

FULMER NOTATIONS

Department of Biochemistry and Biophysics
Department of Chemistry

INSIDE THIS ISSUE . . .

Faculty & Student News	2
Faculty Spotlight: St. John Dixon-Warren ..	3
Biochemistry/Biophysics Briefs	4
Biotech Symposium Honors Yount	4
Chemistry Notes	5
Alumni News	6
Budrow Returns to WSU ...	9
What We've Been Up To...	10
Donor Roll	11
Students Return for Crosby Symposia ...	12

SUMMER 1997

Biochemists Elected to National Academy of Sciences

Rodney Croteau and Linda Randall have been elected to the National Academy of Sciences, the country's most prestigious and influential scientific organization.

They were two of the 60 new members elected at the 134th annual meeting this spring and were the only new members from the Northwest. Election to the Academy is considered one of the highest honors that can be accorded a U.S. scientist or engineer.

Croteau is an internationally recognized expert in the biochemistry of plant products, specifically terpenes. His work has important implications for chemicals used in pharmaceuticals, flavors, fragrances and cancer therapy.

An Eisig-Tode Distinguished Professor and a Fellow of WSU's Institute of Biological Chemistry, Croteau has been at WSU since 1973. He is credited with the recent isolation of a gene involved in taxol biosynthesis by the yew tree, important in treating cancer, and he has pioneered research on the defense mechanisms of conifers against bark beetles.

Randall is an authority on export of proteins by bacteria and on the action of molecular chaperones. Her work has implications for understanding hormone production, antibody secretion and immune function, and toxin production by bacteria.

Professor Randall joined WSU in 1981 after eight years on the faculty of the University of Uppsala, Sweden. She received the Eli Lilly Award from the American Society of Microbiology in 1984; and a MERIT Award from the NIH in 1993.

WASHINGTON STATE UNIVERSITY

Faculty & Student News



Suzanne Arter was selected as the 1997 outstanding freshman chemistry student and was awarded a copy of the CRC Handbook of Chemistry & Physics.

The Department of Chemistry is pleased to announce the recipients of various departmental scholarships for the 1996 - 97 academic year. For the **Julian Culbertson Memorial Scholarship**: Joseph Baker, Misty Headridge, Brad Kirsch, Stephen LaMont, Janet Paulsen and Donald Waller. For the **Harvey K. Murer Memorial Scholarship**: Anthony Boitano, Matt Moberly and Mike Stratton. For the **Edward Wagner Memorial Fellowship**: Shannon Long, Greg Long and Suzanne Love.

Don Matteson spent this past spring at the Massachusetts Institute of Technology as a Visiting Professor. Knowing how MIT students feel about Harvard students, he entertained his graduate level course in asymmetric synthesis with photos from nearby Harvard, Idaho.

The WSU chapter of the honor society of the ACS, Phi Lambda Upsilon (PLU), recognized the achievements of Kip Kendrick by naming him the 1997 "Outstanding Graduate Student" and Stephen LaMont the "Outstanding Undergraduate". PLU also generously donated a new copier to the Department of Chemistry.

The WSU Faculty Association for Scholarship and Research presented the 20th Annual Undergraduate Research Awards to 14 students. First-place winners were John Wyrick, a biochemistry major, and Daniel Zweisler, also a biochemistry major. Working under the guidance of Keith Dunker, Wyrick studies the three-dimensional structure of proteins, which may help in the development of new drugs. Zweisler's research focused on a novel method of studying the way cells repair damaged DNA. This research, which has potential relevance for the treatment of cancer, was carried out in the laboratory of Michael Smerdon.

Ralph Yount is Vice President of the Federation of American Societies for Experimental Biology and will become President

this summer. The Federation is an umbrella organization for 10 basic biomedical research societies and has a membership of 44,000. He has served on its board for two years and is a past president of the Biophysical Society, one of its member groups.

Professor of Chemistry Bruce Eaton has left his full-time position at WSU to work at NexStar. He will retain his relationship with WSU as an adjunct faculty member.

Cyndi Earles, a graduate student in Jim Schenk's lab, has been named a National Research Service Award Predoctoral Fellowship recipient from the National Institutes on Drug Abuse (NIDA). She was awarded three years of support. WSU has three of the current 47 fellowships in the NIDA predoctoral award portfolio.

Glenn and Jane Crosby have been awarded a \$50,000 grant from Research Corporation to enhance their M.A. in Teaching Chemistry program. The grant provides mini-grants of \$2,500 for chemistry curriculum improvements by teachers who have completed the degree program and whose schools have agreed to match the funds.

A photograph of Kerry Hipps and his student, Bill Lu was selected for the first month of the new 1997 NanoScope Calendar. You can view the image in the User's Showcase of the NanoTheater at www.di.com

The American Academy of Microbiology is pleased to announce that Gerald Hazelbauer has been elected to Fellowship. The American Academy of Microbiology, an honorific leadership group within the American Society of Microbiology, recognizes microbiologists who have demonstrated outstanding scientific excellence and originality by election to Fellowship in the Academy.

Professor Emeritus Randall Hamm had a spinal fusion operation in Spokane last spring. During the pre-operative physical exam they discovered that he had a partially blocked carotid artery which required an endarterectomy. Both operations were successful and Professor Hamm stops by

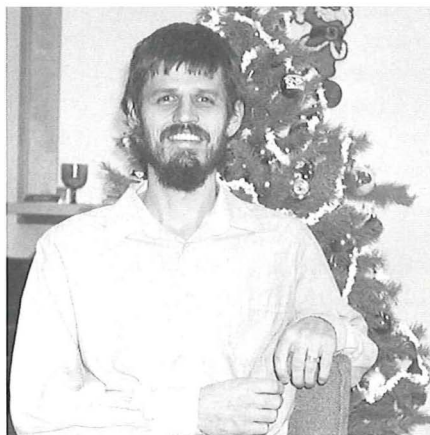
(Faculty & Student News Cont. on p. 8)



Faculty Spotlight

WSU's newest Physical Chemistry and Materials Science faculty member is St. John Dixon-Warren. St. John is a first-generation Canadian of English heritage, who grew up near Vancouver, British Columbia. He has adjusted quickly to Washington state, particularly since he finds himself closer to home than at any other time during his graduate or postdoctoral years. He obtained his Ph.D. at the University of Toronto followed by a NATO Fellowship at the University of Cambridge in England and a stint at JILA at the University of Colorado at Boulder.

The focus of his research will be the physical and chemical properties of self-assembled monolayers (SAMs) of thiols adsorbed on gold. These studies will be performed for SAMs prepared directly in ultrahigh vacuum and prepared by deposition from solution. The relationship between chemical reactivity and the structure of the organic films will be of particular importance to these investigations. This relationship will be probed quantitatively using molecular beam reactive scattering. A second area of interest will be the evolution of mesoscopic structure in the self-assembled films. Photoelectron emission microscopy, which allows direct imaging of spatial variations in the work function, is a new technique which is particularly suited to such studies. These two methods will be complemented by standard techniques of modern surface science, including temperature programmed desorption, low energy electron diffraction and Auger electron spectroscopy. In



St. John Dixon-Warren

addition, scanning tunneling microscopy and X-ray photoelectron spectroscopy will be utilized to further characterize the self-assembled monolayer systems.

During his first year at WSU St. John participated primarily in the graduate program. He taught the introductory physical chemistry graduate course, ran the physical chemistry and materials science seminar program, and recruited graduate students. St. John has now taken an active interest

in the undergraduate Honors Program and plans to make this a focus for his efforts for the next several years. Although he believes strongly in the advantages of chalk board lectures complemented by demonstrations, he also plans to utilize the Internet to provide additional supplementary information. This information will be accessed via the Honor Freshman Chemistry Home Page. The URL is www.wsu.edu:8080/~honrchem.

St. John is in the process of building his research group. At present he has two graduate students, **Natalie Burson** from South Carolina and **Yan Yu** who recently arrived from China. He also employs a teaching postdoctoral associate, **Victor Bondzie**. Victor is originally from Ghana, but he obtained his Ph.D. at the University of Maine.

St. John is very pleased to have joined the faculty at WSU, and he looks forward to an enjoyable career involving both undergraduate education and graduate research.

Biochemistry/Biophysics Briefs

by Gerald Hazelbauer, Chair

Looking back at the activities of Biochemistry and Biophysics in the 18 months since the previous issue of Fulmer Notations, a recurring theme is that national recognition of our faculty is bringing our department ever-increasing prominence. Of particular importance was the election of **Lin Randall** and **Rod Croteau** to the National Academy of Sciences. Our graduate faculty now includes three Academy members (the third, **Bud Ryan**, was elected in 1986), and this number has the distinct possibility of increasing soon. At a university-wide reception in honor of Lin's and Rod's election,

Walter Tribley, President of the Biochemistry Graduate Students Association, made an elegant statement of student appreciation for the quality of graduate training and the excellence of the faculty in biochemistry. Several university administrators later mentioned how impressive it was to hear such articulate remarks from a student. My response was that the excellence of our faculty is matched by the excellence of our students.

Recognition is also occurring through election of faculty to positions of responsibility in national organizations. **Lin Randall**

(Biochemistry Briefs Cont. on page 5)

Biotech Symposium Honors Yount

The Fourth Biennial Biotechnology Symposium, "Molecular Motors," was held this spring to honor Professor **Ralph Yount**, Biochemistry and Biophysics, for his contributions to the field.

Yount has made numerous contributions to the study of proteins and enzymes and is a key member of WSU's Biotechnology Training Program, an eight-year-old program that emphasizes protein chemistry.

The symposium was introduced by **James Wells**, a scientist at the biotechnology firm Genentech, Inc. and a member of WSU's Biotechnology Training Program's Industrial Advisory Board. Wells did his doctoral work with Yount at WSU in the late 1970s and worked with **Ross Dalbey**, another former Yount student, to organize this symposium in the month of Yount's 65th birthday.

The keynote speaker, Daniel E. Koshland, Jr. of the University of California, Berkeley, is a biochemist and the former editor-in-chief of *Science*. He has made numerous contributions to the study of pro-

teins and has trained many scientists, including Yount, who was a postdoctoral fellow with him.

After the symposium many of Ralph's former students and postdocs stayed in Pullman for a reunion. Among those who visited were: **Bill Perkins**, **Kay Nakamaye**, **Scott Braxton**, **Doug Cole**, **Don Wang**, **Bob Swanson**, **Phil Buzby**, **Ed Huston**, **Paul Wagner**, **Bruce Kerwin** and **Lois Greene**.



Ralph Yount (upper right) at the symposium banquet with three of his former graduate students: Boyd Haley (upper left), Richard Barclay (lower left) and Gerald Carlson (lower right).

Chemistry Notes: A Time For Change

by Roger Willett, Chair

The next few years are going to be a time of great change in the Department of Chemistry. Demographic projections predict an increase of 50% in student enrollments over the next decade and one-half. The PC boom and internet have thrust us into the middle of technological revolution. And ten of our faculty have announced their intention to retire or will reach age 65 in the next five years!

Helen Place and Brian Weissbart are introducing computers into our General Chemistry laboratory program. Gratifyingly, the results are already starting to spill over into the main sequence. We hope to equip two more laboratories this coming year.

We are welcoming two new faculty members to our midst. Sue Clark came to us from the University of Georgia's Savannah River Ecology Laboratory to strengthen our "focus area" in environmental chemistry. Her research is in the area of environmental radiochemistry, chemistry of lanthanides and actinides, mechanisms controlling metal speciation in environmental systems.

We will have many new faces among our faculty shortly. Kevin Bray has just accepted a new position in the department in the area of high pressure solid-state chemistry as Associate Professor. Kevin comes to us from the University of Wisconsin where he held a tenured faculty position in the chemical engineering department. He will join our faculty in the spring of 1998. In the coming months we will initiate a search for an organic chemist to replace Professor Bruce Eaton.

In addition, we have filled three Ph. D. instructor level positions: Brian Weissbart has been hired as the supervisor of general chemistry labs; Michael Finnegan joined the department as lecture demonstrator; and John Schaumloffel has been hired as the analytical laboratory supervisor.

The rapid expansion of the Department in the '60s is catching up with us with a vengeance. We will see eight – ten retirements in the next five years. Mainstays in the department (including yours truly) will be reaching retirement age. With increasing undergraduate enrollments projected, we expect to obtain new faculty positions to meet the demand. This will present a real challenge to the department and to the University as laboratory space will become a premium and we have to provide the startup funding necessary to help young faculty get underway.

With these challenges, of course, come opportunities. We have identified three "focus" areas for the department: Environmental Chemistry, Materials Chemistry, and the Chemistry of Biological Molecules. We have initiated options in the first two areas in our undergraduate programs and we will emphasize all three of the areas in our graduate instruction and research efforts. These areas will be targeted as we hire new faculty. It is our goal to become leaders in chemical research in these three areas.

(Biochemistry Briefs Cont. from page 4)

was elected to the Executive Council of the Protein Society (which also includes alumnus Jim Wells among its five distinguished members), Mike Griswold has been chosen President of the Society for the Study of Reproduction in the coming year, and Ralph Yount, after having been President of the Biophysical Society in 1994-95, is in the midst of a three-year term of leadership in the Federation of American Societies for Experimental Biology (FASEB). In 1996-97 Ralph was President-Elect, this year President, and next year, Past President. FASEB has become a major and very effective voice in Washington, DC for biomedical research, and so Ralph is now instructing and counselling not only students and faculty, but also members of Congress and congressional staffers. We in the department have all profited from Ralph's insights and advice; so will Congress.

Besides these highlights of recognition, our faculty and students continue to accumulate honors and awards, as indicated throughout this publication, and our alumni enhance our reputation by their multifaceted accomplishments. Speaking of alumni, it was particularly interesting to interact with the considerable number who returned to Pullman for the Yount Symposium or the McFadden retirement dinner (more on the details of these gatherings in subsequent issues). We welcome you all to contact the department and schedule a visit. Your interest, suggestions and support are greatly appreciated.

Alumni News



Please continue to send us information about what you are doing in the enclosed courtesy envelope. Thank you!

20's

Esther Crawford Andes (Chem '25) passed away in November of 1994 in Knoxville, TN. She was a retired research biochemist at the University of Tennessee.

30's

Marvel-Dare (Fellows) Nutting (Chem '30) made a special donation to the Chemistry Department Scholarship fund to support female chemistry students. Thank you!

D. Archer "Mort" Mortland (Chem '31 B.S.) passed away recently. He lived in Yakima, WA and was retired from the Northwest Equipment Company. He was an active member of the Yakima Rock and Mineral Club and the Yakima Valley Audobon Society.

Art (Chem '31 B.S.; '33 M.S.) & **Helen Brunstad** have established three scholarships at WSU: one in Business to honor the work of Helen's father, one in Athletics in tennis and baseball, and another will support students in Chemistry. Art and Helen met while attending Washington State College. Helen grew up in Pullman, the daughter of distinguished agricultural professor, George Severance, who contributed much to the early development of WSU — he joined the college in 1902, retiring as vice dean of the College of Agriculture. Art's early years were in his native Norway, later coming to the Puget Sound area. After their undergraduate studies, Art completed his M.S. in chemistry and went on to a distinguished career as an analytical and process

chemist, ultimately serving as safety director for the Atomic Energy Commission. Their two sons, Harold and George, both graduated from WSU, as did Art & Helen's grandchildren, Signe and Kevin. In 1992 the Brunstads were presented the Weldon B. Gibson Distinguished Volunteer Award. The award recognizes "the highest levels of exemplary service and achievement on behalf of WSU." For many years they hosted an annual barbecue for WSU alumni and friends in Richland, and later in Port Ludlow, Wash. where they retired.

Eileen Lugar Wexler Johnson (Chem '36) was one of 20 members of the Class of 1936 who returned to WSU last spring for the Golden Grad reunion.

40's

Clyde Frost (Chem '43 B.S.) made donations to three Chemistry Department scholarships (Casebier, Stacey and Culbertson) to honor the memory of his late wife of 50 years, Doris. Thank you!

Vera Jones' (Chem '48 B.S.) husband, Cecil passed away. Cecil received his B.S. degree from WSU in 1947 in Chemical Engineering.

50's

David Loeff (Chem '50 B.S.) passed away last summer. He lived in Cincinnati, Ohio and was employed at the University of Kentucky Medical Center.

Leonard Elvigan (Chem '57 B.S.) retired from The Boeing Company as a Finishes Engineer.

60's

Darryl DesMarteau (Chem '63) from Clemson University returned to WSU to receive an Alumni Achievement Award for 1994. He presented a seminar titled, "From Noble Gas Compounds to Fuel Cells & Pharmaceuticals: An Example of the Benefits of Basic Research in Academe."

Jose Shdo (Chem '64) retired from Boeing after 28 years where he worked with rocket motor propellant, high temperature systems, nozzles and motor case pressure vessels . . . and "some" chemistry consulting.

Mark Suwyn (Chem '67 Ph.D.) has been named chairman and CEO of Louisiana Pacific Corp. in Portland, Ore. He was previously executive vice president of International Paper Co.

John Geigert (Chem '69 Ph.D.) is vice president of quality for IDEC Pharmaceuticals Corp. in San Diego.

80's

James Merryweather (Biochem. '81 Ph.D.) joined Millennium as Director of program management. He was most recently a director in the vaccine R&D division of Chiron.

McMichael Updates Teaching

Kirk McMichael has been a professor of organic chemistry at WSU for 33 years and teaching styles have changed during that time. McMichael is adapting his way of teaching to meet today's new demand for learning. He is abandoning his traditional lectern for a computerized projection system. Students of yesterday could only imagine how atomic reactions occurred but today's students are different - they want to be taught, but also ask, "what is it that you want me to learn?" says McMichael.

Using animation software, McMichael realized he could use computer animation to demonstrate the molecules undergoing structural changes -- a 3-D moving pictorial of the reaction.

According to anecdotal reactions from students' evaluations it seems the students understand and appreciate this approach.

McMichael credits WSU making hardware available and notes that much of the software is available to higher education at low or no-cost freeware and shareware.

1997 Carl M. Stevens Lecture

The 1997 Carl M. Stevens Lectureship was presented by Bruce Ames of the University of California, Berkeley. He spoke on "Diet and Cancer".

Professor Ames is noted for his research on identification of agents damaging human DNA and the consequences on aging and cancer. He originated the noted "Ames test" which uses the mutagenesis of bacteria to screen for possible carcinogens in the environment. He is currently Director of the National Institute of Environmental Health Sciences Center at Berkeley.

The Carl M. Stevens Lectureship was established in 1980 to honor Professor Stevens' outstanding contributions to teaching, research and university governance at WSU. He was instrumental in the development of the Department of Chemistry and served as chair of the department from 1960-71. Professor Stevens retired in 1980 after 35 years of service to WSU.

(Faculty & Student News Cont. from p. 2)

the chemistry office and is looking forward to skiing this winter. He and Vivian attended his 65th high school reunion in Auburn, Wash and recently celebrated their 60th wedding anniversary. His email address is randyhamm@aol.com. He would enjoy hearing from you.

The second annual Interdisciplinary Chemistry, Biochemistry and Materials Science Graduate student retreat was held in May at Camp Roger Larson on Lake Coeur d'Alene. The invited speaker was **Rick Fletcher** of the University of Idaho and a 1981 WSU graduate. Students presented 20 minute talks on their research and had free time for hiking, canoeing, fishing, basketball and more.

Lucia Culbertson celebrated her 100th birthday last year. She is the widow of Professor **Julian Culbertson**. We would like to thank everyone who has donated to the Culbertson scholarship which was established to honor his outstanding teaching career. For the 1996/1997 academic year we awarded \$3,000 in Culbertson scholarships to six undergraduate chemistry majors.

Congratulations to **Jeremy Evans** who has been named a Fellow of the British Royal Society of Chemistry.

Jennifer Parish, of Benton City, Washington was selected as a 1996 Barry M. Goldwater Scholar. The award was \$7,000 to support her research in the following year. She just completed her undergraduate degree in Biochemistry with a double major in Microbiology. Her research in **Professor Schenk's** laboratory is in the area of dopamine transporters - the kinetics of the transporter as it is linked to intracellular processes. Jennifer was also recognized as one of two 1997 College of Sciences Distinguished Students.

Colleagues, friends and former students gathered this past spring to celebrate the career of **Bruce McFadden**, who retired in May after 41 years of distinguished service to WSU. As Professor Emeritus, Bruce

plans to remain active in research. McFadden was also the recipient of WSU's 1997 Faculty Library Award.

Among the annual awards for 1997 announced by the College of Sciences were:

Distinguished Student:

Jennifer Parish, Biochemistry/Biophysics

Distinguished Faculty:

Ralph Yount, Biochemistry/Biophysics

Distinguished Alumnus:

James Wells, Biochemistry/Biophysics

Graduate Student Achievement Award:

Greg Long, Chemistry

Edward R. Meyer Professorship:

James Schenk, Chemistry

Michael Smerdon, Biochemistry/Biophysics, received the 1997 Sahlin Faculty Excellence Award for research, scholarship and arts in recognition of his work in DNA repair.

The WSU Chapter of Sigma Xi, the Scientific Research Society, selected the winners of the student paper competition. Competition this year was so great that the committee could not distinguish between the top three prizes and were forced to select three first-prize winners. Two of those papers were by: **Bill Lu**, Chemistry & Materials Science, **Ursula Mazur's** laboratory; and **Cheng Yang**, Biochemistry/Biophysics, **ChulHee Kang's** laboratory.

Michael Griswold, Biochemistry/Biophysics, received a MERIT Award from the National Institute of Health. The award will provide ten years of funding without renewal competitions. **Ralph Yount** and **Linda Randall** are previous recipients from the department.

Shannon Long, a recent graduate of Professor Schenk's group, received an Eli Lilly Women Chemists travel award to present a paper at the 1996 Society for Neuroscience meeting in Washington, D.C.



Jennifer Parish, a 1997 College of Sciences Distinguished Student

Budrow Returns for Homecoming

At the 1996 Homecoming football game, the crowd welcomed a very special guest, **Theodore Budrow**. Budrow earned his B.S. degree in Chemistry in 1923, making him one of WSU's oldest living graduates.

Ted came to WSU after serving in WWI as a tank driver in France. He grew up in Caldwell, Idaho and planned to study chemical engineering, but could not afford the necessary slide rule and drawing tools. He switched to chemistry which did not require special expensive equipment.

Traditionally freshmen were required to wear green beanies until the Campus Day celebration in May where they could finally remove the caps and toss them into a huge bonfire. Ted recalled wearing the green beanie and being paddled by upperclassmen the one day he did not.

Ted's most clear memory of the WSU chemistry labs was the smell of hydrogen sulfide hanging in the air. Of course, hydrogen sulfide is a deadly poison but no one realized it at the time. Ted was an active member of Theta Nu Theta, the professional chemical fraternity, having served as secretary, treasurer and president. He also remembered Professor Julian Culbertson and some other faculty members at the time: C.C. Todd, R. P. Cope, J. C. Hillman and H. L. Cole. Carl Brewster was Ted's mentor and encouraged him to study for his Ph.D.

Ted earned his Ph.D. in organic chemistry from the University of Minnesota. His thesis was on the anhydrous reaction of iodine with phenol. It made quite a mess and they never did identify the products as they didn't have chromatography in those days.

Upon graduation Ted went to work for a German chemical company in Niagara Falls which was eventually bought by DuPont. Ted stayed on with DuPont until his retirement in 1958.

The snow during Ted's visit brought back memories of bobsledding the snowy hills while he was a student. Campus Av-



Thelma & Roger Willett with Theodore Budrow (center)

enue, a long winding street bordering campus, was roped off every night from 7:00pm until midnight. Guards were posted at every corner and long curves were boarded and banked to keep accidents down and speed up. Ted shared some happy memories of driving the Ferry Hall "bob".

Although some traditions have changed since Ted was a student, many more remain the same. On the drive into town Ted noted a sign for the homecoming bonfire, an activity that students in 1996 enjoy as much as students did in 1923.

During his recent visit, even though Ted is 99 years old and the temperature was in the low 30's, he insisted on staying until the football game was completely over: a Cougar through and through!

Newest Arrivals

It has been a busy year in the maternity wards on the Palouse!

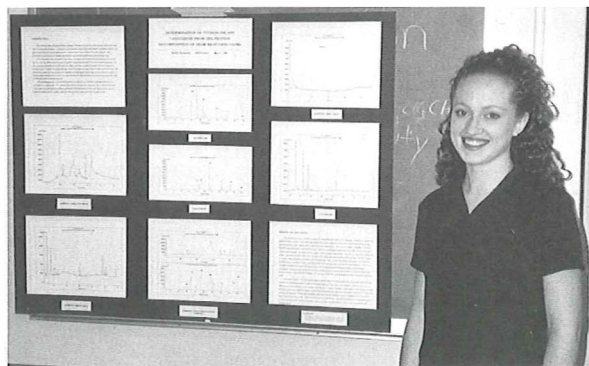
- In March **Tammy Stobb** gave birth to a daughter, Laura. Tammy is a graduate student in Professor Jim Schenk's group. Her husband, Jeff, is a graduate student in neuroscience.
- On June 7th Michael Evans was born to biochemistry professor **Jeremy Evans** & his wife Michele, joining big brother Matthew.
- And on June 8th, Haley Hansen arrived a month and a half early to her parents Suzanne and **Chris Hansen**. Chris is a graduate student in Professor **Rob Ronald's** group and is almost finished with his Ph.D.

What We've Been Up To . . .

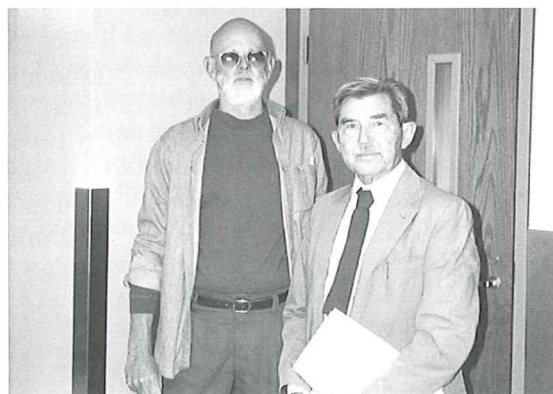
Participants of the 1997 Interdisciplinary Chemistry, Biochemistry and Materials Science Graduate Student Retreat at Camp Roger Larson on Lake Coeur d'Alene.



Jim Hurst (left) and Henry Taube before Taube's seminar. Taube is known as "the father of modern inorganic chemistry" and 1983 Nobel Prize winner in chemistry for his work on the mechanisms of electron transfer reactions, especially in metal complexes. He gave a seminar addressing his current research on coordination complexes containing H_2 as a ligand.



Kelley Koopsen presenting her Chem 489 research project on "The Determination of Putrescine and Cadaverine from the Protein Decomposition of Deer Meat by GC/MS" at the chemistry department undergraduate research exposition



Stephen Lamont displaying the poster of his research he presented to the MARC IV meeting in Hawaii. Stephen did his undergraduate research in Roy Filby's lab and will start work on his Ph.D. this fall at WSU. He was awarded a College of Sciences Abelson scholarship for incoming graduate students.



THANK YOU

Honor Roll of Donors – 1996/1997

The Department of Chemistry and the Department of Biochemistry and Biophysics thank you for your support! Every gift is appreciated a great deal and we extend sincere thanks to all our alumni and friends who support our worthy students and programs through donations.

Silver President's

Associates
(Annual gifts of \$10,000 to \$99,999)
Philip '33 & Neva (Martin) Abelson '34
Glenn & Jane Crosby
Donald & Marianna Merritt Matteson
Molecular Kinetics, Inc.
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Crimson President's

Associates
(Annual gifts of \$5,000 to \$9,999)
Ronald L. Casebier '55

President's Associates

(Annual gifts of \$1,000 to \$4,999)
Gene '59 & Priscilla (Stanton) Alberts '59
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Randall & Vivian Hamm
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Raymond '63 & Shirley Mah
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Robert C. Ronald
James '54 & Lee (Neff) Ruck '54
Mary (Mullen) Stacy '46
Joseph '74 & Jean Westsik
Ralph G. Yount

Dean's Associates

(Annual gifts of \$500 to \$999)
William '78 & Diana (Walker) Beaulieu '76
Abel '77 & Sherry (Schreeck) Mendoza '77
James '76 & Elizabeth Olson
Frank '32 & Esther Springer
Louise Piepho

Tower Club

(Annual gifts of \$100 to \$499)
Jeffrey Alger '75 & Laurel Leach
William '65 & Ann (Peterson) Amies
Donald '71 & Dana (Garen) Anderson '69
Herman '35 & Mariette (Moser) Anderson '39
Edwin C. Barker '65
John '91 & Cheryl (Suitt) Bartleson '92
Kevin P. Bertrand
Robert '85 & Diane Knutson Bianchini '83
Frederick '41 & Rita Bollinger
Dan B. Borchardt '85
Jay '91 & Donna Bowen '89
John '47 & Blanche Buckingham
Eugene '51 & Ruth Bulgozdy
Robert '68 & Diana Bushey
Clayton F. Callis
Charles '41 & Brownie Cameron
James '70 & Ruth (Decann) Caputo '69
Joseph '86 & Amy Carter
Mark '81 & Kimberly Chen
Donald '75 & Robin (Stiles) Chisholm '75
John '69 & Carol (Baker) Clark '69
David '80 & Teresa Cremers '80
Grace (Vanwoudenberg) Crisp '55
D-3 Racing
Darryl D. Desmarreau '62
James '67 & Catherine Ebbert '66
John H. Estes '52
Jeremy Evans
Sandra (Pettee) Fadeff '81
Donald '62 & Nancy Filion
David '75 & Sigrid Flatness
William '81 & Mary Fordyce
Otis '41 & Eula Fortner
Frank Fowler '70
Alan '66 & Lisbeth

Fritzberg

Andrew Gieschen '86 & Linda Florek
Clarence '33 & Arcile Green
James '51 & Maxine Groves
In Suk '93 & Ok Nam Han
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James '74 & Rebecca (Dutro) Hinken '76
Paul '68 & Joann Johnson
Joyce J. Kaufman
Raymond '67 & Connie Kelly
Charles R. Kissinger '79
Marshall '79 & Marcella Lane
David '51 & Marie Langdon
P. R. '76 & Cynthia (Abhold) Ledgerwood '78
Harry '65 & Betty (Gould) Linker '66
Christina L. Loechelt '79
Gary '84 & Carmen (Ayuso) Marshall '84
Ernest '42 & Ardis (Hines) McKibben '45
Brad A. McMullen '77
Jeffrey Miller '73 & Kathleen Buckley-Miller
Earl W. Murbach '52
Marvel (Fellows) Nutting '30
Gerald '80 & Kathleen O'Bannon
Roger '76 & Pamela Parry
Thomas '75 & Beverly Rauchfuss '75
Stephen E. Rayner '68
Douglas '69 & Pamela Rector
Gail (Newcomb) Salo '62
Brian L. Scott '88
William '65 & Ann (Reeves) Seese '63
Sandra L. Slichter '65
Robert & Elaine (Foskett) Smith '63
Software North
John & Carol Sokatch '58
Roger Sperline '77 & Sue Roberts '78

Robert '67 & Rita

(Goecke) Stanton '65
Laurence '52 & Mildred (Neustel) Starr '46
David '58 & Janet (Jewsbury) Stephenson '57
Alice (Benson) Strand '48
Howard '42 & Shirley Strobel
Wayne '74 & Carol Sukow
Rodney L. Swanson '68
Gary L. Turney '77
Arakere '58 & Karen Vasudev
Brian Warner '81 & Jennifer Clyne
James Wells '79 & Carol Windsor
Mark '72 & Mary (Sunderland) Wickersham '72
Alan '79 & Patricia Wilson

Sustaining

(Annual gifts of up to \$100)
Marvin '59 & Shirley Abrams
Stephen '81 & Patricia Agnew
Stephen & Ann (McKenney) Ames '69
Donald F. Averill '64
Harold '75 & Cheri Baker
Richard '74 & Nona Barclay
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Martha (Walters) Miller '33
Shane '93 & Janet Needham '93
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Gary Walter & Terrell Patterson '89
Carl '80 & Randee Weiss
Charles '42 & Bernice Wilke
Edwin '66 & Deborah Willgress
Nedwin '61 & Nancy Wogman
Ronald '72 & Maria Yates
Craig W. Young '93

* deceased

Colleagues and Former Students Return to WSU to Honor Glenn Crosby

Glenn A. Crosby, Professor of Chemistry and Materials Science, was honored recently at two special symposia: the first at the 52nd Northwest Regional Meeting of the American Chemical Society in Moscow, Idaho and the second in the WSU Chemistry Department in Pullman. The NWRACS Meeting held two special Friday sessions in chemistry education to honor Glenn. The WSU Chemistry Department hosted a Saturday symposium focused on research carried out by former Crosby students and associates. The finale of the weekend was a banquet and poster session on Saturday evening.

Crosby's nationally acclaimed accomplishments both as an innovative chemistry educator and as a researcher in molecular electronic spectroscopy were recognized.

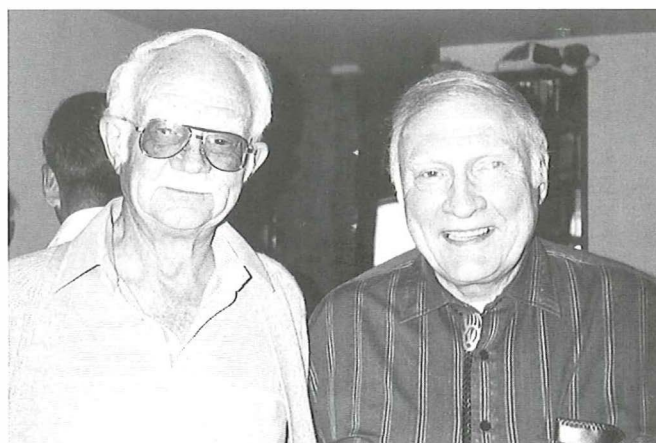
Twenty-five of Glenn's 45 Ph.D. and M.S. degree students attended as well as many of his postdoctoral associates, colleagues, and numerous teachers from his various educational programs. Former campers from his popular Cougar Summer Science Camp also attended.

J. Ivan Legg, provost at the University of

Memphis and former Chair of the WSU Chemistry Department, presented a discourse on chemical education and Michael Kasha, Professor of Chemistry at Florida State University and Crosby's postdoctoral mentor, presented the plenary research address.

Crosby came to WSU in 1967. Among his many awards, he was named the 1975 Washington College Science Teacher of the year, the 1990 Mortar Board Distinguished Professor and has received the WSU Faculty Excellence Award for both Instruction and Public Service. His extensive national service to research and science education has included service on the ACS Board of Directors, as chair of the ACS Education Committee and as District Director.

Glenn Crosby (right) pictured with Roy McCullough, his very first Ph.D. graduate.



FULMER NOTATIONS

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