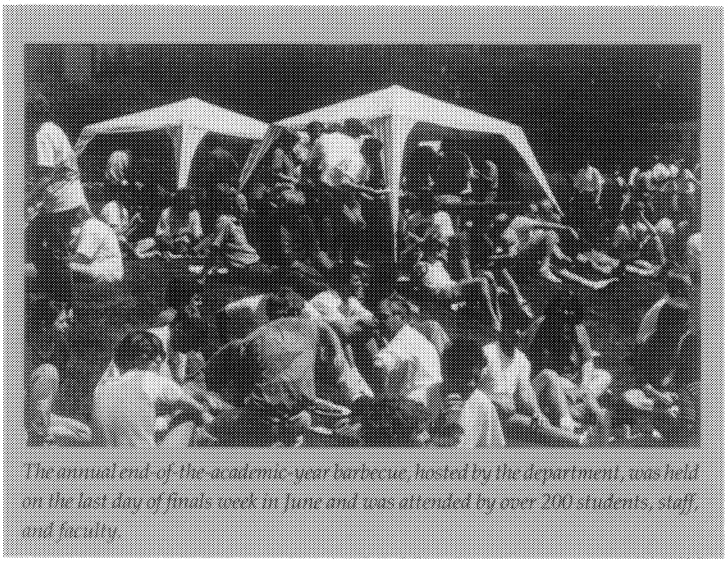
His work has brought wide recognition. Some of his numerous awards and honors include: the Corday Morgan Medal of the Chemical Society of London, the Dannie-Heineman Prize of the Gottingen Academy, the ACS Award in Inorganic Chemistry, the Distinguished Service Award in Inorganic Chemistry, and the Linus Pauling Award, Pacific NW Section of the ACS. In 1988, Bartlett shared the first Prix Moisson with George Cady, in whose honor and memory this lecturership was created.

Bartlett completed his formal training in England and served as a faculty member and/or senior scientist at the University of British Columbia, Princeton University, and Bell Telephone Laboratories before being appointed in 1969 as professor of chemistry at the University of California, Berkeley, and a faculty senior scientist at the Lawrence Berkeley Laboratory.

Richard Zare met with physical chemistry graduate students during breakfast one morning. Pictured at right is Moonbong Yang, a student of Professor Bob Watts's.



Attending the Cady Lecture were former Cady doctoral students Bill Reichert, left, and Leland Burger, center. At right is Neil Bartlett, the featured speaker. At left is chairman Bob Watts.



The annual end-of-the-academic-year barbecue, hosted by the department, was held on the last day of finals week in June and was attended by over 200 students, staff, and faculty.

Graduate Student Recruiting Successful

One of the largest entering classes ever of chemistry graduate students will be joining the department in Autumn 1994. Intense recruiting efforts over the last year have yielded a class of 39 students, all of whom will be supported initially as teaching assistants. Overall inquiries for graduate school information increased significantly and nearly 600 applications to the program were received from graduating chemistry majors across the country and abroad. The department hosted visits by about 85 applicants throughout the past school year, with nearly 70 of these people visiting during a special recruiting weekend last March. One recent change in the state policy regarding health coverage for some categories of graduate students has been an added attractive feature in the department's overall recruiting strategy.

Third Volcano Conference Held

More than 100 undergraduates, graduate students, postdoctoral associates, and faculty from select Western universities gathered at Pack Forest, the UW-owned and operated training forest near Mt. Rainier, last February for a weekend of science and skiing. The event attracted organic and bioorganic chemists from the UW, Washington State University, Oregon State University, the University of Oregon, Simon Fraser University, and the University of Alberta. The weekend, which was once again partially underwritten by Merck Frosst of Canada, featured guest lecturer Professor Dagmar Ringe, a protein crystallographer from Brandeis University.

Summer UG Research Awards

The department has completed a second multi-year site grant from the National Science Foundation Research Experiences for Undergraduates (REU) program. Project Director Darrell J. Woodman reported that the grant continued the activity begun under the original award five years ago. Fifteen undergraduates from the UW and elsewhere did research with departmental faculty. Stipends and modest other support were provided and the students received academic credit for their work. One aspect of the program was the weekly seminar series, where the student participants talked about their respective projects, in addition to their research groups' activities. Darrell will be applying for a third site grant.

Reunion Planned

Doctoral graduates from 1955 through 1957 are asked to contact George Blomgren if interested in planning a chemistry reunion sometime in the summer of 1996. He can be reached at the

Eveready Battery Company, Inc.
25225 Detroit Road
PO Box 450777
Westlake, OH 44145
(216) 835-7757, FAX (216) 835-7772

or at home

1554 Clarence Avenue
Lakewood, OH 44107
(216) 221-4478

Blomgren was a 1956 doctoral student with Professor Paul C. Cross. He has been in battery research and development as well electrochemistry at the Eveready Company since 1957. Currently, he is a senior technology fellow.

Depending on the geographical location of the majority of those alumni who are interested in gathering and on the ability of people to travel, the site of the reunion remains unclear at present. People are encouraged to call Nancy Cooper at (800) 869-2436 if they have other questions.

Records Updated

Departmental staff have spent part of this summer updating as many alumni records as possible. The department is frequently asked to provide employment data, graduation numbers, etc. for various scientific organizations and in response, the Graduate Student Services Office now has a data base of all doctoral alumni. The office is working to update masters and bachelors students' records, as well.

It would be of great assistance if people would spend a few minutes filling out the center insert in the ***Chem Letter*** and returning it in the enclosed self-addressed/stamped envelope to further help in this project. The ***Chem Letter*** is always looking for interesting alumni to profile and would welcome any suggestions in this area, as well.

Mentors Needed

The University of Washington Alumni Association, in collaboration with the Office of Minority Affairs (OMA), is looking for alumni who are interesting in becoming mentors to new UW students. Now in its sixth year, this program matches freshmen or transfer students from minority or disadvantaged backgrounds with alumni working in the field to which the student aspires.

There are nearly 3000 students currently enrolled through the OMA. Many of these are the first in their families to attend college, some are older returning students, some are single parents, and some are from small town, rural and reservation communities.

Volunteers from a wide variety of fields are needed. If you're interested, please call Janet Gibb at (206) 543-0540 or (800) AUW-ALUM.

Donations Continue to Fund Vital Departmental Activities: Fellowships, Scholarships, Recruiting, Research Symposia, etc.

The following individuals, corporations, and foundations donated to the Department of Chemistry between May 1993 and the end of May 1994. Development committee Chair Charlie Campbell expresses appreciation on behalf of the department for the generous support of all its donors. He urges people to call him collect at 206-543-3287 if any gifts were omitted from this list or if names have been inadvertently misspelled.

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Limb, Glenn R.
Lingren, Wesley E.
Lister, Russell Allen
Liu, Chi-Being
Loch, David Myron
Lok, Roger
Looney, Franklin Sittig
Lorentzen, Joyce A.
Lory, Earl R.
Loveland, Walter David
Lowry, Ned M.
Ludwig, Charles H.
Lund, John T.
Lynch, John P.
Lysaght, Michael John
Malofsky, Bernard M.
Marmont, Paula Ruth
Masada, Gary M.
Matsumoto, Alvin M.
McCaw, Robert Irvin
McCormick, Neil G.
McCray, Jefferson Douglas
McDonald, Richard Norman
McDougall, John A.
McIntyre, Diane M.
Meditch, James Stephen
Mellor, William Kimball
Metzger, Robin A.
Mikelsons, Martin Vilis
Milakofsky, Louis
Mill, Theodore
Miller, Alex E.
Minor, James Ernest
Mitch, Cindy Kay
Montana, Andrew Frederick
Monteith, Lee Elmer
Morosin, Bruno
Morrow, Gerald E.
Motten, Alexander F.
Muramoto, Keith
Neff, Loren Lee
Nelson, Jerry Allen
Nelson, Michael
Newton, Robert Andrew
Noftle, Ronald Edward
Nordstrom, Terry Victor
Nortness, Jill D.
Numata, Robert Alan
Oda, Carl E.
Olleman, Elizabeth A.
Olsen, Stanley H.
Ordway, Girard L.
Osada, Debra Ann
Osborne, Allan Gilbert
Osborne, Joseph Herrman
Otto, Charlotte A.
Paddock, Gary V.
Page, Joseph Duffy
Pallett, Richard Dennis
Parker, Marilyn Ankeney
Parker, Richard Clyde
Parkhurst, Dale J.
Paxton, Raymond J.
Peak, Ralph F.
Peck, Dennis F.
Perez, Joseph Manuel
Perkins, Douglas L.
Peterson, Linnea Elizabeth
Peterson, Mary Ann
Pierce, Susan M.
Pinsky, Ann
Plummer, David Frank
Pocker, Yeshayau
Pomerenk, Earl Raymond
Portelance, Herbert James
Puziss, Paul Martin
Rafter, Gale William
Ravander, David Robert
Raymond, Kenneth W.
Reeder, Seth Darrell
Reichgott, David W.
Rice, Sandra Colleen
Richards, R. Ronald
Riddle, Gary N.
Robbins, David Bruce
Roberts, Michelle Lorraine
Robins, Janis
Robinson, Richard C.
Rohr, Timothy Charles
Rohrback, Gilson Henry
Ronald, Bruce Pender
Root, Jeffrey M.
Ross, David Samuel
Rucker, Harriet R.
Sands, Walter C.
Schaffer, Arnold M.
Schomber, Beth Murphy
Scott, Allen B.
Selden, Janice Ann
Serwold, Thomas F.
Shearer, Douglas W.
Sheeran, Norman James
Sherry, Michael Alexander
Shimada, Mitsuyoshi
Siegwarth, David Phillip
Sime, Rodney Jerome
Skewis, Francis Harry
Skiens, William Eugene
Smith, Herbert Edmund
Spitzer, Kenneth D.
Stachowiak, Matthew Leigh
Starkebaum, Mary Kathryn
Steenbergen, Julian Grayson
Stein, John Egil
Steunenberg, Robert K.
Stewart, Mary J.
Stewart, Robert Daniel
Stogsdill, Rose M.
Stone, Joe Thomas
Stoner, John Thomas
Strang, Allan Gene
Strelitzer, Oscar E.
Stringer, John Thomas
Stuhring, Glen Thomas
Sweeney, William Alan
Symms, Kenneth Gregory
Symonds, Marylyn E.
Takeya, Ryan K.
Teague, Jeanette
Teague, Ralph William
Tenge, Bradley John
Theodore, Louis James
Thomson, Lowell A.
Thornton, Marilyn A.
Tippie, Michael A.
Todd, Seldon Page
Torre, Louis Peter
Tracy, Joseph Walter
Tsang, Man Yee B.
VanMeter, Wayne Paul
Vincow, Gershon
Vineyard, William Harold
Virant, Frank S.
Wacholtz, William Frederick
Wagoner, Richard Ryan
Wakeham, Stuart G.
Wallin, Ruth E.
Wang, Yongdong
Wanttaja, Lisa G.
Warren, John Lawrence
Wasserman, Harriet M.
Wasserman, William Jack
Watrin, Kerry Gene
Webster, Frances A.
Wedlund, Peter Jeffrey
White, Danny Vincent
Whitford, Donald D.
Whitman, David Alan
Wilde, Richard Edward
Wilkinson, William C.
Williamson, Lorna Joan
Winters, John Rutledge
Wolbach, C. Dean
Wong, Rebecca Kaneonapua
Woodard, Michael J.
Yasuda, Kyle Etsuo
Yeates, Alan T.
Young, James Allen
Young, Lyman Arnold
Young, Stanley Dewitte
Yu, Chien-Tsiang
Yum, Tai Yong
Zmiarovich, Thomas G.

Assessment

continued from page 3

Another committee, under Paul Hopkins' and James Mayer' direction, invited outside comment from faculty in fields which chemistry services to tell the committee exactly what their students should know. The flexibility to take required credits outside of a student's home department is always a constraint. As a result, part of the chemistry curriculum has been restructured to meet these expectations within a credit limit that is more acceptable to other departments.

Jim Callis headed a team which took on the major job of revising the entry-level honors chemistry sequence so that computers play a much larger role in the class. He has introduced spread sheets into the curriculum and has integrated laboratory into the first two quarters of the class, whereas before laboratory was confined to just the second quarter. In part, this move was made possible because of the increased space which the new building creates.

The exit interviews are conducted during the quarter in which a student is planning to graduate and are led by a staff member not associated with the teaching program so that "positional independence" can be maintained and so the students will not perceive the interviewer as someone having a vested interest in the process.

Answers will be maintained in a database for many years so that accurate inferences can be drawn from them. People with questions about the assessment project are encouraged to send Bill Reinhardt email at rein@chem.washington.edu or call him at (206) 543-0578.

The annual dinner recognizing corporate and private donors and the student recipients of fellowships, scholarships, and prizes, was attended by a capacity crowd last spring. Donations earmarked for scholarly distribution remain at a healthy level, and both graduate and undergraduate students are beneficiaries of such private and public philanthropy.

*UW chemistry students were well represented among National Science Foundation Fellowship recipients. Pictured with alumnus George **Hitchings** are **John Kulman**, **Karl Booksh**, and **Marya Lieberman**. Karl and Marya have just finished up their doctoral research with Professors Bruce Kowalski and Tomi Sasaki, respectively, and go off to further studies with NSF Postdoctoral Fellowships in hand. John received an NSF Predoctoral Fellowship. He is studying in the UW Department of Biochemistry. Not pictured are **Claudia Benitez**, who also received an NSF Predoctoral Fellowship and is currently in graduate school at the Massachusetts Institute of Technology, and UW chemistry undergraduate **Julie Greif**, a recipient of an NSF Incentives for Excellence Scholarship.*

*The first Mindlin Fellow is **Kip Stevenson**, a student in Professor Bob Watts' laboratory. **Dr. Katherine Mindlin Day Reinleitner**, pictured with Kip in the Faculty Club's Reading Room, established this fellowship, along with an undergraduate prize for creativity in science, in honor of her father and uncles.*

***Bernard J. Nist** and **Bill Johnson** have more in common than identical goatees. In memory of his late wife, **Claudine**, Barney created a fellowship designed to enhance investigations into basic molecular chemistry that might support medical research efforts to find a cure for cancer. Bill, a second-year student, is a member of Professor Wes Borden's research group. Barney was a departmental lecturer for more than 20 years.*

*Although emeritus Professor **David Ritter** was unable to attend the awards dinner, his son, **Daniel**, wife **Bernice (Bunny)**, and daughter-in-law **Shirley** joined the 1993 Ritter Fellow **Lara Gamble** for a picture at the dinner. Lara is a third-year student working with Professor Charlie Campbell. Dave was an active member of the inorganic division for nearly 40 years.*

*Alumnus **Howard J. Ringold** spent most of his professional career at the Syntex Corporation and was senior vice president for research at the time of his death in 1984. His widow **Connie Barthold**, established a graduate student fellowship in his memory and is pictured with Ringold Fellows **Seth Brown** (1989), **Nathan Frei** (1993) and **Gordon Hogenson** (1992). Seth has been working with Professor Jim Mayer. Nathan is a student of Professor Charlie Campbell's, and Professor Bill Reinhardt directs Gordon's studies.*

*Professor **Boris Weinstein** was a noted member of the chemistry faculty from 1967 until his death in 1983. An organic chemist, he concentrated his research in the areas of natural products and peptides. His widow, **Barbara**, and sons **Michael** and **Bill**, established a fellowship in his memory and in recognition of his contributions to the Department of Chemistry. The 1993 Weinstein Fellow, **Matt McDonald**, works with organic chemistry Professor Heinz Floss. Pictured to the left with him are **Leanne** and **Bill Weinstein**.*

*Alumnus **Lloyd West** completed his doctoral degree under the late Professor **Rex Robinson's** direction and it is in Rex's memory that Lloyd and his wife, **Florence**, have dedicated their graduate student fellowship. Pictured with them are the first West Fellows, **Todd Steil** and **Jonathan Neidigh**, second-year students with Professor Niels Andersen and Bruce Robinson, respectively. The Photographic Technology Division at the Eastman Kodak Company is where Lloyd spent most of his professional career.*

Alumnus **Gary Masada**, Lubricants and Specialties group manager at the Chevron Research and Technology Company, was able to personally deliver **Warren Oldham's**

Chevron Graduate Student Fellowship check a few weeks before the dinner. Warren is a student of Professor Mike Heinekey's.

Alumnus **Klaus Saegebarth** and his wife, **Mary Ann**, endowed a graduate student fellowship last year which incorporates the duPont company's "Better Things for Better Living Through Chemistry" into its goals for recipients. Klaus rose through the scientific and managerial ranks at the giant multinational chemical company and retired in 1992 as its vice president and head of research and development in the textile and fibers department. The first Saegebarth Fellows are, from left, **Pat Heath** (a student with Professor Mickey Schurr), **Sean Smith** (Professor Bruce Kowalski and Dr. Lloyd Burgess), **Bodil Willumsen** (Professor Jarda Ruzicka), and **Tom Crevier** (Professor Jim Mayer).

Dear Dr. Watts,

Thank you for offering me the Chemistry Alumni Undergraduate Scholarship. Since this prize is the first award that I ever received in America, I appreciated the Chemistry Department's acknowledgement of my academic achievement.

I would like to thank our kind alumni and friends of chemistry. With their help, it has made it easier for students of chemistry to pursue their academic goals. I will consider this award as the encouragement from the alumni and will make good use of it. I believe that this scholarship will promote more students to study and explore the mystery of the universe. Once again, great thanks to you and the friends of chemistry.

Sincerely,

Charles Shen

Editor's note: Charles is a double degree student, majoring in bioengineering and biochemistry. Very active in the undergraduate chemistry majors' club, Charles has been the historian and is currently the vice-president of the Free Radicals. Charles did his undergraduate research with Professor Charlie Campbell and he plans to pursue an advanced degree after he graduates.

A variety of industrial, university, and departmental awards are given every year to graduate students. Pictured from left in the back row are **Linda Jung** (UW Graduate Opportunity Research Assistantship, a student with Professor Charlie Campbell), **Pam Baxter Palmer** (Union Carbide's Keenan Analytical Award Symposium participant, Professors Gary Christian and Jarda Ruzicka), **Sam Tahmassebi** (Department of Chemistry Outstanding Student Service Award, Professor Jim Mayer), **Kim Gardner** (Department of Chemistry Outstanding Teaching Assistant Award, Professor Jim Mayer), **Diane Nagahara** (UW Graduate School Fellow, Professor Mike Heinekey), from left in the front row are **Steve Gerst** (UW Graduate School Fellow, Professor Richard Gammon and Oceanography Professor Paul Quay), **Jeff Delrow** (Dow Chemical Company Graduate Student Fellow, Professor Mickey Schurr), and **Masada Disenhouse** (Washington State NASA Graduate Student Fellow, Professor Tom Engel).

Professor Brian Reid directs the research of **Jingdong (Tong) Xu**, the 1993 Kwiram/CCR Fellow. Former chair **Alvin L. Kwiram** and his wife **Verla**, pictured with Tong, established the fund shortly after the Council for Chemical Research recognized Alvin for outstanding efforts in promoting university/industry relations. Currently, Alvin is UW vice provost for research.

Alumnus **George Hitchings** and the Burroughs Wellcome Company established the Hitchings Graduate Student Fellowship shortly after he received the 1988 Nobel Prize in Medicine. Pictured with Dr. Hitchings are 1993 Fellows **Bryan Prazen**, **Li Liu**, and **Huifang Huang**. They are students with Professors Rob Synovec, Michael Gelb, and Paul Hopkins, respectively.

The following students graduated with doctoral degrees between Summer Quarter 1993 and Spring Quarter 1994.

Analytical

- **Karl Booksh**, "Second Order Calibration Methods in Analytical Chemistry," Professor Bruce R. Kowalski, Spring 1994.
- **Chris Erickson**, "Applications of Linear Systems Theory to Spectroscopic Instrumentation and Multivariate Analysis," Professor James B. Callis, Autumn 1993.
- **Ming Gu**, "Neutralization Reionization Mass Spectrometry with a Tandem Quadrupole Acceleration-Deceleration Mass Spectrometer," Professor Frantisek Turecek, Spring 1994.
- **John Henshaw**, "Reaction-Based Chemical Sensing for the Multicomponent Analysis of Chlorinated Hydrocarbons," Professor Bruce R. Kowalski, Summer 1993.
- **Kevin Kuhn**, "Evaluation of a Planar Optic Waveguide as a Platform for Evanescent Field Chemical Sensor Development," Professors Gary D. Christian and Jaromir Ruzicka, Summer 1993.
- **Zhihao Lin**, "Second Order Fiber Optic Chemical Sensors Based Upon Membrane Separation and Spectroscopic Detection," Professor Bruce R. Kowalski, Winter 1994.
- **Lynn McInnes**, "Chemical and Physical Properties of the Remote Marine Aerosol by Gravimetric and Electron Microscopic Methods," Professors William H. Zoller and David Covert (Atmospheric Sciences), Spring 1994.
- **Leslie Moore**, "High Temperature Gradient Techniques for Microbore Liquid Chromatography," Professor Robert E. Synovec, Summer 1993.
- **Cy Pollema**, "A Study of Reactive Surfaces for Use In Flow Injection Immunoassays," Professors Gary D. Christian and Jaromir Ruzicka, Spring 1994.
- **Daniel Taylor**, "Speciation of Copper in Jet Fuel by High Performance Liquid Chromatography," Professor Robert E. Synovec, Summer 1993.
- **Christopher Thompson**, "Application of Near-Infrared Spectroscopy to the Measurement of Inorganic Acids and Ions in Aqueous Solution," Professor James B. Callis, Spring 1994.

Inorganic

- **Keith Hall**, "Synthesis and Reactivity of Monomeric and Dimeric Complexes of Molybdenum and Tungsten Containing Metal-Ligand Multiple Bonds," Professor James M. Mayer, Autumn 1993.

Organic

- **Chun-Gyu Kim**, "Biosynthesis of 3-Amino-5-Hydroxybenzoic Acid, the Precursor of the mC7N-Unit in Ansamycin Antibiotics," Professor Heinz G. Floss, Spring 1994.
- **Bradley Moore**, "Biosynthetic Studies of Omega-Cycloalkyl Fatty Acids in Alicyclobacillus," Professor Heinz G. Floss, Winter 1994.
- **Snorri Sigurdsson**, "DNA-DNA Interstrand Cross-Linking By Pyrrole-Derived, Bifunctional Electrophiles," Professor Paul B. Hopkins, Autumn 1993.
- **Jinsuk Woo**, "DNA Cross-Linking: The Minor Groove, The Major Groove, and Inbetween," Professor Paul B. Hopkins, Autumn 1993.

Physical

- **Jonathan Callahan**, "Simulation Optimization and Visualization of Nuclear Magnetic Resonance Experiments," Professor Gary P. Drobny, Summer 1993.
- **Aaron Charlop**, "Search for Entrance Channel Effects in Sub-Barrier Fusion Reactions," Professor Robert Vandenbosch, Autumn 1993.
- **James Clendenning**, "The Interaction of Unwinding Ligands with Circular DNAs," Professor J. Michael Schurr, Summer 1993.
- **Melanie Domagala**, "The Use of Bismuth Adatoms for Investigating the Surface Chemistry of Adsorbed Hydrocarbons on Pt(111), Professor Charles T. Campbell, Autumn 1993.
- **Aijun Li**, "Experimental and Computer Simulation Studies of Sputtering," Professor Robert O. Watts, Summer 1993.
- **Debra Mattiello**, "Investigation of Zeeman and Quadrupolar Relaxation to Elucidate Furanose Ring Dynamics in Synthetic Oligonucleotides," Professor Gary P. Drobny, Summer 1993.
- **Miguel Sepúlveda**, "New Semiclassical Time-Dependent Methods for Molecular Systems," Professor Eric J. Heller, Summer 1993.
- **Shao-Hui Tseng**, "The Infrared Laser/Molecular Beam Spectroscopy of Weakly Bound van der Waals Clusters and Its Possible Applications," Professor Robert O. Watts, Autumn 1993.
- **Jiang Wan**, "Fast Response Luminescent Pressure Sensitive Coating and Derivatives of Tetra(pentaflourophenyl) porpholactone," Professor Martin Gouterman, Autumn 1993.
- **Sirkku Willie**, "Dynamics and Structural Studies of A-tract DNA Oligomers in Solution," Professor Brian R. Reid, Spring 1994.
- **Gershon (Gary) Wolfe**, "Methods Development in Solid State Nuclear Magnetic Resonance," Professor Gary P. Drobny, Autumn 1993.
- **Moonbong Yang**, "Experimental and Theoretical Studies of Atom -Molecule Scattering," Professor Robert O. Watts, Winter 1994.
- **Leiming Zhu**, "A Study of Nucleic Acid Spin Dynamics and Structure by NMR," Professor Brian R. Reid, Spring 1994.

During the same period of time, these students graduated with baccalaureate degrees in chemistry and/or biochemistry.

Ik Jo Ahn
Maura Lynn Aldrich
Reid Spencer Alisch
Brigham S. Anderson
John A. Banzer
Robert H. Batchelor
Sharon Bennett
Susan T. Bray
David L. Bryant
Steven K. Burkhead
Nathan D. Carlson
Elvis M. Chan
Sepideh Chegini
Chan Kuk Chong
Pi-Chun (Zoie) Chu
David Chudzik
Maryam Clark
Donald L. Crider
Kevin M. Cummings
Suzie Lauren Day
Salvatore A. DeSalvo
Anthony M. Dunnigan
John D. Duong
Tuan Quan Duong
Mark H. Eisenberg
Anson Fatland
Emilia Filipoi
Jeffrey Flaskerud
Karinne Keiko Fujii
Michelle L. Gordon
Nicole F. Hamann
Daniel C. Hawes
Jeffrey L. Heiser
Daniel Hernandez-Rubio
Shane A. Huddleston
James M. Hudson
Deborah A. Hughes
Kristi Humphreys
Stephen H. Jacks
Shirley A. Jankowski
Tonia L. Jenson
Bruce L. Johnston
Savin Kim
Shu-Tsui Lan
Chris Larson
Alice Mei-Sze Lee
Shawn Joon Lee
Frederick Lockyear
Leonardo Lopez
Constance V. Mahlik
Kevin E. McKeighen
John K. Min
Alicia J. Moffat
Daniel B. Montlucon
Kathryn Muldoon
Beth P. Nguyen
Jeffrey Lee Olsen
Ettore G. Palazzo
Mohsen Pana
Mai Pham
Trung Q. Pham
David Priebe
Katrina J. Rogers
Julie Anne Rorberg
Simonida Rutar
Roy David Seeman
Stefan Smulovitz
Kevin P. Stewart
Scott J. Stewart
Susan K. Stodden
Arna L. Stolz
Teresa Tarbuck
Mark Richard Taylor
Valentin N. Tchana
Samantha Thompson
Thuy B. Tran
Kenneth P. Trease
Thao Pham Truong
William Tuttle
Rory (Ziggy) H. Uibel
Margaret van Waardenburg
Edward E. Wakatake
John A. Weakland
Ralph Weiche
Purwani Wiryana
Ben R. Wolf
Cynthia J. Wong
Jason D. Wong
Jonathan C. Woodard

Outreach, *continued from page 4*

EMPAC
The Department of Energy again funded a summer program overseen by chemical education faculty Frazier Nyasulu and Deborah Wiegand which introduced high school juniors to analytical chemistry. Talented students enrolled in Quantitative Analysis through the Environmental Management Precollege Analytical Chemistry (EMPAC) program. They completed the same curriculum as undergraduates with the help of high school teachers as teaching assistants. College credit was received for taking the course and the hope is some of the young people will be sufficiently intrigued with the subject to choose science or engineering as a college major.

Science Service Learning
Congress created the Corporation for National and Community Service in September 1993. In addition to other activities, it supports service-learning initiatives in higher education called Learn and Serve America. Within the realm of higher education, they recognize efforts to make service an integral part of the education and life experiences of students in the nation's colleges and universities. Deborah Wiegand has been awarded funding to develop a program which brings high school and college students together to work on local science-related service projects. Next year, high school teachers will attend a summer session to design a service project for their schools. Undergraduate students, trained in a science service learning course, will work closely with the teachers and high school students.

Women in Science
To combat the attrition of women in the sciences, the department is continuing to coordinate a Women in Science program which provides a learning community that promotes the success of women in science-related fields and attempts to address the concerns female students have in entry-level chemistry courses. Because studies have shown that women are better at learning in cooperative environments rather than in competitive ones, women-only quiz sections and laboratories have been created and only female teaching assistants teach the sections. Regular mentoring by female faculty is an integral part of the program, as are special weekly meetings where a wide range of topics are discussed. Deborah Wiegand coordinates this program.

CPAC, *continued from page 5*

flow probe, involves the use of fiber-optic technology and it is felt that such an instrument will significantly reduce costs and time required to process environmental samples.

The DOE's Office of Environmental Restoration and Waste Management is responsible for cleaning up the nation's nuclear weapons complexes. Field samples from these former weapons production sites are being sent to laboratories for testing, but with the flow probe, the analysis can be done *in situ*. The probe can be placed directly down a well or in a process line - it is small enough to fit inside a syringe - thus decreasing errors that might result from sample handling, speed the time needed to make cleanup decisions, produce less waste, and lower human costs.

A wide variety of chemical contaminants can be studied using the probe. From heavy metals in drinking water to oil or gasoline leaking from underground storage tanks to the detection of subterranean contaminant plumes at a cleanup site - it is hoped that the flow probe will be among the most effective of the next generation's environmental restoration tools.

CPAC focus groups also continue their work. These industrial-driven grassroots cohorts allow scientists to exchange ideas and discuss problems without the pressure of trade secrets constricting the flow of information. The groups are based around the following concerns:

- environmental
- materials and chemical processes
- food, consumer products, pharmaceuticals, biotechnology
- oil and petrochemicals
- chemometrics
- optical spectroscopy
- flow injection analysis
- chemical sensors
- mass spectrometry
- chromatography

Faculty Update

Wes Borden (organic)
In December Wes delivered an invited lecture at a meeting of the Faraday Society in Oxford, U.K. The lectures, questions, and comments about them will be published in the *Discussions of the Faraday Society*. Closer to home, he gave invited lectures in California in March at the Gordon Conference on "Isotope Effects" and at the ACS national meeting. This summer he was invited to lecture at the Gordon Conference on Computational Chemistry and at the International Conference on Radical Ions in Halifax, and in the fall he spoke at a symposium at Yale University, honoring Professor Jerome A. Berson on the occasion of his retirement. Next spring will bring another trip outside this U.S., this one to Penang, where Wes has been asked serve as the external examiner for the Department of Chemistry at the University of Sains, Malaysia. When in Seattle, he has been enjoying acting as a guide, taking interested students, staff, and faculty on tours of the new building. It has been very exciting for him to see and show others how the plans, to which so many people in the department contributed, have been translated into three-dimensional reality. Wes also continues on the editorial advisory board of the *Journal of Organic Chemistry*.

Jim Callis (analytical)
Jim led a team of faculty and staff which made sweeping changes to the entry-level honors sequence. A paper he published in 1989 was selected as one of the top 50 publications to appear in the past 65 years in *Analytical Chemistry*.

Charlie Campbell (physical)
Charlie is the immediate past chairman of the ACS's division of Colloid and Surface Chemistry and also serves on the editorial board of the *Journal of Catalysis*.

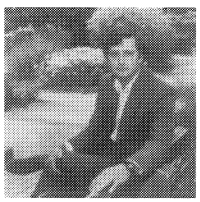
Gary Christian (analytical)
Gary has given invited seminars at Wayne State University, University of Tokyo, Yamanashe University, and University of New Mexico. He's been an invited lecturer at the Symposium on Processes in Ion-Selective Electrodes and Other Ion-Sensors, the 184th National Meeting of the Electrochemical Society in New Orleans, the 19th National Meeting of the Japanese Society of Flow Injection Analysis in Nagoya, where he gave the N. Ishibashi Memorial Lecture. (Gary was the only foriegn speaker at this memorial symposium.) He was also an invited speaker at the International Symposium on Electroanalysis, which was a tribute to Professor J. D. R. Thomas. Gary also organized symposia for Pittcon '93, the 20th Annual Meeting of Federation of Analytical Chemists and Spectroscopy Societies (FACSS), and the Canvassing Committee for the 1993-1995 ACS Award in Analytical Chemistry. He co-authored the book "Quantitative Calculations in Pharmaceutical Practice and Research" with Greek colleagues last year. The fifth edition of his book "Analytical Chemistry" came out this year. Gary continues as associate dean for the natural sciences in the College of Arts and Sciences.

Gary Drobny (physical)
Gary continues his involvement with the Environmental and Molecular Sciences Laboratory at Battelle Pacific Northwest Laboratories where he has oversight of the design and construction of a 1GHz NMR instrument.

Tom Engel (physical)
Tom has been selected as the recipient of the 1995 American Chemical Society Award in Surface Chemistry. It is given semiannually to recognize research accomplishments in the area of gas-surface chemistry. He also delivered 10 lectures in July on the oxidation and etching of silicon surfaces as the physical chemistry summer lecturer at the University of Colorado. He is currently head of the surface science division of the American Vacuum Society and continues his interest in the interface between science and public policy as a member of the Hanford Advisory Board. This is a board representing the interests of all Hanford stakeholders (from friends of the earth to friends of the atom) in which it is attempting to give both policical and scientific input to those in charge of the most expensive cleanup project in history.

Heinz Floss (organic)
Heinz continues his strong interaction with the local biotechnology industry. He gave the Ole Gisvold Lecture at the University of Minnesota and was an invited speaker at meetings in Japan, Germany, and the United States.

Richard Gammon (environmental)
Richard has developed a new, interdisciplinary course "Photochemical Processes at the Ocean-Atmosphere Interface" as a bridge between environmental chemistry and chemical oceanography. Richard was appointed chair of the NOAA/UCAR Global Change Postdoctoral Fellowship Program for 1994-1997. He also gave invited lectures in France and a short course on global climate change in Arizona.



Mike Gelb (bioorganic)
Mike is a Fellow of the Alfred P. Sloan Foundation and a National Institutes of Health Research Career Development awardee. His work on protein prenylation, phospholipases, and enzyme inhibitors is being funded by three grants supported from NIH, one from Sterling-Winthrop Pharmaceuticals, one from Parke-Davis Pharmaceuticals, and one from the UW's Royalty Research Fund. Gelb gave invited lectures last year in Switzerland, Germany, and at a number of American universities.

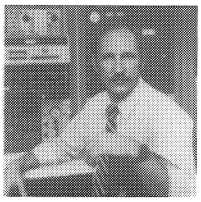
Martin Gouterman (physical)
Martin was the College of Arts and Sciences' Liberal Arts Professor last year and he continues his NASA funded collaboration with Boeing to develop pressure-sensitive paint to study airflow characteristics of the next generation of passenger aircraft. Martin played a leading role in the development of the new chemistry minor, which will be implemented this coming year.

Paul Hopkins (bioorganic)
The chemistry of DNA continues to be the central focus of Paul's group. During the past year, the structure of several more lesions in DNA formed by antitumor drugs were solved. The group has now conducted low resolution studies of the impact of some of these lesions on the global structure of DNA, and in some cases has detected substantial bending of the helix axis. During the coming period, they hope to collaboratively pursue the three dimensional solution structures of these lesions in DNA. Particularly pleasing this year was the completion of a new, rigidly spin labelled DNA for use in studies of DNA dynamics. The group is confident that this is the best available probe for these measurements. Paul received the H. C. Brown Young Investigator Award from Purdue University and is the 1994 Ciba-Geigy Lecturer at Colorado State University. He serves on the advisory board of the *Journal of Chemical Research in Toxicology* and he worked with faculty in other departments this year to introduce new teaching methods into the organic chemistry curriculum. Paul's twenty-one month old son, Sam, is now composing original music, solving simple quadratic equations, and has made critical comments concerning the works of the late Nobel Laureate Robert Burns Woodward. Just kidding.

Hannes Jónsson (physical)
Last year, he received an NSF grant for "Computer Simulations of Thin Films and Interfaces" as well as unrestricted funds from Allied-Signal, an industrial company. Hannes organized a workshop on "Computer Simulations of Crystal Growth" at CECAM in Paris and gave invited talks at the workshop on "Large

Scale Simulations in Surface Science" in Denmark. He also spoke at the chemistry departments at Pennsylvania State, Harvard, Brown, and the University of Pittsburgh. He gave talks at the national ACS meeting in San Diego last spring, one in the Colloidal and Surface Science and the other in the Chemical Education division. Hannes received a UW ACCESS award for innovative undergraduate teaching and he used the funds to hire undergraduates to work on software development for the computational laboratory.

Bruce R. Kowalski (analytical)
At its semiannual industrial sponsors meeting in May, the Center for Process Analytical Chemistry (CPAC) celebrated its tenth anniversary. CPAC has the largest industrial sponsor base of the 50 centers established by National Science Foundation's Industry/University Cooperative Research Center Program grants. At the meeting, Bruce was presented with an award and recognized as the founder and CPAC director for the last ten years. He continues to serve as editor emeritus of the *Journal of Chemometrics* and as associate editor of *Computational Statistics and Data Analysis*. Bruce serves on the Westinghouse-Hanford advisory board and he authored a special report, "Theory of Analytical Chemistry," which reviews the history of chemometrics.



Alvin Kwiram (physical)
Alvin was the 1993-1994 immediate past chair of the AAAS Chemistry Section. This past year he was appointed to the AAAS program committee which plans the annual AAAS meeting. He was also asked to serve on a special AAAS Task Force to review the organization, structure, and operations of the sections. Alvin continues as a member of the ACS Division of Physical Chemistry and also the Committee on Science. Recently, Kwiram and postdoctoral fellow Jurek Krzystek, participated in the first successful magnetic resonance force microscopy experiment on the UW campus. This concept, introduced by Professor John Sidles of the Department of Orthopaedics, uses force methods to detect magnetic resonance. The first such experiments were carried out a year ago at the IBM Almaden Labs by Dr. Dan Rugar and associates. The UW experiment was spearheaded by Professor Sidles and Professor Garbini of the Department of Mechanical Engineering. Calculations suggest that with advances in miniaturized cantilever design, single electron spins should be detectable with this method.

Joe Norman (inorganic)
He has become Vice Provost for International Education. Since 1987, Joe has served as the dean of the College of Arts and Sciences.

Marjorie Olmstead (adjunct, physics)
She received the Peter Mark Memorial Award of the American Vacuum Society. Since 1979, it has been awarded annually to a young scientist or engineer for outstanding theoretical or experimental work, at least some of which has been published in the society's journal. The citation reads: "for elucidating the nature of semiconductor surfaces and the heteroepitaxial growth of insulating materials on these surfaces." Marjorie was also awarded a fellowship by the American Vacuum Society which will be presented this October at the Annual Symposium of the American Vacuum Society in Denver, CO. There, she will also give an invited talk on her work. She was the keynote speaker at an NSF-sponsored symposium designed to give undergraduate women information about graduate schools: "Graduate Study in Science: A Symposium for Undergraduate Women" which was held in Corvallis last April. Marjorie's topic was "Confidence in Your Career."

Yeshayau Pocker (organic)
Saya continues to serve on the board of reviewing editors for *Science* and on the advisory board of Gonzaga University's Murdock Research Program.

B. Seymour Rabinovitch (emeritus, physical)
Rab continues to be excited by his studies of antique silver and his pseudo-chemical research related to silver smithing and antique silver surfaces. Several papers have been published on surface appearance and silver gilding, and work has started on a new project on the removal of firestain. He participated in a London exhibition last fall on "Twentieth Century Table Silver" and is guest curator of an exhibition on "Eighteenth Century European Silver" which opened at the National Ornamental Metal Museum in Memphis, TN in August.

Bill Reinhardt (physical)
Areas of the group's research continue to broaden, with projects relating to solvation of electrons, formation and stability of bubbles in water solution, frustra- tion and do- main forma- tion in two dimensional polar adsor- bates, fold- ing of mem- brane pro- teins, and the develop- ment of new meth- ods for de- termining the critical parameters of atomic and molecular fluids and the surface tension of interfaces of molecular fluids. Group members have or are preparing to give talks in such places as Kyoto, Prague, Berlin, Asilomar, Honolulu, and Irsee. Bill is continuing to develop a cooperative research venture with scientists at the National Institute for Standards and Technology (NIST) as part of a High Performance Computing initiative at NIST's Gaithersburg research labs. This cooperative work will take advantage of his group's background in materials simulations and atomic/molecular physics, and NIST's recent acquisition of a massively parallel supercomputer. Bill continues to serve on the editorial boards of the *Journal of Physics B (Atomic, Molecular and Optical Physics)* and *Chemical Physics*.

Norm Rose (inorganic)
The UW Board of Regents approved the appointment of Norm to be dean of the UW Bothell branch campus.

Jarda Ruzicka (analytical)
Jarda is a member of the advisory board of collection of Czechoslovak Chemical Communication and remains active on the board of the Danish company Novo Nordisk USA. Jarda gave invited lectures at major international conferences in Finland and Spain and he also developed a new curriculum for an undergraduate course.

Tomi Sasaki (organic)
Tomi was made an honorary member of Phi Eta Sigma undergraduate honor society in recognition of his outstanding teaching.

Verner Schomaker (emeritus, physical)
Verner and Judy Schomaker have been spending their summers in Seattle and their winters in Pasadena, since his retirement a decade ago. Verner works days in Bagley while in Seattle and at the Beckman Institute when in California, on a number of old problems in thermodynamics, crystal and molecule structure, and diffraction methods. At the annual meeting of the American Crystallographic Association in Albuquerque last year he presented an invited paper with Ken Trueblood (UCLA), which is being readied for publication. The Schomakers have eight grandchildren.

Mickey Schurr (physical)
During the last year, Mickey was officially promoted to the rank of "grandfather" by the arrival of his first grandchild, Tom, born to his oldest daughter Kerrie. Of considerably less significance were/are the following events: he attended the Winter Gordon Conference on Macromolecular and Polyelectrolyte Solutions in Oxnard, where he served as a Discussion Leader and presented a poster. This Gordon Conference was initiated by UW grad Ken Schmitz in the early '80s. Together with Bryant Fujimoto, Mickey attended the 1994

Biophysical Society Meeting in New Orleans, where they presented three posters from their group. In June and early July in 1994, he attended the International Conference on Laser Light Scattering in the Life Sciences in Minsk, Belarus. After that, he presented a lecture at the European Molecular Biology Laboratory in Heidelberg.

Leon I. Slutsky (physical)

Leon is starting his fifth year as departmental associate chair for graduate studies. He is also a member of the faculty intercollegiate oversight committee. Given the lapses in judgement of Husky football players and boosters in the last year, this committee is keeping Leon extremely busy. Leon has never been to a football game, so his qualifications for this particular committee speak for themselves.

Rob E. Synovec (analytical)

In the past year, Rob and co-workers have participated in two CPAC meetings, presenting six posters and four student talks on work in process chromatography at each meeting. Invited lectures were given at the 206th national ACS meeting in Chicago, 207th national ACS meeting in San Diego, and 18th international symposium on Column Liquid Chromatography in Minneapolis. Recently, Synovec was appointed an associate editor for *TALANTA* and is also invited to lecture on the "Chemical Sensing of *in-situ* Extracted Organics by Direct Detection of Mode-Filtered Light" at the SPIE conference in San Diego.

Frank Turecek (analytical)

Frank continues as North American editor of the *Journal of Organic Mass Spectrometry*. He gave invited lectures at conferences in the United States and Europe and published two monographs.

Bob Vandenbosch (physical)

Bob gave a series of five invited lectures at a winter school in Japan sponsored by the Institute of Physical and Chemical Research.

Bob Watts (physical)

Bob continues on the editorial board of *Molecular Physics* and is chair of the external advisory committee for the Molecular Sciences Research Center at Battelle Pacific Northwest Laboratories. Bob gave invited lectures at conferences in Germany, Britian, and the United States.

Darrell Woodman (organic)

Darrell continues to operate his Research Experiences for Undergraduates (REU) program and the Summer Institute for High School science teachers, both through funding from the National Science Foundation. He also continues to develop computer graphics demonstration software for use in the undergraduate curriculum. His unit on VSEPR geometries is being included in the 1994 Prentice-Hall chemistry videodisc.

Paul Yager (adjunct, bioengineering)

Particularly exciting this year has been success in forming solvent-free planar phospholipid bilayers across holes in microfabricated hydrophilic silicon devices - 20 years after Paul first tried to make stable planar bilayers as part of an undergraduate thesis project. Work continues of an NSF-funded collaborative project dealing with spider silk fibroins. One of his new projects involving potential uses of lipid tubules in drug delivery and bioseparations has been initiated with funding from the Royalty Research Fund. A Washington Technology Center (WTC) project on the use of Raman spectroscopy for development of a fiber optic sensor for general anesthetics and other small volatile organics continues with new NSF funding. And finally, a new project funded by the WTC and a private company will explore the use of microfabricated waveguides and flow channels to make devices for monitoring blood chemistry by optical absorption, fluorescence, and light scattering.

Bill Zoller (environmental)

Bill's nationally recognized project which teaches college students to give talks to high school students about environmental issues such as ozone depletion, NASA and the environmental effects of the space shuttle flights, Chernobyl, volcanos, and the greenhouse effect has completed its fifth highly successful year. In the last year, outreach students spoke to several thousand high school students across the state. During the past summer outreach students worked with 50 science teachers of Native American students, Native American paraprofessionals and Native American high school students to teach water monitoring and the science of watersheds.

Julie Kovacs Receives Tenure

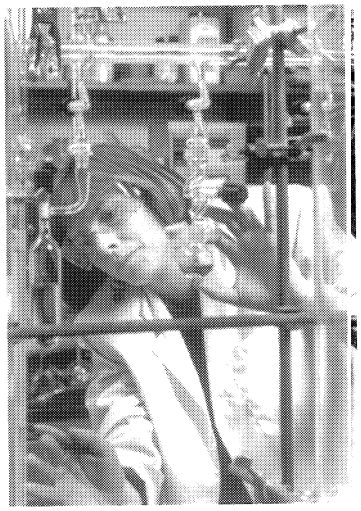
aving survived the initial rite of academic passage this summer, Julie Kovacs would now like to work toward making it easier for other women in the sciences to get the support they need to succeed in male-dominated departments.

Julie's appointment to associate professor with tenure comes at a time when the Department of Chemistry's graduate population is almost evenly divided among male and female students. However, far fewer women pursue academic careers upon receiving their doctorates, a situation which Julie would like to see change.

To begin with, she believes that women need to become more comfortable with self-promotion. In general terms, women have a different approach to research and the larger scientific community needs to become more accepting of other professional styles.

Julie's father, currently associate chair of Michigan State University's Department of Physics, spawned Julie's initial interest in science. After receiving her bachelors degree from MSU, she earned her Ph.D. at Harvard University in 1986, under Richard Holm's supervision. Her postdoctoral work at the University of California, Berkeley, was supported by a Presidential Fellowship. There, she worked with R. G. Bergman.

Her research at the UW has centered on the transition metals in nature. The focus of the work has to been to develop an understanding of the role played by Ni in the metalloenzymes hydrogenase (H2-ase), and methyl coenzyme M reductase. She is also interested in how zinc breaks down alcohol in the liver. The work is presently supported by a grant by the National Institute of Health.



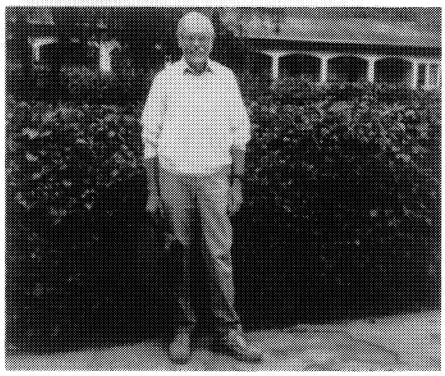
Julie sits on a board which meets once a month to discuss the clean-up of ground water at the Hanford Nuclear Reservation. She is a member of the UW Faculty Senate and in addition to her journal publications, Julie has written a chapter, "Understanding the Role of Ni in Ni-containing Enzymes," in the 1993 Prentice-Hall book "Advances in Inorganic Biochemistry, Volume 9."

Alumni News

Service to Others Motivates Former Physics Chair

Washington D.C. during the Kennedy administration was a heady time and place for W. Vance Johnson, who was in his early 30s and working in the nation's capital when John F. Kennedy was assassinated in 1963. The young president's message of volunteerism for the betterment of humankind struck a responsive chord with Johnson, who as the eldest son of a minister, was raised with a strong belief in serving others selflessly.

Thirty years and one successful academic career later finds Johnson (BS, 1953) still living his belief, as he works as a physics teacher at a private boarding school in northern Tanzania as part of a two-year Peace Corps assignment.



Vance, who went on to earn his doctorate in physical chemistry at Oregon State University, is an inveterate explorer. He's gone bird watching in Costa Rico, Nepal, and Antarctica, during his free time in the Peace Corps he's managed to visit Kenya, Tanzania, Zambia, Namibia, South Africa, Botswana, Zimbabwe, and Malawi, and he's climbed Mt. Kilimanjaro.

He's also reached the peaks in his professional career. Vance was chair of the Department of Physics at Central Washington University for many years. During a sabbatical there, he served a two-year stint as executive director of the Pacific Northwest Association for College Physics, and another term as the executive officer of the American Association of Physics Teachers. This job is what brought him to Washington, D.C.

As a classic example of the Renaissance man, Vance writes short stories, enjoys the opera, and is a wine connoisseur. During his late wife's illness and at the same time he was serving as physics department chair, he was serving up wine coolers, port, and other grape drinks as the wine steward in a local Ellensburg restaurant. Eventually, he opened up his own wine shop, at which he worked late afternoons and weekends. He remembers his students coming down to the shop to talk to him about physics if they needed extra help.

Vance is considering retiring to Bellingham, WA when his days in the Peace Corps are over. As if he knows the meaning of the word "retire."

The Winning Attitude

The 1991 GoldMedal winner of the Pacific Coast Adult Ice Dancing Championship is chemistry's own alumna Karen (Claussen) Timberlake (BA 1962). In addition to being a competitive ice skater, a sport she took up only ten years ago, she is a professor of chemistry at Los Angeles Valley College and visiting professor at UCLA, where she directs the preparatory chemistry program for underrepresented students.

Karen is the author of the top-selling "Chemistry: An Introduction to Inorganic, Organic, and Biological Chemistry, 5th Edition" (1992, HarperCollins Publishing Inc.). The text is used around the world in two- and four-year schools as an allied health careers majors' book. She is currently working on the next edition, which will feature an interactive study guide and computer disks for self-guided instruction.

Becoming the female member of the "Torvill and Dean of the Geriatric Set" (her words) is the realization of a childhood fantasy, even though she skied for most of her early life. She finds that skating is a tremendous release for the pressures that build up during her more intellectual work. She also enjoys being with other adults who possess the same zest for life and who enjoy keeping fit and firm. Karen is a self-admitted "risk-taker" and appreciates this same quality in her skating partners and friends. The sport is based on ballroom dancing, and while there are no lifts involved, the skaters have to be proficient in the tango, fox trot, rumba, waltz, cha cha, and other complicated dances.

Karen's avocation isn't the only area of her life in which her excellence and leadership has been recognized. In 1985, she won the western regional award from the Chemical Manufacturers Association for "Excellence in College Chemistry Teaching." At Los Angeles Valley College she was the recipient of two services awards, one from the Academic Faculty Senate and the other from the school president. In 1988, she was president of the Santa Monica branch of the American Association of University Women. Karen develops extensive collaborative learning activities to enhance the teaching of chemistry and has spoken nationwide about her innovations.

It was in UCLA's chemistry master's program that Karen met her husband of nearly 30 years. He is also a professor of chemistry in the Los Angeles area and together, they have just spent a summer sabbatical in Greece, after which Karen will continue working on the next edition of her textbook. By the way, Karen's husband can't skate.

She encourages those with similar interests or questions to email her at khemist@AOL.COM.

Three Alumni Share China's Highest Scientific Honor

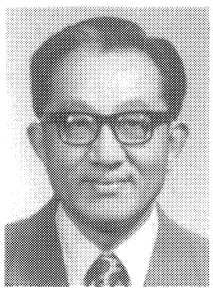
The standing committee of the Chemistry Division of the Chinese Academy of Sciences (Academia Sinica) has among its small, select group of members three former doctoral students from the UW. The standing committee is the ruling, inner circle of leading chemists in the country and has only 15 total members. China is a country of 1.2 billion people.

David Tong-Hui Zhou

Xiao-Tian Liang (formerly Hsiao-Tien Liang, before the Cultural Revolution), Stanley Xi-Kui Jiang (formerly Hsi-Kwei Chiang), and David Tong-Hui Zhou (formerly Tung-Whei Chow) were all graduate students in the 1950s who have gone on to positions of great prominence at home. Liang and Jiang received their doctorates from the late Professor Hyp Dauben and Zhou worked with the late Professor Rex Robinson.

Zhou has been affiliated with the Institute of Materia Medica in Beijing since 1955. He became head of the Department of Analytical Chemistry there in 1973. Zhou was the director of the China Doping Control Center for the 11th Asian Games, which took place in Beijing in 1990.

Zhou is also a member of the Chinese Chemical Society's board of directors' standing committee, as well as chair of its Commission on Chromatography. He has been the associate editor of four journals and he serves as an advisory board member on British and Dutch phytochemical analytical and environmental journals. He became a member of the Chinese Academy of Sciences in 1991. Zhou's research has centered around instrumental analysis, chromatography, and pharmaceutical analysis. He won a first grade National Award for Advances in Science and Technology for the study on doping control analysis. He has published about 100 papers and edited or contributed to several books on instrumental analysis and chromatography.

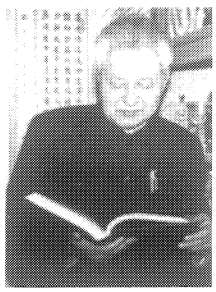


Stanley Xi-Kui Jiang

Jiang has visited Bagley Hall as recently as 1986 and like Zhou and Liang, has kept up with some classmates from the 1950s. His primary research interests have been free-radical chemistry, electron transfer and halophilic reactions, fluoroorganic chemistry, reaction mechanisms and structure-property correlations, solvent and microenvironmental effects, the effects of hydrophobic-lipophilic interactions, and aggregation and self-coiling of organic molecules. He won a National Natural Science Award in 1982 for work in fluoroorganic and radical chemistry.

He was elected to the Academia Sinica in 1991 and is an executive committee member of the Chemistry Division. Jiang is a professor at the Shanghai Institute of Organic Chemistry of the Chinese Academy of Sciences, where he has been since 1963. Prior to the Cultural Revolution, Jiang was the department head and during the Revolution, he held various positions. Jiang has given more than 100 invited talks all over the world, has published more than 130 papers, and has been an associate editor of several journals.

Liang reports that he has, regrettably, not been able to return to the UW in the last 40 years. Irving Shain, another doctoral student from the 1950s, periodically brings Liang and the others up-to-date on current events about the department as he has visited the trio a number of times in China.



Xiao-Tian Liang

In 1981, Liang was honored with the distinction of becoming a member of the Academia Sinica. He is also a member of the executive committee of the Chemistry Section of the Academy. Liang was the president of a committee for the 34th IUPAC Congress held last summer in Beijing. He is currently a senior research fellow at the Institute of Materia Medica of the Chinese Academy of Medical Sciences in Beijing. He holds several adjuncts professorships at various Chinese institutions of higher education.

Liang has been president of the Chinese Mass Spectroscopy Society, president of the Chinese Chemical Society, and editor of several scholarly journals. He has published nearly 200 papers and written several books on nuclear magnetic resonance.

The department is extremely proud of these three alumni and they are remembered warmly by emeritus faculty.

And Furthermore . . .

Tom Ables (BS, 1951) received his dental degree from the UW. He's a healthcare consultant and entrepreneur who lives in La Conner, WA. He writes that he has developed a filtering system using electrolysis in a new twist to remove all toxic metals such as mercury, silver, copper, lead, etc. from any healthcare liquid waste stream. **Alejandro (Sandro) Aruffo** (BS, 1982) works for Bristol-Myers Squibb Pharmaceutical Research Institute in Seattle. He received his Ph.D. from Harvard University. **Keith Barton** (BS, 1974) owns and operates a four-legged walking backhoe in Albany, OR. **Charles J. Bishop** (Ph.D., 1969), has been elected vice-president of the Industrial Research Institute (IRI) in Milwaukee, WI. This is an association of more than 260 industrial companies with a common interest in research and development. He will become president next year. He is also vice-president for corporate technology at the A. O. Smith Corporation. He serves on the Governor's Council on Science and Technology. **John Brock** (BS, 1972) received his Ph.D. in 1976 from the University of California at Berkeley. He is a senior scientist at the TRW Research Center in Redondo Beach, CA. He serves on the Industrial Advisory Board for the UW Department of Electrical Engineering. **Alan Coffino** (Ph.D., 1989) finished his first year of medicial school at the Albert Einstein School of Medicine, where he had previously served a postdoctoral fellowship with Professor Jack Peisach. **Richard G. Cuddihy** (BS, 1987) received his medical degree in 1991 from the State University of New York at Buffalo. He finished a pediatric residency this year and is working on a fellowship in pediatric endocrinology. **Carlo Demandante** (MS, 1992) is an instructor of chemistry at the United State Air Force Academy in Colorado. **Ira Dye** (BS, 1949) is retired and lives next to the Atlantic Ocean but still misses Seattle and the Puget Sound. He received a master's degree from the University of Pittsburgh in 1956. **Erica Loeb Evans** (BS, 1948) is retired. **Eleanor (Ray) Friele** (BS, 1983) received her medical degree from the UW. She recently joined Obstetric and Gynecologic Associates after completing a residency in San Jose, CA. **James L. Hargiss** (BS, 1942) is doctor of ophthalmology in Seattle. **Orville Manley Hutson** stopped by the Department of Chemistry recently to show his nieces and nephew the tiled murals in the front lobby of Bagley Hall. Mr. Hutson was the artist who created murals as part of a Roosevelt Administration WPA project. **Ted Flanagan** (Ph.D., 1955) is a professor at the University of Vermont and he received a D. Phil (*honoris causa*) from the University of Uppsala two years ago. **Hep Ingham** (BS, 1981) received a master's degree in chemical engineering from Arizona State University. He is a simulation engineer in Illinois. **Shawna Kennedy** (BS, 1988) taught English in Japan from 1978-1980, travelled in Asia and Europe for another year, and is now working as a data validation chemist in Seattle. **Patrick J. King** (BS, 1982) spent 9 years in the Air

Force after graduation. He received a master's degree in systems management from USC. **Barry K. Kop** (BS, 1985) received his doctor of chiropractic degree from Western States Chiropractic College. He practices in Portland, OR. **John G. Kristofzski** (BS, 1983) received his Ph.D. and is now manager in the Process Development Support Unit of the Processing and Analytical Laboratories at the Westinghouse Hanford Company. **Rob Lee** (BS, 1983) finished his Ph.D. in September 1990 at the University of California, Santa Barbara. He is a senior research investigator at Sterling Winthrop pharmaceuticals in Collegeville, PA. **Linda Marshall McGown** (Ph.D., 1979) received the New York Section, Society for Applied Spectroscopy Gold Medal Award. She is a professor chemistry at Duke University. **Sandra Moore** (D. A., 1991) is an ICP spectroscopist in a local environmental laboratory. **Robert Nelke** (BS, 1990) is a manager for ServiceMaster in Long Beach, CA. **Amy Ogai** (BS, 1985) received her chemistry Ph.D. from the University of Southern California under Curt Wittig's direction. **Mary K. Parker** (BS, 1991) works as a chemist for the Environmental Protection Agency in Manchester, WA. **Bernie D. Santarsiero** (Ph.D., 1980) is the manager of macromolecular crystallography for the MSC Corporation in the Woodlands, TX. **Donald W. Setser** (Ph.D., 1961) of Kansas State University was awarded a "Rank Prize" for his work on the development of the excimer laser. **Curtis J. Sneddon** (BS, 1988) served four years as a naval officer after graduation. He is a veteran of the Persian Gulf War. **Oscar Strelitzer** (BS, 1939) joined the United States Army Air Corps at the time of Pearl Harbor and spent 10 years in the military, first as a meteorologist and then as a flight control officer. He is now living in Bellevue, having retired in 1976 after 27 years at the Boeing Company. **Sandra Tang** (Ph.D., 1990) is a research scientist associate for the Lockheed Company. **Stacy Turner** (BS, 1950) is retired from the Weyerhaeuser Company in Everett, WA. **Bruce Underwood** (BS, 1989) received a Washington State teaching certificate from the UW and served as a visiting scholar at the Smithsonian Institution's Experimental Gallery.

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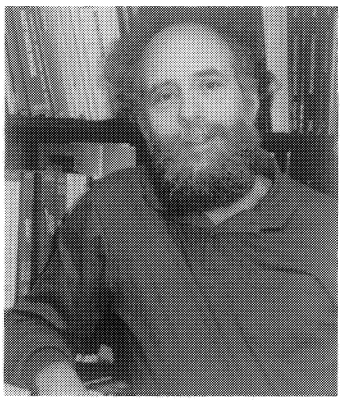
Cooper Selected Outstanding Employee

Department Chair Bob Watts writes:



Nancy Cooper, who writes and produces ***Chem Letter***, was named "Outstanding Employee of the Year" for 1994. Nancy joined us in 1978 as a Program Assistant and has risen to be the Director of our Advising Section. In her spare time she rules the department with an iron fist! Nancy advises graduate students, recruits them, acts as in-house "mother" during their stay here and helps them prepare professional CVs when they leave. She organizes

the commencement lunch, writes, edits and publishes several first class publications, and is always there when needed.

Nancy tells us that she had never had so much as a high school chemistry class when she joined us. Her claim is that she was hired after Professors George Halsey and Darrell Woodman had peppered her with absurd questions for an hour. She went home to bed following her interview, convinced of failure. After she joined the Department, Darrell Woodman told her she was hired because she seemed the most resilient of the applicants. Nancy claims that her long tenure is a tribute to Darrell's intuition. I sometimes tell her it is a consequence of my patience!

Nancy Cooper richly deserves her award. She is in turn wise, frustrating, delightful, terrorizing - and always (well, almost always) lovable.

But what does Nancy really think of us? Poet Derek Walcott says it all:

"Assuredly that fissured face
Is wincing deeply, and must loathe
Our solemn rubbish,
Frown on our canonizing farce
As self-enhancing, in lines both
Devout and snobbish."

Great work, Nancy, and thanks for everything!

Professional Staff Prize Goes to Gladden

Jim Gladden has made his avocation into his vocation and recently won a prize as a 1994 Outstanding Professional Staff person at the University of Washington, one of only six awards given annually. He parlayed his childhood electronics hobby into first, a way to pay for college, and later, a profession when he didn't follow the trajectory his studies would have taken him.

As a Research Engineer III in the Department of Chemistry, where he has worked for nearly 20 years, Jim supervises electronic and computer employees and is frequently asked to work on complex electronic instrumentation design tasks. Jim also worked on the technical parts of the grant proposal which allowed the department to purchase the large, central VAX computer in the mid-1980s. At that time, it was only the second or third of its kind on campus.

The natural course of progression saw Jim working as the VAX manager for a while, but constant interruptions prevented him from concentrating on projects for very long at any one time. Eventually, he asked to become an independent design engineer, which has been more in line with his intellectual style. He retained the managerial parts of his job as straight design would have been too isolating. Maybe this is where his psychology degree comes in handy.

While working as a staff person in an academic setting can make one a believer in the caste system, Jim feels that he is treated on equal footing by the faculty and he finds the work challenging. As one of Jim's recommenders wrote when he was nominated for the UW staff prize:

"It is staggering when one contemplates the number and diversity of cutting-edge research instruments for which Jim has served as design engineer, construction supervisor and test engineer over the years. His most recent effort in the design of a GHzNMR, to be the first one of its kind in the world, has been nothing less than fabulous. The completed project will bring great acclaim to the University of Washington, and simply would not be possible were it not for Jim Gladden."

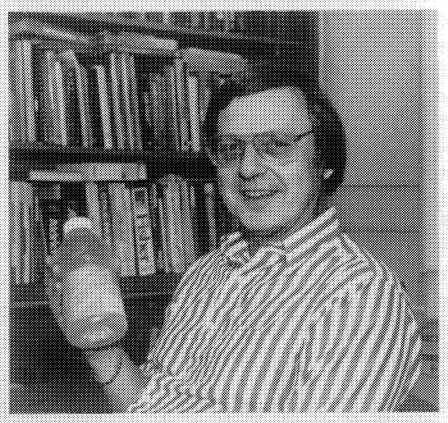
Jim's wife is a high school teacher and he has two young children. He's heavily involved with his children's school and serves as the co-chair of the site council at Bryant Elementary. Sleep deprivation prevents him from having significant hobbies.

Furthermore, *continued from page 19*

There, he was involved in the interpretation of innovative science and humanities exhibits to determine how well they will be received by the public. Several of the exhibits were interactive and dealt with such diverse topics as navigation, astronomy, psychology, poverty, AIDS, and kids and racism. **Rajendar Dev Verma** (postdoctoral studies, 1969-1971) retired recently from the Centre of Advanced Studies in Chemistry at Panjab University in India after nearly three decades. **Susan M. Wall** (BS, 1976) attended St. Louis University School of Medicine. She is now a nephrologist at the University of Texas in Houston. **Isiah M. Warner** (Ph.D., 1977) received the American Microchemical Society Benedetti-Pichler Award. He's a professor at Louisiana State University. **Scott Warner** (BS, 1985) attended the University of Texas, Galveston, School of Medicine after graduation. **Danny V. White** (BS, 1962) received a 1991 Chemical Manufacturers Asssociation Catalyst Award for outstanding teaching from the CMA. He is the department chair at American River College in Sacramento, CA. **Yusuke Yahagi** (BS, 1982) is attending Teikyo University School of Medicine.

"This Molecule Can Help Your Team Kick Butt. If You Don't Believe Us, Go Ask the Chemistry Department."

. . . . so reads the headline in a recent publicity blitz aimed nationally at high school coaches by the Seattle office of the world's second largest advertising network. Coca-Cola's new entry into the high-stakes world of sports beverages, PowerAde, boasts that its use of maltodextrins (short glucose polymers from grain starch) as a sweetener, rather than GatorAde's use of simple sugars, helps athletes outperform competitors. Because of their new drink's enhanced polymeric sweeteners, PowerAde has a greater beneficial effect on osmolality and fluid balance, according to the ad. It's also more "gulpable." Associate Professor Darrell Woodman, pictured with the drink, has supplied the advertising agency with a diagram of malto-dextrin's structure and in return for his services, his second year organic chemistry class was sent a case of the lime-green beverage. No word, yet, on whether those who drank PowerAde outperformed those who didn't on the final examination. At last report, the advertising agency was trying to convince Woodman to draw them a more attractive molecule for use in their print ads.



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