CHEMISTRY NOTATIONS

Washington State University Department of Chemistry and Department of Biochemistry and Biophysics

Willett's Welcome

by Roger Willett, Department of Chemistry Chair

I am back in the Chair's office after a 14 year hiatus. I find the job to be more challenging than before. In my earlier tenure, the University was growing and resources were available to pursue new objectives. In the intervening years, enrollment has peaked out and lean economic times force us to work through budget reductions. Actually decision making is easier now — if it costs money the answer is automatically "No." Seriously, it does hinder my ability to strengthen and build the department.

We have had numerous retirements in the inorganic division (Professors Hunt, Batey, and Nyman) and two talented young faculty members were recruited away by larger universities. These openings give us an opportunity to reevaluate our priorities and emphasize our strengths. The department's major priority is to rebuild the inorganic division and we have chosen Materials Science as a new direction. Such a decision comes at a time when Materials Science is being recognized at the University and national levels as an area important for the continued economical and technological development of our country. We are currently conducting a search for a senior inorganic chemist and anticipate adding a junior physical chemistry faculty member. Both candidates will have research interests in the materials science area.

Former chair Royston Filby & new chair Roger Willett exchange gifts.

A second activity the department is emphasizing is enhanced industrial contacts. Due to Pullman's relative isolation, this has been difficult to initiate and sustain. With the state budget situation and tightening of federal funding for research, it becomes imperative that we find ways to attract private dollars into our program. These funds can provide much needed support for graduate fellowships, summer research grants, undergraduate scholarships, etc. We encourage you to think about how you can help in these efforts, either personally or through contacts you have in industry.

In addition to the completion of the new research building several years ago, we are now close to completing plans for some

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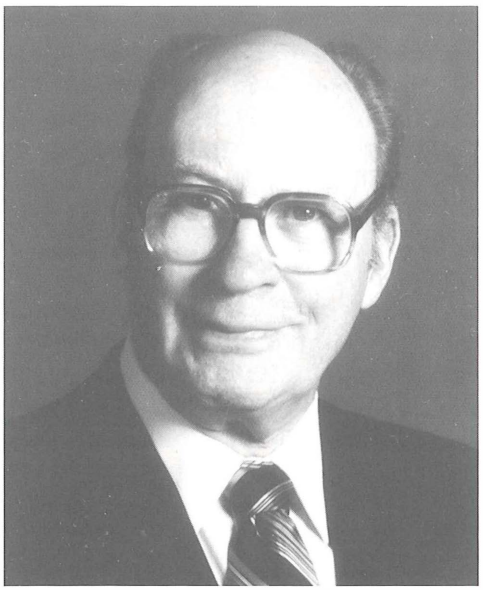
In Memorium...
William J. Shelton (1909-1992)

William J. Shelton, a WSU chemistry alum and benefactor, passed away in July after an extended illness. He lived with his wife, Ellen, in Portland, OR. Shelton earned a BS(1933) and a MS degree (1934) in chemistry from WSU. Shelton came from the backwoods of Washington and his relatives were early settlers to the Washington Territory. His uncle, David Shelton, founded the town of Shelton in 1853.



William J. Shelton

When he came to WSU in 1927 he played frosh football with the same group of players that made it to the Rose Bowl in 1931, but his real love was baseball. While attending college he played semi-pro baseball under the name Shelby so he would not hurt his amateur status.

In fact, he received an "F" in Agricultural Chemistry because he skipped a lab to play a double header on Memorial Day to earn money. This was during the height of the depression when making some extra money was very important. Dean Todd understood his situation and did not make him retake the course. Bill had a lot of respect for the wisdom of Dean Todd. Later, Todd recommended him for a job as a state chemist which utilized this course.

After Bill received his MS he sent out 106 applications and received only 2 responses. One was from a friend of the family saying that he was sorry, but he wasn't able to hire anyone. The other, from Longview Fibre, was an entry-level job which only paid $.425 per hour for 6 hours per day—for a college graduate with two degrees!

At that time, Bill was working as a logger and playing on the logging sponsored baseball team—getting paid five times as much as the offer from Longview Fibre, so he did not respond. A month or so went by, when a terrible accident occurred. Two boys he was playing baseball with had a tree pulled over on top of them, killing them both instantly. That evening, Bill went home and found a telegram from Longview Fibre asking him if he wanted the job or not. Bill decided it was fate and accepted the offer. Thus began his 50 year association with the pulp and paper industry.

He became involved in building new mills and major expansions. He started with Longview Fibre, and then went on to Georgia Pacific. He left Georgia Pacific in 1965 as Corporate Vice-President and began his own business as an executive consultant and was kept on retainers for the next 20 years to Willamette Industries. Bill described his career as "ideal and happy" because he was doing things exactly as he wanted.

Shelton never forgot the influence that WSU had on him and in appreciation he became a WSU benefactor. Mr. Shelton said, "WSU did so much for me, high time to repay some of the debt I owed the school."

He established the William J. and Ellen G. Shelton Executive in Residence program that will bring corporate leaders in business or technologically based industries to WSU in order to lecture, teach, and interact with students and faculty. For example, this would include seminars, group discussions or lectures on subjects inherent in the business world, but not yet included in the curriculum. This will enhance the learning experience beyond the classroom and laboratory and better prepare the academic community to provide future leaders to science related fields.

He also established the William J. Shelton Scholarship. This fund will provide summer grants or scholarship assistance to undergraduate or graduate students studying in the physical sciences within the College of Sciences and Arts who might otherwise be unable to pursue intensive studies in the sciences.❖

Biochem Students Awarded Goldwater Scholarships

Two biochemistry students were named Barry M. Goldwater Scholarship recipients for 1992-93. Douglas Ryan Davies and Kimberly Jo Melde, both juniors, will each receive $7,000 per year from the national scholarship fund for up to two years of undergraduate study. The Goldwater Scholarship was created by the US Congress in 1986 to encourage study in mathematics and natural sciences and to honor former Senator Barry M. Goldwater.

Doug Davies, of Richland, WA, focused his essay on his research on proteins found in fossilized DNA. Davies has received several awards recognizing his academic achievements, including the Glenn Terrell Distinguished Presidential Scholarship, a Seafirst Excellence Scholarship, and the Battelle Award. His collection of books by Ayn Rand won him the undergraduate prize in the '92 WSU Annual Student Book Collection Competition. He hopes to complete a PhD and work for the federal government or private industry in research and development.

Kimberly Melde, of Kennewick, WA, hopes to earn her PhD and study genetic diseases or human genome mapping. Her essay explored a possible cure for Alzheimer's disease. Kimberly is a National Merit Scholar and received several WSU scholarships including the Glenn Terrell Distinguished Presidential Scholarship and the Bell Freshman Mathematics Scholarship. In high school she was an Explorer Scout, participated in the Math Honor Society and the Westinghouse Hanford Company "Inquire Into Science" program during her senior year.

Each applicant was required to submit a 600 word essay about research they are involved in to the WSU selection committee. The committee is headed by Ronald Brosemer, Associate Dean of the Division of Sciences. Five names from WSU were forwarded to the national competition.❖

Smerdon Invited to Benzon Symposium

Mick Smerdon, professor of biochemistry and biophysics, was an invited participant at the Alfred Benzon Symposium in Copenhagen, Denmark last August. He presented a talk entitled *DNA repair in transcriptionally active chromatin.*

The Benzon Foundation, established in 1952, is a non-profit organization devoted to promoting medical, pharmaceutical, biological, and chemical research. Among other activies, the Foundation, in conjunction with the Royal Danish Academy of Sciences and Letters, sponsors a series of international symposia. Professor Smerdon participated in the thirty fifth symposia. Speakers came from as far as Japan, Germany, the Netherlands, and the US.❖

(Willett's Welcome continued from page 1)

final remodeling in Fulmer Hall and Fulmer Annex. This project will focus largely on addressing safety and code issues in the two buildings. However, after several stages of negotiation within the University, we have been able to accommodate a number of programmatic items and to solve the inadequacy of the air handling system in Fulmer Annex. The programmatic items will focus largely on instructional updates although a number of research laboratories will be upgraded. Construction is scheduled to begin in the fall of 1993.

If you have any questions or concerns please call or write and if you are planning to visit Pullman be sure to come by the department. I am looking forward to meeting all of you!❖

Changing of the Chairmen

The Department of Chemistry held a party to celebrate the changing of the chair on May 15, 1992. After four years, Roy Filby passed the torch to Roger Willett. As many of you may remember, Roger Willett was also chair of the department from 1974 to 1978. Members of the department prearranged a box of "roasting" material for each of them to present to the other. Neither Filby nor Willett realized they would be on the receiving end. Among other items, Professor Filby presented Professor Willett with a plaque that read on one side, "Deans Motto: A promise is not a commitment"

and on the other side, "Chairman's Motto: A commitment is not a promise." Professor Willett reciprocated by handing Professor Filby next year's teaching assignments, with Filby assigned to every course. Filby then presented Willett with the projected year end budget with a $100,000 deficit. The departmental staff had a great time serenading the two chairmen with "What do you do with a department chairman?" sung to the tune of "Happy Trails" and led by Barb Harding. It was a fun time for all!❖

Exciting Moments in a Physical Chemistry Seminar

by Daryl Clerc, a physical chemistry graduate student

Dr. Pertur Bation completes his derivation of the Schroedinger Equation . . . and the crowd goes wild!

Enzymes in Compromising Positions

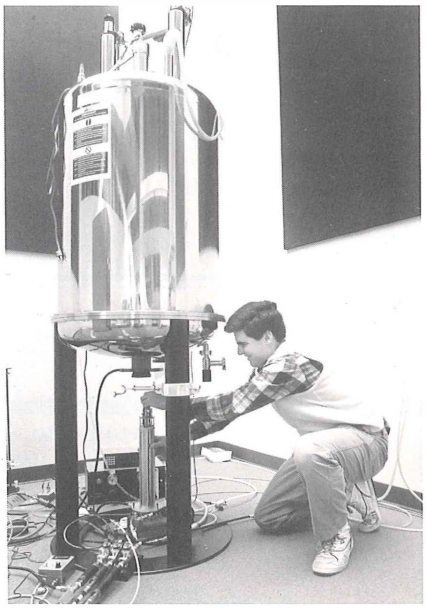
Richard Appleyard is a biochemistry graduate student. He received his undergraduate degree in chemistry from Oxford University and considers himself part of the "brain drain" from the United Kingdom, but stoutly maintains that British research is not dead, it's just currently residing in the USA!

Nuclear magnetic resonance (NMR) spectroscopy was a technique that I stumbled upon at the beginning of my academic career and have been enamored with ever since. I took a year out between high school and college to work at the Shell Research Center in England where I was given a technician's job in the NMR laboratory of the Analytical Chemistry Division. The majority of my work involved running service samples on a high-field, superconducting NMR spectrometer. For a newly graduated high school student, the task of operating a $500,000 instrument was quite daunting. However, my familiarity with computers, which control most machines today, soon dispelled these fears.

I went on to complete a bachelor's degree in chemistry at Oxford University. This degree program includes a fourth year devoted entirely to research. I chose to work for Jeremy Evans, who was studying enzyme reactions using NMR spectroscopy. I saw this as a unique opportunity to combine my interests in NMR and the fundamental chemistry of biological reactions.

As I completed my undergraduate studies, Professor Evans decided to take a faculty position in the biochemistry department at WSU. Faced with the prospect of a new laboratory with new NMR facilities and the playground of the Pacific Northwest, I didn't need much persuading to continue my studies toward a PhD in Pullman. The NMR Spectroscopy Center at WSU currently possesses an impressive array of spectrometers: both solution-state and solid-state.

The main problem with studying enzyme reactions in solution is that in order to slow the rate down enough to observe transient intermediate stages of the reaction, the temperature must be lowered below the freezing point. Therefore, I hope to use solid-state NMR spectroscopy to study enzymatic reactions in my research. Using rapid-mixing apparatus, a reaction will be frozen at different time points and studied using this technique. NMR spectroscopy gives details about the magnetic environment around a particular type of nucleus, like hydrogen. This readily translates into information about the structure within a molecule. These experiments will give data about the intermediates formed as a reaction progresses, and even changes in the distances between the reacting species. In effect, I hope to produce an NMR "movie" of a reaction. This detail will allow a greater insight into the catalysis by the enzyme, allow the rational design of molecules that will specifically inhibit a reaction and, in the long term, hopefully lead to novel drugs, herbicides or insecticides.❖



Richard Appleyard places an enzyme sample into the NMR spectrometer.

Best Deal Around!

The Department of Biochemistry and Biophysics has T-shirts for sale. The shirts have a beautiful 5-color design on a black background and are guaranteed to stand out in a crowd. Cost is $15.00 each and are available in sizes from adult small to XXL. Profits go to the Biochemistry Graduate Student Association, a newly formed group which has already taken a leading role in the issues of student rights and benefits. To order, drop us a note with payment (checks payable to WSU Dept. of Biochemistry), call us at (509) 335-1276, or FAX 509-335-9688. If you're on campus stop in and pick one up in Fulmer 628 — you'll be glad you did!❖

TAs Teaching TAs

All teaching assistants (TAs) receive training as they make the transition from student to instructor, but in the Department of Chemistry their teacher training comes from an effective and unusual program.

The chemistry training program uses experienced and successful TAs instead of faculty to evaluate and monitor the new TAs. The new TAs practice leading tutorials (problem solving classes), and introducing and leading laboratory experiments using a method called micro-teaching, where one TA acts as teacher and the others pretend to be the class. The tutorial part of the training is video-taped and the "teachers" get the opportunity to watch themselves teach. Experienced TAs evaluate their performance and lead demonstrations of good classroom techniques.

"The first TA assignment is usually difficult..."

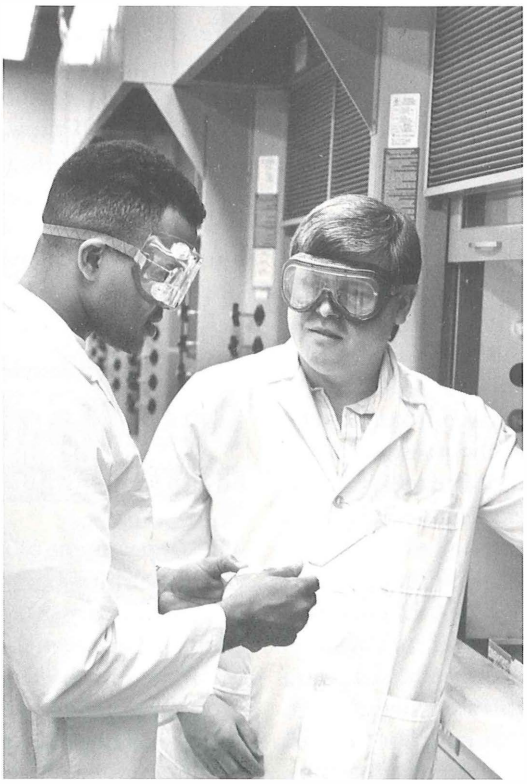
—Bob Thomas

Since a novice TA might find a faculty member's presence intimidating during these practice sessions, faculty members do not take part in the proceedings. Instead the experienced TAs report upon each of the new TAs and make a recommendation for their placement into teaching positions.

In the past, the director of general chemistry labs observed new TAs . This was a nerve-racking experience for many of the new TAs, who occasionally became virtually tongue tied during such a visit. Last fall the new method of monitoring TA progress began. A seasoned TA, Bob Thomas, took over some of the "visitation" role. Thomas observed without causing the distraction a faculty member would have. He was able to offer advice to the new TAs from a peer-counselor perspective.

"The first TA assignment is usually difficult and adapting to the classroom is time consuming," said Thomas. "It is hard to utilize everything taught in TA training while working in the different, occasionally hostile environment of the classroom. A large part of my own adaptation as an instructor came about through end-of-the-semester feedback from students. This method takes time and does not necessarily serve the student or the TA in the most effective manner.

"It may be possible to enhance and accelerate this process through peer reviews. Having already made and become aware of many mistakes, an experienced TA can see many ways in which a new TA can improve their classroom interactions with students. By keeping the process simple, a few suggestions per review, the new TA can use the information."



Bob Thomas, right, assists undergraduate Kipchoge Kirkland in the quantitative analysis laboratory.

Bob Thomas is pursuing a PhD in analytical chemistry. He returned to school after working five years at the Spokane Community Mental Health Center. He worked as a counselor at the Morning Star Boys Ranch while earning his first chemistry degree in 1989 from Eastern Washington University.❖

New Science Courses Planned

Students may soon take two new broad introductory science courses that are currently in the planning stage. The pilot courses, one has an environmental focus and the other an earth science focus, are the first of several courses being prepared by the Division of Sciences. These courses will meet the new Tier I, General Education Requirements for graduation.

Far reaching changes in graduation requirements will be put into place over the next four years. Under the new requirements, students will achieve basic writing proficiency, mathematics proficiency, and effective writing in their major. They will take a world civilizations course and a distribution of courses in sciences, social sciences, intercultural studies, and arts and humanities. There are three levels, or tiers, of distribution courses.

A typical student with a non-science major, in addition to other requirements, will take a Tier I science course followed by two Tier II courses, one in a biological science, the other in a physical science. Tier II courses already exist as the introductory courses in the science disciplines, such as BioScience 103, Chemistry 105, Physics 101, etc. Tier I courses, however, do not yet exist.

Helen Place, instructor and supervisor of general chemistry laboratories, is the Division of Sciences General Education Committee Chair. The committee is developing a plan for general education in the sciences, and specifically stimulating the design of Tier I courses.

The committee has agreed each Tier I science course will serve as an introduction to science and scientific thinking. This includes the historical development of science, its relationship to civilization and its relevance to contemporary society, as well as the impact of modern technology on the individual, society, and the environment. Courses won't focus on a single discipline, but rather address topics and ideas that are common to all branches of science. All courses will offer students a "hands-on" experience — collecting, interpreting, and presenting data. Tier I courses will introduce the student to scientific literature, require writing, and use the scientific method as a unifying theme.❖

Helen Place

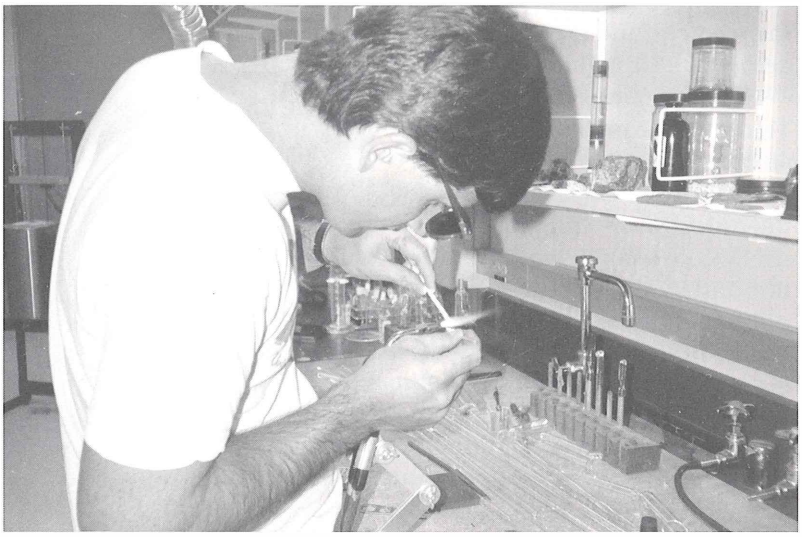
Operation Progress II

At the XIIth Biennial Conference on Chemical Education held in Davis, CA in August, high school teachers from California, Oregon, and Nevada participated in OPERATION PROGRESS II. The program targeted teachers who are teaching chemistry out-of-field or teaching large numbers of students traditionally underrepresented in the sciences. OPERATION PROGRESS II was a sequel to the highly successful program directed in Atlanta, GA in 1990 by Professor Crosby and managed by Jane Crosby. Both functioned in similar capacities this summer. Four high school chemistry teachers from Washington State helped the Crosbys run the event: Dana Beatty, Jerry Breymeyer, David Trap, and George Johnson. Assisting was Leonard Henscheid (WSU, Dept. of Chemistry), Charles Templeton (Professor of Chemistry, Whitman College) and Karen Crosby.

The National Science Foundation, the Council on Chemical Research, and the Division of Chemical Education of the American Chemical Society lend support to the program. The goal is to improve chemistry teaching in high schools by introducing relevant laboratory materials for use in the classroom. If funding is obtained, a follow-up program will be offered in 1993. Plans for OPERATION PROGRESS III are now underway to complement the XIIIth Biennial Conference at Bucknell University in Lewisburg, PA in 1994.❖

Cleary Receives Fellowships

Chemistry professor David A. Cleary recently received fellowships from two prestigious conferences to attend their gatherings and present results from his laboratory. The first was from NATO to attend an Advanced Study Institute entitled *Chemical Physics of Intercalation* held in Bonas, France. The second was from the Gordon Research Conferences to attend the biannual Gordon Conference on Solid State Chemistry, held in New Hampshire.



Professor Cleary preparing specialized glass reaction vessels.

Cleary has been at WSU since 1987. His research in solid state chemistry involves synthetic metals, superconductors, and chemical sensors. At these meetings, Professor Cleary reported the results of work he and his graduate student Daryl Clerc have done on the charge transfer nature of intercalation compounds. An intercalation compound is a solid modified in a controlled way by the insertion, of "intercalation," of atoms, molecules, or ions into available interstices of the solid. The resulting material often displays optical, magnetic, and transport properties different from either the pure host solid or the intercalating agent. Interest in this type of chemistry results from the fact that low temperature synthetic routes (25-100°C) can be used to produce new materials. When reaction temperatures are kept in this regime, an enormous number of exotic reagents can be considered in planning synthetic strategies. Cleary and Clerc's work involves the intercalation of cobaltocene, $Co(C_5H_5)_2$, into $Cd_2P_2S_6$. Using Fourier transfer infrared spectroscopy and an infrared microscope, they produced spatially and temporally resolved spectra from which a detailed mechanism of the intercalation reaction can be deduced. This work has been submitted to the new American Chemical Society journal, *Chemistry of Materials.*❖

Biochemistry Grad Begins New Career

A recent WSU graduate, Linda Roberts accepted a position at the Centre College in Danville, Kentucky as an assistant professor of biochemistry. Professor Roberts' position is funded for the first 5 years by a Howard Hughes Medical Institute Grant. Centre College is dedicated to involving undergraduates in research and a portion of the Howard Hughes grant is designed to increase undergraduate research. Linda will teach several classes but will continue to pursue her research interests.

Linda worked under Keith Dunker while at WSU and graduated with her PhD in biochemistry in 1990. Last year she held a postdoctoral position at the University of Alabama in Birmingham and then worked at Southern Research Institute while finishing up research she began at the University of Alabama.

Linda hopes to continue collaborating with researchers she worked with in Alabama as well as those at WSU. She may be able to bring some of her undergraduates back to Pullman during summers to work in laboratories here and gain experience at a research university.❖

Alumni News

The following information has been sent in by our alumni or submitted by current faculty members. We love hearing from our alumni and encourage you to send us information about what you are doing in the enclosed postage paid envelope.

Jeffry R. Alger (McLean, VA) (BS Chem '75) is a research chemist for the National Institutes of Health.

Antony C. Bakke (Portland, OR) (BS Biochem '71) is an associate professor at Oregon Health Sciences University. Antony received a PhD in '78 from California Institute of Technology.

Perry F. "Buzz" Brake (Tacoma, WA) (BS Chem '63) received a MS (organic chemistry) in '71. As a chemist for the Washington State Department of Ecology, his primary duty is to audit and accredit analytical laboratories that analyze environmental samples and to report the data to the Department of Ecology.

Douglas J. Christie (St. Paul, MN) (PhD Biochem '79) was promoted to associate professor with tenure in July of '91 in the Department of Laboratory Medicine and Pathology at the University of Minnesota Medical School.

Irvin C. Feustel (Berkeley, CA) (BS Chem '27) received a PhD from the American University in '34 and retired from the US Department of Agriculture in '65. Following retirement, he taught chemistry and physics in a private college preparatory school (Anna Head School) for 5 years.

Melvin J. Gortatowski (Salt Lake City, UT) (MS Chem '52) wrote to say it is very good to "keep in touch" and read about happenings at WSU, especially the chemistry department.

Edward J. Guthrie (Landenberg, PA) (BS Chem '78) received his PhD in analytical chemistry in '84 from the University of North Carolina at Chapel Hill. He is now a columns research and development manager for Hewlett Packard.

John E. Halver (Seattle, WA) (MS Chem '48) recently retired from the University of Washington where he was a professor of nutrition since 1978.

Ray E. Harris (Modesto, CA) (BS Chem '49) retired in '82 from Kerr McGee after working 31 years in analytical research and spectroscopy on rare earth, thorium, titanium and manganese, and uranium compounds.

Sharon Hecker, MD (Chicago, IL) (BS Biochem '82) received her MD at Loyola University's Stirch School of Medicine and is now a resident in internal medicine at Loyola Hospital. She would like to see more encouragement and support given to students interested in medicine.

Ramy N. Hough (Seattle, WA) (BS Chem '46) enjoys our newsletter and the work the department is doing to increase the interest of school children in science. Thanks!

Edward L. Johnson (Tualatin, OR) (PhD Chem '67) is president of ALPKEM corporation, a manufacturer of continuous flow analyzers. He previously held positions at the University of Washington, Dionex Corporation, Varian, and Goodyear Tire & Rubber. He coauthored the book *Basic Liquid Chromatography*, published numerous papers dealing with both liquid and ion chromatography, and was co-inventor for 8 patents.

Michael B. Lindsey (Sunnyvale, CA) (BS Chem '85) is a materials and processes engineer for Lockheed Missiles and Space Co., Inc.

Jack R. Luoto (Highland, CA) (BS Chem '54) received a degree in biology from California State University in '77. Jack retired from the Air Force in '74 and earned a California State Teaching Credential in '78. He taught life science and math.

David W. Maddison (Idaho Falls, ID) (PhD Chem '68) who works as a chemist at Argonne National Laboratory wrote recently to share with us that his daughter Christine just finished a musical education degree at the University of Oregon and Lisette graduated from the University of Puget Sound in Tacoma with a BS in biology. David's wife Josette, who also graduated from WSU (MS Chem '65) is a teacher at a Presbyterian preschool.

Raymond W. Mah (Walnut Creek, CA) (PhD Chem '63) is a researcher for Dow Chemical Co.

Martha E. Miller (Vacaville, CA) (BS Chem '33) is self-employed doing income tax work where she specializes in working with senior citizens. She continues to use her navigational skills in boating competitions.

Christopher E. Nelson (Des Moines, IA) (PhD Biochem '80) is VP of Research and Development at Kemin Industries.

Ellen Webber Pankuch (Califon, NJ) (BS Biochem '68) is a science teacher at Rahway High School and is finally doing what she has always wanted to do. Ellen tells us that learning and sharing are great fun, but it is a tremendous amount of work!

Greg L. Pearce (Palouse, WA) (BS Biochem '75) received a MS (animal nutrition) from WSU in '83. Greg is a research technician for WSU (C.A. Ryan) and expresses to us his appreciation for the work that Gerhard Munske does in the Laboratory of Bioanalysis and Biotechnology.

David L. Smith (Chicago, IL) (BS Chem '67) received a degree in inorganic chemistry in '72 from the University of Wisconsin-Madison and now works for the Fryer Company as director of electronic imaging.

Todd Somers (Montara, CA) (BS Chem '82) received a PhD from Oregon State University in '87 and was an NIH post-doc at Harvard in '87-89. Todd is currently working on the rational design

(Alumni News continued on page 11)

Golden Graduates Class of '42

During the Class of '42 reunion celebration this summer, we were lucky to be able to visit with our golden grads in the chemistry department. Otis Fortner (BS Chem '41) was also on campus for the reunion and he joined us. Roger Willett, chair of the department, gave everyone a tour of our new facilities. We were so happy that everyone could stop by and say hello!

William Edward Brandt (BS Chem '42) began his education with a degree in chemistry, but found his professional life centered around music. Professor Brandt is a professor emeritus of the School of Music and Theatre Arts at WSU. He has taught music history, theory and composition for many years and has been honored for his talents and dedication many times over. He received a WSU Faculty Enrichment Award in 1982 and was elected "Composer of the Year" in 1992 by the Washington State Music Teachers Association, which included a commission for a new composition. He is also an honorary curator of the music collection at the WSU Archives and Special Collections Library. Professor Brandt continues to live in Pullman with his wife, Janet. They have three sons, Roger, David, and Douglas, and three grandchildren, Kelly Christine, Todd, and Tyler. The Brandts like to travel and Professor Brandt continues to keep an interest in science.

Loyal H. Davis (BS Chem '42) was employed as a manager of technical services at Philip Morris Inc. for 41 years. He continued to act as a consultant for Philip Morris for 15 years. He received several awards during his career, including the VA Section of the American Chemical Society Distinguished Service Award, Alpha Kappa Lambda Distinguished Alumni Service Award, and the Philip Morris Inc. Gold Ring Award. Loyal lives in Richmond, VA with his wife Helen. Loyal and Helen have 3 children and 7 grandchildren. He stays active by fishing, bowling, gardening, and orchard growing.

J. Haworth Jonte graduated with a MS in chemistry in 1942. His career was spent at the South Dakota School of Mines and Technology where he is a professor emeritus. He was awarded the Kuebler Award from the Alpha Chi Sigma Fraternity in 1977 and enjoys many interests including photography, backpacking, and travel. Professor Jonte lives in Rapid City, SD with his wife Eloise (Bailiss) Jonte, who graduated from WSU in 1943. The Jontes have 4 children, Barbara, Sharon, Michael, and Dorothy, and 6 grandchildren.

Ernest C. McKibben (BS Chem '42) used his degree in chemistry to pursue a medical career. He became a physician and began his family practice in Kirkland, WA. Although now retired, he still lives in Kirkland with his wife Ardis (Hines) McKibben who also graduated from WSU in 1945.

George B. Millard received his BS degree in chemistry in 1942, and then was in the army until 1945. He received four ribbons during his service which were pinned on by General George S. Patton. After returning home, he was the head of the chemical division at Sherwin-Williams on the west coast before returning to WSU for his MS degree which he received in 1955. He spent 31 years as a professor of chemistry at Yakima Valley Community College where he is now an emeritus professor and continues to be very active in helping others. Professor Millard lives in Yakima, WA with his wife Mable (Palmer) Millard. The Millards have 4 daughters and are blessed with eleven grandchildren. Professor Millard remembers December 7, 1941 at WSU. The Japanese had attacked Pearl Harbor and his roommate, Karl Koyama, was Japanese. Karl was very worried when George arrived home from church that day. They had a discussion about the events that had transpired and George encouraged Karl. They remained roommates and strong friends thereafter.

Harris O. VanOrden received a MS in organic chemistry from WSU in 1942. VanOrden is an emeritus professor of chemistry at Utah State University. He retired in 1983. Professor VanOrden participates in many activities including reading, volunteering, golf, and travel. He lives with his wife Eleanor Y. VanOrden in Logan, UT. The VanOrdens have a son, Peter.❖

From left to right: J. Haworth Jonte, Loyal Davis, William Brandt, Howard Strobel, Harris VanOrden, Otis Fortner

(Alumni News continued from page 9)

of platelet aggregation inhibitors within the Department of Bioorganic Chemistry at Genentech, Inc.

Van Thomas Spohn (Kent, WA) (BS Biochem '87) is a GC/MS chemist for Analytical Resources Inc. He has seen a large increase in the amount of people and laboratories involved in environmental testing in the last five years.

Dale A. Stauffer (Elkhart, IN) (PhD Chem '48) has retired from Miles, Inc. where he was president of the Research Products Division. Dale enjoyed the picture of Carl Brewster and the Filipino students in the last issue.

Rodney Swanson (Vancouver, WA) (BS Chem '68) is a research analytical chemist for the Camas Technical Center at James River Corporation's Communication Paper Division. His specialty is infrared analysis.

Linda C. Trimmer (Chambersburg, PA) (MS Chem '87) received a MEd (curriculum and instruction) in '91 from George Mason University in Fairfax, VA. She is now a lecturer at Penn State University and Wilson College.

Carol E. (Stocker) Wos (Eau Claire, WI) (BS Chem '79) and her husband George have been working at Cray Research, Inc. for over 8 years as integrated circuits process engineers. They are currently working on a design/construction team for a new 8 inch silicon water, integrated circuits processing facility. They have 2 young children, a son named Sam and his younger sister, Bridget.

Ronald L. Yates (Midland, MI) (BS Chem '72) received a PhD in chemistry in '77 from the University of Washington and is now a research manager for Dow Chemical Co.❖

El-Sayad Visits

Mostafa El-Sayad, editor-in-chief of *The Journal of Physical Chemistry*, visited Pullman as featured speaker of the Phi Lambda Upsilon-Chi annual banquet. At the banquet, Professor El-Sayad presented a history of the scientific career of Michael Faraday, commemorating the 200th anniversary of Faraday's birth on September 22, 1791.

Professor El-Sayad was born in Egypt. He obtained his BSc in 1953 at Ein Shams University in Cairo and his PhD at Florida State University in 1959. He held postdoctoral positions at Harvard, Yale, and the California Institute of Technology, and has been on the faculty of the Department of Chemistry and Biochemistry at the University of California at Los Angeles since 1961.

El-Sayad uses femtosecond pulsed lasers to understand relaxation, energy transport and conversion in molecules, solids, and photosynthetic systems. He has over 290 publications in the areas of spectroscopy and molecular dynamics.

He has received many awards and honors during his career including a Guggenheim Fellowship, a Sloan Fellowship, and the 1990 King Faisal International Prize in the Sciences (Chemistry).

Students and faculty alike were impressed with Professor El-Sayad's warm personality. Before dinner, he introduced himself to each of the students and inquired into their scientific background and interests. During his after-dinner remarks, he emphasized the incredible range of topics that Faraday chose to investigate.❖

From left to right: Joe Hoagland, Mostafa El-Sayad, David Cleary, and Ann Cleary.

Faculty & Student News

We were all sad to see **Karen Brewer**, assistant professor of chemistry, move on to Virginia Polytechnic Institute and State University in Blacksburg, VA. We wish her good luck in her new position.

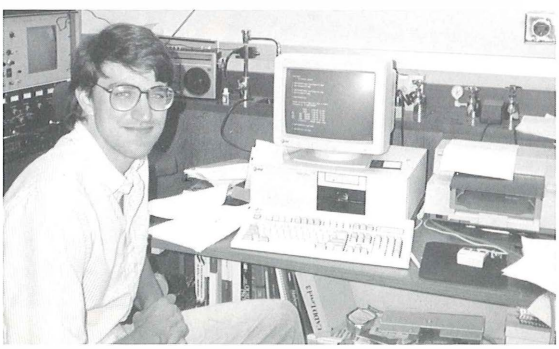
G.A. Crosby, professor of chemistry, served as a discussion group leader at the NSF workshop on Innovation and Change in Chemistry Instruction in Washington, DC. He was also an invited speaker at the Sixteenth Solar Energy Conference held by the US Department of Energy. Both he and his wife, **Jane**, attended the Conference for Principal Investigators that was held by the Education and Human Resources Directorate (EHR) of the NSF. Both the Crosbys are principal investigators for EHR projects.

Last February **Professor Crosby** lectured and met with scientists at the Universities of Osaka, Hokkaido, and Tohoku in Japan. Crosby has a joint reasearch project with Professor Azumi of Tohoku University that sponsors visits for Japanese scientists to WSU and trips by Crosby to Japan. Funds are supplied by the Japanese Ministry of Education. On the recent trip, Mrs. Crosby edited a set of lectures on Group Theory that was delivered by Professor Azumi during his last visit to WSU.

Glenn Fried graduated in August with a MS in chemistry. His thesis research was the construction of room temperature and low temperature scanning tunneling microscopes under the direction of KW Hipps. Glenn will continue his studies in physical chemistry at New Mexico State University. He plans to complete a PhD under the direction of Keith DeArmond. Good luck Glenn!

Dale Fried, Glenn Fried's younger brother, is also leaving WSU to study for a PhD in physics at MIT. Dale has been a continuing contributor to KW Hipps' research group. His intelligence and diligence were recently recognized when he won a prestigious Department of Defense National Graduate Fellowship. It will provide Dale with about $15,000/year of support for the first three years of his graduate study. Congratulations!

During graduation ceremonies last spring the Department of Biochemistry and Biophysics Chair **Mike Griswold**, received the College of Sciences and Arts' Distinguished Achievement Award. His research in the area of biological reproductive mechanisms has won him wide recognition, including the Research Career Development Award from the National Institutes of Health. His work is supported by grants from NIH and total more than $1 million.



Glenn Fried takes a break from the computer.

Joe Hoagland graduated this summer with a PhD in physical chemistry. His thesis research "Spectroscopic and Morphological Analysis of CuTCNQ Thin Films" was performed under the direction of KW Hipps. Joe, his wife, and their 3 children will be moving to Muscle Shoals, AL where Joe will be working for the Tennessee Valley Authority as a research chemist in their National Fertilizer Environmental Research Center. He chose the job in Muscle Shoals to gain experience as an industrial chemist and to continue his studies of vibrational and electronic spectroscopy on solids and surfaces. Joe is waiting to decide his future career goals until he tries working in the industrial setting, but he believes one day he would like to return to teaching.

Linda Randall, biochemistry professor, reports in the July 10 *Science* magazine on how a molecular chaperone in *E. coli* bacteria recognizes the proteins it is to escort through the cell membrane. Randall's work has major implications for understanding hormone production, antibody secretion and immune function, toxic production by bacteria, cell surface structures, and propagation of viruses.

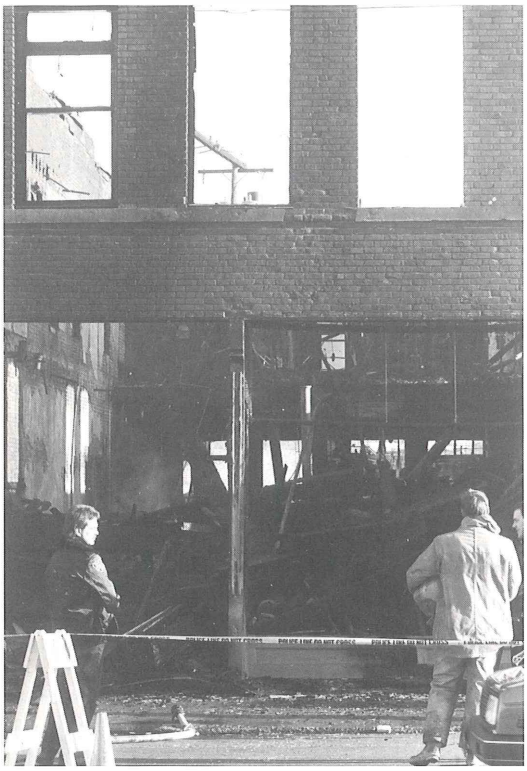
Durwin Striplin, a graduate student in chemical physics, and the holder of a National Defense Education Fellowship, spent 8 weeks at the Frank G. Seiler Air Force Research Laboratories located in Colorado Springs, CO. Durwin was engaged in chemical syntheses and the application of modern electrochemical methods to inorganic complexes. Striplin returned to WSU this fall to continue his PhD studies in the laboratory of Professor GA Crosby.

Elizabeth Wilhite has accepted a one-year position on the WSU faculty and is currently teaching in the freshman chemistry program. She joined the department as a postdoctoral fellow in the fall of 1991 to aid in the teaching of the laboratory of the new course in chemistry for elementary education majors that is currently being developed by Professor Crosby. Professor Wilhite has a PhD degree from Louisiana State University in physical chemistry. She is an expert in the field of electronic spectroscopy and will continue her scientific investigations during 1992/93 by using the facilities of Professor Crosby and Emeritus Professor MW Windsor.

Ralph Yount, professor of biochemistry, celebrated his 60th birthday on March 25. Members of his lab arranged a big party for him with lots of food and fun.❖

Pullman Landmark Gone Forever

Fire devastated a century-old Pullman landmark this past winter. Built in 1890 on the corner of Grand Avenue and Olsen



Police and firefighters look over the Bloomfield Building remains.

Street, the Bloomfield Building was one of the first sights visible upon entering town. The building was destroyed in a spectacular blaze that sent flames shooting over 50 ft into the night sky. All of the city of Pullman's fire equipment responded to the alarm as well as members of the WSU fire crew and rural units. The fire destroyed 6 businesses and left at least 6 people homeless. Authorities declared the building unsafe to enter. The building could not be saved and was demolished in only 2 days. The owner of the building, Ted Beasley, said, "I know what a landmark the building was. It feels like a part of me has died."

The businesses are just now beginning to bounce back. Northwestern Stage Lines, the local bus depot, relocated almost immediately after the fire and was soon operating at pre-blaze levels with minimal losses. Other businesses were not so lucky. Neil Minnehan, owner of Bullpen Sports Cards has moved his shop and reopened but he can never replace an autographed collection of Cincinnati Reds memorabilia and other rare and unique pieces. Nicole Taflinger, owner of the NICA art gallery, will reopen soon on Main St. Taflinger had been in business in the Bloomfield building for the past sixteen years. Most of the original artwork was ruined by smoke and water damage. Washington Sportswear Unlimited opened for business about one year ago and sustained over $40,000 of damage. Co-owner Warren Bingham will probably reopen in the future. The owners of the popular restaurant, The Cougar Cafe, are looking for a downtown location and are hoping to reopen soon.

> *"I know what a landmark the building was. It feels like a part of me has died."*
>
> *—Ted Beasley*

Where the landmark used to stand is only a gaping hole in the ground. No plans to rebuild on the site have been finalized.❖

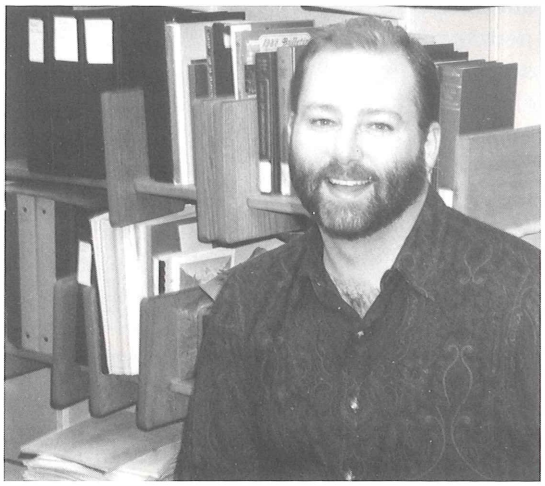
Schenk Gets Award

Jim Schenk, professor of chemistry and biochemistry, has been granted a National Institutes of Health Career Research Scientist Development Award. The award provides Schenk with 5 years of uninterrupted research by paying 80% of his twelve month salary for each of the 5 years. WSU returns the 80% salary savings to Professor Schenk for use in his research program. The funds can be used to support a postdoctoral fellow to teach Professor Schenk's classes and purchase equipment or supplies.

The Career Development Award was based on Schenk's previous grant with NIH entitled, "Drugs of Abuse: Dopamine Release and Uptake." The 5-year award, which begins in December, may be renewed. Other chemistry and biochemistry professors that have been granted a Career Development Award include Mick Smerdon, Jim Satterlee, Bruce McFadden, Michael Griswold, and Bud Ryan.❖

Alum Returns To Give Seminar

T. Rick Fletcher (BS Chem '81) was able to take a break from his assistant professorship position in the University of Idaho Department of Chemistry to visit WSU faculty and give a seminar. A local Pullman boy, Rick was a classmate of Roger Willett's oldest daughter, Juanita. As an undergraduate, Rick did a senior research project in Willett's lab, where a bungled synthesis led to the isolation of an unusual compound, $(Et_2NH_2)_2[Cu_3Br_8]CuBr_2$, which became known as "Fletcher's Salt." After graduating from WSU in 1981, Rick received his PhD in chemistry from the University of California, Davis. He completed a postdoctoral research fellow position with Professor Stephen Leone at the Joint Institute for Laboratory Astrophysics, University of Colorado, Boulder.



During his visit to WSU, Professor Fletcher gave a seminar entitled, "Laser Studies of Chemical Reaction and Reactive Molecules." In an ideal experiment, a chemist would be able to shrink to atomic size and make motion pictures of molecules as they move together, collide, react, and separate. Unfortunately, cameras are too large to allow such cinematography. However, the use of time-resolved laser spectroscopy and related techniques allows the motions and identity of a molecule to be measured (or controlled) immediately before and after a reaction. The goal of the experiment is to learn which specific motions must be excited in a molecule to enhance chemical reactivity. Professor Fletcher's talk was drawn from recent work that demonstrated ways to use lasers to select the motions of molecules during chemical reactions. The talk focused on a new method for creating reactive intermediates in the gas phase, using ablation of an organic polymer as a propellant of low temperature matrix isolated species. It was great to see you Rick. Welcome back to WSU!❖

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Your support is highly valued and appreciated!

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A Friend Checks In

Professor Batey recently checked in with us, and speaking to him reminded us of his contributions to the WSU Department of Chemistry. Harry Batey retired in 1985 after 34 years as a professor of inorganic chemistry. In 1982 a full tuition scholarship was endowed in his name. He was hired when WSU was known as the State College of Washington. Harry graduated from high school in Grand Island, NE. He earned his undergraduate degree from Cornell College, although World War II temporarily interrupted his studies. During the war he spent 3 years in the Air Force as a pilot. During that time he spent 7 months of duty in the United Kingdom flying in the European Theater of Operations. Professor Batey earned his PhD in 1951 from Ohio State University. Upon graduation, WSC hired Harry as an Instructor of Chemistry.

Professor Batey and his wife, Kate, spend most of their time at their home on Priest Lake in Idaho. The lodge is so remote that during winter they must snowmobile in 9 miles. He is a board member of the Selkirk-Priest Basin Association, chair of its Water Quality Committee, and refers to himself as a "master water watcher." He reported that he is the Meadows Precinct Democratic Committeeman and has been on a Bonners County committee to revise the Comprehensive Plan since 1989. For the past two years, he and Kate have gone to Culebra, a small island east of Puerto Rico where they worked with the US Fish and Wildlife in recording and assisting with the leatherback turtles egg depositing. Harry said, "Other than that things are dull at home—just eagles, coyotes, moose, etc."

We miss Professor Batey, he is one of those individuals who brightened our days. Dean Nilan stated our feelings well in his farewell letter to Harry, "Many, many students' lives and professional careers have been enriched from your classes and the opportunity of having a professor and friend such as you during their enrollment at this University."❖

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