University of Minnesota Duluth
Chemistry and Biochemistry
Department Newsletter:
Summer 2013

transitions

in this issue

Nobel Prize in Chemistry: Brian Kobilka

Brian Kobilka (UMD 1977, Chemistry and Biology) and Robert Lefkowitz (Duke University) were awarded the 2012 Nobel Prize in Chemistry in December 2012. They were honored for their pioneering studies elucidating how G-protein coupled receptors (GPCR) work on the molecular level. GPCRs represent a very large class of G-proteins that regulate nearly every physiological process in the human body including maintaining heart and brain function. In addition, because about 40% of all pharmaceuticals target these receptors, group members are using GPCR structural characteristics to develop a new family of drug candidates that bind to GPCRs.

A native of Little Falls, Minnesota, Brian came to UMD as a freshman in the fall of 1973. His research career began in the laboratories of Professor Emeritus Conrad Firling in the biology department examining selective gene expression. It was also during this period that he met his future wife Tong Sun Thian Kobilka (UMD 1976, Biology) who continues to be a member of the Kobilka Research Laboratory. After graduating from UMD, Brian received an M.D. degree from Yale University. He currently holds the Helene Irwin Fagan Chair in Cardiology at Stanford University. As an undergraduate, Brian's unique combination of outstanding intellect, energy, determination and collegial sprit were clearly evident in his lecture and laboratory courses, as well as in the research lab.

His many friends at UMD and his scientific colleagues from around the world look forward to the next set of scientific discoveries that will increase our understanding of this important class of compounds and lead to improvements in human health.

For the full story, please visit http://www.nobelprize.org/nobel_prizes/chemistry/laureates/2012/

Brian K. Kobilka with wife Tong Sun Kobilka, daughter Megan and son Jason, after the Nobel Prize Award Ceremony at the Stockholm Concert Hall, 10 December 2012. Copyright © Nobel Media AB 2012 Photo: Alexander Mahmoud

Dear Friends and Graduates of UMD Chemistry and Biochemistry,

I have the pleasure of bringing greetings and news of our department to you. Our feature story is about Brian Kobilka (UMD 1977, Chemistry and Biology) being selected as a co-winner of the 2012 Nobel Prize in Chemistry. We are incredibly proud of Brian and hope you will enjoy reading about his Nobel-prize winning discoveries.

The 2011 external reviewers of this department found much to praise about our undergraduate and graduate programs, research productivity, the commitment of the staff and faculty, and potential for continued success and impact. Responding to one of the reviewers' recommendation, the faculty and staff completed a comprehensive strategic plan that will guide and inspire our efforts over the next five years. We are pleased to share it with you (p. 7).

The faculty is very grateful to alumni and friends who honor our educational work with your gifts which allow us to provide more scholarships and awards to deserving students (p. 14-15), a first-class undergraduate research program (p. 11), support for our instructional labs, and graduate student professional development. We are pleased to announce that Warren Davis (UMD 1949, Chemistry) has made two very generous gifts to the department, one advancing faculty excellence and one supporting highly talented biochemistry students (p. 5). In addition, thanks to Jim Swenson (UMD 1959, Chemistry), the James C. Nichol Scholarship was established and awarded for the first time this May.

We are sad to share news of the passing of Professor Emeritus Thomas J. Bydalek. We remember his strong commitment to students, the rigor he brought to the classroom and lab, his sense of humor, and love of North Shore streams. (p. 3)

We also recognize Vince Magnuson on the occasion of his retirement after 45 years of service and leadership to the department, campus and community. (see below)

We will continue to work hard at what we do best – educating our students, discovering new knowledge, and providing leadership to the campus and the community. We fondly remember all of our graduates and are proud to hear about your achievements and successes. Your visits are always welcome and we look forward to reminiscing with you and showing you what new things are happening in the department and at UMD. Please stay in touch.

Best wishes,

Bilin P. Tsai

Bilin P. Tsai
Professor and Head

Vince Magnuson Retires

After a distinguished 45-year career at UMD, Professor and former Vice Chancellor Vince Magnuson retired in May 2013. Many of you took his General Chemistry course while others enrolled in Vince's Inorganic courses. He established a research program in structure determination of low oxidation state transition metal complexes, topological indices and aquatic toxicity.

Vince was born in Nebraska and raised on his family's farm. He completed his B.S.-Chemistry at U. Nebraska-Lincoln, M.S.-Chemistry at U. Wisconsin-Madison, and Ph.D.-Inorganic Chemistry at U. Illinois-Urbana prior to starting his academic career at UMD in 1968. He was active in faculty governance, served as department head for four years, and most recently (1995-2012) was the Vice Chancellor for Academic Administration. During his 16 year vice chancellorship, UMD grew significantly in enrollment, academic programs, research productivity, graduate and professional education, and service to the community. We honor and thank Vince and express our best wishes to him and Nancy.

Faculty & Staff Updates

Fond Farewells To:

Carla Ahrenstorff, Instructor, left the department in May 2013 and is relocating to Brainerd, Minnesota.

Sarah E.J. Bowman, Assistant Professor, resigned in June 2013 and is relocating to Massachusetts.

Barbara Chapin, Accountant, resigned in April 2013 and is relocating to the Minneapolis/St. Paul area.

Welcome To:

Patty Sutliff Opoien, Accountant, joined the department in April, 2013. Patty holds a Bachelor's Degree in Accounting from UMD and completed the three-year professional banking program offered by the Graduate School of Banking, U. Wisconsin-Madison. She served as the finance director at a large Duluth non-profit organization and at a local community bank including two years as CFO. Patty enjoys reading, traveling, and gardening. She is especially proud of her two children, Aaron, a senior, and Anna, a 7th grader, both enrolled in Proctor schools. She and her family, including 2 dogs, 2 cats and a horse, live near Grand Lake in Saginaw.

Sunita Shah Walter, Assistant Professor, will join the Department of Chemistry and Biochemistry and Large Lakes Observatory in January 2014. She received a B.S. in Biochemistry from Columbia University, an M.S. in Atmospheric Chemistry from the U. Michigan-Ann Arbor, and a Ph.D. in Earth and Planetary Sciences from Harvard University. She is currently completing a postdoc at Woods Hole Oceanographic Institute. Her future research plans include investigating the metabolic and biogeochemical functions of archaea and bacteria in lakes and ocean settings by applying isotopic analysis to intact membrane lipid biomarkers.

Promotions:

Elizabeth Minor, Associate Professor, was promoted to full Professor.

In Memory:

Thomas Bydalek, Emeritus Professor, a friend and colleague, passed away on June 14, 2012, in Duluth, after a long illness. Professor Bydalek earned a B.S. in Chemistry at Aquinas College in Grand Rapids, Michigan, and a Ph. D. in Analytical Chemistry at Purdue University in West Lafayette, Indiana. Prior to joining the UMD faculty, he taught chemistry at the University of Wisconsin-Madison. Professor Bydalek taught and performed research at UMD from 1965 through 1997. He taught courses in analytical and general chemistry and introduced electronics and modern instrument design into the curriculum in the early 1970's. His research focused on the equilibrium and kinetics of metal chelates and on environmental problems. Professor Bydalek supervised the research of many undergraduate and graduate students in a very personalized manner and was the mentor to the first Ph.D. student on the UMD campus. He was well-recognized for his demanding attention to the meaningful nature of data and for introducing his students to the artistry of fly-tying and applying the same rigor in testing their creations on the North Shore trout streams.

Dorothy Passer,

SCSE Academy of Science & Engineering

The Academy of Science and Engineering was established in 2002 to recognize alumni and special friends of the Swenson College of Science and Engineering who have distinguished themselves through their participation, commitment, and leadership in their chosen professions. The annual induction ceremonies are held each year during the fall semester. Our 2012 Academy Inductee is...**Ms. Marianne Bohren, B.S. Chemistry**

Marianne E. Bohren assumed the role of Executive Director of the Western Lake Superior Sanitary District (WLSSD) in Duluth, Minnesota on July 1, 2008. She succeeded Kurt Soderberg, who served as the Executive Director for more than 17 years. Bohren has been employed by the WLSSD since fall 2004, formerly holding the positions of Director of Organizational Development, Business Services Manager and Assistant Director, where she was responsible for the overall financial performance of the organization in addition to labor relations, human resources and management information systems.

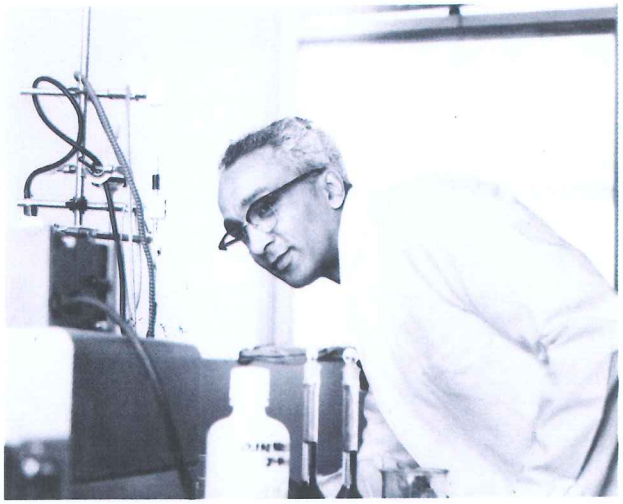
Prior to joining WLSSD, Ms. Bohren worked at Potlatch Corporation for 17 years serving as the Environmental Manager, Manager of Strategic Planning and the Vice President of Marketing and Services. Ms. Bohren has served on the Boards of the WLSSD, the Cloquet Salvation Army, and the United Way of Greater Duluth. Bohren holds a B. S. in Chemistry and an M.B.A., both from the University of Minnesota, Duluth.

With this Summer 2013 issue of Transitions, we are inaugurating a new feature to present our proud history of accomplishment and the individuals who played a key role in this history.

Looking Back...Meet William (Bill) Maupins, Jr.

William (Bill) Maupins (1921 – 1992) served as laboratory services supervisor in the Chemistry Department for 28 years until his retirement in 1982. He was a dedicated employee, trusted friend, and a strong advocate for social justice. He was a mentor and role model to many and especially to African-American students and employees at UMD. Both on and off campus, he was the heart and soul of the fight against discrimination and a tireless promoter of educational and employment opportunities. Bill was an outstanding community leader, active in the DFL Party, and served as the President of the National Association for the Advancement of Colored People for 11 years.

Born in Duluth, but abandoned as an infant, Bill was raised by his adoptive father. After graduating from Duluth Central High School, Bill served in the U.S. Navy during World War II. He returned to Duluth after the war and graduated from UMD with a degree in Political Science in 1951. His first job was with the DMIR Railway followed by a long career at UMD. Bill married a woman from Texas who gave birth to their four children before she died in 1957. This remarkable man then raised their four young children while working full time, providing support and counsel to many and leadership to his campus and community.



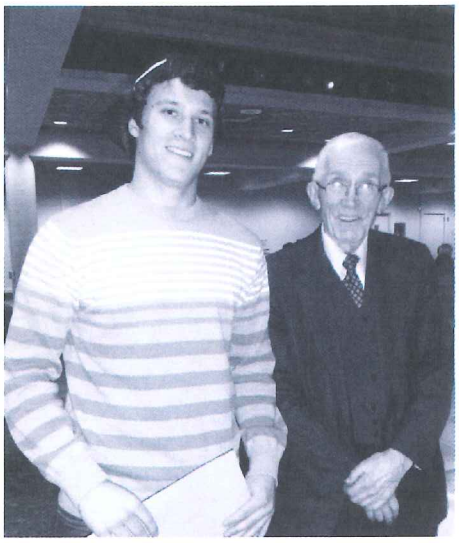
1949 Alum Establishes Warren F. Davis Chair in Chemistry and Warren F. Davis Scholarships for Excellence in Biochemistry

Warren F. Davis, UMD 1949 Chemistry graduate, has included a $2 million bequest through his estate to create an endowed chair in the Department of Chemistry and Biochemistry. His gift will significantly enhance our efforts to recruit, support, and retain outstanding faculty members who will provide a margin of excellence in scholarship and discovery in the chemical and biochemical sciences. Mr. Davis pledged this gift in gratitude for the excellent education he received at UMD and to support the next generation of scientists and chemists. In addition, Mr. Davis has created a scholarship program for rising junior biochemistry majors who have demonstrated academic excellence and who have financial need. This program will fund two students each year.

Mr. Davis was born in Duluth and graduated from Duluth Central High School in 1942. He served in the armed forces during World War II and was stationed in England. After the war, he enrolled in the Duluth State Teachers College, about a mile from his family's Chester Park home. In 1947, DSTC became the Duluth campus of the University of Minnesota and Mr. Davis graduated from UMD in 1949 with a degree in Chemistry and minors in German and Mathematics. As an analytical bench chemist throughout his professional life, he worked on a variety of projects including nuclear powered aircraft at the General Electric Company and metal-based materials for NASA's space exploration and aeronautic projects at the Lewis (now Glenn) Research Center.

The Warren F. Davis endowments will advance our mission to provide scientific solutions that address societal needs by attracting exceptional faculty members who will define and push back the frontiers of science and supporting excellent students who will be future leaders in biochemical and health science professions. The faculty and staff are deeply grateful to Mr. Davis for these generous gifts and his commitment to our educational mission.

James C. Nichol Scholarship



In honor of Professor Emeritus James C. Nichol's 90th birthday and in recognition of his service of over 50 years to UMD, alumnus James I. Swenson (UMD 1959, chemistry) and his wife, Susan, established the James C. Nichol Scholarship at UMD. The first scholarship was presented to Logan Pirkl, a Chemistry major from Owatonna, MN who will be a senior next fall. Logan excelled in the two-course Physical Chemistry course and aspires to complete a graduate degree.

Professor Emeritus Nichol was a faculty member in the Department of Chemistry (now Chemistry and Biochemistry) from 1957-1992. He taught physical chemistry to many students, including Jim Swenson. Dr. Nichol's research program focused on the study of proteins and large electrolytes. A native of Alberta Canada, Dr. Nichol earned B.S. and M.S. degrees in Chemistry from the University of Alberta and a Ph.D. degree in Physical Chemistry at the University of Wisconsin Madison. In 1949, he started his academic career at Willamette University in Oregon prior to accepting a position at UMD.

Scientific Discovery

Our faculty continues to expand the boundaries of knowledge in both disciplinary and interdisciplinary areas resulting in a very successful and impressive year of publications, presentations, and grant awards. Our commitment to preparing the next generation of scientists, educators, and health care professionals for 21st century challenges is reflected, in part, by the growing number of undergraduate and graduate students working on research projects. In addition, the breadth of research in the department, the emergence of new collaborations, and the exciting applications that result from this research are indicators of a research-rich and highly productive department.

In 2012, chemistry research projects carried out by faculty and graduate and undergraduate students resulted in 52 articles published in refereed journals/proceedings, 34 papers presented at national/international meetings, 7 articles published in unrefereed journals/proceedings, 10 papers presented at regional meetings, 2 book chapters, and 3 published book and article reviews. In addition, faculty members were active in their research areas serving as reviewers of articles for major journals and federal funding agencies.

Successful faculty research proposals in 2012-13 resulted in new external funding totaling $952,000. Funding was provided by grants from the National Science Foundation, National Institute of Health, Mayo Clinic, U.S. Department of Transportation, and a number of industrial corporations. For the year a total of $986,000 of research expenses were funded by continuing grants and/or new grants. The three year total for all external research funds is $3.926 million.

Discovery Knows no Borders

Faculty members presented their research findings at several international conferences, received many invitations from scientists in other countries to present seminars, and maintained collaborations with colleagues all over the world.

Elizabeth Minor: Invited speaker at the SOLAS/IGAC workshop on marine gels and their impact on atmospheric aerosol and clouds. (Kiel, Germany)

Victor Nemykin: Co-Author on 3 presentations at the 7th International Conference on Porphyrins and Phthalocyanines. (Jeju Island, Korea)

Invited speaker at the Symposium on the Applications of Physical Methods to Coordination Chemistry in Honour of Barry Lever. (Calgary, Alberta Canada)

Invited speaker at Tohoku University and Institute for Materials Research (Sendai, Japan), Nihon University (Narashino-shi, Japan)

Donald Poe: Co-Author on 3 presentations at the 29th International Symposium on Chromatography. (Torun, Poland)

Viktor Zhdankin: Invited plenary speaker at U of Stockholm (Sweden), U of Pardubice (Czech Republic), Friedrich-Alexander-Universitat Erlangen-Nurnberg, (Germany)

Invited plenary speaker at the HALCHEM VI 6th International Meeting on Halogen Chemistry (Bangalore, India)

Postdoctoral Fellows and Visiting Scientists

This academic year, the Department is hosting many fine postdoctoral fellows and visiting scientists from around the world. In addition to furthering their education, they provide scientific expertise to their research labs and mentor our undergraduate and graduate students.

Visiting professors: **Rodion Belosludov** (Japan), **Yunling Gao** (China), **Mariia Larkina** (Russia), **Sree Rama Chandra Murthi Musti** (India), **ZhaoKuai Peng** (China), **Dr. Chenjie Zhu** (China), and **Dr. Mekhman Yusubov** (Russia)

Visiting research fellow: **Ewa Kasprzycka** (Poland)

Postdoctoral research associates: **Semen Dudkin** (Russia), **Eranda Maligaspe** (Sri Lanka) and **Akira Yoshimura** (Japan)

Research specialist: **Dmitrii Svitich** (Russia)

New Course and Program Development

As scientific discoveries and new teaching methods rapidly emerge, we are committed to developing new courses and programs to prepare our students for the challenges they will face. In May, our new BA-Biochemistry program was approved by the UM Board of Regents. This degree program is tailored to provide a balance between chemistry, biochemistry and biology, all with strong liberal arts components. Encouraged by the chemists on the SCSE External Advisory Board, we proposed a new polymer chemistry course to be offered next spring. In addition to advising graduate students in our M.S. Graduate Program, several faculty members in the department have graduate appointments in the M.S. and Ph.D. programs in Integrated Biosciences and Water Resource Sciences.

Enrollment in chemistry and biochemistry courses is at an all-time high. For example, the number of 2012-2013 UMD students enrolled in General Chemistry I was 972 and the number of students enrolled in Organic Chemistry I was 369. Interest in the chemical sciences as a fundamental science in solving both general and basic societal issues such as climate change, sustainability, safe supplies of food and water, health care, etc. is driving enrollment.

The number of departmental majors has increased significantly. Currently, the department has 435 undergraduate majors, 215 undergraduate minors, and 33 graduate majors at the M.S. level.

Response to 2011 External Review of the Department of Chemistry and Biochemistry

In our last issue of *Transitions*, we reported that at the end of 2011, three faculty members from other campuses visited our department to evaluate our programs. We are grateful for their comprehensive review. We would like to share some of the outcomes of our efforts to respond to their recommendations. First, we completed a departmental strategic plan which will guide our priorities and actions for the next five years. Secondly, we are developing a case for a new building to address (1) our need for more research and advanced teaching laboratories including laboratory support space and active learning classrooms, (2) a new initiative in materials science and engineering, and (3) an academic/industrial center. Third, we redesigned our graduate student orientation program in August 2012 and will continue to make improvements for this fall. Fourth, our proposals to add a new BA-Biochemistry and a Polymer Chemistry course were approved; these will expand program options for our students and provide coursework in an important area of chemistry. Finally, an ad hoc committee on mentoring was formed to identify ways to better support our faculty.

Vision Statement

The UMD Department of Chemistry and Biochemistry will continuously enhance the departmental reputation and visibility (both nationally and internationally) to ensure the highest recognition of and opportunities for our graduates, faculty, and staff. The 5-year department goals are:

1. Prepare our majors to develop, synthesize, and apply their knowledge base and skills to help solve local, national, and global problems.
2. Establish a center of excellence in graduate education that provides knowledge and skills that enable our students to be competitive for challenging careers.
3. Promote excellence in research, discovery, and training of our students.
4. Align and strengthen human and physical resources to support the departmental mission.
5. Promote a departmental culture that supports open communication, mutual respect, collaboration, ethical thinking, diversity, and civic engagement as foundations for excellence.

Mission Statement

The Department of Chemistry and Biochemistry is committed to providing scientific solutions that address societal needs in an increasingly complex, diverse, and dynamic world. This commitment is demonstrated in our support of the professional and personal development of our undergraduate and graduate students through rigorous courses that promote critical thinking, problem-solving strategies, and active learning in addition to opportunities to participate in research and scholarly activities. The department is similarly committed to the professional development and success of each faculty and staff member as we collectively strive to advance our strategic goals. We reaffirm our role in educating non-majors, engaging in creative community partnerships, and serving within the university and professional organizations.

Swenson College
OF SCIENCE AND ENGINEERING
Department of Chemistry
and Biochemistry

Thanks
for your
additional gift
of postage.

University of Minnesota Duluth
Dept. Chemistry & Biochemistry
246 Chemistry Building
1039 University Drive
Duluth, MN 55812-3025

Please use this envelope to send us news and updates for our next newsletter or email us at umdchem@d.umn.edu!

Enclosed is my/our gift to the UMD Department of Chemistry and Biochemistry
(Please make check payable to: University of Minnesota Foundation)

$____*James C. Nichol Scholarship Fund*

$____*Swenson Science Building Chemistry Excellence Fund*

$____*UMD Chemistry Development Fund*

$____*Other* _____

☐ My employer will match this gift. (Please enclose your company's matching gift form.)

Thank you!

Name: _____

Address: _____

City, State, Zip: _____

Phone: _____ Email: _____

Community Outreach

In January, UMD Chemistry and Biochemistry Instructor, Romesh Lakhan, visited Harbor City International School to assist with their "Great Experiments" class. It was a week-long intensive course where students recreated famous experiments in history. The students were guided through astronomer Edwin Hubble's "red-shift" experiment. To recreate Hubble's experiment students built their own spectrophotometers using pizza boxes, discarded DVD's, and duct tape. With the collected data, students calculated the expansion rate of the universe.

UMD Chemistry & Biochemistry Club

Despite their busy college schedules, several UMD students and faculty members, Romesh Lakhan and Ahmed Heikal, carve out time on Thursday evenings to delve into the world of chemistry.

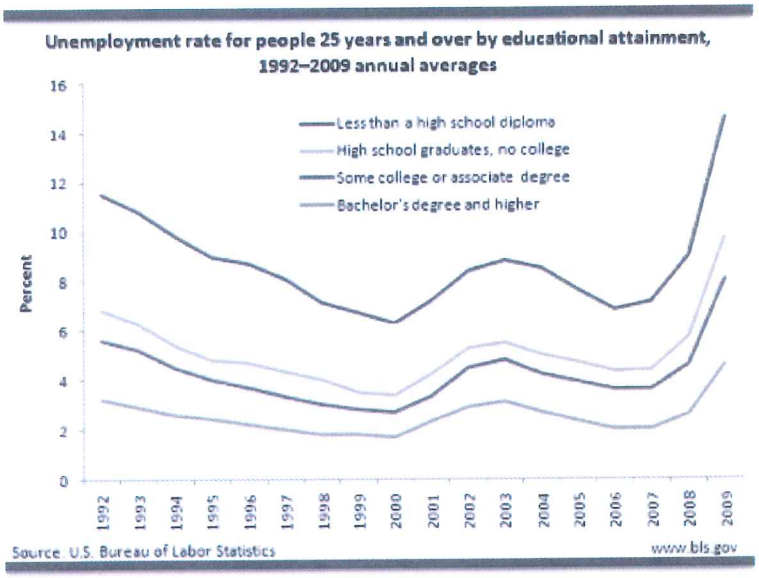
UMD's Chemistry and Biochemistry Club, fondly nicknamed the *Chem Club*, meets every other week and performs a variety of exciting demonstrations, ranging from simple Diet Coke and Mentos fountains to the Thermite Reaction. Besides providing an opportunity for students to broaden their knowledge of chemistry and provide a fun and supportive group of peers, the Chem Club also does community outreach activities to inspire interest in chemistry.

The Chem Club's most recent outreach activity was participating in Science Night at a local elementary school. The Chem Club put on a chemistry show for students followed by a treat of ice cream cooled with liquid nitrogen. Explosions of hydrogen-filled balloons and fountains of Diet Coke and Mentos mesmerized the children. For many of the experiments, kids from the audience were able to assist the club members. Smashing flowers frozen in liquid nitrogen was a highlight for many, in addition to any experiment that involved fire. The show went smoothly and safely, with the only hiccup being an over-sensitive fire alarm set off by the Fiery Gummi Bear Reaction (oxidation of sugar by potassium chlorate). Between the experiments, ice cream, and fire alarm, the night was definitely one to remember. More than 250 parents and kids alike had a great time and were certainly enlightened about all the great opportunities chemistry has to offer.

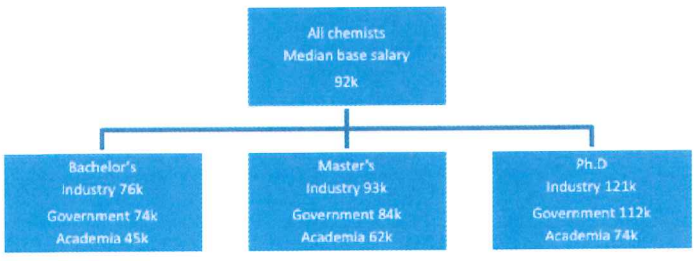
Summer Workshop - BG

Why Pursue a Degree in Chemistry or Biochemistry?

Attending college can place financial demands on students and their families. Perhaps you are wondering if the benefit of obtaining a college degree, specifically one in chemistry or biochemistry, outweighs the cost.
The Department of Labor's Bureau of Labor Statistics (http://www.bls.org) contains extensive data comparing how the unemployment rate varies with level of education:



Of course, a lower unemployment rate for college graduates does not tell the whole story. Will the salary you earn after obtaining your degree be enough to justify the tuition cost? Salary data comes from the September 2012 issue of *Chemical & Engineering News* published by the American Chemical Society. The data from over 7,000 salary and employment surveys are compiled below:



The data indicate that obtaining a college degree, and specifically a degree in chemistry or biochemistry, is indeed a sound long-term financial decision.

Student Spotlight: Justine & Stephanie Schramel

Justine and Stephanie Schramel, twin UMD Juniors from Cold Spring, Minnesota, along with the UMD Dance Team, have taken the first National Championship title for the Division II National Dance Alliance in April 2013, with the highest Division II score ever, a 9.452! This captain-run dance team fundraises over $20,000 a year for flights, hotels, competitions, costumes and choreographers, and practices about 12 hours a week.

Both students are double majors in the Chemistry and Biochemistry Department; Justine in BMB & Biology and Stephanie in BMB & Chemistry. Both Justine and Stephanie are members of not only the Department of Chemistry & Biochemistry Honors Program but the University Honors Program as well. Their dedication to dance since the age of 3 has earned both of them the title of Junior Captains for next year, and the victory this year against 10 other teams across the country. **Congratulations!**

Honors Program

The departmental Honors Program provides an opportunity for outstanding Chemistry or BMB majors (3.25 or greater GPA) to enhance their ability to function as independent and competent research scientists. After a formal application and admission process, the students are guided towards choosing a mentor and beginning an undergraduate research program consisting of at least two semesters (or the equivalent). Currently, the program has about 13 members from each of the sophomore, junior and senior classes. The average GPA for the current honors students is 3.7.

The results of their research are presented during the Casmir Illenda Undergraduate Research Program at the annual spring semester Senior Symposium. Members of the Honors Program also participate in a spring luncheon where new members are introduced. Departmental honors graduates are recognized on their final grade transcripts with the notation "Department Honors". Several members of our Program also actively participate in the all-campus "University Honors Program".

The academic achievement and leadership skills of this group of students have made them excellent representatives of the best our program offers.

https://www.facebook.com/UmdDepartmentOfChemistryAndBiochemistry

Find us on: facebook

Undergraduate Research Program

For more than sixty years, the Department of Chemistry and Biochemistry has been a recognized leader in delivering a strong program in undergraduate research. The impact of this program on the educational achievement of our students closely aligns with the UMD Strategic Plan: reinforce and enhance classroom learning, increase and improve experimental, analytical, and quantitative skills, engage students in the discovery of new knowledge and methods, develop collaborative and team building skills, and strengthen oral and written communication skills. We know that many of you participated in undergraduate research when you were a student at UMD and that what you learned as an undergraduate researcher were transferrable skills that have contributed to your professional lives and promoted lifelong learning.

The **UMD Undergraduate Research Opportunities Program (UROP)**, for example, offers competitive financial awards twice a year for undergraduate students to carry out research or participate in scholarly or creative projects in partnership with a faculty mentor. In 2012, 37 undergraduate students from our department were granted UROP awards. Because dissemination of their research is a vital element of discovery, students frequently present at regional and national conferences and/or the UMD spring Undergraduate Research and Artistry Showcase.

Our department offers a **Summer Undergraduate Research Program (SURP)**, which enables our undergraduates to conduct full-time research each summer while being engaged in social and developmental activities. SURP students are supported by the Swenson Family Foundation (SFF) Summer Research awards, UROP awards, and faculty research grants.

In the summer of 2012, for example, 19 full-time SURP students (*pictured*) were supported by these awards. They presented their research findings in the SURP Poster Symposium (August 10, 2012), which was attended by faculty, students, and UMD administrators. Dignitaries such as Mayor Don Ness of Duluth and State Senators from each student's home region were also invited to attend the symposium. External interdisciplinary reviewers judged the poster presentations in order to select the top 3 Outstanding Poster Presentation Awards. Each SURP student also earns a Merit Award for successfully completing the program.

In addition to the SURP and UROP programs, our undergraduates may register for research credits (Chem 3194: Undergraduate Research) during the year. At the end of each semester, the students complete a research paper summarizing their findings.

Graduating Seniors: 2012 - 2013

2012 - 2013

Lydia Allen, BS-BMB
Janae Anderson, BS-BMB
Tyler Atkinson, BS-BMB
Peter Bather, BS-BMB/BA-Chem/BS-Biol
Christina Bogart, BA-Chem
Erik Carlson, BS-BMB *

Magna Cum Laude

Fletcher Christiansen, BA-Chem
Ben Delebo, BS-BMB
Marcus Elliott, BS-Chem
Kelsey Erickson, BS-Chem
Travis Fransen, BS-Chem
Cody Hattenberger, BS-BMB
Shawn Helmueller, BS-BMB/BS-Chem
Alia Herbst, BS-BMB/BS-Cell & Molecular Biol
Dylan Ice, BS-BMB
Taylor Jacobson, BA-Chem
Jordan Klussendorf, BS-BMB/BA-Chem
Kelsey Kraczek, BS-BMB/BS-Biol
David Kringen, BS-BMB
Cassandra Langrehr, BS-BMB
Houa Lee, BS-BMB
Komemba Lohese, BA-Chem
Zachary Lundstrom, BS-BMB/BS-Chem
Ryan Lusk, BS-BMB
Nathan Mekonnen, BS-Chem
Christine Meyer, BS-BMB
Marissa Mongoven, BS-BMB
Jamie Nosbisch, BS-BMB
Ivanna Oribamise, BS-BMB
Sheewin Pananookooln, BS-BMB
Hanna Pasell, BS-BMB
Sarah Pedersen, BS-BMB/BA-Chem
Dana Roach, BS-BMB

Cum Laude

Jared Sabin, BS-Chem *
Stephanie Santarriaga, BS-BMB
Briar Schnuckel, BS-BMB
Emily Schuster, BS-BMB
Aaron Skoglund, BS-BMB *
Jacob Stanley, BS-BMB
Amy Stein, BS-BMB
Robert Stickel, BS-BMB/BS-Chem
Caleb Stokka, BS-BMB
Kelly Tauer, BS-Chem
Hannah Tauscher, BS-Chem
Elaine Terry, BS-BMB

Cum Laude

Randi Timerman, BS-BMB/BA Hispanic Studies
Anthony Todora, BS-Chem
Danielle Truax, BS-Chem
Dustin Vang, BS-BMB
Amy VanHecke, BS-BMB/BS-Cell & Molecular Biol
Xuan Wang, BS-BMB
Anthony Wertish, BS-Chem
Robert Wicklander, BS-Chem
Ahren Wippermann, BS-BMB/BA-Chem

**** With Distinction (Departmental Honors)***

Post Graduation Plans:

Attending Graduate School = 10
Attending Professional School = 23
Seeking/Secured Employment = 13
Undecided = 8

Masters of Science in Chemistry Program Graduates: 2012 - 2013

The Master of Science in Chemistry degree program at UMD provides an excellent opportunity to acquire and develop technical expertise and problem-solving skills expected of today's chemical and biochemical professional. Coursework is designed to provide a firm fundamental basis for students going into a variety of chemical specialties in both professional and academic settings. Following is a list of students who have completed their Master's degree over the past year:

2012 - 2013	Post-graduation Plans
Logan Bodnia	Seeking employment in a laboratory setting with Analytical focus
Richard Dennison	Exploring opportunities
Shirisha Gurrapu	University of Minnesota Duluth, Integrated Biosciences Ph.D. Program
Nicole Heinks	
Sravan Jonnalagadda	University of Minnesota Duluth, Integrated Biosciences Ph.D. Program
Andrey Maskaev	Dartmouth College, Chemistry Ph.D. Program
Kyle Middleton	Applied for employment at 3M and H.B. Fuller
Grady Nelson	University of Minnesota Duluth, Integrated Biosciences Ph.D. Program
Anatolii Purchel	University of Minnesota-Twin Cities, Chemistry Ph.D. Program
Anne Rice	
Jacob Strange	Seeking Employment
Casey Van Stappen	University of Michigan-Ann Arbor, Chemistry Ph.D. Program
Robb Welty	Washington University of St. Louis, Computational and Molecular Biophysics Ph.D. Program

Student Awards

Our department is fortunate to be able to recognize our outstanding and deserving students. Former students, faculty and friends of the department established some of these awards; others are from organizations in the field. Award details can be viewed at http://www.d.umn.edu/chem/undergrad/awards.html and http://www.d.umn.edu/chem/grad/awards.html

UNDERGRADUATE AWARDS:

Swenson Family Foundation Scholarships for Academic Excellence
2012/13: Nicholas Dalton, Sarah Finstad, Samuel Headlee, Trevor Hilk, Austin Koepp, Katelyn Koval, Dillon Lundstrom, Meghan Wicklund

Achievement in Organic Chemistry (ACS) Award
2012/13: Joan Madison

Achievement in Inorganic Chemistry (ACS) Award
2012/13: Briar Schnuckel

HyperCube Scholar Award
2012/13: Paul Yager

Peterson Memorial Scholarship
2012/13: Chad Reuter

Lake Superior Section of ACS Outstanding Senior
2012/13: Janae Anderson, Zachary Lundstrom

The American Institute of Chemists Outstanding Senior
2012/13: Sarah Pedersen

F. B. Moore Academic and Leadership Award
2012/13: Shawn Helmueller

CRC Freshman Award for Excellence in General Chemistry
2012/13: Hillary Heiling, Alex Lawrence, Caitlin Pedersen, Kathryn Peterson

James H. Maguire Scholarship
2012/13: Tong Ding, Madeline McDonald, Kelsey Melgaard, Justine Schramel

Undergraduate Analytical Chemistry Award
2012/13: Stephanie Greengo

Robert Bayer Memorial Scholarship
2012/13: Abdulkadir Ali

Norm and Joan Gill Scholarship
2012/13: Kayla Wiltrout

Larry C. Thompson Inorganic Chemistry Award
2012/13: Erik Carlson

James C. Nichol Scholarship
2012/13: Logan Pirkl

Casmir Ilenda Award for Outstanding Undergraduate Research
2012/13: Christine Meyer, Jamie Nosbisch, Jared Sabin, Anthony Wertish

Dr. Nathan and Elaine Ballou Scholarship
2012/13: Matthew LeBlanc, Jonathan Opacich, Katelyn Schneider

Departmental Honors
2012/13: Janae Anderson, Erik Carlson, Travis Fransen, Kelsey Kraczek, Zachary Lundstrom, Ryan Lusk, Christine Meyer, Jamie Nosbisch, Jared Sabin, Aaron Skoglund, Robert Stickel, Randi Timerman, Xuan Wang

Departmental Outstanding Service Award
2012/13: Kelsey Kraczek, Sarah Pedersen, Elaine Terry, Emmalee Toldo

Chemistry and Biochemistry Outstanding Undergraduate Teaching Assistant
2012/13: Emalee Barkley, Jonathan Fuchs, Christine Hedstrom, Anthony Wertish

Student Awards, continued

GRADUATE AWARDS:

John C. Cothran Memorial Fellowship
2012/13: Evan Anderson, Grady Nelson, Anatolii Purchel, Casey Van Stappen

Moses Passer Graduate Fellowship
2012/13: Steven Koski, Garrett Stoddard

UMD Siders Chemistry Graduate Fellowship
2012/13: Nathan Erickson

SCSE Outstanding Graduate Teaching Assistant
2012/13: Shirisha Gurrapu, Anatolii Purchel, Anne Rice

Chemistry and Biochemistry Outstanding Graduate Teaching Assistant
2012/13: Amrita Oak

CAMPUS AWARDS:

University Honors
2012/13: Janae Anderson, Jamie Nosbisch, Sarah Pedersen, Amy Stein, Randi Timerman

William Maupins Memorial Scholarship
2012/13: Benedicth Ukhueduan

Harry Oden Scholarship
2012/13: Urji Yusuf

Darland All-American Scholarship
2012/13: Kayla Wiltrout

2012-2013 Award Recipients

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and Biochemistry