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Chemistry Department • Western Washington University

Newsletter for Alumni and Friends of the Chemistry Department

Number 5 Spring 2004

Beckman Scholars

The Chemistry and Biology departments were awarded \$88,000 from the Arnold and Mabel Beckman Foundation in March 2003 to support five students during a three-year period. The foundation, established in 1997, provides scholarships to outstanding undergraduate research students at accredited universities and four-year colleges in the United States. Western received an invitation to apply for this grant due to the quality of its undergraduate research and history of sending students on to further study in graduate programs.

Each Beckman scholar receives a \$17,600 scholarship for full-time research for two summers and part-time for one academic year. Adam Lin, a sophomore biochemistry major, and Melissa Pease, a junior chemistry major, were the first two recipients. Adam is investigating steroid regulation of neuroreceptors involved with learning and memory at the molecular level with faculty mentor Lisa Gentile. Melissa and her faculty mentor Mark Bussell are studying new catalytic materials for hydrodesulfurization catalysts.

During summer 2003, both scholars and Lisa Gentile attended the Annual Beckman Research Symposium in Irvine, California. In summer 2004, both scholars and Mark Bussell will travel to the Symposium to present the results of their research.

Three additional scholars will be selected in the coming years. The scholarships provide research experience and comprehensive faculty mentoring and thus contribute to advancing research and personal development of select chemistry, biology, and biochemistry students at Western.



Benjamin Drummond/WWU Publishing Services

Melissa Pease and Adam Lin

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Message from the Chair

Greetings to all our alumni and friends! This year marked the 10th anniversary of our "new" Chemistry Building, and it seems that we are just about out of space. Perhaps a new wing is needed. Spencer Anthony-Cahill, hired in 1997, was granted tenure and promoted to the rank of



Associate Professor. We are in the midst of a major transition period with respect to faculty retirements. George Gerhold and John Whitmer retire this year after 33 and 36 years of service, respectively. In fall 2004, we expect to recruit for new tenure-track faculty. Transitions also occur in staff positions. Charles Wandler has moved from Instrument Specialist to the newly created position of Organic Chemistry Lab Coordinator. Tom Harvey, spouse of Lisa

Gentile, is our new Instrument Specialist. Bekah (Main) Mellema is our new General Chemistry Lab Coordinator, and Gary Carlton has joined us as Stockroom Manager.

The department continues to emphasize the undergraduate research experience. For faculty and students this is a rich and intensive one-on-one form of instruction. There were 47 undergraduates who completed faculty-supervised research projects during the past academic year and 29 more worked full time on funded research projects last summer.

External recognition for the department and its students has come in the form of new student scholarships. The Hach Foundation, a non-profit organization located in Colorado, has established six annual scholarship awards of \$6,000 for chemistry majors at WWU. And in a very competitive process, the Beckman Foundation of California awarded stipends of \$17,600 to two junior chemistry majors for carrying out undergraduate research over a 15 month period.

We continue to buy new instrumentation with funding from external agencies. Recent acquisitions include a 500 MHz nuclear magnetic resonance spectrometer and a circular dichroism spectrometer. In addition, WWU purchased a new electron microscope for shared use by science department faculty and students. In order to prepare our students for the workplace and graduate school, we want them to work with the most current instrumentation, hence the need to continually upgrade and replace older equipment.

If you would like to keep posted about department news, we invite you to visit our website at www.chem.wwu.edu. We also cordially welcome you to stop by and visit the department any time you are in the vicinity of Bellingham.

Mark Wicholas

Message from the Editor

I want to thank everyone who made contributions to the text. Gary Lampman, Don King, and I planned the Newsletter while Melissa Maxwell



and Laurie Rossman of Publishing Services were responsible for design and production. In addition, we gratefully acknowledge the Western Alumni Association and Research Corp/Murdoch Trust who paid for the printing. We invite you to fill out an alumni questionnaire that you will find on the last page or use other ways of staying in contact with the Department.

Sal Russo

Summer 2003

To say that the summer of 2003 was a busy one in the Department of Chemistry is an understatement! In addition to the teaching activities of general and organic chemistry, there were 48 undergraduate and Master's students (up from 32 last summer) plus 1 postdoctoral fellow doing research with a total of 12 chemistry faculty. The areas of research were widespread, spanning the range from nanotechnology to synthetic organic/inorganic chemistry to protein structure/stability. Some of these research students were supported by external grants (NSF, NIH, Beckman, Dreyfus, Frasc, ACS-PRF, Research Corporation, Amgen-on-campus summer internship), some were supported by internal grants (from BFR and WWU start-ups), some took summer research for class credit, and some volunteered. All of the students that participated presented their research twice at Western; once at the beginning of the summer that summarized overall goals and directions, and once at the end of the summer focusing on results and future directions. Some of the students also presented the results of their research at regional and national meetings, including: the Protein Society meeting



in Boston, the Beckman Symposium in California, the national American Chemical Society meeting in New York, and the American Chemical Society NORM in Montana. In addition, faculty, staff, and students played softball (students lost by a large margin), went to Safeco field for a Mariner's game (Mariner's beat the Red Sox 10-5), and celebrated with an end of summer barbeque. For any curious readers from last year, the 500 MHz NMR was installed in June, and is up and running beautifully. All in all, it was a fun, productive, event-filled summer here in Bellingham!

Arlan Norman is New Dean

Arlan Norman joined the faculty of Western Washington University in September as a member of the chemistry department and as the founding dean of the new College of Sciences and Technology. He comes to WWU from the University of Colorado at Boulder where he was the Associate Dean for Natural Sciences and a member of the chemistry department. Arlan grew up on a wheat farm in rural northern North Dakota, and went to the University of North Dakota planning to become an electrical engineer. However, as often happens, one of his teachers during his freshman year was truly exceptional. That teacher, a chemistry professor, convinced Arlan to change his major to chemistry and later to go on to

graduate school. Arlan received his bachelors degree from the University of North Dakota, his Ph.D. degree at Indiana University, and subsequently his postdoctoral experience at the University of California at Berkeley.

The first years of Arlan's career at Colorado were dedicated to his teaching and his research in inorganic chemistry. He taught both small and large sections of

freshman chemistry, and undergraduate and graduate inorganic chemistry. He devoted considerable time to the development of materials for lecture demonstrations and for honors-level freshmen. He established a research group of undergraduate, graduate, and postdoctoral students, whose work was largely focused on the chemistry of phosphorus and its many compounds. Of particular interest were new phosphorus-containing materials and novel phosphorus-containing cage and ring compounds. Arlan served a term as chemistry departmental chair, and as a result of that experience and his participation in a variety of other campus activities, learned that academic administration could be very rewarding and an area where there were significant opportunities for innovation and creativity. Recognition of this caused him to accept an invitation to become an Associate Dean in 1999, and to move his career in an exciting and new direction.

As Dean, Arlan will oversee the new College of Sciences and Technology, which consists of the chemistry department and seven other departments and programs, through the period of its reorganization within the WWU campus. He hopes also to exert leadership in areas of increasing importance to departments of science, math, and technology, such as generating new funding sources to better support faculty and students, advocating for increased student and faculty diversity, seeking a greater level of student participation in research, and assisting with innovation in science education. These are all front-burner issues for him as he faces the challenges of his new position.

Arlan and his wife have two children, a son and a daughter, and three young grandsons. Diane is a computer systems analyst who plans to continue her career in Bellingham. Both Arlan and Diane are interested in music and art, and look forward to enjoying these activities in the Bellingham area. They enjoy the outdoors, especially biking and skiing, and have done several extensive bike treks in Italy, New Zealand and France. They very much look forward to "discovering" Bellingham and becoming a part of the Western Washington University community.

Honors General Chemistry

Do you remember how challenging General Chemistry was when you took it as a freshman? Well this year it just became even more demanding for some students. In fall, 2003 we began offering a new honors-level course in general chemistry which provides an accelerated, more mathematically rigorous survey of introductory chemistry for freshmen students with unusually strong backgrounds in science and math. Interest in the class has been high, and enrollment during fall quarter was capped at twenty-four students in order to provide a personalized experience in lab and lecture. A new set of laboratory experiments is being developed which places emphasis on discovery and independent scientific investigation. Student laboratory projects range from DNA fingerprinting to the search for trace residues of illegal drugs on dollar bills. Professor Spencer Anthony-Cahill, who is developing and teaching the first two quarters explains, *"The students are very motivated and have impressed me with their enthusiasm for the challenges of a more intensive lecture and inquiry-based lab. The labs are centered on the identification of unknowns using wet-lab and instrumental methods (i.e., GC, GC-MS, UV-Vis, IR). The students write final reports for each lab. Through a combination of open-ended synthetic and analytical exercises we hope the students will develop skills to answer the questions how do we make this stuff and/or how do we know what this stuff is? I'm also trying to sneak in as much biochemistry as I can; however, that hasn't gone as well I hoped! At the very least we will have the students perform a forensic DNA analysis using PCR"*. The course combines coverage of the traditional material in General Chemistry with Analytical Chemistry and will involve an intensive lab-centered experience in the third quarter taught by Professor David Patrick.

One of the goals of this new class is to encourage more gifted students to become involved in research earlier in their studies. For many, undergraduate research is a centerpiece of the Western experience in Chemistry, but currently too many students wait until their junior or senior year to get involved. This class encourages students to begin making connections with faculty and other chemistry students as early as their freshman year.



Faculty

Anthony-Cahill Tenured



Last year was quite eventful for Spencer Anthony-Cahill. The biggest news was being promoted to Associate Professor with tenure. His wife Yvonne is pleased to be settling down in Bellingham, and he is grateful for the support of colleagues, and present and former students. It wouldn't have happened without a lot of help from them. He was quite honored to have several former research students come to WWU for

his "tenure talk" in December 2002. It is always a pleasure to get the larger Team Spencer family together for a good party!

His lab continues to hammer away at making and characterizing permuted myoglobins in their long-term quest to make a single-chain hemoglobin molecule. This past year Spencer had 4-6 undergraduates and (since September 2003) another graduate student in the lab. They have made some fusions between myoglobin and the green fluorescent protein that have neat spectroscopic properties, but don't express well as soluble proteins. More on that next time!

As you can read in other parts of the newsletter Spencer has been busy teaching a new Honors General Chemistry course. It has been a real pleasure for him to work with a group of "hand-picked" students in this course, as well as a real learning experience on many fronts (i.e., it has been a lot more work than anticipated...). He hopes to work as many bugs out of the lecture and the new (!) labs as possible this year. The downside to that effort is that he will not teach any 400 level biochem courses this year, and misses doing that. The honors course has meant a lot of extra work for the department staff and Spencer owes them all a debt of gratitude for their help in pulling off a successful enrollment and introduction of new labs.

Spencer continues to work with a group of very supportive industry and academic members of our Biotechnology Advisory Board. We were fortunate to receive a couple of protein chromatography instruments as well as summer research stipends for WWU students from our contacts in the biotech industry.

As Chair of the Younger Protein Scientists Committee of the Protein Society he contributed to organizing sessions at national (Boston) and international (Florence, Italy) meetings in which students and postdocs presented their research. Lisa Gentile and Spencer took a total of three WWU undergraduates to the meeting in Boston where our students presented posters of their research.

Last December Spencer had the misfortune to tear his ACL playing Ultimate Frisbee, and so did no climbing at all this past year. The rehab is going slowly but he is MOTIVATED to get strong again. Besides, he doesn't want to miss out on another Faculty/Staff vs. Students softball game! Yvonne and Spencer both look forward to seeing Chemistry alumni whenever your travels bring you to Bellingham.

Staff

Bekah Mellema Joins Staff



Bekah (Main) Mellema joined the department in January 2003 as the General Chemistry Lab Coordinator. Bekah earned her undergraduate degree from this department, graduating with honors in 2000. She earned her Master's degree in Chemistry from California Institute of Technology in Pasadena in June 2002. Bekah then moved back to Bellingham and married Tyler

Mellema in August 2002, capping off a very busy summer!

As the General Chemistry Lab Coordinator, Bekah is involved with maintenance and support for the lab portions of general and analytical chemistry. Bekah supervises lab preppers, lab assistants and graduate teaching assistants and also teaches several labs each quarter.

Bekah enjoyed her years as a student in the department and was very happy to return to Western as a staff member. She is thankful for the opportunity to work with the faculty and staff that she knew as a student, especially now that there are no tests or lab reports due, and has also enjoyed getting to know the new members of the department.

Carrie Annett Joins Staff



Carrie Annett joined the administrative support staff in January 2004 as a part-time fiscal assistant to the department manager. She graduated from WWU in 1994 with a Bachelor of Arts in Economics and went on to work as a fiscal technician for the Associated Students and an office assistant for Elementary Education. She is returning to Western after two years as a stay at home mom and

four years as a part-time secretary for the Nursing Department at Skagit Valley College.

Not having a background in the sciences was one of the attractions of this position to Carrie, as well as returning to WWU. She has always been intrigued with the sciences and is pleased to have the opportunity to work with the department and expand her knowledge.

Carrie has been married for 7 1/2 years to her husband Aaron, a commercial fisherman in Alaska. She has a 6 year old son, Noah, who just started kindergarten last fall. She keeps very busy managing her household and rental property with her husband away. But, when she has free time, she enjoys playing Bunko and traveling. Last summer her family took a pleasurable 10 day vacation to the island of Kauai. Carrie is pleased to be working for such a distinguished chemistry department and hopes her business education as well as 7 years combined higher education employment will be beneficial.



Gary Carlton: Stockroom Manager



It has been a long and circuitous route but Gary Carlton has joined the department as the Stockroom Manager/Safety Officer. He has the formidable task of replacing Lorraine Wilde who served in this position for the last four years.

Gary's formal education was at Western where he received a BS Chem/Biol in 1986 and worked with Gerry Prody for his MS Chem degree in 1991. Following graduation, Gary left Bellingham to work at Bristol Myers Squibb(BMS) in Seattle as a research scientist. The focus of most of his research there was in receptor/ligand biology, specifically receptor tyrosine kinases. The significant accomplishments of that work were isolating and identifying the ligand for the HER-4 receptor and six publications. Other projects Gary worked on included research into neovascularization control as well as rheumatoid arthritis.

After working at BMS for eight years, Gary decided to challenge himself by diving into another career as a graphic designer. He had been creating graphics in-house at BMS and when the Seattle site was shut down, he decided to take the plunge and open his own graphics company. After freelancing for a year, he took a position at Immunex as a graphic designer where he worked for six years before joining us. In those years, Gary not only supported the scientists in preparing publication figures, posters and presentations, but also ultimately did work for just about every department within Immunex.

It has been a long standing goal of Gary's to return to Bellingham. To be employed by Western is an opportunity that he never foresaw and he is delighted to be back where he started. Gary and his wife Kim (also a departmental alumnus) have a two year old daughter named Ren. When not doting on his daughter, Gary can often be found racing sailboats, playing with his two great danes or finding some excuse to work on a car project in the garage. Other interests include photography, motorcycles, and aikido.

Tom Harvey: Instrument Specialist



As of April 1, 2004, Tom Harvey is our new instrument specialist. Tom helps to make sure that the instrumentation is ready for use in several of the ongoing labs - usually for the upper level chemistry courses. Recent students will be familiar with Tom since he has taught several of the organic and general chemistry courses here at Western since coming to Bellingham with his daughter Courtney and wife Lisa Gentile who is a biochemist on the faculty.

Tom's background includes getting a BS in chemistry from North Carolina State University and then beginning graduate school at Florida State University to work on the total synthesis of the anticancer drug Taxol(r). He also met Lisa at Florida State, so it was an excellent graduate experience! While Lisa continued her graduate career at Brown University, Tom transferred to Brandeis University which is located just outside of Boston. For his PhD he worked on the total synthesis of cylindrospermopsin which is an alkaloid produced by some algae. For his postdoctoral work, Tom next went to the University of British Columbia to work on two projects involving the synthesis of medicinally relevant compounds.

Tom then worked for two biotech companies back in Boston. His first job was at Scriptgen Pharmaceuticals where he led a group of medicinal chemists in the company's hepatitis B and C projects. Subsequently, he took a job at Millennium Pharmaceuticals working in their process chemistry group, which meant that he tried to find ways of improving the synthesis and/or lowering the cost of drugs that were being used in clinical trials. Being in these fields was fantastic since he was making real contributions to society, but the flip side of working in Boston was that he had about four hours of commuting time every day, leaving little time to be with his family during the week. Fortunately his new role at Western actually lets him have a much better quality of life. He can play racquetball with his wife during lunch and be with his daughter at home after school. And as you all know, Bellingham is an awesome place to live. Tom has been delighted with their move here, and looks forward to being the Instrument Specialist.

Faculty/Staff News

George Gerhold retired from Western in December 2003.

Pamela Large left her part-time position in our department and is now employed as a full-time office assistant in the Dean's Office at Woodring College.

In July 2003 **Charlie Wandler** began new duties as the Organic Chemistry Lab Coordinator.

Lorraine Wilde has been the Chemistry Department Safety Officer and Stockroom Manager since fall 2000. Lorraine gave birth to twin boys named Maxwell and Schuyler on February 7, 2004 and is now a full-time mom. She has enjoyed her time in the department and we will miss her. Good luck, Lorraine!



Graduation



RECENT DEGREES AWARDED CLASS OF 2002/2003

MS Chemistry

Michael Lynch

*(Serving with the Army
National Guard)*

Joseph McLellan

*(PhD Program, Chemistry, Univ of
Washington)*

Gregory Parks

*(PhD Program, Chemistry, Univ of
Washington)*

BA Education Chemistry/ Mathematics

Anya Keen

(Substitute teacher, Bellingham)

BA Education Chemistry/ Physics

Cody Anderson

BA Chemistry

Peter Kilner**Jennie Le**

*(Lab Technician, Benaroya
Research Institute, Seattle)*

Christie Mitchell

*(2nd major in Spanish; Metals Chemist,
Cascade Analytical)*

BS Biochemistry

Seth Allen

*(Travel, followed by application to
graduate school)*

Benjamin Edwards

*(job search, followed by application to
pharmacy school)*

Rebecca Engle

*(MS Program, Nutrition/Registered
Dietician, Bastyr Univ, Seattle)*

Shaun Fraser

(applying to professional schools)

Adam Fung

*(PhD Program, Biochemistry/
Biophysics, Univ of Maryland)*

Julie (King) Terry

*(Chemistry Dept Honors; Medical
School, St. Louis Univ)*

Devin Koontz

(Bank Teller, Valdez, Alaska)

Casey Kulla

*(Chemistry Dept Honors; Cum Laude;
Outstanding Chemistry Dept Graduate;
Chang Biochemistry Award; Volunteer,
Holden Village, North Cascades)*

Alexei Lissounov

*(SAIC Research Award; Research
Technician, Biochemistry Dept,
Univ of Washington)*

Nitobe London

*(continuing biochemistry research with
Gerry Prody while conducting job search)*

Gregory McBride

*(Operations Assistant,
Viking Union, WWU)*

Andrew Morgan**Elaine Peterson**

*(Coach, Seattle Gymnastics Academy;
applying to graduate school)*

Erin Stanley

*(MS Program, Epidemiology/Public
Health, Tulane Univ)*

Anton Stetner

(Sales Rep, Sound Scientific)

BS Chemistry and ACS Certification

Edgar Benson**Christina Hampton****Derek Harwell****Matthew Hovde**

*(Quality Control Lab Technician,
Botanical Labs, Ferndale)*

Peter Kasselmann**Jennifer Meyer**

(MS Program, Chemistry Dept, WWU)

Rachel Meyer

*(PhD Program, Chemistry,
Univ of California, Santa Barbara)*

Justin Orr**Eric Pearce**

*(Graduate School, Chemical Engineering,
Washington State Univ)*

Peter Rademacher

*(PhD Program, Medicinal Chemistry,
Univ of Washington)*

T. Reed Shumaker

*(Assistant Property Mgr, Rental Mgmt
Services, Portland, OR)*

Gavin Thorinson**Rebecca Zapf**

*(PhD Program, Organic Chemistry,
Colorado State Univ, Fort Collins)*

Casey Kulla Chosen for Awards

Casey Kulla was chosen as the outstanding graduate for the Chemistry Department and as the recipient of the Sea Bong Chang award in biochemistry. In addition, his wife Katie was named outstanding graduate for the English Department. They were the first married outstanding graduate couple in Western's history. Casey was also selected to deliver the student address at afternoon spring commencement, the first chemistry graduate to do so.

When Casey entered Western in 1998, he kept as far from science as he could when he declared as a philosophy major. He quickly changed his mind. He took a year off from school to learn, to try various jobs, and to marry Katie in 2000. During that year he worked as a cook, a general laborer, and as a plumber's apprentice for Western's Physical Plant. When he returned to school, he was determined to pursue a career in medicine - thus he entered into the Chemistry Department. He continued to work part-time as a plumber while slogging through general and organic chemistry.

Chemistry was a series of required classes in expectation of a distant career until he met Professor Spencer Anthony-Cahill and joined his protein biochemistry research group, Team Spencer. As a declared biochemistry major, he thought medical schools would prefer students with some research experience. Little did he know that his whole life would be consumed, that he would wrestle with problems larger than his project, that he would have to think independently. After stumbling through repeated failures over two years, he was successful with two projects: overexpression of a myoglobin variant, HGL16, and studying a mutant of HGL16. After presenting his research at Scholar's Day 2003, he met keynote speaker Professor Carolyn Bertozzi, who together with his research mentor convinced him that teaching and research contain as much challenge and fulfillment as medicine. In addition, scientific knowledge has the potential to dramatically improve the lives of millions.

Katie and Casey are spending a year at Holden Village which is a religious retreat center in the North Cascades area west of Lake Chelan. They anticipate entering PhD programs in the future in their respective academic areas.



Awards

2002/2003

Department Awards

Chemistry Department Awards

Outstanding Chemistry Department Graduate
Casey Kulla

Chang Biochemistry Award
Casey Kulla

Hypercube Scholar
F. Scott Wilkinson

Outstanding Analytical Student
Jeffrey McMahon

Outstanding Organic Series Student
Chadwick Merkel

CRC Press Freshman Chemistry Award
Jennifer Angelosante

College of Arts & Sciences Awards

SAIC Research Award
Alexei Lissounov
Stephanie Sawhill

Front, left to right: Chadwick Merkel, Casey Kulla, Jeffrey McMahon
Back: Adam Lin, Melissa Pease, Stephanie Sawhill, Jennifer Angelosante, F. Scott Wilkinson



Scholarships

2003/04 Scholarship Recipients

Knapman Senior Renewal (\$2,000)

Abigail Lambert

Knapman Junior Award (\$2,000)

Rebecca Jensen

Ruth Watts (\$1,800)

Melissa Pease

Jerry Price/Nancy Sherer + Chemistry Fund Match (\$1,500)

Brandon Dietrich

Verna Alexander Price (\$750)

Haley Pugsley

Barbara French Duzan + Chemistry Fund Match (\$1,000)

Jessica DiBari

Rathmann + Chemistry Fund Match (\$1,000)

Peggy Leviton

Tuition/Fee Waiver (\$1,000)

Stephen Klebs

College of Arts and Sciences -

Paul Woodring Scholarship (\$3,000)

Abigail Lambert

College of Arts and Sciences -

Women in Science Award (\$1,000)

Melissa Pease

Biology & Chemistry Depts -

Beckman Scholar Awards

(\$17,600 each)

Adam Lin

Melissa Pease

Hach Chemistry Education Scholarship (\$6,000 each)

Michael Couto

Carter Maden

Danielle Moore

Mary (DePalma) Steele

Annual Colloquium

Our annual Scholars Day was held on Friday, May 16, 2003. Undergraduate and graduate students presented a total of 18 posters and 5 talks. The keynote speaker was Carolyn R. Bertozzi, Professor of Chemistry, University of California, Berkeley. Her talk was titled "Chemical Approaches to the Study of Posttranslational Modification".

For Scholars Day on May 21, 2004, our keynote speaker will be John Bercaw, Centennial Professor of Chemistry, Caltech. The title for his talk is "Organometallic Catalysts for Making Polypropylenes: Controlling Stereochemistry and Polymer Microstructure".



Front, left to right: Jessica DiBari, Haley Pugsley, Brandon Dietrich
Back: Abigail Lambert, Melissa Pease, Peggy Leviton

NSF Science Education Grant

A five-year grant totaling \$12 million awarded by the National Science Foundation to Western Washington University launched the North Cascades and Olympic Science Partnership, with the goal of advancing the teaching and learning of science throughout Northwest Washington.

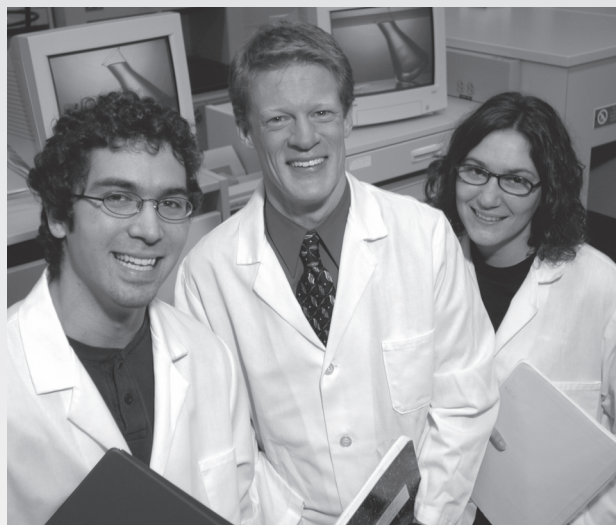
"This is the single largest grant that Western has ever received and its impact on science education will be significant and widespread," said President Karen W. Morse. "Master teachers of science in Washington's elementary, middle and high schools will collaborate with community college and university scientists to explore, create, and implement innovative course content for current and future teachers of science. This work reflects Western's commitment to meeting state and national needs in science and technology. I am very pleased and proud of this accomplishment," Morse said.

The North Cascades and Olympic Science Partnership consists of 26 school districts, five higher education institutions, two Educational Service Districts, Washington State LASER (Leadership and Assistance for Science Education Reform), and the Naval Undersea Museum Foundation.

The Partnership sets out to establish a national and statewide model for improving teacher preparation and student achievement in science. WWU and its neighboring community colleges will collaborate to revise introductory undergraduate science courses to better reflect the science content future elementary teachers will go on to teach. Steve Gammon, Professor of Chemistry, explains that "The course will help future elementary teachers develop a deep understanding of fundamental concepts in science. Research has shown this is necessary to be effective in the classroom".

Science method courses for future teachers will then build on that content knowledge and focus on teaching practices shown to be effective in helping students learn. The Partnership will also establish special recruitment programs to increase the number and diversity of highly qualified science teachers and mentoring programs to retain them.

Research scientists from WWU will apply their expertise to conduct science education research to evaluate and continuously improve all aspects of the work of the partnership. George Nelson, director of the Science, Mathematics, and Technology Education program at Western Washington University, is the principal investigator and Carolyn Landel is the project director. Chemistry department faculty members involved in the partnership are John Whitmer and Steve Gammon. Other participating WWU faculty members include Alejandro Acevedo-Guitterez, Sue DeBari, Deborah Donovan, Scott Linneman, Chris Ohana, and Jim Stewart.



David Scherrer / WWU Publishing Services

New Hach Scholars

Left to right:

Michael Couto, Carter Maden, Danielle Moore



Alumni News

1960's

Robert Schmitz '66 left teaching chemistry and horticulture at the high school level in 1978 and currently runs three businesses - a wholesale nursery, a retail garden center, and a point-of-sale software company with over 100 installations across the U.S. and Canada. Robert currently resides in Monroe, WA with his wife Cory and son Peter, a junior at Monroe High School.

Ruth Schoonover '66, MS '71 (and retired stockroom manager) has been busily traveling the planet, including four trips to Europe and will spend most of March in China. One of her European adventures took her to Romania where she found it "very interesting and very expensive."

Michael Penley '67 received his M.D. from the University of Chicago in 1974. He now works part time in the U.S. and spends the remainder of his time doing medical missionary work in East Africa with his wife Julie.

1970's

Alfred Belanger, Jr. '75 reports that he retired July 2003 after 28 years in silicone chemicals manufacturing. His current pursuits are other business ventures and lots of hiking and fishing.

Randy Engel MS '76 is retired from community college chemistry instruction but continues to co-author organic laboratory textbooks with Professors Pavia, Lampman, and Kriz. Randy is also a Hospice volunteer and co-founder of "The World Association of Wizards and Clowns for Peace."

Charles Ross '76 is General Manager of Conda Phosphate Operations, Agrium. Charles and his wife recently celebrated 33 years of marriage. Their daughter Rachel attends college in California and son Ryan attends college in Pullman, WA.

Elizabeth Hoener '77 received her Masters in Religious Studies from Mount St. Mary's College, Los Angeles, CA in 2002.

Anne Ochs '77 is president of Quest Analytical, Inc. Her company specializes in quality management system consulting for meeting the requirements of the International Organization for Standards.

1980's

Roger Koops '81 is actively involved in developing vaccines in response to the bioterrorism threat. He enjoys traveling to Japan to meet with counterparts there. Sake has become Roger's new favorite beverage.

Kelli Arntzen '82 launched a private dermatology practice in January 2004, ending her affiliation with Virginia Mason Clinic.

John Bittinger '83 currently teaches chemistry in the Everett School District.

Nan Knitter-Jack '83 reports that she is the Business Operations Manager for a private school.

Mike Leahy '83 is now with Synrad Inc. as part of regional sales.

Barbara (French) Duzan '84 now resides in Scottsdale, Arizona and has moved from the scientific field to wildlife sculptor. Barbara works in clay for bronze casting. She is a member of the American Academy of Women Artists and Women Artists of the West. Barbara and her husband enjoy traveling, golf, and showing her Dutch horses in dressage competitions in Arizona and California. They also endowed an annual scholarship for department majors. Thanks again Barbara and Steve!

Raymond Gross '84. After enjoying a stint in medicinal chemistry research at both big and small pharmaceutical companies, Ray is now a Principal Scientist with Neurocrine Biosciences Inc.

Kathy Gunderson '84 is currently a senior QA Chemist with Premier Environmental Services, an environmental consulting service.

Gary Arvan '85 brought his two sons (Dan and Steve) to campus on Veterans Day 2003. Their favorite spot was the dining hall at Viking Commons! The Arvans took the grand tour of the chemistry building with Denice, our department manager.

Kenneth Self '87 resides in Allyn, WA where he has been enjoying the south sound for twelve years. Ken is a radiochemist at Puget Sound Naval Shipyard and Intermediate Maintenance Facility. He's been with this department for 16 years. "In the radiochemistry laboratory, we prepare and analyze samples from Naval Nuclear Propulsion Plants on a regular basis using plasma emission and gamma spectroscopy to verify proper plant operation and to provide data to Knolls Atomic Power Laboratory for use in developing next generation propulsion plants. We also analyze mixed waste (radioactive and hazardous) to characterize for proper disposal."

1990's

Daniel Bickford '91, "I can't believe that it has been 12 years since I graduated! We still are living in Sammamish, WA and just had another baby (#3), Wyatt Daniel Bickford who arrived May 2003. So we now have William Guy, 5 years old and Emma Grace, 3 years old....our house is delightfully full." Dan has been with Confirma, Inc. for the past three years as Vice President of Sales and Marketing. After graduating from Western, Dan worked for Genetic Systems, then Ostex, then Neopath. Each position led to greater and more challenging roles, moving from lab work to technical service to marketing. He says, "I seemed to take to marketing right away where my strong science background provided invaluable insight into customer needs (scientists and healthcare professionals)...and new product applications. Someday I might move back into the lab, but for the time being I am having a great time on the business side of technology."

Karen (Dyer) Wilson '92 married Wayne Wilson, February 2002 in Negril, Jamaica. They are currently residents of Boise, Idaho and both are engineers with Micron Technology. They have two dogs-Lucy and Floyd. Karen loves to go camping, mountain biking, snow boarding and fishing. She looks forward to hearing from fellow grads!



Alumni News

Michele (Keller) Larkin '93 received her Ph.D. in Biochemistry from the University of Washington School of Medicine in 1998.

Kathy Arundell '94 received her Physics M.S. in 1997 from College of William and Mary. Kathy now teaches physics at Jesuit College Prep School after spending time with ITS-Environmental as a Data Evaluation Supervisor.

Shirley (Lafeen) Obermeier '94. Shirley (more commonly known as "Jan" while attending WWU) and her husband Carl welcomed the arrival of twin boys, Andrew and Carsten, on June 6, 2003. Congratulations!

Bret Nicks '94. After graduation, Bret spent two years with the Peace Corps teaching chemistry, biology, and physics in Tanzania. Bret started medical school at the University of Washington in 1997, graduated in 2001 and is currently a resident in emergency medicine at Carolinas Medical Center in Charlotte, North Carolina. In November 2003 Bret tied the marital knot. Congratulations on all your career and life achievements!

Patrick Sofarelli '94 has been to the Leiden/Amsterdam Center for Drug Research in Amsterdam, the Russian Academy of Medical Sciences in Moscow, Russia, and the University of Innsbruck in Austria giving presentations on Prous Science databases. He enjoys the travel and is surprised how much Bellingham, WA was in the European news this past year. Patrick has moved from Spain to Philadelphia, Pennsylvania with the hopes of eventually relocating to the Pacific Northwest. He is still working with Prous Science in a corporate development role.

James Boaz MS '95 began work in the Masters in Information Management program at the University of Washington in fall 2003.

Samantha Glazier '96 married long-time WWU sweetheart Brian Berg at the White Salmon Lodge in the Mt. Baker ski area on July 5, 2003!

Michael Haas '96 tells us that he enjoys his time with his family, friends, and "my dog." He married in May 2001 and is residing in Indianapolis, Indiana with his wife. Michael is halfway through his residency training in ophthalmology and to WWU Chemistry Department he says, "thanks for the help getting here."

Erika Stromberg '96. After working in research for a number of years, Erika decided to return to school and become a naturopathic doctor. She is currently in her second year of a four year N.D. program at Bastyr University in Seattle. Erika married Sean Jacobsen in July 1999. Congratulations!

Matt Kaeberlein '97 received his Ph.D. in Biology from Massachusetts Institute of Technology in 2002. He then became Vice President at the Biology of Aging Research, Longevity Inc.

David DeKlyen '98 was activated for military duty with the Army for "Operation Free Iraq." David was due to return from Iraq in early 2004. He works for LaBelle Inc. as the Lab Manager for QA.

John Logan '98 received his Ph.D. in May 2003 from UC Berkeley and is now doing post doctoral work in chemical engineering with IBM, San Jose, California.

Amber Ratcliffe '98 is co-founder and Chief Operating Officer for NanoString Technologies (NST). "We provide molecular tools to research scientists doing drug discovery, disease diagnostics, and molecular biology. It is a microfluidic based platform that seeks to replace microarrays. NST won the University of Washington, Seattle business plan competition in May 2003 and took third place nationally at the Purdue Life Sciences Business Plan Competition. We were also a semifinalist in the International Jungle Business Plan competition in New York City." Amber received her MBA from the University of Washington in June 2003.

Jake Soper '98 is now doing post graduate work with Massachusetts Institute of Technology (MIT) Chemistry Department.

Heather (Callery) Barrieau '99 (and former department general chem. lab coordinator) and her husband Shaun welcomed their second child-and first son-Nathan Michael Cole Barrieau, into the world in October 2003. Heather is enjoying full-time motherhood and still manages to visit the department with cherubs in tow.

Hawkins DeFrance '99 reports that he is now in his second year at the University of Washington School of Pharmacy pursuing his Doctor of Pharmacy degree. He is currently a pharmacy intern at Valley Medical Center, Renton, WA.

Christian Holst '99, MS '01 is a Research Scientist with Albany Molecular Research, Inc. in New York state. Chris is engaged to Kim Hughes ('99 WWU Alum Spanish). They are enjoying their travels through the New England states.

Meredith Morgan '99 anticipates completion of her Chemistry PhD at Duke Univ in August 2004.

Paul Wadlow '99 now officiates high school football! Can you see it! Paul was awarded the Inland Empire Football Officials Association 2002 Apprentice of the Year Award. He received the Rookie of the Year award in 2003 for football officiating. Paul is now starting to officiate in basketball games. Says he is having a blast! When not on the field or on the court, Paul is still hard at work at Biomedix as both the laboratory manager and as project manager for key clients. He enjoys the challenges and opportunities.

2000's

Scott Dunlap '00 completed his Masters in Chemistry with Emphasis in Semiconductor Device Processing from the University of Oregon. He is currently a process engineer for LSI Logic in the Chemical Mechanical Polishing Dept. Scott is now engaged to Sarah McDonald and their wedding is scheduled for September 2004.

Alumni News

Anna (Mowry) Fishburn '00 is currently a Project Coordinator at Fred Hutchinson Cancer Research Center in Seattle. Anna has also enrolled in the MBA Program at the Univ of Washington.

Katherine Foland '00 graduated from Arizona State University in May 2003 with a MS in Chemistry and a MED in Curriculum and Instruction. Katie currently teaches at a new high school in Chandler, Arizona. She says, "It is a dream job to be able to start the chemistry department, so I will be staying for awhile."

Kevin Hambly '00 received a MS degree in Applied Bioscience from Keck Graduate Institute, Claremont, CA. He is currently a Business Development Associate with Eidogen, Inc, located in Pasadena, CA. The company deals with computational structural biology.

Allison Johnson '00 is currently a QAL Associate with Amgen in Bothell, WA. Plans are being made for a summer 2004 wedding.

Emily Peterson '00 won an ACS Organic Division Graduate Fellowship and tells us that she is in the fourth year of her PhD program with Professor Larry Overman of UC Irvine. To keep in shape Emily continues her sailing, rock climbing, and surfing activities.

Chuck Schelle '00 completed a MS in Materials Science and Engineering from UC Santa Barbara in September 2003. He has decided to teach high school chemistry and physics and is in the process of obtaining his teaching certificate.

Kathleen Barry '01 is a scientist with Cell Therapeutics, Inc in Seattle. In her off time, she enjoys playing on a "9-ball team" and checking out the wineries.

Andy Bookter '01 is now in Missoula, Montana with girlfriend Morgan who is in Physical Therapy graduate school. Andy is now gaining experience with the Missoula Smurfit-Stone Container Corporation pulp mill as an Environmental Compliance Assistant.

Jessica Brzana '01 is currently a student at New York Medical College, MD class of 2006. Before starting her studies, Jessica worked as a phlebotomist for the Puget Sound Blood Center.

Tanya (Wilke) Dinwiddie '01 married Daryl Dinwiddie in July 2003. Daryl's company has a branch office in New Orleans, so he transferred there to be with his wife. Tanya is studying medicine at the Louisiana State University Health Sciences Center. Her interests in women's medicine and tropical medicine took her to Bangkok, Thailand this past year. Tanya did travel a little while in Thailand and walked through ancient temples and on the beach, of course!

Stephanie (Tedrow) Garofoli '01 married Justin Garofoli (WWU Physics '02 graduate) and currently resides in the Tri Cities (Kennewick, WA). Stephanie is an analyst with Severn Trent Laboratories in the radiochemistry department.

Amanda Murphy '01 passed her advancement-to-candidacy exam in the Ph.D. program at UC Berkeley. Amanda works in the lab of Jean Fréchet designing and synthesizing organic semi conducting materials for various optoelectronic applications.

Barrett Nelson '01 is currently a Manufacturing Associate with Amgen.

Bevin Parks '01 advanced to PhD candidacy in spring 2003 and interned at Pacific Northwest National Laboratory for two months in the Radiochemical Processing lab. Bevin hopes to do a teaching internship in the next year or so. Her son, Ethan, is loving first grade and still bikes with mom to work every day.

Courtney Rubens MS '01 is a Research Associate with Signature BioScience, Inc, in Richmond, CA.

David Shock '01 and Amy (Kendall) Shock '01 stopped by the chemistry office during the summer to tell the faculty how great their education was here at WWU. Amy is an analyst with Emax Laboratories, an environmental analysis company. David currently works for Phenomenex, Inc. in Torrance, CA as the HPLC Brand Manager. He also mentioned that Bruce Harder '00 and Sky Countryman '00 are also with Phenomenex, Inc.

Steven Chrisman '02 is currently a Research Assistant with Los Alamos National Lab in New Mexico but has plans to attend graduate school in a year. In his off time, Steve enjoys hiking and snowboarding.

Amber Hamilton '02 just returned from field work in the Canary Islands, part of her Geochemistry PhD program at the Univ of Washington.

Valerie Terrill '02 has started her studies at Washington State University in Veterinary Medicine.

Anya Keen '03. After graduation Anya completed a research project into the aerobic and anaerobic energy consumption of nudibranchs (sea slugs) thanks to a NASA Space Grant Consortium 2003 Summer Research Award for Future Science Teachers that is associated with Western's Science Education department.

Devin Koontz '03 is currently in Valdez, Alaska with her husband who is in the Coast Guard. Devin's ultimate goal is to become a registered nurse with a specialty in holistic medicine.

Andrew Morgan '03 married Jamie Heng in August 2003. They spent their honeymoon in Fiji.

Elaine Peterson '03 is in Seattle coaching gymnastics at the Seattle Gymnastics Academy while preparing to apply for graduate studies. In November 2003 Elaine will be traveling to South America.

Anton Stetner '03 was married in December 2003 and is in the process of applying for an MBA program.

Julie (King) Terry '03 married Josh Terry in June 2003 and honeymooned in Los Cabos, Mexico before driving to the midwest to begin medical studies on an Air Force scholarship at St. Louis Univ.



Alumni Spotlight

Tom Holzman



Tom Holzman received his BS in Biology from Western in 1974. He then enrolled in the chemistry graduate program where he conducted two related research projects involving proteolytic enzymes in starfish. Tom's enthusiasm for research was evident at this early stage of his career. His efforts resulted in publications with both Sal Russo in chemistry and Don Williams of the biology department.

Tom then went to the Biochemistry Department of the University of Illinois at Urbana where his PhD thesis with Professor Tom Baldwin involved the study of bioluminescent luciferase from different species of marine bacteria. The entire lab moved to the Department of Biochemistry and Biophysics at Texas A&M in 1981. He stayed in that lab for a postdoc and then was employed first by Upjohn and subsequently by Abbott Laboratories.

Tom currently manages the Protein Biochemistry Project in Pharmaceutical Discovery at Abbott Laboratories where he has both PhDs and BS/MS scientists under his direction. The function of the group is to provide large amounts of well characterized high-quality proteins for x-ray crystallographic and NMR analysis of protein three-dimensional

structures. The group is challenged to produce these proteins in purified forms in large quantities and understanding them well enough to manipulate them in solution. Tom is fortunate to be at Abbott because the company encourages publication of research results. He has made significant contributions to our understanding of modern analytical ultracentrifugation techniques, human FK binding protein, amyloid- β found in Alzheimer's disease, and automated analysis of protein folding. In addition to several patents, he has 58 publications in refereed journals and 15 review articles.

Tom and his wife Rita have been married for 25 years. They have three daughters with ages of 22, 16, and 14. Rita manages a group in the Diagnostics Division at Abbott Labs. Tom has a serious audiophile addiction - at least his kids tell him that! He still rides a cherry red motorcycle (Honda 750 Nighthawk) to work when the weather is good. Rita and Tom enjoy outdoor activities at a vacation cabin they own near Lake Geneva, Wisconsin.

Chiron Contributes Lab Equipment

Thanks to the efforts of Chemistry alumnus D. R. "Dutch" VanDevanter, the Chiron Corporation has given a gift of surplus laboratory equipment valued at \$28,800 to the Chemistry Department. Dutch serves as Director of Medical Communication for Biopharmaceuticals at Chiron's Seattle office. Upon learning of the disposition of surplus property, Dutch contacted Spencer Anthony-Cahill to alert him to the opportunity to select items that will most benefit the department. Dutch who is a 1981 graduate of WWU with a degree in Chemistry/Biology, earned his PhD at the University of Texas at Austin. In addition to his work with Chiron, Dutch serves on the Biotechnology Advisory Board for the Departments of Chemistry and Biology and on the Board of Directors for the Western Washington University Foundation. When contacted about the gift, Dutch replied, "My wife Camille (Dr. Camille VanDevanter, Chemistry and Biology 1981) and I value the education we received at Western - especially the quality of teaching available in the science departments. In addition to contributing personally, connecting my employer with the Chemistry Department has the double benefit of helping Chiron be a corporate good citizen for the chemists of tomorrow as well as benefiting the Chemistry Department now." Anthony-Cahill notes, "Gifts-in-kind benefit the department by increasing our resources through both their function and by freeing cash resources to meet other needs of the department and of our students."

Thank You to Donors

We wish to thank the following alumni and friends of the department who donated to the following Chemistry Department Western Foundation Funds during the 2002/03 academic year. Employees that matched donations are noted in brackets following the donors' names. Donations during the past year funded a variety of activities, including scholarship matching, academic awards, undergraduate research projects, small equipment purchases, and events for department majors and alumni.

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Dear Alumni and Friends,

It is my great pleasure to greet you and to wish you every success in the New Year. It is also my special honor to write to you about our Department of Chemistry.

The Chemistry Department at Western Washington University truly is a remarkable place. As you have certainly read elsewhere, there is a great deal of interesting activity in a variety of areas, and virtually all of this involves undergraduate students. Our department is among the nation's leaders in teaching chemistry the way that scientists actually function, and also in encouraging students to become involved in undergraduate research. This program is the model for the way that chemistry majors of the future should be trained.

I can't resist highlighting some important activities that demonstrate how well our program is doing. We are sending undergraduate students to national meetings and symposia, where they are presenting the results of their work and winning awards. I've watched some of these presentations, and it makes me smile to think that our students are presenting work that is at least the equal of what most *graduate* students are presenting. Our faculty is gaining national recognition with a variety of prestigious awards and grants. Our department is one of only a very few primarily undergraduate institutions in the country that can point to a 500-MHz NMR spectrometer in their collection of instruments.

With all of this progress, the pressing need today is finding a way of sustaining this push toward excellence made possible, in part, by a Department Development Grant from Research Corporation and the M. J. Murdock Charitable Trust. I believe that you, as an alumnus and friend of WWU's chemistry program and as someone who has benefited from many of the advantages that our program brings, will want to play a role to ensure that future classes of students have access to these same advantages and that they have their chance to meet and exceed the high standards that applied when you were a student. This is a wonderful opportunity to help make a difference, to do what you can to allow the program to continue its excellent record of giving students the extra opportunities to grow and learn.

Currently, our department's top priorities for activities that are dependent on outside funding include support for the Scholars' Day program, for travel by students to national meetings, and for summer research stipends. I am sure that you know that current state funding provides support for an *adequate* education of our students. We hope to be able to provide an *excellent* education, but we need your help to do this, including continuance of the programs outlined above. Won't you please do what you can to help us sustain our quest for ever-increasing excellence in chemistry education?

Your financial contribution to the Chemistry Department can be made in a variety of ways by working with the Western Washington University Foundation:

- On line at <https://www.applyweb.com/public/contribute?wfwwu>. We encourage you to indicate "Chemistry Department" under "Your Designation." Please note the sidebar at this site through which you can access the WWU website, <http://www.wvu.edu/home.shtml>.
- By joining the Western's President's Club and designating the annual \$1,000 dues to the Chemistry Department. Further information is available at the website listed above or through the contact given below.
- In response to a phonathon call or annual fund letter from the Foundation.
- Through gifts of stock or real estate.
- By including the Chemistry Department of Western Washington University in your estate plan through either an outright gift or a percentage of the residual of your estate.

The Chemistry Department's liaison at the WWU Foundation is Amanda Haralson, Director of Development for the Sciences. For answers to your questions and assistance, please contact her at 360-650-6542 or Amanda.Haralson@wwu.edu. You are welcome to indicate that your gift is for wherever the Chemistry Department needs it most, Scholars Day, student participation in national competitions, or stipends for summer research.

Your assistance is also needed in helping our wonderfully qualified students to become familiar with workplace options through internships, scholarships, stipends, and by providing speakers for on-campus presentations.

I am very proud of the Department of Chemistry and of my long association with the department and with all of you as a faculty member. I look forward to continuing exciting developments from our faculty and students, and I look forward to your support in helping our program build upon its reputation for excellence in chemical education.

George S. Kriz
Chair, Chemistry Fundraising Committee



2004 Alumni Questionnaire

Today's Date: _____

Name: _____

WWU degree(s), date(s), Research supervisor (if any): _____

Please update the following if you have any changes or additions:

Other institution(s) degree(s) and date(s): _____

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Is this a change? _____

Do you have any news to share in the 2005 Alumni Newsletter? Information of interest might include job descriptions, promotions, research, awards, publications, outside interests, and news of your family.

This Newsletter is available on our webpage at www.chem.wwu.edu.

In the future, do you wish to continue receiving a hard copy of the Newsletter?

☐ Yes ☐ No

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