

Department of Chemistry
Department of Biochemistry and Biophysics

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WINTER 1995

**Innovative WSU Biotech
Training Grant Renewed**



WSU's biotechnology training program is an interdisciplinary graduate curriculum involving 22 training faculty from six different degree programs in four colleges. WSU was one of nine institutions to receive initial funding for the biotechnology training from the National Institutes of Health (NIH). After site visits and program evaluations, NIH renewed funding for WSU which reflects the high quality of WSU's program. Six others of the original institutions were also renewed.

WSU's program was started in 1989 under the direction of Professor **Gerald Hazelbauer** and is organized with four distinct components: lab work, coursework, internships and research symposia.

In their first year, students rotate through four different and diverse labs. A biochemistry student may spend time in chemical engineering, plant physiology or veterinary microbiology & pathology. Familiarity with different scientific perspectives is essential, says Hazelbauer. "Modern science and engineering is very much a social activity," he says. The familiarity with the nature of different labs and the ability to speak the different languages is invaluable.

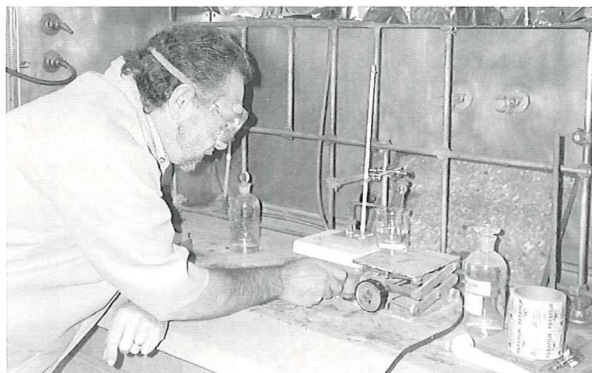
The second major element of the program is coursework emphasizing protein chemistry and an innovative biotechnology course taught alternate years. Students from various backgrounds are assigned to research groups and work as teams to develop research proposals for biotechnology projects which are reviewed by

(Biotech Training Grant Cont. page 10)

WASHINGTON STATE UNIVERSITY

Organic Labs Go Microscale

In June of 1994 Chem 240, Elementary Organic, ran their first laboratory experiment in the microscale configuration. This completed the transition of all organic laboratories to microscale. Microscale experiments replace the large amount of chemicals and bulky equipment commonly used in organic labs with smaller apparatus and significantly smaller quantities of chemicals.



Ron Newton demonstrates the new microscale equipment

In the summer of 1987 a team headed by scientific instructional tech, **Ron Newton**, and consisting of one postdoc, one graduate student and two undergraduate students conducted over 40 laboratory experiments to obtain experimental data and locate trouble areas with the experiments.

Major benefits of microscale chemistry include a 70% reduction in hazardous waste output from laboratory experiments, a significant reduction in chemicals used, a reduction in chemical emissions into the environment, increased safety in the laboratory and rapid spill cleanup.

The organic division plans to further the improvements begun with the microscale conversion by installing a solvent recovery system and expanding the use of instrumental analysis in laboratory experiments. ♦

Materials Research Instrumentation Grant Awarded

NSF recently funded a matching proposal for the acquisition of surface electron spectroscopy instrumentation to serve a number of faculty and students at WSU who work in the area of advanced materials research. The total grant, including WSU matching contributions, amounted to \$510,000. The principal investigators are from both the chemistry & physics departments: Professors **K.W. Hipps** and **Ursula Mazur** from chemistry; and Professors **J.T. Dickinson** and **Brad Pate** from physics. In addition, Professors **Roger Willett** and **Glenn Crosby** of the chemistry department contributed supporting documentation indicating their need for this equipment.

The specific instrumentation to be purchased include an electron spectrometer (ES), combining an Auger Electron Spectrometer (AES), X-Ray Photoelectron Spec-

trometer (XPS) and Ultraviolet Photoelectron Spectrometer (UPS) including the necessary vacuum system, electronics and data acquisition and presentation systems. The research that will benefit from this instrumentation includes: efforts in thin film synthesis and processing, surface modification, laser surface interactions, tribology and fracture, and characterization of materials on an atomic level. AES/XPS allows both qualitative and semiquantitative analysis of surface composition and, combined with UPS, provides critical information about electronic and chemical structure.

A total of 21 graduate students and postdoctoral fellows will directly benefit from the acquisition of this AES/XPS system. The system will also provide substantial benefits as an instructional instrument for both graduate and undergraduate students. This acquisition is a significant part of our efforts to acquire instrumentation necessary for research in materials synthesis and properties. A number of research areas require measurements of both the microstructural and microchemical properties of materials and, in particular, of surface composition.

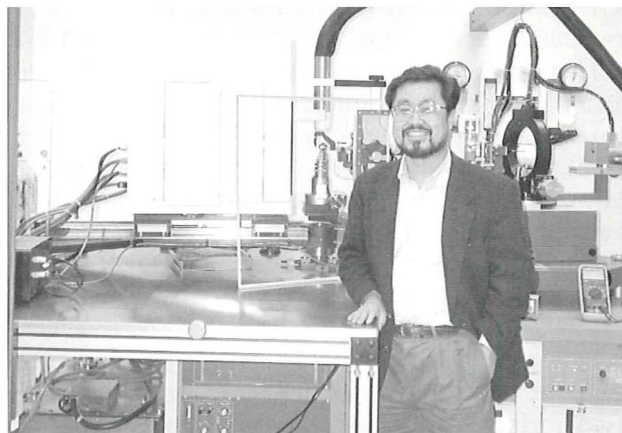
The AES/XPS will complement our new characterization equip-

(Materials Research Equipment Grant Cont. page 5)



Faculty Spotlight

The WSU Biochemistry & Biophysics faculty have long aspired to have a state-of-the-art biomacromolecular X-ray crystallography laboratory on campus, however, there was a “catch 22”. Granting agencies will not fund major equipment purchases without appropriate faculty, but faculty will not come unless they know they have the appropriate equipment. Professor **Bruce McFadden** had the creative idea to hire a new faculty member and



ChulHee Kang

have this person write for equipment grants while still in his/her current position. Using this idea, the department hired ChulHee Kang.

Professor Kang, a native of Korea, earned his Ph.D. in biophysics from the University of California, Berkeley working with Professor Sung Ho Kim. He spent one and one-half years as a postdoctoral research fellow at Lawrence Berkeley National Laboratory and three years as a Damon-Runyon-Walter-Winchel postdoctoral fellow in the biology department at the Massachusetts Institute of Technology (MIT). He spent two additional years at MIT as a senior scientist before he was hired by WSU.

Kang was put on a partial appointment at WSU while he remained at MIT. Kang, McFadden, Provost **Tom George**, and others at WSU worked for one year to plan the laboratory while Kang and McFadden wrote the equipment grant proposal to the Murdock Foundation. The grant was approved for \$400,000. Using this money and other money from WSU, Professor Kang had his laboratory up and running and getting good results only two months after arriving on campus in August 1994.

Kang's lab is equipped with a RIGAKU rotating

anode generator (RU200H) with mirror optics, RAXIS II imaging plate, AFC6R diffractometer, SGI INDIGO II extreme (R4400 processor), SGI INDIGO (R4000 processor) and DEC alpha-Station, which creates a state of the art X-ray laboratory for determination of macromolecular structures. Kang is excited about having this unique opportunity. It is rare for a junior faculty member to have his own equipment of this caliber. Both the laboratory and Kang have been extremely

successful. He was just awarded a five year NIH grant for nearly \$500,000 to study damaged DNA and its repair. He hopes to determine the crystal structure of human single stranded DNA binding protein which performs a vital role in DNA repair. This research is important in the study of cancer: a better understanding of the details of DNA damage and repair will help pave the way to risk assessment based on the mechanics of carcinogenesis.

Another focus of his research is telomeres and telomerase. He has been determining the three-dimensional structure of telomeric DNA, which is found at the ends of chromosomes, and studying the formation of cruciform DNA by guanine-rich and/or cytosine-rich polynucleotides. This information could also be applied to the study of human longevity in determining why we age.

The third aspect of Kang's research is the study of the structure of RNA-protein complexes. Determining the molecular basis for the recognition of RNA structures by certain regulator proteins may provide insights into the regulation of viral replications and tumor development.

ChulHee reports he was surprised at how quickly he developed affection for small town life in Pullman; although he says he does miss the variety of night spots available elsewhere. ♦

Biochemistry/Biophysics Briefs

by Raymond Reeves, Acting Chair



As Professor **Gerald Hazelbauer** announced in the previous issue of *Fulmer Notations*, he is currently on sabbatical leave working at the Department of Molecular Biology at Uppsala University in Sweden through February 1996. In the meantime, back in Pullman, I am serving as Acting Chair, and have quickly discovered that life as chair of the Department of Biochemistry & Biophysics at WSU is never dull!

In addition to Professor Hazelbauer, we have three other faculty members on professional leave this year: **Linda Randall** is also working at the Department of Molecular Biology at Uppsala University; **Michael Smerdon** is working with his collaborator, Fritz Thoma at the ETH, Honggerberg in Zurich, Switzerland; and **Kathleen Postle**, who holds a partial appointment with the WSU Department of Microbiology, will concentrate on her research in Pullman.

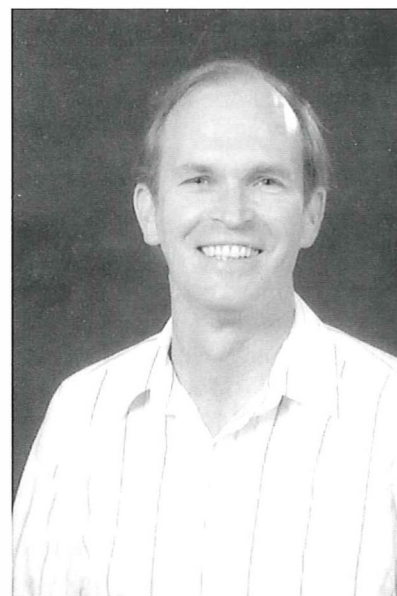
I am especially proud of the successful search we conducted this spring which resulted in the hiring of **Carolyn Decker** as assistant professor with a joint appointment in genetics & cell biology and biochemistry & biophysics. Professor Decker comes to us from the University of Arizona where she was a research assistant professor. She received her Ph.D. from Johns Hopkins University working with Barbara Sollner-Webb in the Human Genetics Training Program. We are delighted to have her join our faculty and look forward to her future career at WSU.

If you are planning to visit the Pullman campus anytime soon, you'll have to pardon our mess! Fulmer Hall Annex is in the process of being remodeled to accommodate current air handling regulations. All of the biochemistry labs from that part of the building have been squeezed into other sections and the biochemistry & biophysics main office has been temporarily moved in with the chemistry offices. Space is tight,

but it is for only a few more months, or so we are told.

On the bright side, Associate Professor **Toshiko Ichiye** spearheaded a successful effort that resulted in NSF awarding us a \$600,000 infrastructure grant to upgrade computer equipment. In addition, Ichiye received an NSF Career Advancement Award which will go a long way in helping her establish a place in her research field both locally and nationally. **Linda Randall** and **Traci Topping** were presented the Parke-Davis Award for the best paper published in 1994 in *Protein Science*. Professor Randall also received a MERIT award from NIH which provides her with ten years of guaranteed funding. **Michael Griswold** recently received the Edward R. Meyer Distinguished Professorship for 1995-98 from the WSU College of Sciences. We congratulate our colleagues on their successes which reflect the quality of our department and faculty as a whole. ♦

Ray Reeves



Notes from the Chemistry Department

by Roger Willett, Chair

We have initiated a long-range planning process in the department. As the comic strip character Pogo stated, we are faced with "insurmountable opportunities". Two main factors driving this need for long-range planning are related to demographics. Nearly one-half of our faculty are fifty-five or over. Thus the next decade will see many of us "veterans" in the department opting for retirement. In addition, due to the combination of the "baby-boom echo" and population migration to the Northwest, the University forecasts a 50% increase in student population by the year 2010. This translates into a projection of eight new faculty positions for the department.

We will see a major transformation within the department, with a change from a senior, mature faculty to a younger and perhaps more dynamic faculty. This may be coupled with industrial cut-backs in scientific personnel and changing governmental priorities which result in reduced support for research funding. While the effects of these changes upon educational institutions are not clear, we need to prepare to react to these changes, or to quote an unknown source, "Our job is not to foresee the future, but to enable it". It is important that we define our goals for the

future of the department and our strategies to reach those goals. Any suggestions for this process would be appreciated.

On the more immediate time scale, we are taking several steps to strengthen the department. In the physical chemistry/materials science area, Professor **St. John Dixon-Warren** joined our staff this fall and continues our development in the areas of surface chemistry and physics. Major funding has been obtained for the purchase of an XPS system (see article on page 2). The Boeing company established a chair in Materials Science and a search is underway for a senior person to head the University's Material Research Center. We are also continuing our effort to move visibly into the environmental chemistry area. We have two permanent faculty members at the WSU Tri-Cities campus who both have interest in environmental problems. We have also re-opened the search for a junior faculty member at the Pullman campus in environmental chemistry. Finally, we are defining our goals and expectations for a position in the area of chemical education, where the emphasis would be on curriculum development at the undergraduate level. The support for this position again comes via a gift from The Boeing Company.

We are currently in the middle of remodeling Fulmer Annex which is not without its challenges but we look forward to the new air handling and other mechanical systems.

Over the past year we have seen a satisfying increase in the number of donations to our named scholarships. The scholarship committee will meet again this spring to recognize the achievements and successes of our students and hope to award even more scholarships than last year. Call-a-Coug students will be calling most of you in the upcoming months; I hope you will take this opportunity to help our students reach their educational goals. ♦

(Materials Research Equipment Grant Cont. from page 2)

ment, namely scanning probe microscopy equipment and analytical TEM. It will also allow us to make measurements that correlate the surface composition of materials with their electrical, chemical, optical and mechanical properties. This information is extremely important in a number of areas where we have funded research activity, including: composite materials, ceramics, adhesively bonded interfaces, protective and high hardness coatings, tribology, optical material, laser-surface interaction, micro-

electronic devices, electronic state of thin films and solid state sensors. In each of these systems, there are critical spatial regimes whose structures provide the desired behavior and properties, e.g. the interface between a fiber and a surrounding matrix in a composite, the grain boundaries of a ceramic, or the exposed surface of a gas specific sensor. ♦

Alumni News



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

90's

Durwin R. Striplin ('94 Ph.D. Materials Science) has been awarded the Gerhardt Closs Award to attend the annual meeting of the Inter-American Photochemical Society. He was invited to present a paper based on his research, "Characterization of the Lowest Excited States of Phenium(I)Cl(CO)₃(Diimine) Complexes". Striplin resides in North Carolina with his wife Caryn (Ph.D. '94 Neurosciences) and their daughter, Morriah. The Striplins are both postdoctoral fellows at the University of North Carolina.

Matthew Wessel ('91 B.S. Chem) is pursuing a doctorate at the Penn State University.

80's

Congratulations to **Martha Moore Oliver** ('86 B.S. Chem.) who recently married Bill Oliver in Corvallis, Oregon. Both Martha and Bill are employed by the Campus Crusade for Christ at Oregon State University.

Greg Plunkett ('80 Biochem.) is a Senior Research Scientist for the Bayer Allergy Products.

70's

James A. Wells ('79 Ph.D. Biochem.) co-authored a January 20th *Science* magazine cover story entitled, "A Hot Spot of Binding Energy in a Hormone-Receptor Interface". He is a staff scientist in the Department of Protein Engineering with Genentech, Inc. one of the world's leading biotech firms. His research focuses on developing and applying methods to probe and design protein

properties - especially as they apply to molecule recognition events and drug design. Wells is author or co-author of more than 80 publications. In 1992 he received WSU's Alumni Achievement Award.

Kathleen & Jeffrey Miller ('73 Biochem.) of Cambridge, Mass. are on the neuroscience faculty at the Harvard Medical School. They are the proud parents of twins, Caitlin and Elizabeth and older son, Thomas.

Wayne W. Sukow ('73 Ph.D. Chem. Phys.) of Fairfax, Virginia is program director of the Teacher Enhancement Program at the National Science Foundation, and is in charge of awards in physics and earth science. He retired as executive director of the West Central Wisconsin Consortium at the University of Wisconsin.

Craig L. Smith ('72 B.S. Chem.) passed away recently. He was employed at Twiss Analytical and survived by his wife Aileen ('67 B.S. Biology).

60's

Raymond Kelly ('67 Biochem) is director of toxicology at Associated Pathologists Laboratories, the largest clinical laboratory in Nevada.

Buford Barnett ('62 Ph.D. Chem.) has retired as material process scientist at Rockwell International.

Maurice Moneymaker ('62 Chem.) graduated in May 1995 with a B.S. in Horticulture. This while he was still working full-time at WSU as a research technologist in the WSU Soil Fertility Research Lab.

50's

Thank you to **Gene Alberts** ('59 B.S. Chem.) who came to campus and spoke with students at the College of Sciences Career Day where he shared his experience as a chemist at IBM.

Carol Koch Sokatch ('58 Chem.) was chair of docents at the National Cowboy Hall of Fame and Western Heritage Center (1994-1995) in Oklahoma City where she lives.

Peter Linde ('53 Ph.D. Chem.) reports that he and his wife, the former Mary Ruth Bousliman, are "sliding into their Golden Sunset years" in the San Francisco Bay area. He is completing his final semester of teaching chemistry after 37 years on the faculty of San Francisco State University. Mary Ruth's daytime hours are mostly dedicated to caring for their two young grandchildren. Linde also asks how to get in touch with **Jim Hutchison** and **Claire Thomas** who were both graduate students during his time at WSU.

Mark Adams ('51 Chem) retired from WSU in 1974. Since then he has been busy with his own consulting corporation. He is on the Board of Directors of LAREX, International, Inc. He served as a citizen ambassador to Berlin in 1994.

Mariam Proctor ('50 M.S. Chem.) is retired from the Brighton School District in Colorado.

40's

C.G. "Mike" McCormack ('48 Chem.) has been appointed to a four-year term on the State Higher Education Coordinating Board by Gov. Mike Lowry. McCormack directs the Institute for Science and Society at Central Washington University and served in the U.S. House of Representatives from 1957 to 1960, representing the Tri-Cities area. While serving in the state legislature, he chaired the Senate Education Committee and authored legislation creating the state's community college system.

Edith (Eng) Huey ('45 Chem) attended WSU's Golden Grad Reunion this past spring. The reunion is held graduation week for those who graduated from WSU 50 years ago.

John Halvaer ('44 B.S. Chem; '48 M.S. Chem) is a member of the National Acad-

emy of Sciences and a professor emeritus at the University of Washington.

George Millard ('42 B.S. Chem.; '55 M.S. Chem) passed away in March at the age of 77. He taught chemistry and math at Yakima Valley Community College for 31 years. He was head of the chemistry department and later chair of the physical science division for 18 years. Millard worked closely with the chemistry department at WSU, sending us many of his top students. He also served 14 years as director of Northwest College and University Association for Science and was director of the Washington Education Association.

30's

Roy C. Kirk ('37 Ph.D. Chem.) passed way in June of 1994 in Michigan. He was a research chemist for Dow Chemical Company from 1937 to 1968.

20's

Helen Johnson ('27 M.S. Chem.) passed away on June 13.

Alumni Travel the West to Learn Teaching



Edward and Christine Lindley stopped by for a visit this spring. They were on a sabbatical tour of the west coast of the U.S. and southern British Columbia speaking with educators and sitting in on their classes, searching for ideas on how to improve their teaching skills to best address the varied needs of their students.

After Ed earned his Ph.D. from WSU in 1976 from the late Professor **Magnuson**, they moved to Ithaca, New York, where Ed held a postdoctoral position with Russ MacDonald in Cornell University's Department of Biochemistry; Christine was a senior technician in the same laboratory. Ed progressed up to the level of research associate, but wasn't completely satisfied with his research career. The Lindleys spent from 1981-1983 in Zaire teaching public health in the Peace Corps.

Upon returning to the U.S., Ed taught general and organic chemistry at Fresno City College in California. Christine, who worked at WSU with Professor **Krakauer**, took the job of developing a second chemistry program at a local high school. This program, a college preparatory chemistry, is quite a challenge due to the diversity of the students – over 80 languages are spoken in her school district.

Ed is now the Chair of the Chemistry Department at Fresno City College. He has his challenges with diversity too – his students range in age and experience from 18 year-olds to senior citizens. Both Ed and Christine agree these challenges, while sometimes exasperating, make teaching a joy. ♦

Faculty & Student News



Three biochemistry graduate students were recognized for their work at the 1995 Graduate and Professional Student Association Research Exposition. **Albena Dinkova-Kostova** (a student in Professor Lewis' group) was awarded first place; **Yan Li** (a student of Professor Evans) was named second place and **Peter Brezny** (a student in Professor Schenk's lab) was an honorable mention.

Amy Gamerdinger, professor of environmental chemistry at WSU Tri-Cities, was a featured speaker at an international workshop on soil pollutants in Switzerland. She spoke on the biodegradation of hydrocarbons such as fuel oil and gasoline.

WSU Provost and Adjunct Professor of Chemistry **Tom George** was elected a Fellow of the American Association for the Advancement of Science. He was honored for his research in the theory of laser-induced chemical physics, non-linear optics, molecular collision dynamics, chemical reaction, energy transfer, molecular clusters and surface and solid-state chemistry/physics.

Michael Griswold was named the College of Sciences 1995 Edward R. Meyer Distinguished Professor in Science. The professorship will provide him \$30,000 over the next three years to fund his research.

Professor of Biochemistry and Biophysics **Toshiko Ichiye** has been awarded a National Science Foundation Career Advancement Award (CAA) in support of her proposal entitled, "Water in Electronic Structure Calculations: Development of New Methods". Professor Ichiye was selected for this award based on her potential to make a substantial contribution to her field. In the area of molecular and cellular biosciences, only eight awards were made in the national competition.

Donald Kinghorn was married last winter to Caroline Bogyo ('94 Nursing). Don is finishing up his thesis with Ron Poshusta. Congratulations!

Greg Long, a graduate student in Roger Willett's group, received NSF & NATO

grants to attend the NATO conference on molecular magnetism in the Canary Islands.

Donald Matteson, professor of chemistry, presented an invited talk, "Hydroboration with Naked Boranes," at a boron symposium, part of the 210th annual meeting of the American Chemical Society (ACS) in Chicago. He reported on a new technique that he and **Raman Soundararajan**, a former WSU postdoc now at Purdue University, developed for combining boron and carbon. Authors of other papers presented at the general ACS meeting were **Ken Mopper** and **Bruce Eaton**, professors of chemistry and **Jeb Headrick**, a chemistry graduate student.

A paper published in the May 1994 issue of *Protein Science* authored by **Linda Randall** and **Traci Topping** was awarded the 1995 Parke-Davis Award for the best paper published in 1994. Randall is a professor in the biochemistry department, Topping is an associate in biochemistry.

Rob Ronald, professor of chemistry, was an invited speaker at Portland State University's 50th Anniversary Chemistry Symposium. Ronald received his B.S. degree from Portland State in 1966.

Kristina Lynn Tribley was born to Jennifer and **Walt Tribley** in March, 1995. Walt is a graduate student in Professor Griswold's lab.

Mingyi Wei, a student in Professor Willett's group, won second place in the WSU Chapter of the Sigma Xi Student Paper Competition for her paper titled, "Crystal structure of (3-chloroanilinium)₈NiCl₁₀ and a temperature dependent x-ray diffraction study of the Jahn-Teller distortion in (3-chloroanilinium)₃CuCl₁₀."

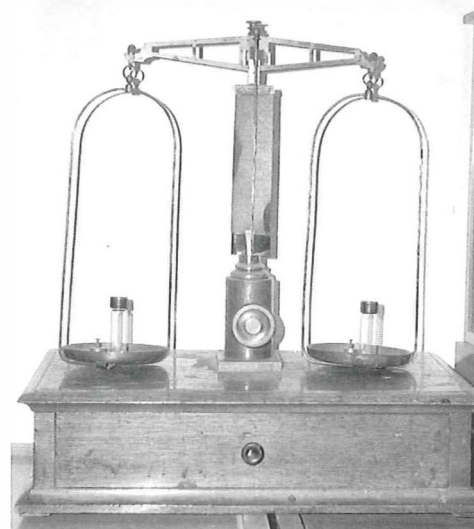
Roger Willett has been invited to become a member of the Industrial University Relations Committee of the Council for Chemical Research.

Fulmer Annex Remodeling Project Progress Report

The project to remodel, update and upgrade Fulmer Annex is well underway. Most of the spring and early summer was spent moving offices and labs until the entire six floors of the building were empty.

For those who haven't been back to WSU lately, the Annex is located between the new Synthesis building and old Fulmer Hall which creates some difficulties getting between buildings. The general chemistry program has been the hardest hit by the upheaval. To compensate for the lost laboratory space night labs are being held and Saturday labs may be added if necessary.

But the move has not been without its bright spots. In the process of cleaning out labs and making space, enough interesting artifacts and old equipment were rescued that the Department of Chemistry is now home to an informal "museum". If you come back to Pullman, stop in to the chemistry office in Fulmer Hall room 305, to see and help us identify some of these treasures. ♦



Obituary: Professor Gardner Stacy

Professor Emeritus Gardner Stacy died of cancer on April 30, 1994. Stacy's career included long and distinguished service to WSU, the Department of Chemistry, and chemistry in general.

Stacy was born in Rochester, New York in 1921. He received his B.S. degree from the University of Rochester and his Ph.D. from the University of Illinois. He joined the WSU faculty in 1948 after two years as a fellow in biochemistry at the medical college of Cornell University.

Stacy's research interests included heterocyclic chemistry and medicinal chemistry, particularly antimalarials. Stacy was nationally known for his leadership in chemical education. He was concerned about providing students with quality education and served on many NSF and ACS committees in those areas. He was also the author of a textbook "Organic Chemistry: A Background for the Life Sciences" which he wrote to accompany his class for nonmajors in organic chemistry.

On April 1, 1967 he married Mary Mullen in Spokane.

The WSU College of Agriculture honored Stacy by recognizing him as the outstanding professor outside the College of Agriculture for 1976-77. In 1986 the Department of the Army awarded Stacy the Commander's Award for Public Service for the year he spent as a visiting professor at the West Point Academy. Stacy was very active in the ACS. He served on the Council, the Board of Directors, and numerous committees. He was elected to the Presidency for 1979. He was elected a Fellow by the Council of the American Association for the Advancement of Science (AAAS).

Stacy retired from WSU in 1988 and he and Mary moved to Spokane. He was a very active member of the Cathedral of St. John the Evangelist Church and was so taken by the cathedral that he researched its history and acted as a tour guide. Stacy is survived by his wife and five children, 10 grandchildren and one great grandchild. ♦

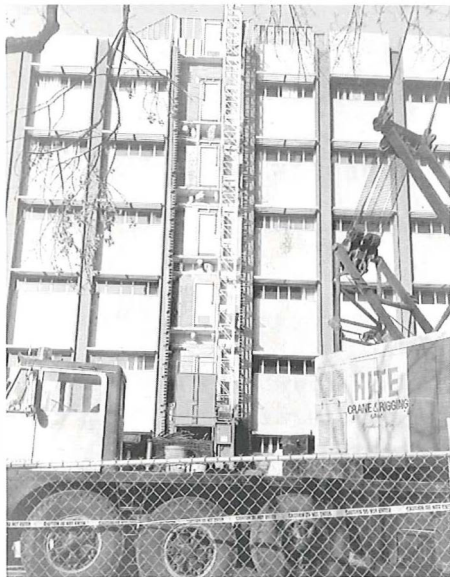
The Department of Chemistry would like to thank everyone who made a memorial for Professor Stacy by contributing to his research endowment. We are in the process of selecting the recipients of the graduate student scholarships.

What We've Been Up To . . .

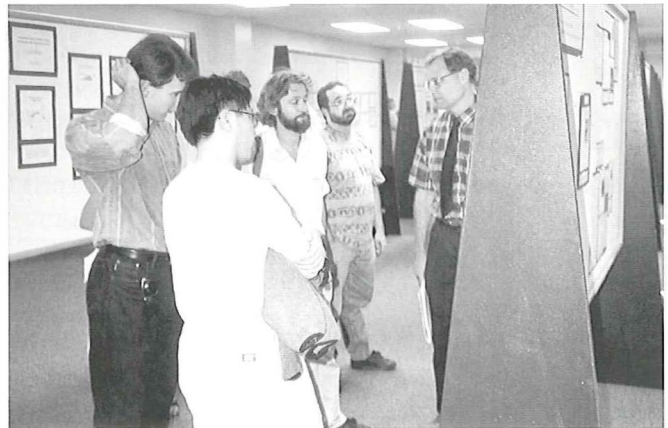


View of Fulmer Hall construction from Stimson Hall. Old Fulmer Hall is on the left, Fulmer Annex in the middle and the new SYN building is to the right.

When preparing for the remodeling project, we found this plaque and other items from the WSU Chapter of Alpha Chi Sigma.



An exterior elevator on the side of Fulmer Annex.



Biotech. students ask questions at the 1994 biotechnology symposium poster session.

(Biotech Training Grant Cont. from page 1)

the faculty.

The third aspect of the program are internships with a biotech companies. Most of the cooperating companies are in the Seattle and San Francisco Bay areas including: Bristol Myers Squibb, Monsanto, Somatogen and DNAX. Zymogenetics recently donated enough money to support an additional trainee.

The training program also sponsors a biennial biotechnology symposium, featuring widely respected researchers in biotechnology. Last year's symposium focused on plant biotechnology, with speakers from the Scripps Research Institute, CALGENE, Monsanto, and Ciba-Geigy. ♦

THANK YOU

Honor Roll of Donors – 1995

The Honor Roll of Donors is our way of saying "thank you" for supporting the Department of Chemistry and The Department of Biochemistry & 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 and visiting lecturers. We deeply appreciate your involvement and support.

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(Lifetime gifts of \$100,000)
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Frederick J. Schuetze '80

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(\$100 to \$499 annually)
Harry Ako '72
Barbara (Bloom) Allen '38
William '65 & Ann (Pettersen) Amies
Herman & Mariette (Moser) Anderson '35, '39
Dale Antles '37
Kendall '70 & Janet Ayers
Buford '62 & Jo Ann Barnett
John & Cheryl (Suit) Bartleson '91, '92
William H. Bartlett '71
Jacob '41 & Grace Bigeleisen
Frederick '41 & Rita Bollinger
Dan B. Borchardt '85
Glenn '56 & Janet Brand
John '47 & Blanche Buckingham
Eugene '51 & Ruth Bulgozdy
Robert '68 & Diana Bushey
Philip '81 & Susan Buzby
Charles '41 & Brownie Cameron
Joseph '86 & Amy Carter
Donald & Robin (Stiles) Chisholm '75
John & Dorothy Clarke
Douglas '90 & Leigh (Matson) Cole
Grace (Vanwoudenberg) Crisp '55
Harvey R. Deweyert '48
James & Catherine Ebbert '67, '66
John H. Estes '52
Sandra (Pettee) Fadef '81
Donald '62 & Nancy Filion
William '81 & Mary Fordyce
Otis '41 & Eula Fortner
Frank Fowler '70
Charles '43 & Donna (Berkeley) Gardner
Lloyd '49 & Helen (Grohs) Garretson
Clarence '33 & Arcie Green
James D. Groves '51
In Suk '93 & Ok Nam Han
James '72 & Anne Haugen
Bjorn '54 & Jan Hrutfiord
John & Marjorie Hunt
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Qian Yi '94

Friday Night Videos

by Steve Sylvester

A growing need in the fast-paced field of molecular biology is the efficient transfer of laboratory skills. Bioscientists at WSU now have the opportunity to learn advanced biochemical techniques through multimedia in the videotape format.

Teaching specialized laboratory skills is frequently labor intensive. WSU undergraduate researchers, graduate students, postdocs, research technicians and faculty all need to learn new procedures from time to time. If someone on campus has the skills, they may offer to teach the technique in a one-to-one situation. When yet another person wishes to learn the skill, the "master" must again spend time training a single person. For example, I have explained gel electrophoresis to more than 50 individuals in addition to teaching it in lab.

If the skills are not on campus, one must stumble through the technique, frequently learning by trial and error and wasting a lot of time before finally mastering the technique. In some cases, WSU scientists have had to visit other campuses to learn a specific technique.

Using videotapes instead of many indi-

vidual meetings to teach techniques has many advantages: VCRs are widely available, they can be viewed by groups or individuals, they can be viewed at one's convenience and portions of the presentation which are difficult to grasp can easily be reviewed. In the production of videotapes, computer graphics and animations can be added to live video demonstrations yielding teaching packages of very high quality.

Through an instructional mini-grant from the College of Sciences, **Keith Dunker** and I have begun to develop an instructional video library. We previewed the videos on cloning DNA, culturing cells and amplifying DNA offered by Taped Technologies of Logan, Utah and we felt the presentations were excellent and would be a useful resource to our campus. We continue to look for more videos to add to our library. Please call the Biochemistry & Biophysics office at 509-335-1276 for a list of current titles or to suggest others.

Just so you know the truth about us scientists, on a recent Friday I found 15 of the 24 videos checked out! ♦

Steve Sylvester received his doctorate in biochemistry from WSU in 1984. He teaches biochemistry and organic chemistry and runs a DNA sequencer. His research interest is reproductive toxicology in the male.

FULMER NOTATIONS

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