COMPLIMENTARY ISSUE

Q-CHeM CHRONICLES

Queen's UNIVERSITY

AUGUST 2009

Excellence in Green Chemical Research

Photograph by: John Fairweather

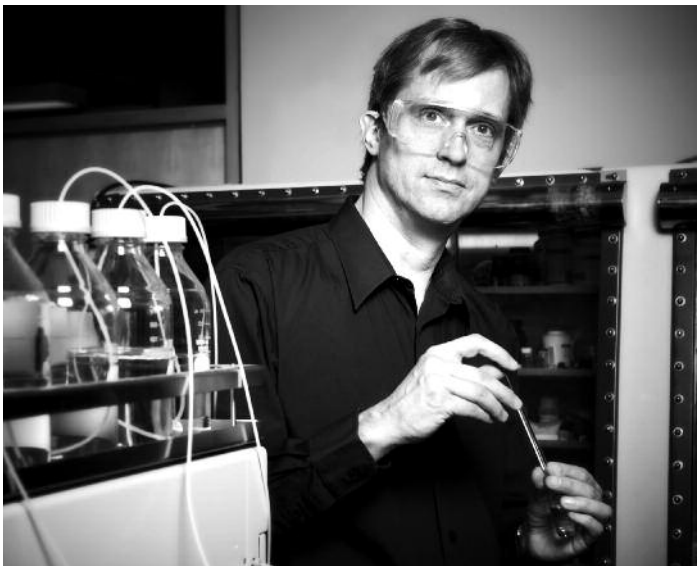
Philip Jessop is the 2009 recipient of the prestigious NSERC John C. Polanyi Award for his ground-breaking work on switchable solvents and surfactants. The Polanyi Award is given annually to an individual or a team whose research, conducted in Canada, has led to a recent outstanding advance in an NSERC-supported field of the natural sciences or engineering.

Q-CHeM CHRONICLES

Queen's UNIVERSITY

AUGUST 2009

Queen's Chemistry Goes Green



Green chemistry is alive and well at Queen's! Through undergraduate teaching, graduate teaching, research, commercialization activities, and external recognition, we've done very well in 2008-9. Graduate and undergraduate courses in Green Chemistry were offered for the first time in early 2009, with excellent enrolment in both courses. Students worked in groups over 6 weeks to carefully analyze many routes to an assigned organic chemical product, determining which of the routes would have the least environmental impact. At the end of the term, each group presented their analysis to the class, including lessons learned about how to (and how not to) design a green synthesis. Another sign of the emergence of green chemistry as an area of strength at Queen's is the creation of GreenCentre Canada, a new centre of excellence for commercialization and research funded by Industry Canada (see page 5).

The 'greening' of Queen's Chemistry is being led by Prof. Philip Jessop, Canada Research Chair in Green Chemistry. Research in the Jessop group has been very productive in the past year, with many new concepts being proven for the first time; PARTEQ is scrambling to keep up with the large number of invention disclosures going their way. Publications will ensue after the technologies are protected. As a recognition of his seminal discovery of switchable solvents and switchable surfactants, Prof. Jessop was awarded the prestigious NSERC John C. Polanyi Award in January, 2009. The award money will support 3 graduate students for 4 years, including supplies. His switchable surfactants were named in *Canadian Chemical News* as one of the top 20 chemical discoveries in Canada of the past 100 years. New Technology magazine named Dr. Jessop a "top innovator" in their annual issue on innovation in April 2009. Prof. Jessop went to England in 2008 at the request of the *Financial Times* to be the opening speaker at a forum on the Future of Energy. He also served on the advisory panel for the Ministry of the Environment, Ontario, for the development of the new Toxics Reduction Act, which was introduced to the legislature at Queen's Park in April and passed into law in June, 2009. Additionally, he's a volume editor for the 12-volume *Handbook of Green Chemistry* being published by VCH-Wiley in 2009.

The students in the Jessop group are also receiving significant recognition, with Vanessa Little being nominated for the Vanier Scholarship and other students obtaining CGS, OGS, McLaughlin, Neish, Hershey and Ministry of Research and Innnovation Fellowships. Christine Muchemu, an undergrad student in the group, won the Sullivan prize for the best 4th year project in Engineering Chemistry (see page 4). Andrew Carrier won the Best Student Oral Presentation award at the Discovery '09 conference in Toronto. Students, like most of the public, care deeply about the environment. We're working hard to make Queen's the place to go to for an education in Green Chemistry.

Photo by John Fairweather

At the Polyani Award Presentation Ceremony in Ottawa last January.
Back row (l to r) Lam Phan, Chen Liang, Vanessa Little, Darrell Dean, Trisha Ang, Alaina Boyd, Jitendra Harjani. Front row (l to r) Bob Lemieux and Philip Jessop

2008-2009 DEPARTMENTAL HIGHLIGHTS

May 2008

Bill Newstead receives the Applied Science First Year Teaching Award for the Winter 2008 term.

July 2008

Gang Wu is promoted to the rank of Professor.

Igor Kozin, Henryka Slebocka-Tilk and Bill Newstead are promoted to the rank of Associate Adjunct Professor.

August 2008

A departmental bowling event is held on August 20th.

September 2008

A paper by Derek Pratt published in the *Journal of the American Chemical Society* providing an alternative explanation to previous claims suggesting that ozone is produced in the body is highlighted in *Chemical and Engineering News*.

October 2008

A paper by Cathleen Crudden, Bob Lemieux and Nick Mosey published in the Journal of the *American Chemical Society* describing the first example of chirality transfer in mesoporous organosilicates is highlighted in *Nature Chemistry*.

November 2008

The Queen's Chemistry Innovation Council Annual Meeting is held on November 7. The QCIC Welcoming Dinner features Mr. David Mitchell, Vice-Principal (Advancement), as guest speaker.

Zachary Hudson (Wang group) wins one of the three best oral presentation awards at the 41st Inorganic Discussion Weekend Conference at Brock University.

December 2008

Jen Powell joins the department as Receptionist in the General Office.

Barb Armstrong receives the 2008 Staff Appreciation Award at the annual Departmental Potluck.

January 2009

Philip Jessop receives the prestigious NSERC John C. Polany Award at a ceremony in Ottawa.

February 2009

Industry Canada announces $9.1 million in federal funding to establish a national Centre of Excellence in Green Chemistry Commercialization in Kingston (GreenCentre Canada).

Philip Jessop is appointed Technical Director of GreenCentre Canada.

Ralph Whitney and Scott Parent receive $449,400 through the Ontario Centre of Excellence for Materials and Manufacturing to continue their collaborative research program with LANXESS Global Butyl Rubber R&D.

A paper by Gang Wu published in the *Journal of the American Chemical Society* elucidating the structure of the 5'-guanosine monophosphate quartet (G-quartet) is highlighted in *Chemical and Engineering News*.

Gregory Jerkiewicz and his German collaborator, Aris Dreismann, receive $498,474 from the Canada Foundation for Innovation and the Ontario Ministry of Research and Innovation for a project entitled "Infrastructure for the Search of Quantum Entanglement in Electrochemical Processes Involving Hydrogen."

Message from the Head

BY BOB LEMIEUX

Last year, my message focused on the theme of embracing change, and how the infusion of new administrative blood, and the continued success of our faculty and students gave me confidence that Queen's Chemistry was heading in the right direction and that the future looked very promising. A year later, I remain confident about our future as a department, although the financial landscape is now much rockier, and embracing the changes that lie ahead may be easier said than done as we move forward as an institution. Over the past year, the Queen's community has had to come to grips with serious financial challenges that forced all levels of administration to rethink how we do business, i.e., how can we deliver our academic programs more cost effectively and generate more revenue while maintaining the outstanding quality of education that is the hallmark of the Queen's experience ? Despite all the financial concerns, I believe that Queen's Chemistry is in a strong position to deal with the current budgetary reality by thinking outside the box and finding opportunities that would not necessarily have presented themselves in normal times.

It has become obvious to all involved that balancing the budget through budget cuts alone is unfeasible and will seriously compromise the quality of the Queen's educational experience if these cuts are not accompanied by the creation of new revenue streams. The Chemistry Department is at the forefront of this movement with two initiatives under development. One is the creation of an online version of the 2nd year organic chemistry course for Life Sciences students, CHEM 281/282. This new online course, which is being developed by Dr. John Carran, will be packaged with offerings from Anatomy and Physiology and marketed by Queen's Continuing and Distance Studies as a pre-med package that may appeal to students across North America seeking acceptance to medical school and looking for course credits from a first-class institution. Another more ambitious initiative undertaken in partnership with the Department of Pharmacology and Toxicology is the development of a professional graduate degree or certificate program in Drug Discovery and Development. This new program is aimed at graduates of university Life Sciences and Chemistry programs who are pursuing careers in drug development in various settings, including pharmaceutical and biotech companies, contract laboratories and technology transfer offices, and who often lack the knowledge and skills directly related to the processes involved in drug design and development.

As you can read in this edition of the Chronicles, Queen's Chemistry is blessed with faculty members who not only excel on the national and international stages in making discoveries of fundamental importance, but who are also very successful in generating intellectual property and translating discoveries into potential commercial applications. Indeed, our faculty ranks as one of the largest contributors to PARTEQ Innovation's intellectual property portfolio, including invention disclosures and patents applications. Our inventors include established faculty members like Mike Baird, Stan Brown, Stephen Brown, Gregory Jerkiewicz, Guojun Liu, Victor Snieckus, Walter Szarek, Suning Wang and Ralph Whitney, but also younger faculty members like Cathleen Crudden, Philip Jessop, Peter Loock, Richard Oleschuk and Anne Petitjean, all of whom have shown a level of entrepreneurship that is second-to-none at Queen's. Our success in generating new IP invariably leads to success in securing research contracts with industrial partners and government agencies. The overhead revenue from contract research constitutes another revenue stream with significant growth potential that we rely on to maintain and operate our growing research infrastructure. Active involvement in securing IP, research contracts and commercialization is beneficial not only to the principal investigators and the department, but also to the students involved in the research as they get valuable experience in making R&D benefit society in a very tangible way. Of course, one must be careful not to promote scientific entrepreneurship at the expense of fundamental research and the academic mission to educate young people, and our faculty have been able to strike the proper balance, as evidenced by an NSERC Discovery Grant average funding level of $61,800/year that is well above the national average. All Ontario universities are facing similar financial challenges, and Queen's is committed to lead the way in implementing constructive changes to deal with its

continued on page 3

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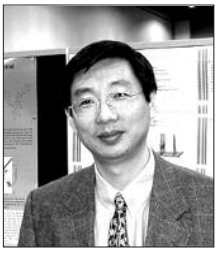
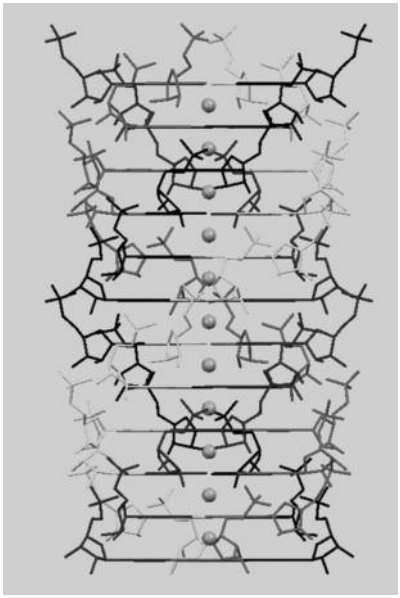
own financial concerns. I am optimistic that the Chemistry Department is in a strong position not only to deal with the current budget issues, but also to grow and prosper as one of the leaders in chemical education and innovation in Canada. However, given the uncertainty of our short-term financial outlook, we need the support of our alumni and friends, now more than ever. Many of you have generously contributed to the Chemistry Gift Trust and to student prizes and scholarships, and I thank you all very much on behalf of the department. This year, we are adding the Chemistry Seminar Series and the 1960's Chemistry Scholarlship Fund as other options for you to make a targeted gift. To those of you who have not yet given to Queen's Chemistry, I am asking you to consider making a gift; your generosity will make a huge difference in these uncertain times. If you wish to discuss making a gift or a planned gift from your estate, please contact Patty McHenry or Laura Costello from the Office of Advancement (see page 7 for their coordinates). As always, I look forward to meeting many of you during the next Reunion festivities, at one of the Queen's receptions I hope to attend with Patty this coming year, or perhaps at one of the Gaels' home games at Richardson Stadium this fall.



Self-assembled nucleotide mystery solved after 50 years

Almost a century ago, a Norwegian biochemist, Ivar Christian Bang discovered that one of the simplest nucleotides, guanosine 5 -monophosphate (5 -GMP), gelatinizes under a slight acidic condition whereas its neutral solution exhibits normal viscosity. In 1962, David Davies and his colleagues at the National Institute of Health proposed that 5 -GMP gel formation results from nucleotide self-assembly into a helix utilizing a guanine tetramer structure (known as the G-quartet) as its building block. Now although G-quartet structures have been found in many DNA and RNA sequences, the exact structure of 5 -GMP self-assembled helix has remained a mystery for nearly 50 years. Recently, Professor Gang Wu and graduate student Irene Kwan of the Department of Chemistry have finally solved the structure of this self-assembled nucleotide helix using sophisticated nuclear magnetic resonance (NMR) techniques.

"This helical structure turns out to be a total surprise," states Professor Wu. "Unlike DNA and RNA helices, the individual nucleotide molecules in the 5 -GMP helix are linked only by weak hydrogen bonds. The most surprising feature of the helix is that 5 -GMP molecules self-associate together in such a way as if they are ready to form phosphodiester



bonds, a necessary step for RNA polymerization. Very naturally, one wonders whether this pre-organized 5 -GMP helical structure may have played a role in prebiotic chemistry."

This study has been published in the *Journal of the American Chemical Society* and was also highlighted in *Chemical and Engineering News.*

Advances in chiral technologies

At the most recent American Chemical Society meeting in Salt Lake City, Utah, Prof. Cathleen Crudden presented the results of a study on the Suzuki cross-coupling of chiral secondary boronic esters with complete retention of configuration. This study, co-authored by Daisuke Imao, Ben Glasspoole and Veronique Laberge, had appeared days earlier as a communication in the *Journal of the American Chemical Society.* It describes the first successful example of a Suzuki cross-coupling reaction at a secondary centre, a reaction not accomplished by any other group since the Suzuki reaction was first reported 40 years ago. The presentation was highlighted by *Chemical and Engineering News* as part of its ACS conference highlights. The Crudden group has already had industrial interest in this reaction, since it provides facile access to chiral compounds that are difficult to make by any other methods.

Another important advance in chiral technology was recently reported by Crudden, in collaboration with Profs. Bob Lemieux and Nick Mosey, and postdoctoral fellows Stephanie MacQuarrie and Matt Thompson. In a communication to the *Journal of the American Chemical Society,* the group reported the synthesis and characterization of a novel class of chiral inorganic/organic composite materials that have order and chiral porosity on the nanometer scale. This work was highlighted in *Nature Chemistry* and has significant implications in the areas of chiral catalysis and chiral chromatography. The development of new chiral technologies was given a significant boost by the Canada Foundation for Innovation and the Ontario Ministry of Research and Innovation in the form of a Leaders Opportunity Fund award of $736,000 to Lemieux, Crudden and Prof. Peter Loock for the purchase a suite of new instruments that will form the basis for a *Centre for Chiral Catalysis* at Queen's.

Message from the Manager

BY JOHANN JARDINE

It doesn't seem possible that a year has passed since I wrote my first article for *QChem Chronicles.* During the past year I have had many great opportunities to focus on expanding our safety programs, improving administration efficiencies and forming partnerships with other departments to develop best practices and streamline services. The department welcomed two new staff members this year: Jennifer Powell joined the department in December as our new receptionist and Dr. Jiaxi Wang will join the department in July as the new manager of our Mass Spectrometry facility. Dr. Wang is currently a Research Scientist at McMaster Regional Centre for Mass Spectrometry and will replace Dr. Yimin She who joined the Biologics and Genetic Therapies Directorate of Health Canada in Ottawa.

The department is continually looking for ways to increase the safety consciousness of our students and staff. All department employees are required to take the WHMIS training offered by the University Environmental Health and Safety Department. In the fall of 2008, the department extended the WHMIS training requirement to approximately 1200 first year undergraduate students. The program was an overwhelming success and will continue to be a requirement for all first year Chem 112 undergraduate students.

Another important advance in health and safety is the implementation of the Higher Education Co-Operative for Hazardous Materials and Equipment Tracking (HECHMET), a consortium involved in tracking hazardous materials formed by Queen's University, Concordia University, the Royal Military College and the University of Ottawa. Queen's Environmental Health and Safety (EH&S) is responsible for the coordination and rollout of the HECHMET project across campus. Last April, our stores operation welcomed a new staff member from EH&S who is responsible for bar-coding chemicals and distributing and updating the HECHMET database for all chemicals received and consumed on campus. Upon completion of the project, all campus chemicals will be received, tracked and distributed from the stores location at Chernoff Hall. The HECHMET database will provide up-to-date information on all chemicals stored on campus, allow for immediate retrieval of any Material Data Safety Sheet and facilitate the generation of reports for regulator agencies.

Our stores operation has seen major changes over the past year. Last May, the Physics and Chemistry departments joined forces to provide one stop shopping for the staff and students of both departments. Purchases from the new "Science stores", which is located in Chernoff Hall, are tracked using a modern bar-code system and on-line inventory and ordering protocol are available to members of both departments.

Renovations to Dr. Gregory Jerkiewicz's laboratory were undertaken to create additional space for new instrumentation. Two new glass vestibules and the installation of additional air filters will create a dust reduced environment. First floor renovations for the new University mass spectrometry and proteomics unit will be completed this summer.

A departmental staff task force was established to convert our existing Web site to a new editor platform; templates and page layouts are currently being created with a planned conversion date of Aug 2009. The new platform will provide the department with a fully supported Web editor that will significantly improve site maintenance and updating. The department has also invested in new software to provide students with a more interactive computer environment: WebMO and LabSkills. WebMO is a versatile, easy-to-use, interface to Gaussian 03 that is available from any computer with web access, including their personal laptops on our wireless network. LabSkills is an interactive E-lab resource developed at the University of Bristol with an engaging step-by-step approach that helps develop knowledge of the principles and procedures of synthetic techniques and experiments. LabSkills will be used in our 2nd year curriculum for Life Science and Biology students as an introduction to practical organic chemistry and as a preparation for at-the-bench experiments.

Given the current budgetary constraints, we must provide services to our Chemistry constituents in the most cost effective manner and we are continually searching for innovative ways to improve our efficiencies. I am confident that the department will have great success in meeting the opportunities and challenges that lie ahead. The future looks bright in the department of Chemistry at Queen's and I look forward to updating you on the new ways we have developed to address the important needs of our department.

Congratulations to the class of 2009!

Front Row (from left): Manlio Alessi, Sohyoung Her, Priscilla Leung, Nicole Day, Heather Mowatt, Leslie Young, Jennifer Adams, Dominique Vanier, Sarah Tooth, Amanda Geris, Sue Min

Back Row (from left): Andriy Plugatyr, Ben Rogers, Shawna Barker, Sarah Chadder, Shelley McArthur, Timothy Clutton, Brendan MacGillivray, David Griese, James Douglas, Avik Ghoshdashdar, Kevin Mehi, Shona Robinson, Lisa Whitelaw, Rebecca Holmberg

GreenCentre Canada gives Queen's chemists a new path to market

Dr. Philip Jessop, Technical Director, GCC, speaks at the GCC announcement. Also pictured (l to r): Hon. Gary Goodyear, Minister of State for Science and Technology; Dr. Suzanne Fortier, President of NSERC; Dr. Rui Resendes, Executive Director, GCC; Mr. Peter Snucins, Chair of the Board, GCC; Mr. John Molloy, CEO, PARTEQ Innovations; and Dr. Kerry Rowe, Vice-Principal (Research). Photo by Greg Black, Queen's University

Queen's University's strengths in chemistry and chemical engineering research received an exciting boost earlier this year, with the announcement of $9.1 million in federal funding to establish a National Centre of Excellence in Green Chemistry Commercialization in Kingston.

The funding, announced at Queen's on February 27 by the Honorable Gary Goodyear, Federal Minister of State for Science and Technology, was awarded to PARTEQ Innovations, the technology commercialization office of Queen's.

GreenCentre Canada (GCC) brings together Canada's leading green chemistry researchers, industry partners, and commercialization professionals in a common goal of developing cleaner, less energy-intensive solutions for traditional chemical and manufacturing processes. It is believed to be the first venture of its kind in North America. The centre will open its doors at the Innovation Park at Queen's later this year.

The centre builds on strong ties between Queen's researchers and industry partners. Dr. Rui Resendes, Executive Director of GCC and a polymer chemist himself, is a familiar face in Queen's chemistry circles, through his past contract research collaborations with Queen's as a Business Development Manager with Bayer Inc. and LANXESS Inc., and more more recently as Director of Commercial Development, Chemistry and Materials, at PARTEQ. According to Dr. Philip Jessop, Canada Research Chair in Green Chemistry, and the centre's Technical Director: "Researchers' discoveries come in test-tube size packages. Industry wants tested, proven compounds that can fill a vat or a rail car. Green Centre Canada fills this gap by doing the necessary, risky early development work in collaboration with industry. The result is proven technologies that are much more valuable and attractive to chemical companies."

While officially in existence for only three months, GCC has attracted at least 10 industry partners, and researchers from across Canada have already submitted discoveries for evaluation. "Our feeling when we proposed this centre was that there was a need for it, but now we're seeing that the demand is even greater than we expected," noted Dr. Resendes. "It's exciting to see this strong industry presence grow in Kingston. Not only does it enhance the city's growing reputation as a centre for green innovation, it also benefits Canadian researchers across disciplines."

The key to GCC is the breadth and depth of its services. Researchers can take advantage of the expertise of GCC's scientific and technical staff and industry partners while also having access to the commercialization services of PARTEQ, which is assisting GCC in areas as diverse as intellectual property protection, commercial development, finance and communications. "Ultimately, we see GreenCentre Canada as a national model for moving research discoveries to market," noted John Molloy, President and CEO of PARTEQ Innovations. "This national, collaborative approach is one that can be applied to the development of discoveries across many research sectors."

www.greencentrecanada.com

2008-2009 DEPARTMENTAL HIGHLIGHTS

February 2009 continued

Ben Glasspoole (Crudden group) receives the McAdie Doctoral Student Award.

March 2009

The Chemistry Banquet is held on March 7th. Michael Baird receives the 2009 Chemistry Graduating Class Award for Excellence in Teaching.

A paper by Derek Pratt published in *Angewandte Chemie* elucidating why garlic is beneficial as a herbal medicine is highlighted in the *Globe and Mail*.

Zach Hudson (Wang group) receives the Educational Excellence TA Award from the Queen's Engineering Society and the TA of the Year Award from the Chemistry DSC.

Cathleen Crudden's presentation at the ACS Meeting in Salt Lake City, Utah, on the Suzuki cross-coupling of chiral secondary boronic esters is highlighted in *Chemical and Engineering News*.

A paper by Jean-Michel Nunzi entitled "Light induced organization of molecules" is highlighted in the *Popularization Journal*.

April 2009

The 4th year project presentations, the Smith Prize and Sullivan Prize competitions, and the QCIC Careers Luncheon are held on April 6.

The Chemistry and Physics stores are amalgamated and renamed the Science Stores.

Hugh Horton is appointed Acting Associate Dean (Studies) in the Faculty of Arts & Science for a one-year period effective July 1, 2009.

Natalie Cann is appointed Acting Associate Head for a one-year period effective July 1, 2009.

Philip Jessop is featured in the April "Innovation" issue of *New Technology Magazine* as one of the country's leading innovators in the oil and gas industry.

Gregory Jerkiewicz is appointed editor-in-chief of Electrocatalysis. an international journal specializing in electro-chemical reactions.

The following students win national NSERC awards for 2009-2010: Darrell Dean (CGSD2), Zachary Hudson (CGSD3), Gillian Mackey (CGSM), Shona Robinson (CGSM), and Christopher Lata (PGSD2).

Ontario Graduate Scholarship recipients for 2009-2010 are: Thomas Blackburn, Andrew Carrier, Adam Daley, Veronique Laberge, Ying Yin Lau, Chris Maxwell, and Sean Mercer.

May 2009

The following students graduated with honours in 2009: Jennifer Adams, James Douglas, Amanda Geris, Sohyoung Her, Priscilla Leung, Shelley McArthur, Benjamin Rogers, Matthew Wathier, Leslie Young, Gillian Mackey, Katie Lan Wei.

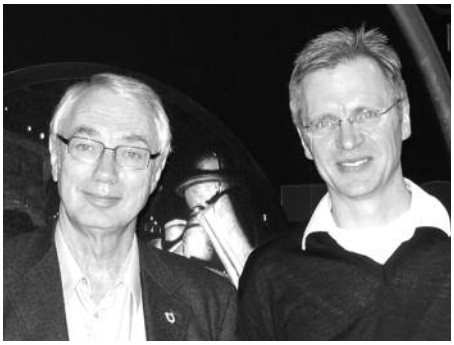
The department welcomes back its alumni during the inaugural Queen's Spring Reunion on May 23rd.

Peter Loock receives the 2009 W.A.E. McBryde Medal from the Canadian Society for Chemistry for a significant achievement in pure and applied analytical chemistry by a young scientist working in Canada.

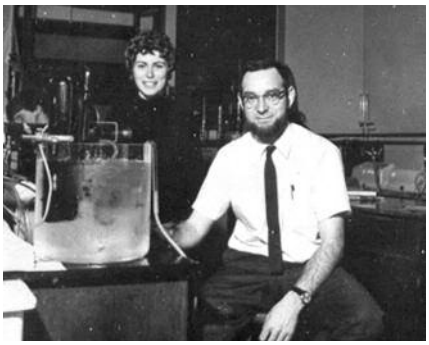
Mike Baird receives the 2009 Canadian Catalysis Lectureship Award, sponsored by the Canadian Catalysis Foundation and the Chemical Institute of Canada. The award is made to a researcher who is recognized as a leader in catalysis in Canada.

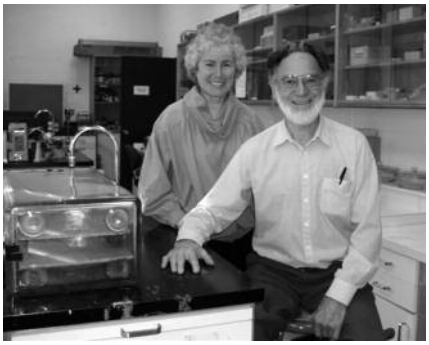
The department holds a joint reception with GreenCentre Canada on May 31st at the 2009 Canadian Society for Chemistry Conference in Hamilton, Ontario.

Our alumni



Mike Baird with alumnus Professor Troels Skrydstrup from the Department of Chemistry, University of Aarhus, Denmark. Troels graduated with a B.Eng in Engineering Chemistry in 1983 and was at Queen's for his 25th anniversary at Homecoming last September.





Engineering Chemistry graduate Marilyn Laver (nee Wheeler) returned to teach Art Conservation courses at Queen's. The two pictures feature Marilyn and Emeritus Professor Gus Shurvell then and now. After graduating in 1974 from Queen's, Marilyn worked at the Canadian Conservation Institute in Ottawa. She now has a private art conservation practice in Toronto.

4th Year Research Projects and QCIC Careers Luncheon

On April 6th, students in Engineering Chemistry (Applied Science) and Honours Chemistry (Arts and Science) presented the results of their 4th year research projects; 67 students in total gave oral presentations during this day-long minisymposium. The Sullivan Prize and Smith Prize competitions recognizing outstanding achievements in undergraduate research in Applied Science (CHEM 417) and Arts and Science (CHEM 497), respectively, were adjudicated by two members of the Queen's Chemistry Innovation Council, Dr. Jan Oudenes (Alphora Research) and Dr. Heinz Plaumann (BASF) The Sullivan Prize competition featured presentations by Andrew Powell, Javin DeVreede, Christine Muchemu and Bob Cockburn, with Christine taking the prize for her project on *"Emulsion Polymerization with Switchable Surfactants"*, which was co-supervised by Profs. Mike Cunningham and Philip Jessop. The Smith Prize competition featured presentations by Sarah Chadder, Kevin Mehl, Gillian Mackey and Shelley McArthur, with Shelley taking the prize for her project on *"Directed Evolution of Protein Stability with a Green Fluorescent Receptor Assay"*, which was supervised by Prof. David Zechel.

The QCIC Careers Luncheon was held in the 4th floor lounge of Chernoff Hall and featured Dr. Heinz Plaumann, Research and Development Manager at BASF Corporation. Heinz gave an overview of his career and shared with our graduating class his thoughts on career planning and opportunities for chemistry graduates in the chemical industry and elsewhere.

Bob Lemieux, Shelley McArthur, Heinz Plaumann, Jan Oudenes

Bob Lemieux, Heinz Plaumann,Christine Muchemu, Jan Oudenes, Ralph Whitney

News from the Department of Advancement

Alumni, donors and friends continue to generously support the Department of Chemistry. We are grateful to those who give back to the department by volunteering, mentoring and/or supporting our students and programs through financial contributions.

Fundraising initiatives
The 1960's Chemistry Scholarship: Our volunteer organizers from the 1960's - Jake Blair and John Latham are leading the charge – have been working hard on this exciting scholarship initiative. This scholarship will bring the very best graduate students to Queen's, and at the same time, honor the influential teachers of the decade.

Support for this initiative to date has been wonderful but we still need another $7,000 to be in a position to award the scholarship. If you are a member of this group and would like to ensure that graduates of the 1960's leave their mark at Queen's, please contact Peggy Shanks, Faculty Projects Assistant for Arts & Science at 1-800-267-7837.

Did you know...
There are 1093 active Chemistry alumni at Queen's. Our alumni are volunteers, donors, mentors and advocates for Queen's.

This year, the Department of Chemistry faculty and staff have made a commitment to step up their financial support of the department and the university. Many thanks for your hard work, generosity and leadership.

A Challenge to our alumni
Help us to continue our tradition of excellence by making a gift to the Department of Chemistry. We would be pleased to work with you on directing your gift to a project of your choosing.

A well-planned gift can reduce, or even eliminate, taxes, and it can substantially increase the donor's after-tax income. If you are interested in directing a bequest to the Department of Chemistry, please contact the Office of Planned Giving by calling 1-800-267-7837 and asking to speak to Faye Ransom. Please know that any communication about estate planning will be held in the strictest of confidence.

Please remember that all gifts (including the beneficial tax benefits of gifts of shares) to Queen's University can be directed to any project of your choice. For more information on supporting the Department of Chemistry, please contact any member of your Advancement Team.

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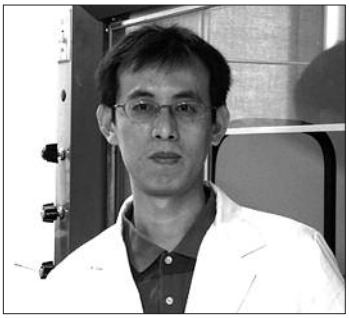
Governor's General Academic Gold Medal



Dr. Shubin Zhao (Wang group) has been awarded one of the Governor General's Academic Gold Medals for 2009. The Governor General's Gold Medals are awarded annually to two graduate students who achieve the highest academic standing in their graduate degree program in any field. He is also the recipient of a NSERC postdoctoral fellowship and will carry out his postdoctoral research at the University of North Carolina, Chapel Hill.

Seminar Series

We are pleased to announce that the following speakers have been confirmed for our 2009-2010 Seminar Series. For more information and dates, please visit our website at http://www.chem.queensu.ca/chemistryN/About/seminarseriesN.asp

Prof. Pat Kambhampati, McGill University

Prof. Zlatko Bacic, New York University, U.S.A.

Prof. Peter Norton, The University of Western Ontario

Prof. Dima Perepichka, McGill University

Prof. Robert Crabtree, Yale University, U.S.A.

Prof. Rob Singer, Saint Mary's University

Prof. Deborah Zamble, University of Toronto

Prof. Matt Sigman, The University of Utah, U.S.A.

Prof. Gerry Wright, McMaster University

Prof. Eric Block, SUNY – Albany, U.S.A.

Prof. Paul Corkum, NRC, University of Ottawa

Prof. Chris Cummins, Massachusetts Institute of Technology, U.S.A.

Prof. Alvan Hengge, Utah State University, U.S.A.

Prof. Ben Feringa, University of Groningen, The Netherlands

Prof. Marcel Nooijen, University of Waterloo

Prof. Pierre-Nicholas Roy, University of Waterloo

Prof. Scott Bohle, McGill University

Prof. Pat Limbach, University of Cincinnati, U.S.A.

Prof. Elizabeth Gillies, The University of Western Ontario

Prof. Gerard vanKoten, Utrecht University, The Netherlands

Prof. Dominic Lariviere, Laval University

Prof. Deryn Fogg, University of Ottawa

Prof. Michael Freund, University of Manitoba

Prof. Yves-Alain Peter, Ecole Polytechnique, Université de Montréal

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Friends of Queen's Chemistry

TA Teaching Awards

In order to promote and recognize excellence in teaching (tutorial and laboratory) by Teaching Assistants in Chemistry in 1st, 2nd, and 3rd years, the following awards are presented each year. Awards for the 2007-08 academic year were presented at the TA training day in September, 2008, below are the award recipents:

David Thomas Teaching Award – Chris Maxwell
Fisher Scientific Teaching Assistant Award – Jeremy Praetorius
Din Lal Teaching Assistant Award – Klaus Bescherer
Varian Teaching Assistant Award – Michelle Douma
Merck Frosst Teaching Assistant Awards – Krista Plett and Jenny Du
William Patrick Doolan Prizes in Chemistry – Rodica Pecheanu and Irene Kwan

back row: Chris Maxwell, Jeremy Praetorius, Klaus Bescherer, Michelle Douma, Krista Plett, Rodica Pecheanu
front row: Jenny Du, Irene Kwan

Q Graduate Chemistry Society

www.chem.queensu.ca/grad/qgcs
qgcs@chem.queensu.ca

New Graduate Society

The Chemistry graduate students have established the Queen's Graduate Chemistry Society. The elected executives are as follows:

Darrell Dean, President
Amy Holland, VP Internal Affairs
Alaina Boyd, VP Finance
Jonathan Webb, VP External Affairs
Trisha Ang, 5th Floor Rep
Andrew Fraser, 4th Floor Rep
Thomas Kraft, 3rd Floor Rep
Elize Ceschia, Secretary

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