



## A Message from the Head



Dr. David Palmer  
Head of Department

**Why a newsletter?** This is (to my knowledge) a first for our department, and long overdue. There is so much going on in our department year after year, it should be celebrated publicly, and not just in a 140-character tweet. This newsletter can't capture every moment of the past year, but should give anyone an idea of the kind of department we have built. I hope this snapshot of Chemistry in 2014-15 holds interest for all of our extended chemical family; everyone from prospective students, to current department members, to retirees and alumni from the days when Thorvaldson and Spinks were professors, not buildings.

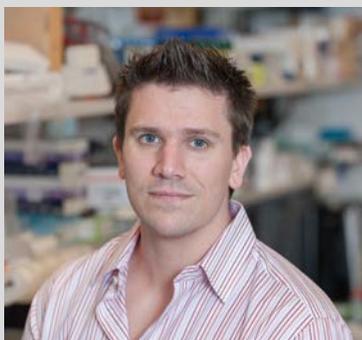
If you have read any of the pages on our website on the history of the department you will know that Chemistry has been one of the strengths of the University of Saskatchewan from its earliest days. We are carrying on that tradition, as we have gone through two reviews of programs in the past two years and been assessed as providing an outstanding learning and research environment for faculty, trainees and students. The TransformUs prioritization process, though controversial, correctly pointed to Chemistry as having one of the top sets of programs on campus. This year's Graduate Program Review also found our department to be a thriving research and training enterprise. As a result, we have won the right to expand our faculty and staff complements for the first time in many years. The accreditation of our programs has been renewed by the Canadian Society for Chemistry for another five years. This is made possible by a tremendous amount of effort, from all members of the department, students, faculty and (award winning!) staff.

If you have not looked in on the department lately, you will find the buildings haven't changed much, but the discipline of chemistry has certainly evolved. Photovoltaics is one of the hottest areas of chemistry right now, and we have built a thriving cluster of researchers in this area, including both our youngest and youngest-at-heart faculty members, Tim Kelly and Ron Steer. Our University has made a multi-million dollar investment this year in a cyclotron (not to be confused with the synchrotron!), which will produce short-lived isotopes for research applications from plant sciences to medicine. As you might expect, chemistry will be at the forefront of this initiative, with new faculty in nuclear chemistry set to arrive next year.

If I reflect on what moments from this year will stay with me, I think Ronda Duke receiving her Distinguished Staff Award may top the list. The 30 cm of snow that fell during my final exam on April 25 does not qualify as a favourite moment, but it will definitely be memorable. My team's "victory" at the J. M. Pepper golf tournament remains inexplicable. Whatever moments you retain from your time with us, I hope they serve you in a life of discovery, creativity, and good chemistry.

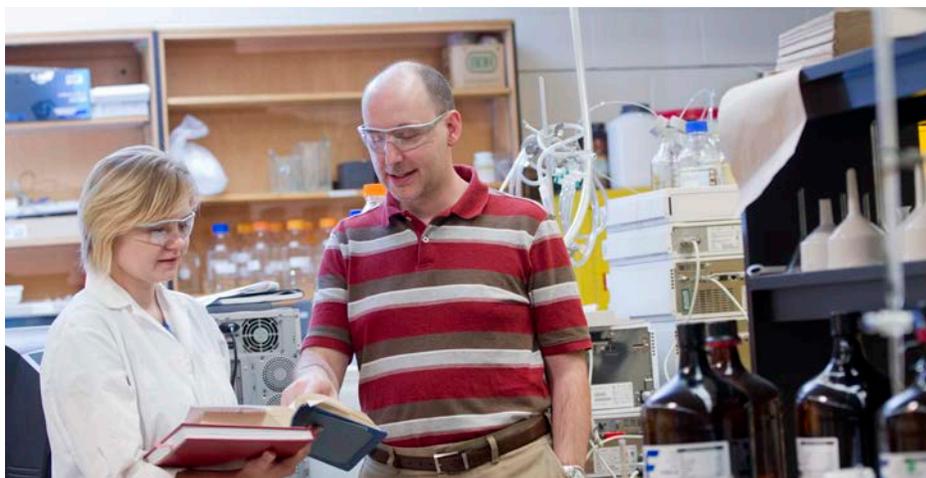
## New Faculty Member

We are pleased to announce that **Dr. Eric Price** will be joining the Department of Chemistry as an Assistant Professor beginning July 1, 2016. Dr. Price received his B.Sc. from the University of Victoria and went on to complete his Ph.D. at UBC. He has since been working as a Postdoctoral Research Fellow at the Memorial Sloan Kettering Cancer Center in New York.



Dr. Price will occupy a Tier 2 Canada Research Chair in nuclear chemistry. His research will utilize the U of S's newest state-of-the-art facility, a 24 MeV cyclotron and radioisotope production facility, which is operated by the Sylvia Fedoruk Canadian Centre for Nuclear Innovation.

Eric's research program will build on his experience in synthesis and fundamental chemistry, as well as the clinical translation of radiometal-based radiopharmaceuticals, primarily in application of positron emission tomography (PET) imaging of cancer. He has published extensively on the development of novel chelators and their applications in targeted delivery of positron-emitting isotopes of Copper, Gallium, Indium, Scandium, Yttrium, and Zirconium. He will be developing both radioactive and fluorescent probes for the detection and therapy of diseases.



## Faculty News

Our department continues to be a robust research environment, with a diverse set of ongoing programs in every area of chemistry. The members of our department support their research programs through provincial, national, and international research competitions, and the competition is fierce. This year the NSERC Discovery program, the primary funding body for research in the natural sciences in Canada, rewarded **Drs. Foley, Grosvenor, Scott and Urquhart** with new five-year research grants, raising the total number of Discovery grants in the department to fifteen.

**Dr. Palmer** was awarded a Saskatchewan Health Research Foundation Collaborative Innovation Development grant for work with **Dr. Sanders** on enzyme inhibitors as lead compounds for antibiotic development. **Dr. Wilson** was awarded a Grand Challenges Canada grant, and a grant from the Agricultural Development Fund, for his work applying materials science to the removal of contaminants from water.

**Dr. Foley** was also awarded an NSERC Idea to Innovation (I2I) grant,



the first such grant ever in our department. Dr. Foley is developing novel methods for gold extraction from ore. The goal of this research is to reduce or eliminate the use of cyanide from the mining industry. Every kilo of gold produced requires nearly a half kilo (!) of NaCN, and Dr. Foley's research has the potential to greatly reduce the environmental risks associated with the use of so much toxic material.



**Faculty Milestones:** **Dr. Burgess** and **Dr. Scott** have now been with the department for ten years. **Dr. Ward** and **Dr. Majewski** have completed 30 years in the department.

## Science Rendezvous is a Real Blast!

Staff and Graduate students from the Department of Chemistry volunteered along with Let's Talk Science to put on informative, colourful and explosive displays on May 9<sup>th</sup>, 2015, in an event free to the Saskatoon public. Science Rendezvous is a national festival held in over 30 cities across the country providing everyone the chance to learn about science and try hands-on activities. This was the 3<sup>rd</sup> annual Science Rendezvous held at the University of Saskatchewan.

The Thorvaldson building and Agriculture buildings were the hubs of activity starting with the Chemistry Magic Show (fire and explosions necessary, of course). There were demonstrations of ferrofluids and hydrophobic sand, and hands-on activities like freezing flowers in liquid nitrogen, vermi-composting and making slime to provide just a few examples. Families were invited to take a tour of the Canadian Light Source,



and those that toured the UofS Dairy barn witnessed a calf born that day! The most popular activity was the preparation of ice cream by liquid nitrogen. Children, their parents and the graduate student volunteers all chose this as their favourite event of the day- however the vote for the best flavour is still up in the air.

Very dedicated graduate student volunteers and staff helped put together all of the demonstrations and helped out all day as almost 200 visitors toured the exhibits. We hope to offer the event again next year and hope to see even more new faces next May!

## Faculty Promotions

On March 24 the U of S Board of Governors approved promotions to full professor for **Drs. Matthew Paige** and **Richard Bowles**. Their promotions come into effect on July 1, 2015.



## More Department News

**Ronda Duke** was recently awarded the 2015 Dean's Distinguished Staff Award from the College of Arts and Science. Ronda has worked in the Department of Chemistry since 1979, and we are pleased that her years of dedicated service to students, staff and faculty have been formally recognized.



We wish all the best to two couples who were recently married! **Pouyan Haghshenas** (current Ph.D. student, Gravel Group) and **Azam Sadeghi** (former Ph.D. student, Ward Group), were married in Saskatoon on April 25, 2015.

Nick Randell (current Ph.D. student, Kelly Group) and April Woods (current M.Sc. student, Burgess Group) were married on June 27, 2015, in St. John's, Newfoundland.



U of S Chemistry graduate (2009), **Mita Dasog**, was recently awarded



the CCUCC Chemistry Doctoral Award, which is presented to recognize outstanding achievement and potential in research by a graduate student whose PhD thesis in chemistry was formally accepted by a Canadian university in the 12-month period preceding the September 15 nomination deadline. Mita completed her thesis with Jonathan Veinot at the University of Alberta, and is currently a postdoctoral fellow at the California Institute of Technology.

This past year has also been a year of loss and sadness for the Department, as two previous staff members passed away. **Brenda Duncalfe** (June 18, 1957 – August 8, 2014) worked in the Department of Chemistry in the main office and ended her career at the University as the Department Head's secretary. **John Fisher** (September 23, 1938 – February 21, 2015) worked in the electronics shop in our Department for 38 years.



## 2015 Graduate Student Symposium

On May 29, 2015, the first Department of Chemistry Graduate Student Symposium, *Science and Communication*, was held. Dr. Joe Schwarcz from McGill University gave the keynote lecture, which was followed by 16 oral presentations given by graduate students and post docs. The day continued with a poster session where 21 students and post docs were able to showcase their work and ended with an awards ceremony.

This symposium was organized by a committee comprised of chemistry graduate students Naheda Sahtout, Kelly Summers and Josseline Ramos-Figueroa and was well attended. We're looking forward to similar events in the future!



## J.M. Pepper Golf Tournament and Barbeque

Every summer, the Department of Chemistry at the U of S hosts the J.M. Pepper, an annual golf tournament and barbeque that brings together members and friends of the Department in an informal and fun setting. The golf tournament is a fun and relaxing tournament, played in a Texas Scramble format, suited to all skill levels.

The origins of the J.M. Pepper are vague; however, as it has been told, Dr. Pepper (unrelated to the soft drink) began a casual golf outing with a very small group of colleagues, sometime in the mid-late 60's. Dr. Pepper was a noted chemist and professor at the U of S and was the department head from 1970-1976. He was also an avid golfer. As this outing grew, Dr. Pepper organized it into an annual departmental golf game, complete with a post-game barbeque at his home, where everyone had a great time. After Pepper's retirement, various people took over organizing it, where eventually it fell into the hands of Dale Ward who spear-headed the event, while Ron and Sheilagh Steer hosted the barbeque. It was eventually named the J.M. Pepper in honour of Dr. Pepper, and turned into a full departmental tournament that continued annually until 2010. After a brief three year hiatus, the J.M. Pepper was revived, with Natasha Vetter organizing the tournament and Jens Mueller and Pia Wennek hosting the barbeque. The original trophy was lost several years ago and a second trophy was designed to reflect J.M. Pepper. Continued interest and immense enthusiasm from all members of the department continue to fuel this long lasting tradition.



## 2015 Taube Medal

The Taube Medal is an annual award given to the graduate student in the Department of Chemistry who is judged to have made the most significant overall contribution to research and scholarly activity. The Taube Medal was first awarded in 1986 and its recipients have gone on to be professors, university laboratory managers, research scientists, and even a university president. The 2015 Taube Medal was awarded to Mahdi Zaeifi Yamchi, who recently completed his Ph.D. degree under the supervision of Dr. Richard Bowles.



The goal of Mahdi's thesis, "The Packing Landscapes of Quasi-One Dimensional Hard Sphere Systems", was to develop and study the dynamics and thermodynamics of glasses and how they relate to the way the particles pack together to form mechanically stable jammed packings.

The external examiner for Mahdi's defence judged the thesis to be "an outstanding contribution to knowledge, demonstrating a great deal of originality and creativity". He also described the thesis to be "of the highest quality, and is a valuable contribution to the continuing effort to obtain a fundamental understanding of the states of matter". Mahdi is currently working as a post-doctoral associate at the Institute for Research in Fundamental Sciences in Tehran, Iran.

### 2014/15 Award Recipients

Congratulations to the following members of the Chemistry Department who were recipients of awards or scholarships this past year:

**Abhinandan Banerjee, Atal Shivhare and Yali Yao** (*Ph.D. Students – Scott Group*) were awarded Kokes Travel Awards to attend the North American Meeting of the Catalysis Society.

**Christa Blaquiére** (*M.Sc. Student – Gravel Group*) was awarded an NSERC Master's Scholarship.

**Philip Boutin** (*Ph.D. Student – Kelly Group*) was awarded an NSERC CGSD3 Scholarship.

**Anindya Ganguly** won the RSC Journal of Materials Chemistry C graduate student poster award for the Materials Science division at the 2015 CSC.

**Steven Langdon** (*Ph.D. Student – Gravel Group*) was awarded an NSERC PGSD3 Scholarship.

**Theerawat Prasertanan** (*Ph.D Student, Palmer Group*) was awarded 2<sup>nd</sup> prize in the poster competition at the 2<sup>nd</sup> Annual Protein Structure, Function and Malfunction Meeting. Theerawat has also been awarded a PRISM scholarship, which he will take up in September 2015.

**Nick Randell** won the C & E News July 2014 photo contest for his solar dyes photo.

**Joseph Smith** (*Undergraduate Student, Palmer Group*) received the Outstanding Undergraduate Poster Presentation award at the Western Canadian Medicinal Chemistry Workshop.

**Dr. Jinli Yang** (*Postdoctoral Fellow – Kelly Group*) was awarded a poster award for the Materials Science Div. at the CLS Annual Users' Meeting.

**Natasha Vetter** (*M.Sc., Palmer Group*) received the Outstanding Poster Presentation award at the Western Canadian Medicinal Chemistry Workshop. Natasha was also awarded a 2015/16 Dean's Scholarship.

Three of our incoming students: **Dylan McGill, Michael Danquah, and Mehran Rezazadeh Khalkhali** have all been awarded Dean's Scholarships and will be starting their graduate programs in September 2015. Another incoming student, **Erick Lins**, has been awarded a 2015 Saskatchewan Innovation & Opportunity Scholarship.

## Recent Graduates

### Fall 2014

#### Bachelor of Science Honours

Cao, Levy  
Wang, Xiomeng

#### Master of Science

Boutin, Philip  
Oberhofer, Amanda  
Tiwari, Siddharth  
Wang, Jing  
Younus, Shaguftah

#### Doctor of Philosophy

Wu, Shih-Chang

### Spring 2015

#### 3-Year Bachelor of Science

Bodnarik, Tanner

### Spring 2015 - Continued

#### 4-Year Bachelor of Science

Akunor, Eugene  
Comahig, Cheryl  
Edwards, Andrea  
Morhart, Amy

#### Bachelor of Science Honours

Dessert, Braeden  
Fransishyn, Kyle  
Mueller, Eric

#### Master of Science

Lai, Leon  
Martell, Jonathon  
Xue, Chen

#### Doctor of Philosophy

Karoyo, Abdalla  
Sadeh, Saeid  
Younesi Araghi, Hessamaddin  
Zaeifi Yamchi, Mahdi

## The Samuel and Ethel Brown Memorial Fund for Chemistry

Weldon G. Brown was born in Saskatoon in 1908 and was precocious enough to complete his bachelor's degree in chemistry in 1927 and a master's degree 1928. He enjoyed a remarkable time here, editing *The Sheaf*, playing Huskies football for two years, and publishing several peer-reviewed articles with his mentor, Thorbergur Thorvaldson.



After a PhD at the University of California and postdoctoral experience in Europe and America, Dr. Brown enjoyed a long career in the Department of Chemistry at the University of Chicago, where he became known for the invention of paper chromatography (*Nature*, 1939, 143, 377-378) and pioneering work on lithium aluminum hydride reductions (*Organic Reactions*, volume 6, 1951). He also gained some notoriety in his department for climbing a ladder into the burning chemistry building after an explosion and rescuing two colleagues who were too badly burned to climb down themselves. In his later career, he studied chemical reactions in the presence of radiation produced by Cobalt-60, an isotope that also has an important place in the history of the University of Saskatchewan. Dr. Brown passed away in 1989.

Dr. Brown thanked his home department by establishing the Samuel and Ethel Brown Memorial Fund in honour of his parents. The fund is used to support special projects in the Department of Chemistry.

We are pleased to announce how this fund has been used recently to maximize the learning experiences of the students in our Department. In 2014/15, \$5700 was used to support 19 graduate students to attend conferences, including the 97th Canadian Chemistry Conference and Exhibition, the 53rd Annual Meeting of the Phytochemical Society of North America and the Pacific Nuclear Basin Conferences. In addition to funding conference trips, we were also able to use \$11800 from the Brown Fund to purchase a cutting edge software program for molecular modeling of compounds and reactions, to be used in teaching and research. The program, called Spartan, uses theoretical principles such as quantum mechanics to predict molecular structure and the energies of reaction pathways (that is, bond-breaking and bond-forming steps). This is used alongside experiments to predict new chemistry and to rationalize observed results to improve our understanding of chemical processes.

### Staying Connected

We have started maintaining a departmental Facebook page where alumni and current students can go to keep up with what's happening in our Department! As something that may interest our alumni, we have also started posting any chemistry job opportunities that are sent to the Department. <https://www.facebook.com/USaskChemistry>

We're always interested in knowing what our alumni are up to! Please send updates to [chem.dept@usask.ca](mailto:chem.dept@usask.ca).

Make sure we have your current contact information to receive your college magazine or newsletter, the *Green & White* alumni magazine, event invitations, and information on special University of Saskatchewan alumni programs and offers. [http://alumni.usask.ca/connect/update\\_information/](http://alumni.usask.ca/connect/update_information/)

