

FULMER NOTATIONS

Department of Chemistry & Department of Biochemistry and Biophysics

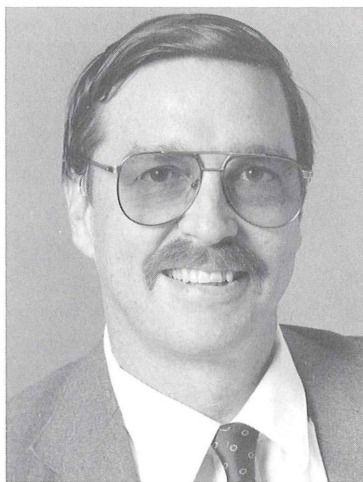
A Word From This Corner

by Michael Griswold, chair
Department of Biochemistry & Biophysics

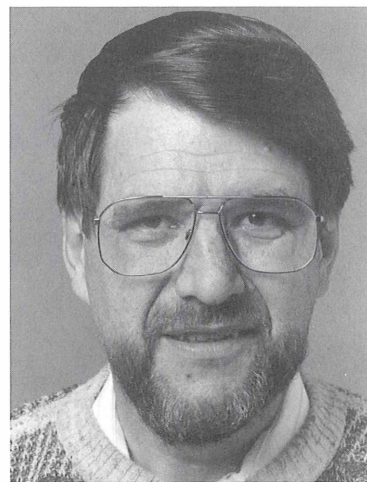
Greetings to everyone! As the Chair of the Biochemistry & Biophysics Department, I am pleased to announce the name change of our newsletter from "Chemistry Notations" to "Fulmer Notations". We feel this alteration will better reflect the unique contributions of both the departments of Chemistry and Biochemistry & Biophysics.

In October, Ralph Yount organized a highly successful symposium on Biotechnology. Speakers included Michael Smith from the University of British Columbia, Lee Hood, who recently moved to the University of Washington and two WSU biochemistry alumni, Jim Wells and Steven Fodor. The Saturday symposium was well received by the WSU bioresearch community.

Another WSU biochemistry alumnus,
(A Word continued on page 3)



Michael Griswold chair,
Department of Biochemistry &
Biophysics



Roger Willett chair,
Department of Chemistry

From the Chair's Desk

by Roger Willett, chair, Department of Chemistry

After nearly a year in this position, several small but significant changes have occurred in the department. The revitalized departmental seminar program (thanks to "Chef" Manning Cooke) has attracted many outstanding speakers from across the nation, as well as becoming a major social attraction on Monday afternoons. We have added "interdivisional" PhD tracks for the graduate students, including ones in environmental chemistry, and in materials chemistry. I would like to provide similar options at the undergraduate level to attract more students as chemistry majors.

A major boost for the university came in the form of a \$7,000,000 gift from the Boeing Company. While no money will come directly to the chemistry department, a substantial portion is
(Chair's Desk continued on page 5)

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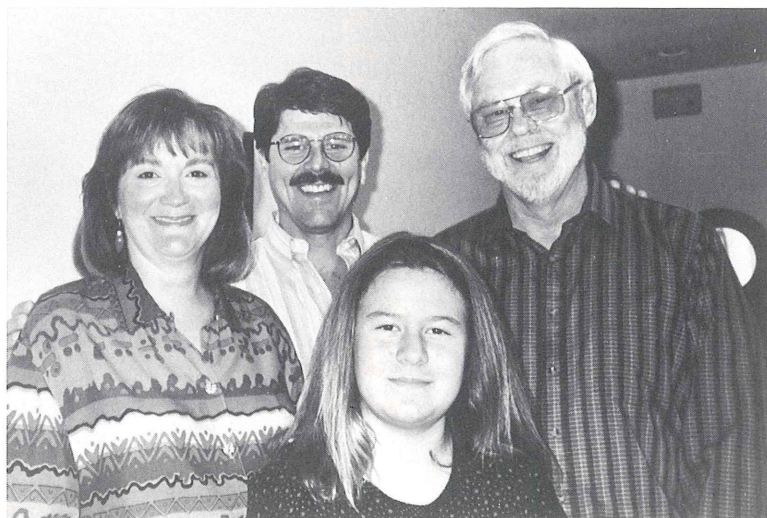
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An Interview With Bryan Lawlis

by Jenni Keith



Bryan Lawlis recently returned to WSU to give a seminar at his alma mater. While a student, Bryan worked under professor Bruce McFadden on his PhD in biochemistry; he graduated in 1979. His seminar was titled: "An Introduction to Process Development at Genentech". Jenni Keith asked him about his work at Genentech and his education at WSU.



Patty, Bryan and Shauna Lawlis and Bruce McFadden.

- J:** Could you please describe a little of what you are doing at Genentech?
- B:** I am the Director of the Department Recovery Process R&D. I am also the project team leader for using DNase to treat cystic fibrosis.
- J:** Can you tell me what you are doing in your lab right now?
- B:** Well, I have a department of 56 people. About half of those are PhD level. Our job is to develop purification processes for all of our products here at Genentech. We have a number of labs, it's quite a large group. We've developed more processes for recombinant products, probably, than any other company around. I've been working on DNase for 4 years now. I am particu-

larly excited about this aspect of my job. I am the project team leader for a group working to develop DNase as a pharmaceutical to treat cystic fibrosis in children. Presently there really are not any products available to help these children. Our phase three clinical trials have shown DNase reduces the risk of infection in these children and improves their pulmonary function. We are all very excited about it. We are building a plant based on a process my group designed and will be coming on line in about three or four months. It was a \$40 million investment.

- J:** I heard a rumor that several WSU PhD graduates are at Genentech. Is that right?
- B:** Right! And three were from the same class! Bob Bridenbaugh, Jim Wells, Ayrookaran Poulose and I are all with Genentech. Bob and I are in manufacturing and Jim is in research. There are also three others (Mickey Urdea, Brian Warner, and Jim Merryweather) over at Chiron across the Bay.
- J:** How did that happen? A coincidence?
- B:** Actually I had bugged Jim to interview at Genentech while he was a postdoc at Stanford, but he never would. So we invited Ralph Yount, his mentor at WSU, out for a seminar and that aroused Jim Wells' interest in Genentech. During Ralph's visit, we asked if he knew anyone who wanted to do protein chemistry and process development. He suggested Bob Bridenbaugh. That's how we got Jim and Bob. I joined in the early days after seeing an ad in Science. I said to myself, that's exactly what I wanted to do. I wanted to work at a start-up company, so I sent my resume and was hired.
- J:** What was your impression of the 1992 WSU campus?
- B:** Really nice. I enjoyed the facilities you added in the Synthesis building for the
(Lawlis continued on page 4)

Biotech Brings Brilliance

The second WSU Biotechnology Symposium was held last October. The symposium, sponsored by a National Institute of Health Biotechnology Training Grant, featured talks by two former WSU graduates, Jim Wells from Genentech (see article, p. 6) and Steve Fodor, from Affymax Research Institute. Wells, who is one of the industrial advisors for our training grant, talked about his recent seminal studies on the interaction between the human growth hormone and its receptor. Fodor, who received his BS in biology in 1978, an MS in biochemistry in 1982 from WSU, and his PhD in chemistry from Princeton in 1987, described his group's ground-breaking studies on the use of photolithographic techniques to synthesize more than 1000 different peptides or DNA fragments on a one cm square chip. These chips, in conjunction with laser-induced fluorescence methods, are used in screening assays and in DNA sequencing. The report of their work, published in *Science* in 1991, won the

\$5,000 Cleveland-Newcombe award for the best article in the magazine during that year.

Other speakers were Michael Smith, director of biotechnology at the University of British Columbia and Leroy Hood, chair of the newly formed Department of Molecular Biotechnology at the University of Washington School of Medicine. Smith, who developed the first site-specific mutagenesis method for replacement of a given amino acid in a protein with any of the other 19 amino acids, reviewed the progress made since his seminal findings. Hood, who gave the keynote address, outlined the role of his new department in developing advanced methodology for sequencing and analyzing the human genome. Hood's move to Seattle from Caltech was facilitated by a \$12 million gift from William Gates, III, founder of the Microsoft Corporation. The symposium also featured a poster session display of 35 student and faculty projects in biotechnology. We hope to continue offering this symposium annually. ♦

(A Word continued from page 1)

Bryan Lawlis of Genentech visited in September and gave an excellent seminar on bioprocessing. Bryan described the problems he encountered and solved with the production of large volumes of proteins for the general market and the production of small volumes of highly purified products for the pharmaceutical market. He gave us a look at work underway on the development of a DNase aerosol for the treatment of complications associated with cystic fibrosis. We enjoyed seeing Bryan and his family again and we are proud of his successes.

The department is committed to further development in the area of biomolecular structure. The University has a successful high-field NMR facility headed by Jeremy Evans and a structure theoretician in Toshiko Ichiye. The next step in this development is attaining expertise and

equipment in X-ray crystallography. Bruce McFadden is currently heading a search committee to hire a crystallographer. We plan to have the equipment and personnel in place by July 1994.

The search for quality graduate students continues. The competition between schools for a diminishing pool of good students is intense. One of our primary goals is to train PhD students. We feel we are successful in this area because our graduates have done very well in the world outside WSU. But we need *your* help in identifying and attracting good quality graduate students. If you have contact with undergraduate students who are planning graduate careers please share your experiences at Washington State University and encourage them to apply.

In closing, I would like to thank all of you who donated to our annual phone-athon. During this year of budget difficulties, we really appreciate your help. ♦

(Lawlis continued from page 2)

biochemistry and chemistry departments and I understand you'll be remodeling Fulmer Hall soon. I think it is great they added the Biotechnology Training Program with Gerald Hazelbauer, Ray Reeves and others. I first got involved in the biotech industry when I began working at Genentech in 1981. There was really no training available for the whole process. You just went out and did it. I learned on the job how to develop processes and put them into manufacturing plants

*“My education served me well.”
— Bryan Lawlis*

and how to deal with the regulatory agencies, how to make recombinant proteins, and how the people in research and in manufacturing take an idea and convert it into an actual product. With the new biotech training program, I think the students have a real advantage. They learn to think about a whole idea or concept and try to get a useful product. I think that's a good thing. This training program should be a great asset to WSU students.

J: How do you feel about the education you received at WSU?

B: It's been great. The emphasis of the program was, and still is, that you have to learn the chemistry side. Some advice I'll always remember from Ralph Yount and Bruce McFadden is, "if you don't learn chemistry when you are an undergraduate or in graduate school, you never will." My education served me well.

J: When you were here recently did you have any memories of old times?

B: Oh yes. My wife, Patty, joined me when I came up here to attend graduate school; we were newlyweds. She was a graduate student too, she did her masters with Armand Mauss in the WSU sociology department. This time we brought Shauna, our ten year old daughter, with us and showed her around. Now she says she wants to go to WSU.

J: Would you like to add anything else?

B: I had a great time on my trip back to WSU. I especially enjoyed seeing old friends like Bruce McFadden, Ralph Yount, and Mike Griswold, with whom I had a lot of contact during my graduate work. ♦

The Carl Stevens Memorial Lecture

The **Carl M. Stevens Lectureship** was established to honor professor Stevens' outstanding contributions to teaching, research, and university governance at WSU. Stevens served as chair of the department from 1960 to 1971. In 1992, the Stevens' Lecture was given by Peter Dervan from the California Institute of Technology. His talk entitled, "*Designing Molecular Machines to Read the Genetic Blueprint*" was interesting and well attended.



Stevens Lecturer, Peter Dervan, Carl's Stevens' twin brother, Russell and Russell's wife Helen.



Mr. Russell & Mrs. Helen Stevens visited from Virginia to honor Carl.

(Chair's Desk continued from page 1)

designated for the sciences. A major chunk is targeted for development in materials science (in which several chemistry faculty are playing a major role), while the science education area has also been targeted.

However, the optimism created by the gift has been offset by Boeing's announcement they plan to lay off 20,000 employees this year. This has sent a fiscal shockwave throughout the state government. Current predictions are for a five to ten percent budget cut this next biennium. We're keeping our fingers crossed that reality will not actually be that severe.

Several faculty positions remain vacant and searches to fill them continue. We are in the midst of interviews for a senior inorganic chemist, preferably one with ties to our efforts in materials science. The number of inorganic staff members has been reduced by the retirement of John Hunt and the departure of Karen Brewer. On a temporary basis, Elizabeth Willhite has been filling in for us. She obtained her PhD in inorganic photochemistry at Tulane University. A second search is underway for a theoretical chemist at the WSU-TriCities branch campus which is a joint position with the Battelle Pacific Northwest

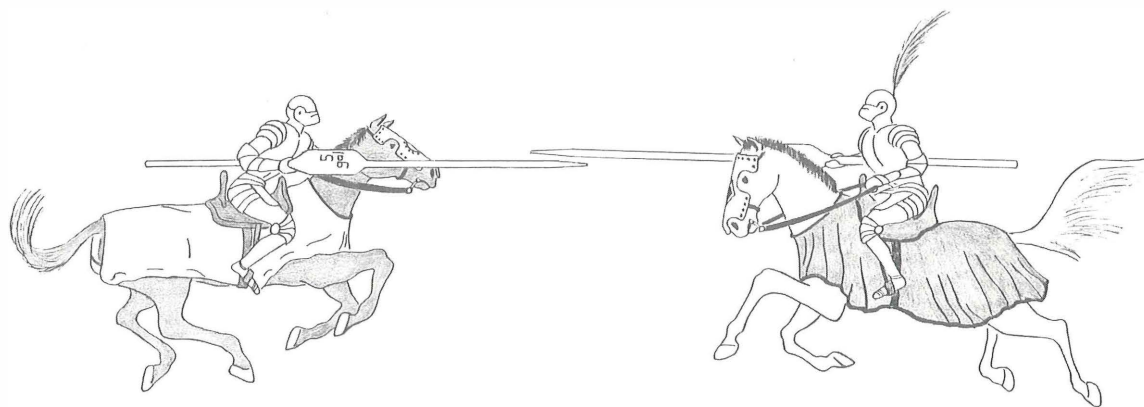
Laboratory. The initial search for a senior position was unsuccessful. We now are planning to reinstate the search, this time at a junior level. We are also anticipating a second search at WSU-TriCities for a person with a geochemical background.

Plans for the final phase of remodeling Fulmer Hall and Fulmer Annex are proceeding, with an anticipated starting date of early 1994. This project will finish the unremodeled areas in Fulmer Hall, including a reconsolidation of the chemistry and biochemistry departmental offices. The upgrades in Fulmer Annex will focus on safety and code issues, and, thankfully, replacement of the presently dysfunctional air handling system.

We recently reinstated our annual Awards Ceremony to honor our outstanding undergraduate students, graduate assistants, and faculty. We awarded over \$8,000 in scholarships and fellowships to our students. Most of these funds came from alumni gifts to various scholarship or development funds within the department. We appreciate your support, and hope you will continue to provide it. It all goes to support a very worthy cause. ♦

How Chemists Solve Disputes

by Daryl Clerc, a Physical Chemistry graduate student



In the days of yore, disputes among chemists were settled in the tournament. Here, after quarreling over the importance of relativistic Hamiltonian corrections, Sir Larry of Cougarwood and Sir Fred of Huskibury duel with their 5 gallon pipets.

Scientist Earns Alumni Award

James Wells, a senior staff scientist at Genentech in San Francisco was presented the WSU Alumni Achievement Award at

the recent Biotechnology Symposium.

Wells was recognized for his achievements in the field of biochemistry, specifically in engineering and enzyme function, and for his support of WSU.

While at WSU Wells worked under Ralph Yount, professor of biochemistry and chemistry. In 1979 Wells completed his doctorate in biochemistry/biophysics. Eleven papers

were published from Wells' PhD research and his year of post-doctoral studies.

After leaving WSU Wells moved on to Stanford where he was a Damon Runyon/Walter Winchell Post-Doctoral Fellow in the Stanford School of Medicine.

In nominating Wells for the 1990 Pfizer award in Enzyme Chemistry, Yount wrote that Wells is "widely considered by our faculty as one of the best, if not the best, PhD to come out of either biochemistry or chemistry PhD programs" in the previous 25 years. Yount considers Wells to be a strong candidate for election to the National Academy of Sciences.

The Pfizer Award was established in 1945 by the American Chemical Society to stimulate fundamental research in enzyme chemistry by scientists under the age of 40. Six past winners of the award have won Nobel prizes.

It was our great pleasure to visit with Jim. We would like to congratulate him on winning the WSU Alumni Award; we are very proud his accomplishments. ♦



Jim Wells

A Day in the Life of a Chemist??

Remember when you were a student and graduation was drawing near? You probably had questions about your future career. Today's students have many of the same questions, but they have the unique opportunity to discuss these concerns with someone who is established in their field.

The Student Alumni Connection (SAC) Mentor Program at WSU is building a network of alumni volunteers whom students may contact for career information. This program is not a resume exchange or a job interview, but a way to help ease the transition from student to employee.

Over 300 alumni from all disciplines

have volunteered for the new and highly praised program.

We would like to thank the following alumni participants from the departments of biochemistry and chemistry:

- Gene Alberts
- Ann Ames
- Marion Dowell
- Rosemary Early
- Kendra Golden
- Julia Hamrick
- Raili Kerppola
- Susan Martinis
- Mary McHughes
- Myrna McIntosh
- Jerry Nick
- Despina Strong
- Julie Thom
- Carol Wos

If you are interested in joining this program, call Gabe Lyons at 1-800-ALUMWSU for more information. ♦

20 Years on the Job

In 1975 Leonard Henscheid was hired to design and develop new experiments and maintain existing equipment in the physical chemistry laboratories in the Department of Chemistry at WSU. Soon he was teaching the laboratories and performing a variety of jobs in the department which now make Leonard invaluable. He supervised the General Chemistry Program and taught Chem 104 and Chem 102 classes. He was also a major factor in developing the demonstrations used in general chemistry classes. Leonard reports that, "developing the general chemistry demonstrations was a very rewarding and exciting project." As the resident computer expert, Leonard is the person to call for help with computers.

Leonard says, "I am very proud of the physical chemistry laboratories. They are one of the most well run and maintained laboratories on campus, but they have a long way to go."

Leonard was born in 1944, the eighth child in a family of 14. He attended a six room country school in Rupert, Idaho. He left Idaho to attend St. Martin's High School, a private boarding prep school in Lacey, Washington. According to Leonard, "It was there I learned how to study." After Leonard took his first chemistry course from a college professor at St. Martin's College he decided to be a chemist. Leonard chose to double major in philosophy and chemistry. After his sophomore year he joined the St. Martin's Benedictine Community as a monk. This put him out of sequence in chemistry and he graduated lacking one course for the double major. Thus his BA degree is in philosophy. Following graduation, Leonard studied theology for one year at St. Benedict Seminary.

When Leonard decided to leave the monastery, his obvious choice was to attend graduate school and continue studying chemistry. He attended the University of Idaho and earned an MS

Twenty Years continued on page 11

Department Awards \$8,000

In January 1993 the Department of Chemistry held an awards ceremony to acknowledge the achievements of our undergraduate and graduate students. We awarded over \$8,000 in scholarships to these students to further their education. The majority of these funds came from the generous contributions of our alumni.

Undergraduate Student Awards

Chemistry Development Awards:

James Kleven, Drew Raraback,
Christopher Hagen, Robert Nicholson

CC Todd Memorial Scholarship

Robert Heffron

Harvey K Murer Memorial Awards

Kathy Green, Ann Marie Eisle
Jason Doten

Graduate Student Awards

EL Wagner

Jennifer Kahl

TA Awards:

Experienced TAs (3M Foundation)

Daryl Clerc, Don Kinghorn

New TAs (Julian Culbertson Fund)

James Elliston, Greg Long

Abelson Graduate Fellowship

Michael Lathrop

Marvel Dare Fellows Nutting Gift

Susan Meiergerd

Chemistry Development Awards

Greg Long, Greg Simpson

Materials Science Program Graduate Fellowship

Bill Xing Lu

TA Training Awards

Tamara Stobb, Durwin Striplin
Robert Thomas, Susan Meiergerd

Alumni News



We are pleased by the exceptional response to Alumni News. Please continue to send us information about what you are doing in the enclosed postage paid envelope. Thank you!

Harold L. Baker (Colville, WA) (BS Chem '75) is a lab supervisor for ALCOA Northwest Alloys.

Robert J. Bianchini (Lakeland, FL) (PhD Chem '85) works for Westrac Corporation as a Technical Manager. He and his family recently located to central Florida. His group supplies surfactants, derived from trees, to the mining industry.

Curtis E. Borchers (Washington Island, WI) (BS Chem '48) received a PhD in '56 at the University of Oregon and is retired.

William Broderick (Delmar, NY) (PhD Chem '86) spoke with Gardner Stacy at the ACS meeting in Washington DC. His wife **Joan Blanchette** (BS Chem '87) has been doing post-doc work at MIT.

Jim Brummer (Stevens Point, WI) (PhD Chem '84) is an associate professor at the University of Wisconsin-Stevens Point.

Scott Campbell (Richland) (BS Chem '85) received a degree in optometry from Pacific University in '89 and is now a self-employed doctor of optometry.

William Hank Chambers (Anchorage) (MS Chem '81) is an organics manager at Keystone Environmental.

Kun Chang (Cupertino, CA) (PhD Chem '71) is a scientist for Hitachi in San Jose, CA.

Chee Chow (San Jose) (PhD Chem '74) is a product engineer working at the Hewlett Packard Company.

Tsaihua J. Chow (La Jolla) (MS Chem '49) is an emeritus research chemist at the University of California San Diego.

J. Robert Clark, MD (Spokane) (BS Biochem '69) is a self-employed neurologist/physician.

Colleen M. Clarkson (Idaho Falls) (BS Chem '88) is a scientist for Westinghouse Idaho Nuclear Company.

Scott Clauss (Pasco) (BS Chem '81) is a technical specialist II at Battelle Pacific Northwest Laboratories.

James W. Cleary (Neenah, WI) (BS Chem '53; PhD '56) has retired from

Phillips Petroleum after 29 and a half years. He has been working for James River Corporation for four and a half years. They have 38 US patents so far.

Dennis J. Cox (Pasco) (BS Biochem '74) received an MBA in '89 from the University of Washington. He works as an engineering and technological service manager for Boise Cascade Paper.

Richard A. Cox (Wenatchee) (BS Biochem '69) received a MD in pharmacology in '75 and is now the chair of pathology at Wenatchee Valley Clinic.

Robert G. Elliott (Huntsville, AL) (BS Chem '58) is working at Remtech/U.S.B.I. as a research specialist.

Brian Folsom (Yardley, PA) (PhD Biochem '84) is a research chemist for Envirogen Inc.

Otis W. Fortner (Baton Rouge) (MS Chem '41) was an instructor at WSU under Dean Todd in 1942 -1943 and is retired. He has a 50th year anniversary coming up as a member of the Washington State University chemistry department faculty.

Kendra J. Golden (Walla Walla) (BS Biochem '83) received a PhD in biochemistry from Penn State University and is now an assistant professor of biology at Whitman College.

Clarence R. Green (Pocatello) (BS Chem '33) is a chief chemist for Oregon Portland Cement Company.

David S. Grosso (Elkhart, IN) (BS Chem '67) received a PhD (biochemistry) at the University of Massachusetts in '75. He now works for Miles, Inc. as a senior scientist.

Linda Grotzke (Mount Vernon, WA) (BS Biochem '72) is teaching science to 7th and 8th grade students at Mt. Vernon Christian School. She has five children ranging from ages 8 to 17.

Denise J. Hert (Richland) (BS Chem '88) is a chemist for Westinghouse Hanford Co.

Ramy Newland Hough (Seattle) (BS Chem '46) has retired after teaching in high schools and 13 years at the Seattle Community College Central and North campuses. Her two sons received their degrees from WSU. One is a family practice doctor and the other received his BS and MS in mechanical engineering and is a Lieutenant Colonel with the US Army

Engineers.

Sei-Heon Jang (Taego, South Korea) (PhD Biochem '88) is an assistant professor at Taego University in South Korea.

Jay E. Kent (Seattle) (BS Chem '61; PhD '66) is self employed.

Irwin L. Klundt (Bayfield, CO) (BS Chem '58) is semi-retired after 24 years with Aldrich Chemical Co. He is currently a professor of chemistry at Fort Lewis College in Durango, CO.

L. Sue Loesch-Fries (West Lafayette, IN) (BS Biochem '69) received a PhD in '74 from the University of Wisconsin-Madison and is a professor at Purdue University.

William W. Low (Syracuse, NY) (BS Chem '41) received a MS in chemistry from the University of Idaho and is now retired from Allied Signal where he was a research chemist.

Abel Mendoza (Midland, MI) (PhD Chem '77) is a research leader in applied organics research, Dow Chemical USA. He just received his 24th US patent and continues to enjoy his work.

Leo Millam (Rochester, WA) (BS Chem '32) has been retired for 20 years from the Cle Elum School District.

George B. Millard (Yakima) (BS Chem '42; MS '55) had an operation and after six weeks of radiation and chemotherapy, we are happy to report he is free of cancer. He has another check up in the spring and we hope everything goes well. In the past he sent many students to WSU and continues to promote his alma mater.

Martha R. Moore (Seattle) (BS Chem '86) is a research technician for University of Washington Pharmaceuticals.

Raymond Myhre (Sparks, NV) (BS Chem '40) is retired from Hunt Foods. He considers himself lucky he is still plugging along when so many others aren't.

Yuk-Chow Ng (Hershey) (BS Biochem '77; MS '79) is a faculty member in the Pharmacology Department at Pennsylvania State University.

Dawn M. Nowlin (San Diego) (MS Biochem '86; PhD '86) is a research scientist for Tanabe Research Laboratories in San Diego. She also received a degree in zoology/chem from Northern Arizona University.

Marvel Dare Fellows Nutting (Sun City, AZ) (MS Phys Chem '30) specified her

recent gift "help student women chemists." Ms. Nutting, who is now retired, worked for 25 years as associate chemist with the US Department of Agriculture. Thank you!

Brian Opitz (Kennewick) (BS Chem '79) is a technical group leader at Battelle Pacific Northwest Laboratory.

Jerome G. Owens (Seattle) (BS Chem '76) is a lab manager for E.W. Saybolt & Co., Inc.

Curt Patterson (Puyallup) (BS Biochem '89) is a biochemist/sales for Sol-Pro, Inc.

Linh H. Phan (Seattle) (BS Biochem '86) is a research associate for Immunex Corporation.

Greg Plunkett (Mead, WA) (PhD Biochem '80) is a senior research scientist for Miles, Inc.

Seth C. Rasmussen (Central, SC) (BS Chem '90) is a graduate assistant at Clemson University.

Thomas B. Rauchfuss (Urbana, IL) (PhD Chem '75) is a professor at the University of Illinois.

Stephen E. Rayner (Annandale, VA) (BS Chem '68) is a staff officer for the US Department of Agriculture.

Jerry A. Riehl (Seattle) (PhD Chem '66) is the dean of technical education at South Seattle Community College. He is in charge of their advanced technology center which is the only chemical/nuclear hazardous materials program in the US.

Christopher B. Shumate (Reno) (MS Chem '88; PhD '89) is a biology science chemist at the Midwest Institute working for Hamilton Company.

Janet E. Jewsbury Stephenson (Ames, IA) (BS Chem '57) retired in June of '91 after being employed by Iowa State University muscle biology group for 19 years. She was worked as a lab technician primarily with tissue cultures.

Carolyn Teschke (Medford, MA) (PhD Biochem '90) is a post-doc at MIT.

Mickey Urdea (Alamo, CA) (PhD Biochem '79) is the vice president of R&D, Nucleic Acid Systems at Chiron Bioengineering and a company officer. They just introduced their first two probe diagnostic essays for HBV DNA and HCV RNA based on his branched DNA signal application system.

George Westsik (Richland) (BS Chem '75) is a principal scientist at Westinghouse Hanford Company.

Doug Wheeler (Laramie, WY) (MS Chem '83; PhD '84) is an instrumentation spec at the University of Wyoming. Doug and his wife, Madeline, just had their first child, a boy, on Aug. 17, 1992.

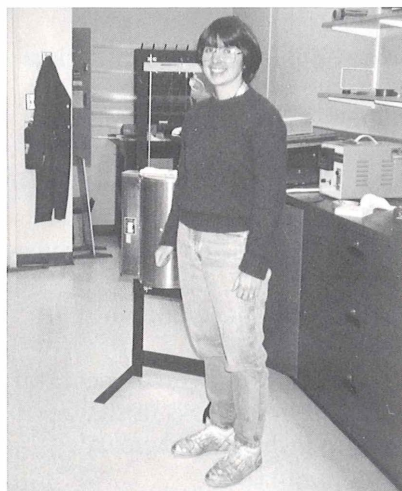
Charles R. Wilke (El Cerrito, CA) (MS Chem '42) is a chemical engineering professor (emeritus) at the University of California-Berkeley.

Edwin R. Willgress, Jr. (Libertyville, FL) (BS Chem '66) is currently working for the US Navy as a radiology physician.

Carol E. Stocker Wos (Eau Claire, WI) (BS Chem '79) is senior IC process engineer working for Cray Research, Inc. She spent the last two years on a design/construction team for a Class 1 clean room for processing semiconductor logic chips. The construction is done, certification was better than class 1 cleanliness, and they are now ordering equipment. ♦

Scholarship Recipients Send Their Thanks

These students were awarded scholarships and/or summer support from funds generated entirely from your donations. Thank you!

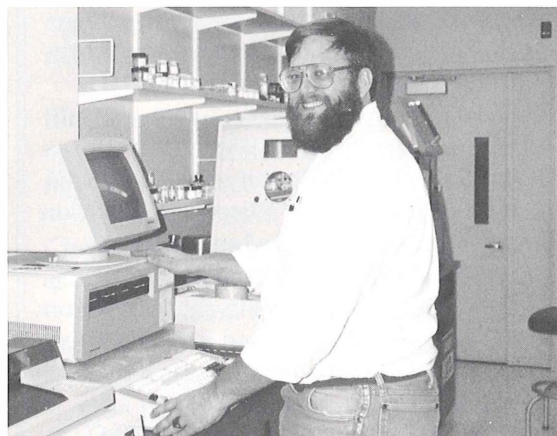


Virginia Smith

"As the recipient of an NIH Biotechnology Traineeship, I rotate through several different laboratories within the biochemistry department during my first year. Before coming to WSU, I was a research associate for Bristol-Myers Squibb Pharmaceutical Research Institute in Seattle. My family and I moved to Palouse in August and the scholarship money helped defray our moving expenses and resettlement costs. I am a first year student and enjoy the challenge of graduate school and am eager to begin my own research."

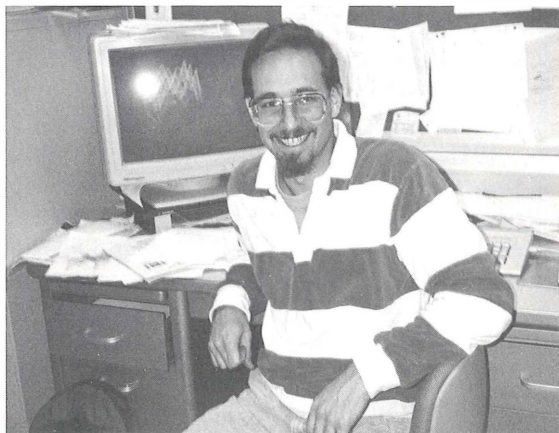
Michael Lathrop

"During my pursuit of a Bachelor of Science in secondary education from Western Montana College, I was awarded a fellowship to work at Argonne National Laboratory with two WSU alumni, group leader Jack Williams and Urs Geiser. Working with these two fine scientists helped me decide to pursue a PhD in chemistry at WSU. I used the Philip and Neva Ableson Fellowships to purchase a new 486DX computer and software which help me toward my academic goals. Being a first year student I have not yet decided on a research topic, but my main interest is physical chemistry."



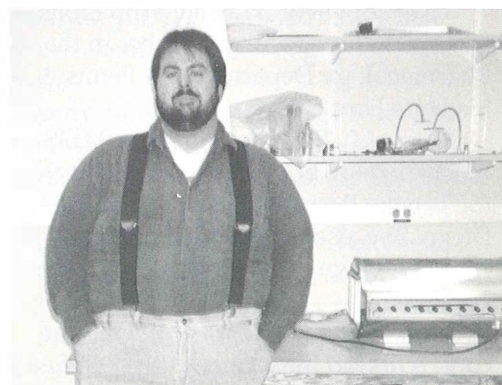
John Schaumloffel

"I came to WSU from Castleton State College in Castleton, Vermont. I work with Barry Moore on the use of annual tree rings of as indicators of long term changes in the levels of heavy metals being released into lake Coeur D'Alene. Thanks to the summer support I received, we cored trees and took soil samples along both the Coeur D'Alene and Spokane rivers. The cores and soils are being analyzed at WSU by Neutron Activation Analysis (NAA) and ICP-MS."



Andrew Mundt

"This past summer I was a TA for Chemistry 105 lab class. The high point of my summer was filling in for the instructor and teaching a class. I really enjoy teaching, my ultimate goal is to be a professor of chemistry. I am working on my PhD with Professor Eaton on the structural effects of modifying bases in DNA. My undergraduate education was primarily analytical chemistry and chemical safety."



Seminar Series Growing



In one of his first decisions as new chair of the Department of Chemistry, Roger Willett gave the departmental seminar series new importance. The seminar series itself has been in existence for quite some time, but only recently has it achieved a consistently high level of success. This new success is largely due to the efforts of professor Manning Cooke who is responsible for organizing and coordinating the speakers.

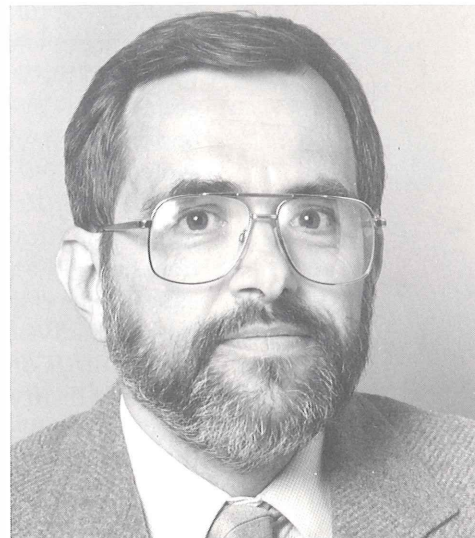
This exceptional program brings specialists from around the country to share their knowledge with WSU. A member of the WSU faculty acts as host to the speaker, showing them the campus and introducing them to our faculty and students. The speakers spend the day in individual meetings which permits students to talk one-on-one with specialists in industry and academia. Immediately before the seminars, an informal social hour is held to allow everyone in the department an opportunity to talk with the guest speaker. The seminar topics are of general interest so individuals in all areas of chemistry may benefit from and enjoy

the talks.

This past fall we were pleased to have four speakers from industry: Vicky Hallmark of IBM, Kenneth Mattes of Eastman Kodak, Chuck Dumoulin from General Electric and T. V. RajanBabu of DuPont.

We also enjoyed the seminars of Julia Kovacs from the University of Washington, Bruce Lipshutz from the University of California Santa Barbara, Richard Field from the University of Montana, Mark Wightman from the University of North Carolina, Steve Zimmerman from the University of Illinois and Bud Ryan & Ken Mopper from Washington State University.

The seminar series will continue throughout the academic year. ♦



Professor Manning Cooke

(20 Years continued from page 7)

degree in physical organic chemistry in 1973. Leonard was a teaching assistant throughout graduate school and this experience confirmed his desire to teach chemistry. At the time he graduated, the country was experiencing a recession which was particularly hard on chemists. Leonard spent several months maintaining parking lots before he took a position as a lab technician in the Department of Zoology at WSU. Leonard claims he spent three days per week collecting water samples on Kootenay Lake in Canada while also enjoying water skiing and fishing! That project ended in 1975 at which time he began his present position in chemistry.

Everyone in the chemistry department appreciates working with Leonard. He is a capable professional and one of the nicest people you will ever meet! ♦



*P.Chem student: I'm intrigued. Apparently my sample doesn't boil.
Leonard: That's not the sample!! That's the vermiculite!!*

Faculty, Staff & Student News

Professor **Bruce Eaton** has a contract with Nexagen, a Biotechnology Company, to continue his work on nucleosides which may have applications as anti-viral and anti-cancer therapeutics. Eaton is working to expand the vocabulary of the genetic code (DNA) by changing the structures and improving binding to the DNA molecules.

Professor **Roy Filby** traveled to San Jose, Costa Rica in February as an international energy agency technical assistants' expert. This is the first part of a three year project to advise scientists in Latin American countries on the use of nuclear analytical methods in environmental research. In May, Filby will give the keynote address at the International Geofluids Conference '93 in Devon, England.

Glenn Fried (MS 1992) and **Melody Smith** (MS 1992) were married this past fall and are currently living in Las Cruces where Glenn is working toward his PhD in chemistry at New Mexico State University.

Milo Hatch, a senior biochemistry major, is participating in the Science Engineering Research Semester (SERS) program at the Oak Ridge National Laboratory at Oak Ridge, TN. A member of the WSU Honors Program, Hatch received the Howard Hughes Scholarship, the Glenn King Scholarship in chemistry, and was nominated for the national Barry Goldwater Scholarship for 1992. Hatch hopes to pursue medical research.

We all miss **Jenni Keith**, who was a staff member for the past three years. Jenni left WSU to begin her new career as an elementary teacher. She was responsible for revitalizing the departmental newsletter and publishing Fulmer Notations.

Donald Matteson, professor of organic chemistry and his former student, **John Michnick**, have a contract with Cell Therapeutics, Inc., a new company in Seattle. They are using their chemistry to

supply the company with test samples of a new and promising drug which promotes rapid healing after certain medical procedures. Cell Therapeutics was so impressed with Michnick's work, they offered him a full-time position. DuPont-Merck has also licensed one of Matteson's patents in connection with a new type of blood clotting inhibitor.

Professor **Ursula Mazur** has accepted an invitation to join the American Chemical Societies Petroleum Research Fund (PRF) Advisory Board. This 13 member group of nationally recognized chemists evaluates about 400 proposals per year and distributes a total of about 15 million dollars per year in university chemistry research grants. Professor Mazur will serve a three year term.

Greg Mercer graduated over the summer of 1992 in analytical chemistry. Greg is the laboratory director for Central Wisconsin EnviroLab.

Ed Tarver, former graduate student, accepted a job at Grambling State University as an assistant professor of chemistry. He teaches quantum analysis, instrumental analysis and general chemistry. In November he organized an equipment seminar to highlight Hewlett-Packard equipment on chromatography and mass spec. Six universities from across Northern Louisiana attended. In February he presented a paper on supercritical fluid chromatography at the Louisiana Academy of Science conference in Lafayette.

Scot Wherland, professor of inorganic chemistry, is currently on a six month sabbatical in Rehovot, Israel, at the Weizmann Institute of Science. He is working with professor Israel Recht on metalloprotein electron transfer reactions. Wherland did his post-doc at the Weizmann Institute; it is also where he met his wife, Lea. ♦

IN MEMORIAM...

Karl D. Luedtke ('38 Chemistry, MS) of Santa Monica, CA passed away in December of 1991. Karl was retired from Los Angeles County.

James D. Verheyden a doctoral student at WSU died in an accident at the age of 27. He graduated from high school with honors in 1983 in Stanwood, WA. While in high school, Verheyden was senior class president and participated in cross country and track, serving as team captain and receiving the most inspirational award. After graduation, he was awarded the presidential scholarship from Pacific Lutheran University in Tacoma. After a year at PLU, he transferred to Western Washington University and graduated with a bachelor's degree in chemistry. Verheyden moved to Pullman in 1988 to begin graduate school in organic chemistry.

He had qualified for a master's degree which he was to receive in December and was one year away from completing a doctoral degree. He married Dawn Emerson in 1990 and the couple made their home in Albion, WA. Verheyden was a member of Albion Community Church and also served on the church's board of directors. For the past year and a half he had been a Vacation Bible School teacher and also was an adult Sunday school teacher.

Harvey L. Young, MD ('48 Chemistry) died of a heart attack on May 25, 1991. He practiced family medicine in the Spokane Valley for 16 years. He was a founding physician and first Chief of Staff of the Spokane Valley Hospital. He was also a retired medical doctor for the Medical Service Corp. of Eastern Washington. ♦

Happy Holidays!

December was a busy month for three members of the staff and faculty in the maternity ward at Pullman Memorial Hospital. On December 1st, **Amy Paynter** and her husband, Brian celebrated the birth of their daughter, Liana Elizabeth. Liana weighed in at eight pounds, twelve ounces. Amy works in the office of the biochemistry department. In the hospital room next to the Paynters, professor of chemistry & biochemistry, **James Schenk** and his wife, Erica Stannard-Schenk welcomed their daughter Genevieve Evon. Genevieve has twin brothers, Nathaniel Lee & Nicholas James. At 4:48 am on December 20th, professor of biochemistry **Toshiko Ichiye** and her husband, professor of physics, Brad Pate celebrated the birth of their daughter, Marina. Marina has an older sister, Monica. ♦

You are invited . . .

*Washington State University
Department of Chemistry
will have an alumni table at the upcoming
American Chemical Society meeting in Denver.*



*Please join us during the social hour on Wednesday
March 31 from 6:00 - 7:30 pm
in the Imperial Ballroom of the Hyatt hotel.*

Discovering the Work of Proteins

by Susan Martinis



A decade has passed, and the impact of my education from WSU continues.

Professor **Glenn Crosby** challenged his students to understand concepts, rather than just memorize facts. His enthusiasm inspired many of us to seek careers in medicine, teaching, and research.

I studied biochemistry in graduate

school at the University of Illinois. My thesis focused on a class of heme proteins called the cytochrome P-450's, which are involved in numerous biological

functions, including liver de-toxification, steroid biosynthesis and metabolism.

I completed my PhD degree in 1990 and moved to Boston to begin my postdoctoral fellowship at Massachusetts Institute of Technology (MIT). MIT is well known for its innovative research and contributions to

science. It can be quite daunting to attend a department seminar where several Nobel prize winners might be spotted sitting in the front row!

My research has propelled me into the world of ribonucleic acids (RNA), a rapidly advancing field. My current work examines the interactions of transfer RNA's (tRNAs) with a family of proteins called the aminoacyl rRNA synthetases. These proteins link tRNA to a specific amino acid. The tRNA then delivers the amino acid to the biological machinery which carries out protein synthesis.

I have been fortunate to attend professional meetings in Stockholm, Strasbourg, Greece and Philadelphia. Most recently, I attended The Protein Society meeting in San Diego. One of my former WSU professors, **Ralph Yount**, told me how the biochemistry department has progressed. Nearly a decade has gone by since I sat in his office in the middle of my senior year seeking advice about graduate schools. Professor Yount gave me the push I needed then, and once again he encourages my career aspirations.

Susan Martinis is currently an American Cancer Society Fellow at the Massachusetts Institute of Technology. ♦

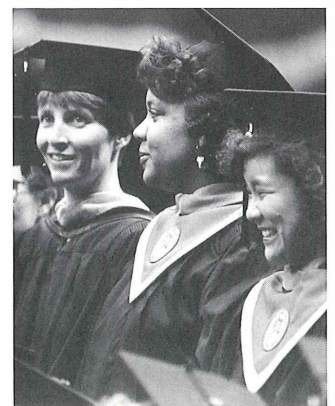


Susan Martinis in her lab at MIT

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Each year our student Call-A-Coug callers help us keep in touch with you. If we didn't reach you, please use the attached envelope to make your gift. And don't forget to tell us about your special events so we can share them with your fellow alumni. It is always a pleasure to hear from you.

The scholarships, fellowships, and special programs you support smooth the way to graduation.



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The Honor Roll of Donors is our way of saying "thank you" for supporting the Department of Chemistry and the Department of Biochemistry and Biophysics. Your generosity enables us to build programs of distinction and provides direct support to our outstanding students and faculty through scholarships, fellowships, research and equipment grants, visiting lecturers and in many ways which build excellence in our programs. We deeply appreciate your involvement and support.

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Alumnus Gives Annual Seminar

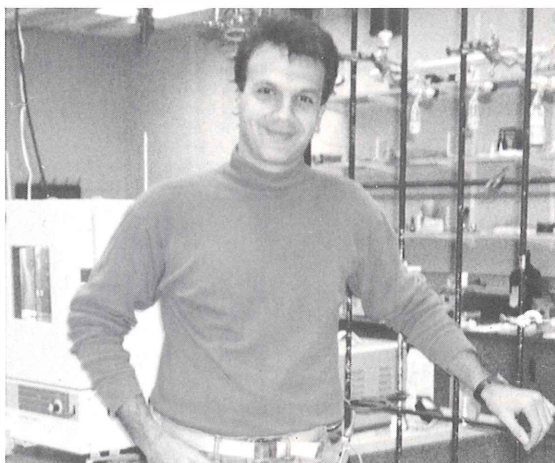
Ioannis Houpis, a WSU alumni, recently presented an organic chemistry seminar entitled "Synthesis of HIV Protease and Reverse Transcriptase Inhibitors." His seminar discussed the synthesis of optically pure decahydroquinoline derivatives which are integral parts of HIV-protease inhibitors. He also discussed the synthesis of non-nucleoside HIV reverse transcriptase inhibitors.

Houpis is a senior research chemist in process research at Merck Research Laboratories. He is responsible for the development of economically efficient processes to be used in the synthesis of drugs for introduction in clinical trials. The goal of his research is to develop chemistry which will allow synthesis of large quantities of drugs of high purity which are suitable for human consumption. The processes must be reliable and economical so they can be introduced in the factory.

In his free time, he tutors students twice weekly at the Newark Technical Training Project, which trains economically disadvantaged people to be lab technicians. It is a very successful program with a high rate of job placement. He and a colleague are beginning a similar program in the New York area.

Thanks to an air traffic controllers strike

in 1981, WSU was fortunate to be the first university to accept Ioannis. He is originally from Greece and during the strike, it was virtually impossible for airmail to reach him. Houpis graduated from WSU in 1985 with his BS degree in chemistry. He worked with EJ Cory at Harvard where he



Ioannis visits a lab during his visit to WSU.

earned his PhD in 1990.

Since graduating, Ioannis has presented three seminars at WSU. Returning gives him the opportunity to visit his former professors and present new information to those who knew him when he knew very little chemistry. ♦

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