chemistry wwu

Newsletter for Alumni and Friends

Message from the Chair

Steve Gammon

As I am writing this document, the sun is shining brightly down on the WWU campus, the blooms of spring are starting to bring forth their colors, and shorts and sandals are very apparent on Red Square. Beautiful February days such as today can be inspirational and provide an opportunity for us Pacific Northwest dwellers to focus on the promise of longer, warmer, and drier days that lie ahead. As everyone is acutely aware, the current economic climate can accurately be described as a Dakota winter; sure to have a chilling effect on everything we do at WWU. Given this condition, the temptation can be to focus on the real and potential negative impacts of the current fiscal climate. However, as in nature, there are many bright spots in our department and program that deserve the spotlight and demonstrate our vitality.

The department is pleased to announce the appointment of Amanda Murphy to the faculty as an organic and materials chemist. Amanda has a strong connection to the department as a 2001 WWU graduate. After finishing her BS at WWU in plastics engineering technology, she went on to complete her PhD in organic chemistry at Berkeley in 2006. Amanda completed her studies at Tufts as an NIH postdoctoral fellow. It is very exciting to have one of our own go on to do great things followed by a return to our program. She has already established a research group that is working on developing organic materials with electronic or biological applications.

The new addition to the chemistry building is in the final stages. The construction has posed a number of challenges to everyone working in the building, but now with the work nearly completed and the walls receiving their first coat of paint (some interesting colors), there is growing excitement about the new instructional, research, and other spaces that will be coming online for both chemistry and biology. Concomitant with the major construction, we have also been able to have significant work performed in research labs on the fourth floor. All of these changes will greatly enhance our ability to serve our students. In order to properly celebrate the additions and changes to the building, plans are in the works for a party sometime early in the fall quarter of 2010. Stay tuned for an invitation.

We all take great pride in our department. In conversations with students, faculty, and administrators from WWU and other institutions, I am always quick to point out that we are one of the finest chemistry departments at a primarily undergraduate institution in the country. I know this, our faculty and staff know this, and our present and former students know this; the challenge becomes how we spread the word of our excellence. Programs that are recognized as outstanding attract superior students, open doors for students, and have unique opportunities for continued growth and improvement. We should feel honored that our excellence is being championed by influential people outside of our immediate community. Jack Pladziewicz, who recently retired as the Vice President of Research Corporation for Advancement, provided an excellent endorsement of our program. His statement appears in an exit interview that is posted on the Research Corporation website *. If you have the time, the entire referenced text is an excellent read that describes the teaching and research culture that thrives in our department.

Every day, we have things to look forward to in the department. Our students will continue to grow and bloom in the coming months. Their enthusiasm and work will inspire us to address the challenges that are surely ahead. Be assured that we are all focused on the continued support of our outstanding, student-centered program.

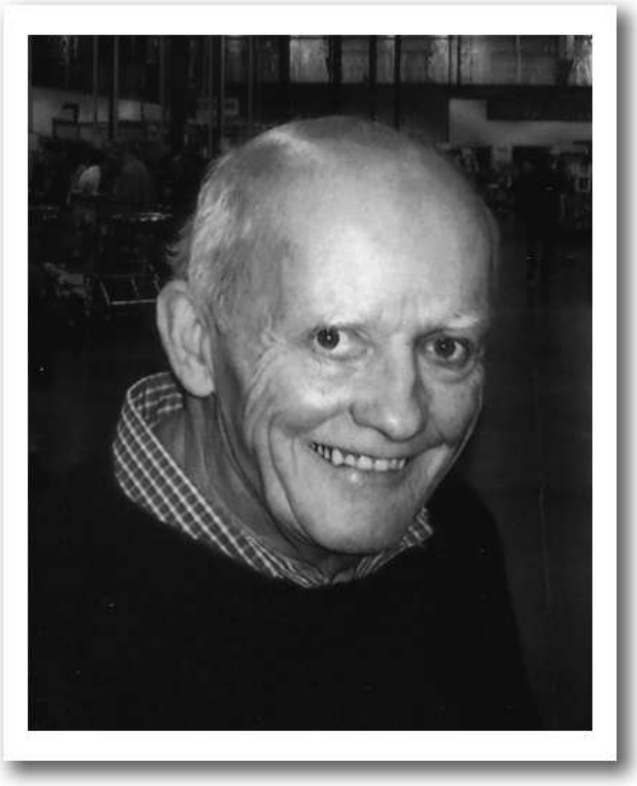
inside:

* www.rescorp.org/new-at-rcsa/jack-pladziewicz-recently-retired-as-vice-president-of-research-corporat/84

In Memory of Bill Wilson

Bill began life in Camrose, Alberta, Canada, the child of two teenage parents who divorced shortly after marriage. Bill spent the first part of his life with his grandmother. When she died, Bill went back to his mother (whom he barely knew) in Edmonton and helped make ends meet by delivering meat to people in rural Alberta on his bike. Bill made the best of a challenging childhood, honing his sense of humor as well as his hockey skills and interests in weather, astronomy, and earth science. During high school, he discovered his superb talent in math and science and his passion for academics.

Bill attended the University of Alberta at Edmonton where he received a BSc Degree with Honors in Chemistry in 1955. While there, he met his best friend and future wife, Joyce Dishaw, a fellow chemistry student. After graduating magna cum laude, Bill traveled to the University of Washington for graduate school, where he began his career as a physical chemist specializing in infrared spectroscopy under the direction of David Eggers. His dissertation was entitled, "Infrared Spectrum and Vibrational Analyses of Ethane-1,1,1-d3 and Ethane-1,1-d2". During his graduate studies he met fellow grad student George Gerhold, who would become a lifelong friend, mountaineering and skiing buddy, and WWU Chemistry Department colleague.



H. (Hubert) William Wilson
December 11, 1933-January 24, 2010

In 1961, he continued infrared studies with postdoctoral work at Freiberg, Germany as a NATO postdoctoral fellow in the labs of E.D.Schmid and R. Mecke. His research while there focused on infrared band intensities in solution and low temperature infrared spectroscopy in particular. Following his lab work and outdoor exploration of Germany, Bill returned to North America in 1963 for a short postdoctoral stint at the University of British Columbia, where he worked with J. Bloor to perform quantum mechanical calculations, specifically, molecular orbital calculations on substituted benzenes related to infrared band intensities. Luck was not on his side as infrared spectroscopy research was in a static period in academic research. So in 1964, Bill took a position with Gulf Oil in Toronto where he established their spectroscopy lab. Fortunately, he maintained his interest in education and kept his eye open for academic openings.

After a few years, a position opened at Western, and the rest is history. Bill quickly demonstrated a real flair for teaching chemistry at all levels. He started a research program which, over the years, involved many students, and he led a modernization of the curriculum in physical chemistry - lecture and lab. He also filled in when asked to teach analytical courses and began to work on the introduction of modern instrumentation and the integration of environmental studies into the curriculum. He found a way to combine his love of mountain climbing with research by tracking the increase in pollutants trapped by yearly snowfall in the layers of the glaciers on Mt. Baker. These studies required a rather unique combination of Bill's skills: climbing, infrared spectroscopy, and analytical and atmospheric chemistries. Several students based their theses on these studies and led Bill to teaching activities within Huxley College which continued throughout his career as well as his faculty emeritus years. He annually taught an upper division atmospheric chemistry course and continued research as an affiliate of Huxley College through 2009.

In Memory of Bill Wilson (cont.)

Research in infrared spectroscopy was reenergized by the introduction of interferometric techniques to the infrared. It was then possible to attack the major limitation of infrared spectroscopy, the intensity problem. Basically the goal was the application of infrared spectroscopy to measure the concentrations of substances in mixtures via Beer's Law analogous to UV/Vis spectroscopy. Interferometery meant that for the first time, the effective slit width was less than the typical absorbtion band width. The attack required both the development of new instrumentation and advanced computer analysis of line shapes. Bill got involved in both via contacts he made during his sabbatical at the National Center for Atmospheric Research in Boulder, Colorado in 1976 where he studied high altitude Fourier transform IR solar spectroscopy. A summer visit to NASA's Moffet Field Laboratory in California led to a second sabbatical in 1982 at the NASA Ames Research Laboratory in Mountain View, Calif where he helped analyze FTIR acetylene spectra sent back by Voyager 1 and 2. Here, Bill demonstrated his outstanding skill in instrumentation; perhaps his strongest scientific skills were his ability to improve, align, and calibrate delicate instruments.

One of Bill's crowning achievements occurred when he was given the opportunity to assist in the development of one of the few experiments onboard the probe that descended into Jupiter's atmosphere. This led to publicity in the local newspapers and made for lively presentations by Bill about the Galileo mission to Jupiter, both when the Galileo spacecraft launched in 1989 and when it arrived at Jupiter in 1995. Bill excelled at creating goodwill with the local public toward science with his entertaining and easily approachable presentations. Following his work on the Galileo Jupiter probe, Bill helped with the adaptation of instruments to high altitude operation in airplanes which helped discover and map the hole in the ozone layer over the South Pole. He also was involved in the development of instruments which are employed in high altitude flights to monitor the concentrations of nitrogen oxides via extremely long path length infrared. He would get so excited describing this work that it was impossible for anyone not to become infected with the joy of discovery.

At the same time, he was an advocate for exposing students at Western to hands-on use of advanced instruments. He knew that such instruments required continual care and feeding by experienced operators and technicians. Bill thought about how modern instruments could be justified at institutions like Western with limited financial and graduate student resources. He convinced Western to address this problem with the creation of the University Instrument Center in 1983. This provided a home for new instrumentation to be shared by multiple departments, and also provided support for many instruments located in the various departments. Bill headed the Center until his (partial) retirement. He assembled a top-notch staff of highly trained and diverse technicians, including Clint Burgess, WWU Chemistry Department Outstanding Graduate for 1981-1982.

I (Gerry) first met Bill when I was hired in 1984. At the time, I was the first hire in the department in 15 years and was the only female. Bill taught me the ropes and gave me ideas on how to improve my teaching evaluations while not compromising my rigorous standards in the classroom. He advised me how to balance cumbersome teaching responsibilities with leading a complete revision of the biochemistry curriculum and setting up a research lab. Throughout all this, Bill demonstrated intelligence, a caring nature, common sense, and a wonderful sense of humor.

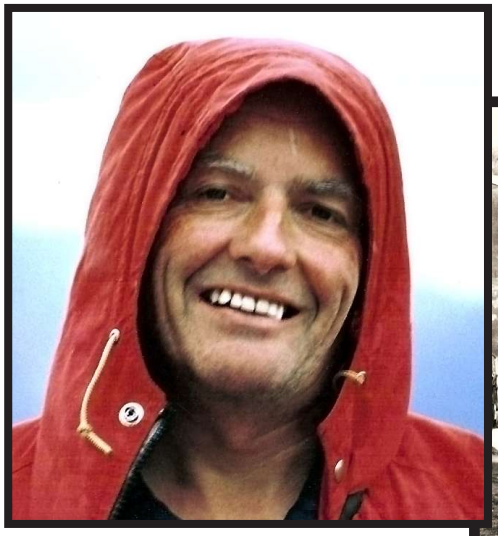
In addition to over 20 publications in refereed journals, Bill leaves behind an incredible legacy, not the least of which is the WWU Scientific Services Center. He shepherded 11 MS students and countless numbers of undergraduates. Bill always said that his students either loved or hated him, but there were few in the latter category. His humor and rigor in class were universally appreciated.

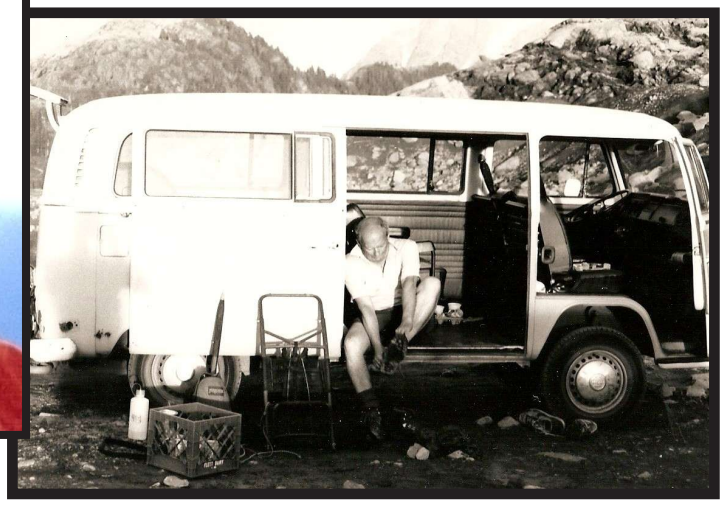
He is survived by his wife, Joyce, and his two daughters, Julia Wilson Elzie and Laurel Wilson, as well as other family members and a multitude of friends. The Chemistry Department at WWU deeply feels his loss. He was a great and productive colleague and a wonderful man.

In Memory of Bill Wilson (cont.)

An annual scholarship scholarship in Bill's memory has been established for natural sciences students, based on demonstrated ability and need. If you wish to make a contribution, it can be sent to: Professor H. William Wilson Memorial, c/o Whatcom Educational Credit Union, 600 East Holly street, Bellingham, WA 98225.

Gerry Prody and George Gerhold, colleagues and friends





A Student Perspective

When I met Bill Wilson for the first time I was in something of an existential crisis. I was nearing the end of my undergraduate career working towards a degree in chemistry, and yet I was unsure what would become of me afterwards. Should I head out into the world and get a job? What about graduate school? In the midst of my crisis, I ended up, almost by accident, taking Bill's Instrumental Analysis class. I responded to Bill almost immediately. He had an extraordinary enthusiasm for teaching and connecting with students as well as a searing wit and a penchant for terrible puns. He also shared my fascination with machines and instrumentation. He talked with great excitement about building instruments that would be put into high altitude airplanes to take measurements.as part of the atmospheric chemistry research he was conducting with groups at NASA. I, of course, was riveted.

By the end of that quarter, I knew what my path would be. I immediately applied for and was accepted for the Master's program at Western. I spent the next two years working for Bill building a diode laser infrared spectrometer and even had the wonderful opportunity to spend a summer working at NASA-Ames in California. During that time, Bill was not only a mentor who taught me to think as a scientist, but he was a friend, a confidant, and an anchor in a sometimes chaotic life of a young man in his early twenties.

After my time with Bill, I eventually went on to earn a PhD in chemistry and now work with bigger and more expensive machines, but I have Bill to thank not only for where I am today, but for making me the scientist that I am. Bill had an enormous impact not only on my life, but on the lives of countless other students. He will be missed dearly, and I feel a strong responsibility to carry on his legacy as a scientist, mentor, and friend.

Josh McBee, MS, PhD
Institute for Systems Biology
Seattle, WA

Assistant Professor Funding

In the past decade, the WWU Chemistry Department has gone through many changes. As indicated in previous newsletters, the face of our department has changed, with new staff and faculty taking our chemistry curriculum and research programs in new and different directions every year. Since 2005, the Chemistry Department has successfully hired eight tenure-track assistant professors. EIGHT!!! All of these junior faculty members have been quite active in scholarship and have been awarded research funding from national institutions for their respective research efforts. To date, the assistant professors in the Chemistry Department have been awarded over $600,000 in research support from the National Science Foundation, Research Corporation, the Murdock Charitable Trust, and the American Chemical Society Petroleum Research Fund for their research and scholarship efforts. These projects have been in all fields of chemistry, including inorganic, physical, biological, and organic chemistries, as well as chemical education.

Here are some of the projects:

"Chemistry for the Informed Citizen"

"Second Harmonic Generation Spectroscopic Studies of Polycyclic Aromatic Hydrocarbons at Liquid Water Surfaces"

"Second Harmonic Generation Studies of Nitrogen Oxides at Water Surfaces"

"Enantioselective Intramolecular Carbonyl Hydrosilations"

"Metathesis Reactions of Acyloxysulfones"

"Methanol Synthesis from CO_2 and H_2 Utilizing Bimetallic Nanoparticle Catalysts"

"Protonation/Reduction of Dinitrogen by Fe-Complexes Utilizing Ligands Containing H-Bond Directors in the Secondary Coordination Sphere"

"Copper-Catalyzed Diboration of Ketones: Facile Synthesis of Tertiary α-Hydroxy Boronate Esters"

"Chelation Directed C-H Functionalization Reactions with Ruthenium Boryl Complexes"

"Deciphering the Roles of the Ribosomal Translocases in the Regulation of Translation"

WWU Chemistry Department Newsletter 11 was produced by:
Clint Spiegel ..... Coordinator
Steve Gammon ..... Photography
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Gary Carlton ..... Design

Alumni Spotlight - Larry Wienkers

Larry Wienkers

To hear Larry Wienkers tell it, his success can be attributed to luck and being in the right place at the right time. That may well be his self-deprecating way to state things, but certainly after discussing the details of his past 30 years, luck is obviously nothing more than a bit player for him. While his story has more than a few instances of events that were not according to plan, Pasteur's often paraphrased "fortune favors the prepared" is much more appropriate in Larry's case.

Larry graduated from North Chicago High in 1979 and spent a couple of years doing construction work in Chicago before being laid off. He decided to move west to Seattle where he drove delivery trucks for a living. An old friend from elementary school cajoled Larry into a road trip to Bellingham where his friend was enrolled. Larry was struck by the WWU campus and, on a whim, filled out an application and was accepted. He began his studies at WWU in 1982 with the idea of becoming an optometrist like his father. During his first year of general chemistry with Ed Neuzil, Larry began to doubt whether optometry was for him. Even though Larry had been accepted to optometry school, he was taken with chemistry itself. With counsel from Neuzil, Larry broke the news to his father of his desire to switch majors. Larry decided on the Biology-Chemistry degree that existed at the time and graduated with his BS in 1986.

With mentoring from Gary Lampman, Larry made the decision to stay at WWU and obtain his MS degree for a multitude of reasons. Most importantly, Larry's girlfriend and soon to be wife, Margie, still needed another year to finish her degree. Second, Lampman made it clear that Larry could use the time in the master's program for polishing his academics.

The first project Larry embarked on was led by Bill Wilson and Hubertus Kohn (Biology). It involved the determination of optimal harvest times for Ti tree (*Melaleuca alternifolia)* extracts as well as developing methods for their analysis. Unfortunately, the project terminated after a few months leaving Larry to find another project for his thesis. Bill Wilson suggested looking at anthropogenic vs. biogenic hydrocarbons in glacial snow and ice. While not as in-depth as the *Melaleuca alternifolia* study, it would allow Larry to gain experience and keep him on track to graduate and move on to a doctoral program. After deciding to do the project, Larry and Bill sat down with a pot of coffee and a notepad one evening and mapped out the next year for the experimental work to be done and a thesis to be written. Thus began one of the more rewarding relationships in Larry's life.

Larry was able to spend much one-on-one time with Bill. To obtain the samples Larry would need, they hiked onto the glaciers on Mt. Baker and dug sample pits to gain access to the stratified layers of ice that are laid down annually. Larry says, "We would drive his old VW van up some of the worst back roads on Mt. Baker, essentially 4-wheeling to get where we needed to begin our collection process. At the end of the day, as distinguished by the fact that my collecting can was full of 5 gallons of glacier ice, and Dr. Wilson had met his quota of bad puns (an informal limit of 100 seemed fair), we would quickly toss off the boots and hurry to get back down the road towards Bellingham because between the mountain and town there was a slice of pie waiting for us at Carol's Coffee Cup! Dr. Wilson was a great mentor for science and life and I am better off having known him. I think of him often, especially when I see Mt. Baker or eat a piece of chocolate cream pie."

During his tenure here, he also performed research with Joe Crook and assisted the Pavia-Lampman-Kriz group with standards for their first book. One of the things Larry could never accept though was calling Bill Wilson *Bill*. This became a tussle between them as Bill was much more comfortable being called by his first name and would harass Larry if he did otherwise. The issue was resolved one day during a sampling on the glacier. Larry had dug a very deep pit and asked Bill to give it his approval before collecting the ice samples. Larry climbed out and Bill in. This pit was deep enough that Bill would need a shovel lowered to him and Larry would help raise him out. Once Bill had descended into the pit, Larry tossed a shovel-full of snow on Bill's head and simply asked "Let's talk about your issue with me calling you Dr.Wilson!".

Alumni Spotlight - Larry Wienkers (cont.)

As Larry's MS project was coming to an end, he was accepted to a number of PhD programs in organic chemistry. With the intention of following that path, it happened that Sid Nelson of the University of Washington Medicinal Chemistry Department came to WWU to give a seminar on the pharmacodynamics of the essential oil pulegone. The new-to-Larry idea of studying drug metabolism, which would combine his interest in organic and biochemistry, resonated with Larry. On a whim he drove to the UW during winter break and spoke with Bill Trager of the UW Medicinal Chemistry Department. Following this meeting, Larry was hooked and immediately completed an application and wrote a check to apply to their doctoral program to which he was accepted. Larry finished his MS thesis in spring 1988 and started immediately at the UW during summer quarter.

Larry decided to work in Trager's lab. During his graduate studies, he had the opportunity to complete an industrial internship at The Upjohn Company in Kalamazoo, Michigan where Trager was a consultant. Following the completion of his doctoral thesis that examined cytochrome P450 stereoselectivity and inhibitor determination methodology, Larry returned to Kalamazoo for his post-doctoral work under the guidance of Paul Pearson on a high-profile drug in a Phase III clinical trial. This turned out to be both a make and break opportunity for Larry as, at the conclusion of his post-doc term, he had high hopes of returning to academia as a faculty member. However, industrial internships do not prepare for either gaining educational or grant writing experience, which left him deficient in those areas. Larry applied to a number of universities for a faculty position (including WWU) and received no requests for interviews. At this same time, Pearson was promoted to director of the Drug Metabolism group at Upjohn and Larry was offered the now vacant position. On Friday, Larry was a post-doc and on Monday he was a research scientist; it happened so quickly.

Larry spent three years as a research scientist at Upjohn until Pearson left the company. Larry was asked by the vice-president of his group to take the director position. Larry was naturally reluctant to do this considering he had been a post-doc with his co-workers only scant years prior. Following some soul-searching and realizing he understood the science as well as anyone there, Larry decided to accept. One of his management styles was to maintain an open-door policy and a bag of peanuts. His floor was often littered with peanut shells following brainstorming sessions with members of his group that would last long after closing time.

The following years became a flurry of corporate mergers and takeovers. First, Upjohn merged with Pharmacia to form Pharmacia & Upjohn. Then, Pharmacia & Upjohn merged with Monstanto to form Pharmacia which was then purchased by Pfizer. During this corporate activity, Larry was promoted to senior director and was moved to St. Louis, MO. This was a difficult period as Larry was responsible for activities in both Kalamazoo and St. Louis and much travel was required between the two sites. Much of the travel was to inform people of layoffs as redundant activities were consolidated. That was a difficult task.

In July 2004, Larry was contacted by Paul Pearson who had moved to Amgen as vice-president of Pharmacokinetics and Drug Metabolism (PKDM). Pearson called Larry to ask if he wanted to become executive director of a newly created PKDM group at Amgen in Seattle. With an opportunity to return home, Margie, who had been amenable to all previous moves and promotions, summed up her feelings succinctly by asking, “Did you have a good talk?” Larry started the new job with no equipment or space in October, 2004. In his first year, he added 20 members and then another 25 in the second year. The group was fully functional by 2007, a remarkably short time to create a group from scratch.

Even though Larry has become entrenched in an industrial science setting, he has not lost sight of academic pursuits. He places the expectation on all of his reporting scientists for at least one publication per year. This has the benefit of keeping the researchers current, but also makes them viable in a competitive job market. So Larry has become a mentor to his group much as Ed Neuzil, Gary Lampman, Bill Wilson, and Bill Trager had been for him. Larry maintains his own academic endeavors as the holder of a patent, 50+ peer- reviewed publications, co-editor for two books, four book chapters, an ad hoc reviewer for seven journals, and twice a Gordon Research Conference chair. Larry firmly believes the strength of the education he received at WWU is integral to his success.

New Faculty and Staff

Brandon Dietrich joined the department in September of 2009 as the general chemistry laboratory coordinator. Brandon is a Western alum who obtained his BS in chemistry in 2004. For the past 5 years he has been pursuing his graduate degree at the University of Washington with Prof. Karen Goldberg. His doctoral studies involved the investigation of amine boranes for use as an on-board hydrogen storage system for hydrogen-powered vehicles, focusing primarily on developing organometallic catalysts that could rapidly eliminate H_2 from the amine borane substrates.

Brandon hopes to bring creative new energy to Western's undergraduate chemistry lab program, and looks forward to enhancing the current labs, developing new experiments, and contributing to the tools and resources available for the students and the faculty. He hopes that his passion for teaching and seeing undergraduate students learn will be beneficial to the faculty, staff, and graduate students, and augment the department's already stellar lab program.

Brandon is excited to be back in Bellingham and looking forward to the biking, hiking, disc golf, kayaking/canoeing, and fishing the area has to offer. He also looks forward to harassing the current faculty and staff members about homebrewing and wine tasting. You are as likely to find him reading a good book on the weekend as watching the Seahawks play football. He also actively seeks any opportunity to expand his repertoire of cooking and baking recipes, and he encourages you to take advantage of this fact (at your own culinary peril, of course).

Brandon Dietrich

Amanda Murphy

Amanda Murphy joined the department in the winter of 2010 as an assistant professor in organic chemistry. Amanda grew up in Washington and attended Western as an undergraduate, obtaining degrees in both engineering technology and chemistry in 2001. For graduate school, she headed south to the University of California at Berkeley and earned her PhD in organic chemistry in 2006. Her doctoral work in Prof. Jean Frechet's group focused on synthesis and characterization of organic semiconductors for thin film transistor devices. Following graduate school Amanda needed a change, so she decided to tackle a new research field and switch coasts. She moved to Boston, and became a postdoctoral fellow in the Biomedical Engineering Department at Tufts University. Her work focused on developing new strategies to chemically modify silk-based biomaterials for tissue engineering and drug delivery applications. At Western, Amanda will teach organic chemistry, and will develop a research program focused on polymer and biomaterial synthesis. Amanda is delighted to be near her family again, and is excited to explore the many outdoor activities in the Northwest with her husband John Antos (who is also a chemist). Amanda and John also enjoy cooking and taking their pug on long walks (when it isn't raining!).

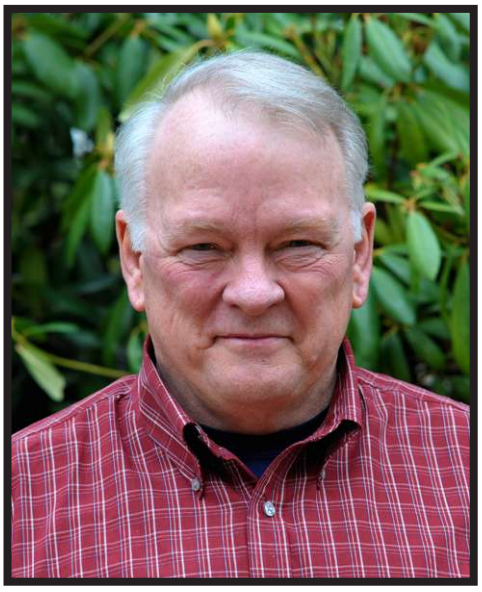
New Faculty and Staff (cont.)

Wendy Schatzberg joined the department as the instrument specialist in December 2009, moving back to the area from Greeley, Colorado. She received her bachelor's degree in chemistry from Western in 2001, and proceeded to get her physical/analytical chemistry master's from the Colorado State University in 2007, and a doctorate degree in chemical education from the University of Northern Colorado in 2009. She developed nanoparticle synthesis methodology in her master's work using reverse micelles and fluorescence anisotropy, and her doctorate work evaluated student attitudes and study habits while using an electronic laboratory notebook. She also developed a questionnaire and evaluation method based upon misconceptions about general chemistry laboratory safety. It has been implemented world-wide.

As the instrument specialist, Wendy helps to make sure the instrumentation is ready for use in much of the upper-level chemistry courses. Wendy enjoys being able to work with students and use her knowledge to teach them how to use the department's instrumentation.

When not working hard in the Chemistry Department, Wendy can be found exploring the Pacific Northwest hiking and snowshoeing trails, cooking, traveling, reading, or learning how to make mead.

Wendy Schatzberg



Steve Sible

Steve comes to our department as our Fiscal Technician after working at Industrial Credit Union for the past 10 years as their chief financial officer. His educational background includes a BS in business from Colorado State University and a MBA from the University of Colorado. Steve and his wife Kathy have been Bellingham residents for over 20 years. They have two children who have blessed them with four wonderful grandchildren. Steve's hobbies include reading, gardening, traveling, and attempting to master the game of golf. Steve says, "I really enjoy working in the Chemistry Department. Everyone has been very welcoming and supportive as I learn my new job. I am looking forward to many enjoyable years with all of you here at Western!"

2008 / 2009 Chemistry Awards

Outstanding Chemistry Department Graduate
Scott Delbecq

Chang Memorial Biochemistry Award
Hayley Wall

Hypercube Scholar
Paul Teichen

Outstanding Analytical Student
Cameron Moore

Outstanding Organic Series Student
Hannah Sturtevant

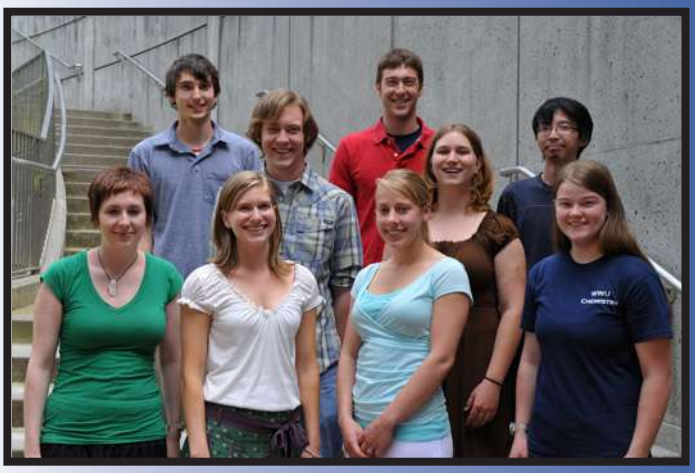
Outstanding General Chem Honors Series Student
Cameron Moak

CRC Press Freshman Chemistry Award
Lauren Verbon

Advancing Chemistry Through Service
Erin Gleason and Amy Gaudette

Back Row (left to ight): Cameron Moore, Cameron Moak, Hayley Wall, Scott Delbecq, Paul Teichen
Front Row (left to right): Erin Gleason, Amy Gaudette, Hannah Sturtevant, Lauren Verbon

2009 / 2010 Scholarship Recipients



Back Row(left to right): Cameron Moore, Bryan Ager, Peter Ye
Middle Row(left to right): Nicholas Isley, Jennifer Novotney
Front (left to right): Katie Tallman, Amanda Norell Bader, Jessie Robinson, Hannah Sturtevant

Knapman Senior Renewal
Bryan Ager

Knapman Junior Scholarship
Hannah Sturtevant

Barbara French Duzan Biotechnology with match from Truc Thon
Jessie Robinson
Katie Tallman

Ruth Watts Female Research Scientist with match from Truc Thon
Jennifer Novotney

Jerry Price/Nancy Sherer with match from Truc Thon
Peter Ye

Verna A. Price with match from Truc Thon
Amanda Norell Bader

Rathmann Foundation with match from Truc Thon
Alicia Michael

Oscar E. Olson
Brandon Crostick
Nicholas Isley
Cameron Moore
Loagan Yarbrough

Hach Scientific Foundation Chemistry Teaching
Jason Fortner
Korin Meyer

Paul Woodring Scholarship
Kelsey Motanic

Outstanding Chemistry Graduate

Scott Delbecq

The graduating class of 2009 had many exceptional students. Among those, Scott Delbecq was the most outstanding. During his years in the department, Scott established himself as an active student, teacher, and researcher. During the summer between his junior and senior years, Scott was awarded the inaugural Lowell Eddy Memorial Fellowship for Undergraduate Research. With this opportunity, Scott was able to complete a comprehensive research project in Prof. Clint Spiegel's research group. In collaboration with Prof. David Baker's research team at the University of Washington, Scott successfully solved the x-ray crystal structure of a computationally redesigned protein to atomic resolution, a first here at WWU!

In the classroom, Scott was an exemplary student, always asking questions and probing further to gain an in-depth understanding of many chemical and biochemical concepts. Scott was also an involved and engaging teaching assistant in many laboratory courses, providing an invaluable service to the Chemistry Department.

Scott has recently enrolled in the Biomolecular Structure and Design PhD program at the University of Washington where he is in his first year of graduate studies. We would all like to congratulate Scott on his achievements at WWU and thank him for all the wonderful service and experiences he has provided the Department of Chemistry. We hope to see you back in Bellingham soon!

Lowell Eddy Fellowship

Haomin (Peter) Ye

In June 2009, Peter Ye received the second annual Lowell Eddy Memorial Fellowship for summer undergraduate research. Peter performed research with Prof. Anthony-Cahill to increase the stability of the circularly-permuted hemoglobin recently characterized by the Anthony-Cahill group. Peter has made site-directed mutations in the genes of the alpha and beta globins and has expressed and purified the mutant proteins. His current efforts are directed at determining the stability of the mutant using circular dichroism spectroscopy and chemical denaturants. The ultimate goal of the work is to find a hemoglobin that could be used as a blood substitute. Last November Peter had the opportunity to present his results to the College Leadership Board. This Board includes Dr. Bill Kindler, to whom we are grateful for providing the funds for the Eddy Fellowship.

Peter hit the ground running when he arrived at WWU in the Fall of 2007, enrolling in the Honor's General Chemistry series (in which he excelled). He hasn't stopped running since, and he is on track to graduate with a BS in Biochemistry this Spring, after three years at WWU. In his free time, Peter is an avid reader of all manners of historical fiction, science fiction, philosophy, and sociology. He is also interested in free and open-source software, distributed computing projects, and developing *nix operating systems. He is appreciative of everyone in the Chemistry Department who has helped him on his path to medical school, which he plans to attend in the Fall of 2010.

Sea Bong Chang Award

Haley Wall

Hayley Wall was selected by the department faculty as the recipient of the 2009 Sea Bong Chang Award. Each year the outstanding student in biochemistry is bestowed with this honor in memory of Professor Sea Bong Chang, a member of the WWU chemistry faculty from 1964 to 1972.

Hayley distinguished herself not only in the classroom and instructional laboratory, but in the research lab as well. After getting her start in honors general chemistry and cruising through organic chem, Hayley joined Prof. Vyvyan's research team. For two years, Hayley studied Suzuki cross-coupling reactions of pyridine-containing substrates in support of efforts toward the total synthesis of cananodine, an alkaloid active against liver cancer. Hayley presented her work at the national meeting of the American Chemical Society in the spring of 2008, and received *Best Undergraduate Poster* at the WWU Scholars Week 2009. Hayley was also the winner of a 2008-9 Woodring Scholarship.

After graduating with a degree in biochemistry, Hayley began graduate studies at Johns Hopkins University, pursuing a PhD in Cellular and Molecular Medicine. Away from the lab, Hayley is an outdoor lover and an avid mountaineer, having climbed numerous peaks over 10,000 feet. These adventures provide amazing vistas for her photography hobby as well.

Class of 2008 / 2009

Congratulations to our graduation class of 2008/09. Graduation honors and immediate post-graduation activities, as known to us, are listed after each graduate's name.

MS Chemistry

Amy Gaudette	Chemistry Instructor, Skagit Valley College
Toby Ligon	Research Associate, Phase Rx, Seattle

BS Chemistry and ACS Certification

Kory Abercrombie	
Yaw Agyei	Lab Technician, Boeing, Seattle
Jennifer Bennett	PhD Program in Chem/Biochem, Univ. Arizona
Colin Bradley	
Heather Brogan	
Courtney Burris	Lab Technician, ConocoPhillips, Ferndale
Sara Champoux	Intera Inc. at the DOE Site, Hanford, WA
Chun (David) Chow	PhD Program in Chem, Univ. Michigan, Ann Arbor
Heidi Dimmitt	MS Program in Chem, Vyvyan Lab, WWU
Rose Ekins	Elementary Teacher, World Teach, Harvard Univ., Dept. of Ed., Republic of Marshall Islands
Erin Gilmore	
Erin Gleason	PhD Program in Chem, Univ Calif, Davis
Katie Holmstrom	
Sarah Kahnamouie	
Liza Koren-Selfridge	PharmD Program, School of Pharmacy, Univ. Wash.
Joseph Korn	PhD Program in Chem, Purdue
Peter Lechner	
Lawrence Lewis	Master in Teaching Program, WWU
Hannah Londino	PhD Program in Organic Chem., Univ. Illinois, Chicago
Erik Madden	
Dylan Moore	Apprentice to Martial Arts Program, Granite Falls
Sean Parris	Post-baccalaureate work, Wash. State Univ.
Julia Peterson	Cum Laude; PhD Program in Analytical Chem, Univ. Wash.
Phillip Pierce	PhD Program in Organic/Inorganic Chem., Univ. Wash.
Matthew Quarterman	
Robert Reed	PhD Program in Applied Chem, Colorado School of Mines
Chase Reinhart	
Casey Rich	
Christian Rycraft	
Roxanne Salandanan	Quality Control Lab Tech., Pepsi NW Beverages, Seattle
Karla Slenkamp	Magna Cum Laude; PostBac Program in Chem, Univ. Wash.
Jillian Smith	
Kevin Strozyk	Magna Cum Laude
Paul Teichen	Hypercube Scholar; PhD Program in Chem., Univ Colorado, Boulder
Keerstin Throm	
Jessica Vellucci	PhD Program in Chem., Oregon State Univ.
Christopher Westcott	MS Program in Chem., Patrick Lab, WWU
Laura White	
Erik Wold	PhD Program in Organic Chem., Scripps Research Institute, San Diego

Class of 2008 / 2009

BS Biochemistry

Lucian Burns	Touring the world including stops in Hawaii and S. East Asia, then applying to medical school
Shawn Campbell	
Melanie Cobb	University Honors Program; PhD Program in Molecular Biology, Univ. Calif., Davis
Scott Delbecq	Outstanding Graduate Award; Cum Laude; PhD Program in Biol/Molecular Structure, Univ. Wash.
Patrick English	Cum Laude; Operations Assistant, Mehadi Foundation, Salt Lake City, Utah
Mari Hammerquist	
Tony Hsu	
Thomas Jordan	
Eric Krohn	
Peter Littlefield	Magna Cum Laude; Research Assistant, Rachel Klevit Lab, Biochem Dept, Univ. Wash.
Christopher Matthews	
Sarah Mohn	Research Technician, Weinmann Lab, Immunology Dept, Univ. Wash.
Greg Palczewski	MS Program in Biochem, Case Western Reserve Univ.
Michael Ray	Volunteer, Diakonia AIDS Ministry, Evangelical Lutheran Church in America; in 1 year entering Graduate Program in Public Health, Univ. Wash.
Kelsey Roe	University Honors Program; MS Program in Tropical Medicine, John A. Burns School of Medicine, Univ. of Hawaii.
Stewart Schaefer	Coordinator, HealthCorps, Houston, Texas
Alexandria Taber	Chemistry Dept. Research Honors; PhD Program in Chem., Inst. of Molecular Biology, Univ. Oregon
Hayley Wall	Chang Biochemistry Award; Chemistry Dept Research Honors; University Honors Program; Magna Cum Laude; PhD Program in Cellular and Molecular Medicine, Johns Hopkins Univ.

BA Chemistry

Johanna Brown	Residential Education Director, Campus Housing, Wash. State Univ.
Sara Condra	
Daniel Lane	

Alumni Spotlight - Ryan Looper

The department delights in visits by its former students, and we have been fortunate in the last few years to have several alums return to give seminars. One visit that stood out this year was that of Ryan Looper (BS 1998, MS 1999), the Henry Eyring Assistant Professor of Chemistry at the University of Utah. Ryan's talk was entitled "Propargyl Guanidine Cyclizations and their Application to Natural Product Targets," and his seminar demonstrated nicely the marriage of synthetic chemistry and biological applications through his active collaboration with the Huntsman Cancer Institute in Salt Lake City.

Although his family is from Arkansas and Tennessee, Ryan's youth was spent in Banbury, England where his parents taught high school. Ryan arrived in Bellingham in 1994, drawn by the outdoor activities the area has to offer. Since he arrived just two days before classes started, he took mostly general education requirements his first term. He then started to gravitate toward biochemistry, but while in Prof. Pavia's organic chemistry class, Ryan distinctly remembers an *aha* moment when stereochemistry was discussed for the first time, and he knew organic chemistry was for him! Continuing the organic series with Prof. Kriz only solidified his decision when the content turned more toward synthetic chemistry. Prof. Lampman's organic reactions course and the chess game of synthesis also had a big impact on Ryan, and he got interested in research and the opportunities graduate school had to offer. Ryan's interest in combining biology with his chemical knowledge was nurtured in Prof. David Leaf's course in cell biology and Prof. Anthony-Cahill's biochemistry lectures on protein structure and interactions, which gave Ryan a lasting love for the beauty and complexity of living systems.

Ryan spent a summer helping Professors Pavia, Lampman, and Kriz collect spectra for their popular laboratory textbook before starting research with Prof. Vyvyan in the fall of 1997. Ryan's work on bisabolene natural products and heliannuol D in the Vyvyan group ultimately led to two publications, and got him interested in an academic career. Deep scientific conversations with Nate Lubliner (Biology '98) continued to foster Ryan's biological interests and friendly competition with Emily Peterson (BS '00) in the Vyvyan lab kept things interesting.

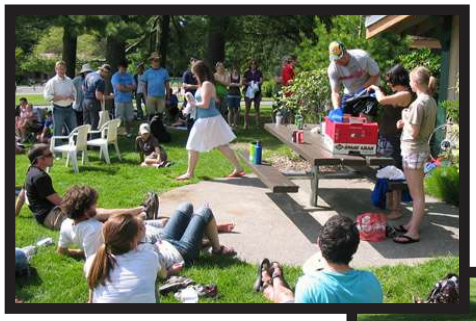
After PhD studies at Colorado State University with Prof. R.M. Williams, Ryan went to Harvard to work with Prof. Stuart Schreiber, and was awarded a NIH Ruth L. Kirschstein postdoctoral fellowship. Ryan's involvement with scientists of diverse backgrounds and expertise at the Broad Institute was a factor in his decision to join the University of Utah faculty in 2007 because of the opportunities to collaborate with scientists at the Medical School and the Huntsman Cancer Institute. Ryan directs a research group of 8 graduate students (including WWU alum Joe Gibbons, BS 2008) and three undergraduates, a legacy of Ryan's undergraduate experience at WWU. Ryan says he "aspires to teach as well and with as much enthusiasm as the WWU faculty." He teaches the undergraduate honors course in organic chemistry and courses in organic synthesis, advanced spectroscopy, and medicinal chemistry.

Ryan and his wife Meghan live in Salt Lake City with their son Jack who is now almost two. In addition to spending time with his young family, Ryan escapes the demands of the faculty life by fishing and skiing Utah's famous powder.

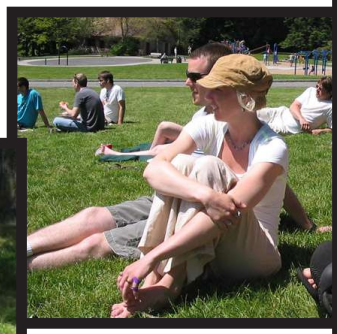
Ryan Looper

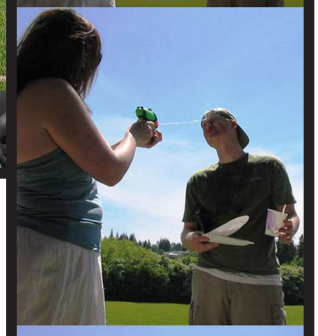
Chemistry Picnic and Halloween

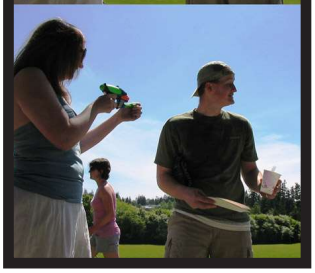
“Be Your Professor” Costumes
Very Scarrrry.



Chemistry Picnic
at Fairhaven Park







Alumni News

1960's

Thomas Vedvick '68, is currently the Director of Process Sciences at the Infectious Disease Research Institute in Seattle Washington.

Robert "Bob" Matson '69, MS '71 (Chang) has been involved in the development of surface chemistries, low-level detection, image analysis, microarray technology, and automated multiplex assay development for the past 17 years at Beckman Coulter, Inc. He has been awarded 18 patents for this work. Bob was inducted into Beckman Coulter's Inventors Hall of Fame in 2006 and was elected a Fellow of the National Academy of Clinical Biochemistry in 2008. He is the author of Applying Genomic and Proteomic Microarray Technology in Drug Discovery (CRC Press, 2005) and Microarray Methods and Protocols (CRC Press, 2009). Dr. Matson is the founder and president of QuantiScientifics, LLC where he is involved in instrument and assay development for biomedical diagnostics.

1970's

Gary Christensen '72 died in January 2008 from colon cancer. He had retired in 1999 as quality control manager of Copeland Corp at their plant in Cookstown, Northern Ireland. After retirement, he and his wife returned to the Omak, Okanogan area of Washington state.

1980's

William "Greg" Cox '82, is continuing to work as a freelance science fiction writer. Recent and upcoming books include *Terminator Salvation: Cold War* (Titan Books, October 2009), *Final Crisis* (Ace Books, July 2010), and *Star Trek: The Hazard of Concealing* (Pocket Books, August 2010). He also has some shorter work coming out in 2010, including a new Star Trek novella, an issue of The Phantom comic book, a Green Hornet adventure, and a time-travel story involving Jack the Ripper. Check out his official website at .

1990's

Julia (Whitford) Bach '98 has been working at Amgen (8 years now) as a Senior Associate Scientist in the Purification Process Development Department. "Dan and I welcomed our daughter, Elena Renee Bach, into the world in the wee hours of April 15, 2009. We are tired (duh) but enjoying being first-time parents."

Joseph Mougous '99 is an Assistant Professor of Microbiology at the University of Washington. He presented a seminar for the WWU Chemistry Dept entitled "Type VI Protein Secretion in *Pseudomonas aeruginosa.*"

2000's

Allison (Johnson) Torgesen '00 is working at Seattle Genetics in Bothell, WA. "I am excited about my new job and looking forward to working on some really exciting cancer therapeutics."

Nikki Chin '01, married Zachton Lowe in Seattle on September 6, 2009.

Alumni News (cont.)

Amanda Murphy '01 joined the Chemistry Department here at WWU as an Assistant Organic Chemistry Professor in winter quarter 2010 after completing her PhD at Univ Calif, Berkeley and a postdoc at Tufts Univ. Amanda married John Antos in July of 2009. Congratulations Amanda and welcome home to WWU!

Adam Fung '03 completed his PhD with Professor Victor Munoz at the University of Maryland in 2008. He is employed in biophysical analytical development at Seattle Genetics.

Casey Kulla '03 and wife Katie celebrated the birth of their son, Russell Sprout Kulla (Rusty), born on December 11, 2009. Also, readers of Mother Nature Network named Casey and Katie among the "top 40 Farmers under 40." Their Oakhill Organics is located in Grand Island, Oregon.

Julie (King) Terry '03 is finishing her last year as a Family Medicine Resident at Scott Air Force Base and holds the rank of Captain.

Brandon Dietrich '04 returned home to the WWU Chemistry Dept in fall 2009 to accept the General Chemistry Lab Coordinator position. He is also completing his PhD Inorganic Chemistry dissertation at the Univ of Washington.

Abigail Lambert '04 completed her graduate work at the Fred Hutchinson Cancer Research Center (in the lab of Dr. Barry Stoddard) and gave her dissertation in June of 2009. She has completed her PhD in Biochemistry at the Univ of Washington and has begun post-doctoral work at Seattle Children's Research Institute in the lab of Dr. Andrew Scharenberg.

Laura Stoll '05 will be graduating from the Univ Of Washington School Of Medicine in June 2010 and will then begin residency training in orthopedic surgery.

Angela (Munson) Frohman, '07 is currently a Research Associate at Syntrix Biosystems in Auburn, WA. She and her husband Aric were married in Snohomish, WA in September 2007.

Lance Visser '07 is working as a Lab Technician at ConocoPhillips in Ferndale.

Brendan Abolins '08 is in his second year in the PhD Program in Theoretical Chemistry at the Univ of California, Berkeley.

Brooks Ohlson '08 is in his second year at the Univ of Washington School of Medicine.

Lauren Retallack '08 is in her second year in the Doctorate of Veterinary Medicine Program at Washington State University.

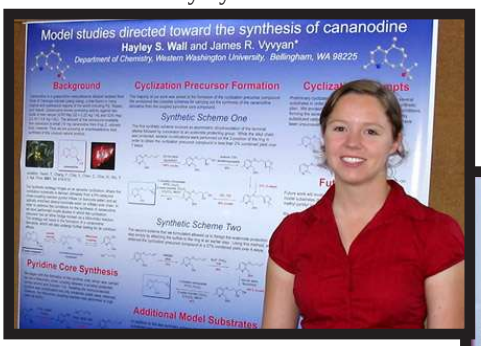
Kasse Rupp '08 is working as a Research Study Coordinator at the VA Hospital for Seattle Institute of Biomedical and Clinical Research. She married Jonathan Skagen on August 22, 2009. Congratulations!

Jillian Smith '09 and Will Weiss, WWU Physics Dept graduate, are engaged. Congratulations! The wedding date is July 16, 2010. They will move to Madison, Wisconsin where Will shall attend UW-Madison while Jillian works and attends nursing school.

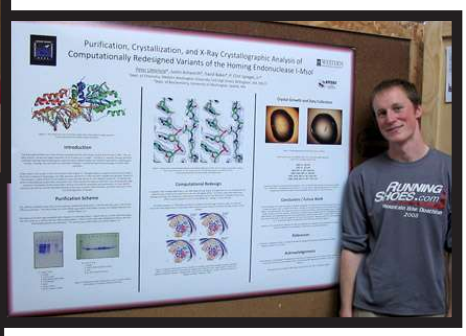
Scholars Day Colloquium

Our annual Scholars Day was held on May 22, 2009. There were 28 undergraduate posters, 5 graduate posters, and 4 Honors oral presentations. The keynote speaker was Rachel Klevit, Professor of Biochemistry, University of Washington. Her talk was entitled “What Biochemistry and Structural Biology Reveal about the Breast Cancer Susceptibility Protein, BRCA1.”

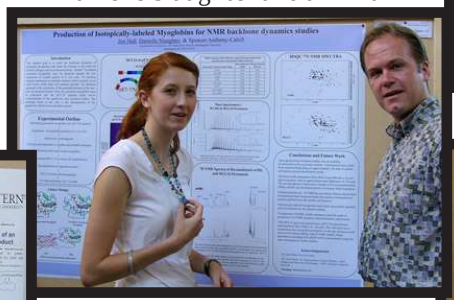
Hayley Wall



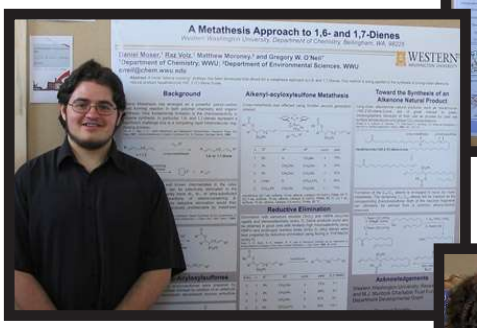
Peter Littlefield



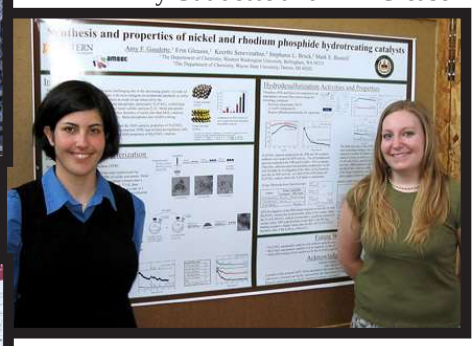
Danielle Slaughter and Jim Hall



Daniel Moser

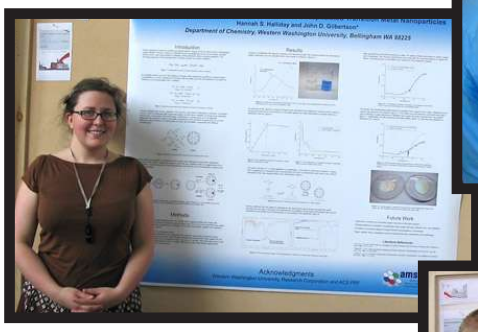


Amy Gaudette and Erin Gleason

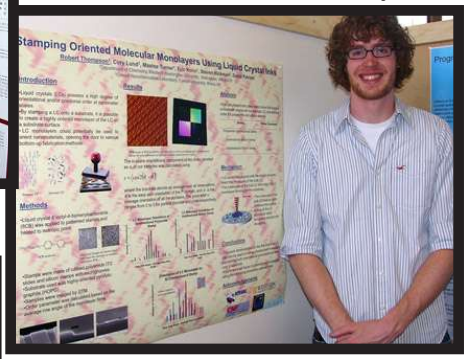


Paul Teichen

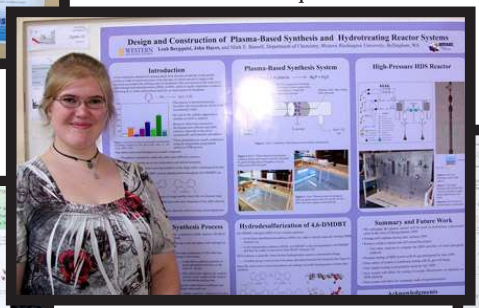
Hannah Halliday



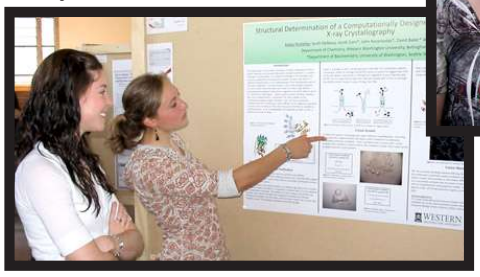
Cory Lund

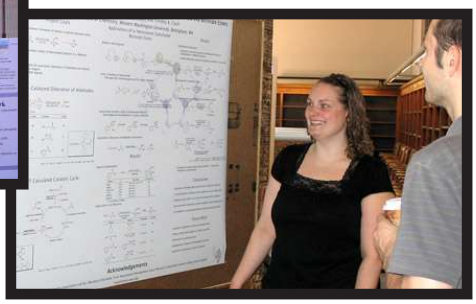


Leah Berquist



Kasey Hostetler





Melissa McIntosh

HazMat Exercise with WWU Chemistry

Needless to say, the Chemistry Department and its activities, pose a unique concern for local and campus emergency response personnel. This past summer, an opportunity was presented for us to participate in a joint HazMat exercise with the Bellingham Fire Department (BFD), Bellingham Aid, Whatcom County Specialized Emergency Response Program (SERP) in addition to WWU Police and Environmental Health and Safety (EHS). It was hoped that in the end, this would not only allow for a training exercise for the response personnel, but also give us a better understanding of how the all the parties can effectively communicate in the event of a real emergency.

Three months of planning preceded the exercise that was held on September 2, 2009. The scenario included a mock organolithium chemical release, subsequent fire, personal injury, a secondary solvent fire, subsequent firefighter incapacitation, and finally a rescue. This scenario was known to controllers on the scene but not to the active participants. Once the fire alarm was triggered and a call made to campus security, the responders needed to analyze the situation and then come up with an appropriate response plan to the scene as it unfolded. Scene controllers followed responders and judgesd the situation evaulation and response decisions. Much of the knowledge that was obtained involved how scene control was passed from WWU Security to BFD to Whatcom SERP as the extent of the mock accident was determined. For the Chemistry department specifically, we have a much better understanding of how to best support the BFD and SERP responder teams with maps, MSDS sheets, and chemical information. In the end, the training event involved four fire engines, two ambulances, two SERP trucks, three BFD command trucks, an air support vehicle, Bellingham Police, WWU EHS, University Police and Chemistry personnel.

Thank You's need to be sent to Jim Vyvyan and Greg O'Neil for their participation in the exercise. We also want to thank two of Greg's student's, Raz Volz and Dan Moser, for their willingness to be our 'victims'.

Thank You to Chemistry Dept 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 2009 calendar year. Donations during the past year funded a variety of activities, including scholarship matching, academic awards, undergraduate research projects, department seminar program, and events for department majors.

Chemistry Fund Donors

Kelli Arntzen and Joseph Erickson
James and Gail Assink
James Boaz
Patrick and Susan Bouma
Scott and Susan Buffkin
Jeff Bullock
Michael Carpenter
Laura Cazares
Jesse and Gloria Close
Tod Companion
Ann Dagle
Joseph Deverich
Joaquin and Norma Fegurgur
Chris and Susanne Gaudette
Raymond and Nancy Gross
J.C. & Mary Hickman
Thomas and Cynthia Hinds
Russell Karns
Peggy Lemmer
Brian D. Lewis
Lionel Livermmore
Steve Lockett
John and Heloise Logan
Jeffrey May
Dan Miller
Gwen Mills
Karen and Joseph Morse
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David and sydney Olausen
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Brian and Kathy Riley
Mark and Martha Sadler
Mary Scheibler
Alan and Caroline Schulz
Linda and Michael Sheaffer
Brian and Alison Skoczenski
Jillian Smith
Bruce and Rebecca Tribken
Timothy Tuura
Jan Wahlstrom
Brett and Shawnessy Watts
Alan and Junell Whitford
Richard and Kay Wojt
Sheryl Wood
Sophia Zervas-Berg and Arvid Berg

Thank You to Chemistry Dept Donors

Eddy Memorial Chemistry Fellowship

Bill and Trudy Kindler

Knapman Scholarship Endowment

Janet & Bob Harris

Hach Science Education Scholarships

American Chemical Society Hach Scholarship Endowment

PLK Organic Endowment

George and Carolyn Kriz
Gary and Marian Lampman
Don and Neva (Jones) Pavia

Wicholas Research Endowment

James Anable
Robert and Jeanette Mustacich
Terry and Maureen Smedley
Mark Wicholas

Chem Club Receives ACS National Award

WWU's Chemistry Club received a 2008-09 Commendable Student Chapter Award from the American Chemical Society (ACS). This marks the second year in a row that it has been recognized by the ACS with this distinguished award. The Chem Club is a vital part of the department's social fabric. It brings together students, faculty, and staff to provide a wide range of activities that include Girl Scout Science Badge, intramural sports teams, food drives, informational seminars, social events, and the annual Chemistry Department picnic. All these activities are organized and financially supported by the Chem Club. A quote from the ACS award letter reads:

> "We extend our warmest congratulations to the students and Professors Raymond and Emory for setting such a fine example for other chapters and being exemplary chemistry ambassadors!"

Hannah Sturtevant and Adam Jansons

The co-presidents for the 2008-09 academic year, Erin Gleason and Amanda Norell Bader, also deserve special recognition for their efforts.

In addition, the club also received a Green Chemistry Award from the ACS Green Chemistry Institute. This award is in recognition of the Chem Club's effort to promote green chemistry practices. The Chem Club was honored in March 2010 at the 239th ACS National Meeting in San Francisco where Hannah Sturtevant and Adam Jansons (shown in photo) represented the club at the awards symposium.

Happy Valley Elementary visits Chemistry

ScienceFair Kickoff at Happy Valley Elementary

Chem Club Receives ACS National Award

Girl Scouts Visit

Boy Scouts Visit

Lynden High School Students Visit

Chemistry Building Addition

Almost There

The new addition to the Chemistry Building is progressing very well and is scheduled for completion this June. The addition is located at the southwest corner near the Biology Building. New space that will be created by this project includes: new department office, new teaching laboratory on the ground floor, 5 additional research labs, 6 faculty offices, an enlarged classroom, and a new computer lab. This additional space was desperately needed to accommodate WWU's growing programs in chemistry, biochemistry, and materials science. Students and staff deserve kudos for their perseverance during this period as they have had to endure a temporary department office and the loss of the chemistry student computer lab for the past year. The good news is this fall we will open a new space that will better meet the needs of our vibrant programs. The department is currently organizing an open house celebration on Friday, September 24, 2010 (more information to come). We hope everyone can visit the campus and new facilities in the near future.

Chemistry Office

PChem/Biochem Teaching Lab

Research Lab

Lecture Room