
Canadian Society for Chemistry

Analytical Chemistry Division Newsletter

Spring 2007

2007 ANALYTICAL AWARDS

2007 Maxxam Award
Sponsored by Maxxam Analytics Inc.

Ralph Sturgeon
National Research Council Canada

This award is presented to a scientist residing in Canada who has made a distinguished contribution in the field of Analytical Chemistry while working in Canada.

2007 W.A.E. McBryde Medal
Sponsored by MDS Sciex

Sergey Krylov
York University

This medal is to be presented as a mark of distinction and recognition for a significant achievement in pure or applied analytical chemistry by a young scientist working in Canada.

2007 Fred Beamish Award
Sponsored by Eli Lilly Canada Inc.

(No recipient in 2007)

The Fred Beamish Award is to recognize individuals who demonstrate innovation in research in the field of Analytical Chemistry, where the research is anticipated to have significant potential for practical applications.

2007 Graduate Student Award
in Honor of Walter E. Harris
Sponsored by the ACD

Walter Russell Algar
University of Toronto (Dr. U. Krull)

This award is presented to an outstanding senior graduate student. The selection of the recipient is made on the basis of research contribution and the excellence of academic record.

The 2007 CIC Montreal Medal recipient is **Joseph Hubert**, Professor of Analytical Chemistry at Université de Montréal.

Message from the Chair

Despite this being the first newsletter in 3 years, and I apologize for that, the ACD Executive Committee can claim a few accomplishments. In 2005 we implemented the new ACD Graduate Student Travel Award, which provides \$500 to a deserving graduate student studying analytical chemistry in Canada so they may present their research at an international conference. There are two competitions per year. In 2006, due to a severe lack of outstanding candidates nominated for the Fred Beamish Award, we proposed to the CSC Board of Directors and the Awards Committee that the eligibility criteria for this award be modified to "...within 6 years of appointment" rather than 4 years. The Beamish Award, sponsored by Eli Lilly, recognizes individuals who demonstrate innovation in research in analytical chemistry since their appointment at a Canadian university. Finally, during the last 3 years, we have donated funds to several undergraduate and graduate student conferences from the east to west coast to support poster and oral presentation awards. Congratulations to all winners! I would also like to take this opportunity to thank colleagues who have helped judge posters in the past several years at the annual CSC conference. I hope I can count on you again this year.

Last year's attendance at Analytical symposia during the CSC Conference in Halifax was excellent, with an average of 37 people per session. I hope to see you all in Winnipeg! Please join me at the ACD Annual General Meeting on Monday, May 28, 2007, in Room 10 of the WCC, to learn more about the Division, to enjoy some wine and cheese, and to meet the ACD student award winners for 2007. All are welcome to join us for dinner at a local restaurant following the AGM. Please contact me or an executive member if you will attend the dinner so we can make a reservation. Thanks.

Karen Waldron

2007 Undergraduate Travel Award (to attend CSC-2007)

The winners of this year's Travel Award are **Robert Mathew Asmussen** from Lakehead University, supervised by Prof. Aicheng Chen, and **Gordon Simms** from Dalhousie University, supervised by Prof. Alan Doucette.

2006 Undergraduate Travel Award (to attend CSC-2006)

The winners of the 2006 Award were **Andrea Kirby** from Memorial University, supervised by Prof. Christina Bottaro, and **Josée Boudreau** from Université de Moncton, supervised by Prof. Celine Surette.

Graduate Student Travel Awards (2005-2007)

Lekha Sleno, Dalhousie University
Shulan Liu, Queen's University
Paul Goulet, University of Windsor
Adam Ptolemy, McMaster University
Andrei Drabovich, York University

2006 Graduate Student Award in Honor of Douglas E. Ryan

Richard Paproski
University of Alberta (Prof. Charles Lucy)

2005 Graduate Student Award in Honor of Walter E. Harris

Alison Holliday
Queen's University (Profs. Diane Beauchemin and Olivier Donard)

2006 Graduate Presentation Awards (at CSC-2006, Halifax)

Jai Sharma, McMaster University (Prof. J. Brennon)
G.A. Orłowski, University of Saskatoon (Prof. H-B. Kraatz)
Lawrence Y.S. Lee, McGill University (Prof. B. Lennox)
Ognjen Panic, University of Waterloo (Prof. T. Górecki)

90TH CANADIAN CHEMISTRY CONFERENCE AND EXHIBITION



Winnipeg Convention Centre,
Winnipeg, Manitoba, Canada
May 26 - 30, 2007



The Analytical Chemistry program is being organized by Douglas Goltz (University of Winnipeg) and can be viewed on the Web at www.csc2007.ca

Topics for the symposia and the session organizers are:

AN1 • Advances in Analytical and Environmental Chemistry (Joint with EN)
Organizer: Stephen Duffy, Mount Allison University

AN2 • Analytical Separations by Capillary Electrophoresis (Joint with BM)
Organizers: Douglas Craig, University of Winnipeg

AN3 • Analytical Separations: Innovative Concepts and Applications
Organizer: Nicholas Toltl, Eli Lilly Canada Inc.

AN4 • Biospectroscopy and Biodiagnostics (Joint with PT)
Organizers: Marco Gruwel, Larry Leonardi, Lin-P'ing Choo-Smith and Mike Sowa, Institute for Biodiagnostics

AN5 • Chemistry of Cultural Artifacts
Organizers: Michael Attas, AECL Whiteshell Laboratories, Ed Cloutis and Douglas Goltz, University of Winnipeg

AN6 • Innovations and Instrumentation (Microfluidic Devices)
Organizers: Richard Oleschuk, Queen's University, Cameron Skinner, Concordia University and Michael Bowser, University of Minnesota

AN7 • Metal Speciation
Organizers: Zoltan Mester, Institute for National Measurement Standards, John Murimboh, Acadia University and Feiyue Wang, University of Manitoba

AN8 • Microscopy and Biophysical Chemistry (Joint with PT)
Organizers: Matthew Paige, University of Saskatchewan and David McMillen, University of Toronto

AN9 • Nuclear and Radiochemistry - Applications and Waste Disposal
Organizers: Michael Attas, AECL Whiteshell Laboratories, Chunsheng Li, Health Canada and Tjalle (Chuck) Vandergraaf, Providence College

AN10 • Post-Modern Electrochemistry (Joint with PT)
Organizers: Sylvie Morin, York University, Ian Burgess, University of Saskatchewan and Alexandre Brolo, University of Victoria

AN11 • General
Organizer: Douglas Goltz, University of Winnipeg

Planning on attending? Join us for dinner at a local restaurant Monday evening following the AGM. For more details please contact Karen Waldron.

OTHER NEWS

ICASS 2007

53rd International Conference on Analytical Sciences and Spectroscopy (ICASS 2007) will be held at Trent University from June 24 – 27, 2007 and is sponsored by The Spectroscopy Society of Canada (SSC). The ICASS 2007 web site address is <http://www.icass.ca>.

For further information about ICASS 2007, please contact the Conference Chair; Dr. Holger Hintelmann – ICASS 2007, Chemistry Department - Trent University, 1600 West Bank Drive, Peterborough, Ontario, Canada. K9J 7B8 **Fax:** (705) 748-1625 **Tel:** (705) 748-1011 x7659 **E-Mail:** ICASS2007@trentu.ca.

STUDENT NEWS

Undergraduate Student Conferences

March 17, 2007

Southern Ontario Undergraduate Student Chemistry Conference (SOUSCC), University of Ontario Institute of Technology, Oshawa, ON, inquiries: souscc@science.uoit.ca.

May 4 – 6th, 2007

Western Canadian Undergraduate Chemistry Conference, University of Saskatchewan, Saskatoon, SK. Inquiries: wcucc2007@gmail.com.

May 17 – 19th, 2007

ChemCon 2007, (CIC-APICS Atlantic Student Chemistry Conference) Acadia University, Wolfville, NS. Committee Chair – *Erin MacLean* (065248m@AcadiaU.ca)

October/November 2007

Colloque annuel des étudiants et étudiantes de 1er cycle en chimie, Université de Sherbrooke, QC. <http://pages.usherbrooke.ca/colloque-chimie/>

Analytical Chemistry Presentation Awards at undergraduate student conferences

Each of the four regional undergraduate conferences are eligible to receive \$150 for an award for the best oral or poster presentation on a topic related to analytical chemistry. A request from the conference organizers should be made to the ACD Chair, Dr. Karen Waldron (karen.waldron@umontreal.ca). Judging is the responsibility of designated faculty members in attendance at the meeting.

The Chemical Institute of Canada's (CIC) Career Services.

- The CIC is the association for all chemical professionals in Canada.

-The CIC provides a unique online job networking resource CareerSite for all chemical professionals and students

<http://www.cheminst.ca/careers/>

Increase your career opportunities by taking advantage of the CIC Career Services. Access Canada's sole chemical related job site. Opportunities abound! Receive multiple benefits with membership to The Chemical Institute of Canada.



OTHER BENEFITS OF MEMBERSHIP IN THE ACD (CSC)

In addition to the activities of the particular Student Chapter, membership will confer the following benefits for students:

- Receipt of Canadian Chemical News/ L'Actualité Chimique Canadienne for members in 2nd and higher years (by bulk mail);
- Eligibility to apply for group insurance on car and home insurance through Monnex Inc.;
- Use of the CIC Employment Service for students in the final year of their program who are seeking permanent employment after graduation;
- Substantially reduced registration fees for the annual CSC Conference;
- Full membership in the CSC in the first year after graduation for one-half of the full membership fee.

Eligibility for a range of scholarships and awards, a comprehensive list of which is given in this newsletter.

SCIENCE WEBSITES

www.chemweb.com/

www.chemcenter.org

FURTHER INFORMATION ON ANALYTICAL CHEMISTRY

ACD Web Page: <http://ftp.cheminst.ca/divisions/analytical/home.htm>

ACS Graduate Education in Analytical Chemistry:

http://www.acs-analytical.duq.edu/education_information.html



STUDENT AWARDS

ACD Undergraduate Student Travel Award

The intent of the award is to honor outstanding senior undergraduate students in analytical chemistry, to encourage them into postgraduate studies and to expose them to a stimulating scientific environment at the annual Canadian Chemical Conference. This travel award is open to all undergraduate students pursuing studies in the area of Analytical Chemistry and in attendance at a Canadian University, irrespective of the conference site of a given year. Each winner is expected to give a poster presentation of his/her work at the conference.

Two awards of \$500 each will be made on the basis of the academic excellence and research promise of the nominees. These students will normally have completed a summer research project, or a Co-op term, or a senior year research project, in the area of analytical chemistry. Awardees and their supervisors are invited to attend the ACD Award Reception after the Annual General Meeting of the ACD at the annual CSC meeting. Each Chemistry Department may nominate one candidate.

For more information concerning this award, contact the Analytical Division chairperson or visit the ACD web site.

ACD Graduate Student Travel Award

The ACD Graduate Student Travel Award was established in 2005 to encourage graduate students in Analytical Chemistry to attend international conferences and present their work. Two awards of \$500 each are given—one in January and one in July—to help defray travel and registration costs. The awardees are each expected to give at least one poster or oral presentation at the conference. All international conferences, including those held in Canada, are eligible. The award is not intended to support travel to the annual CSC Conference. For more information concerning this award, contact the Analytical Division chairperson or visit the ACD web site.

ACD Graduate Student Presentation Award

Graduate students who will be making poster presentations on a subject related to Analytical Chemistry in the ACD poster session at the annual Canadian Chemical Conference are eligible for this award. Only one submission per student is permitted. An *ad hoc* judging committee will be established prior to the meeting. Committee members will question each candidate and assess the quality of the poster. Two awards of \$150 will be given.

Students that wish to be considered for this award should check the appropriate box when submitting their abstract electronically.

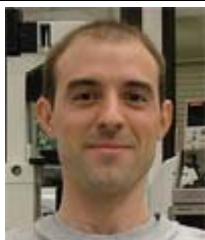
ACD Graduate Student Award in Honor of Douglas E. Ryan and Walter E. Harris

These prestigious awards, named in honour of two senior and well-known analytical chemists in Canada (Dr. Douglas Ryan of Dalhousie University and Dr. Walter Harris from the University of Alberta) are presented in alternate years to an outstanding senior graduate student in analytical chemistry in Canada. Nominations are solicited from Canadian Universities each fall, by contacting both Chemistry Department Heads and all Professors who are active in research in analytical chemistry. The selection of the recipient is made on the basis of outstanding research contributions and the excellence of the academic record. The recipient of the award, who receives a cash award and framed certificate, is expected to make a presentation at the next annual CSC meeting. The awardee, and supervisor, are invited to attend the ACD Award Reception, normally held after the Annual General Meeting of the ACD at the annual CSC conference.

For more information about this award, contact the Analytical Division chairperson or visit the ACD website.

Research Profile

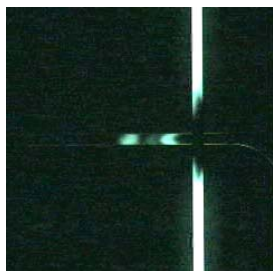
Professor Aaron Wheeler University of Toronto



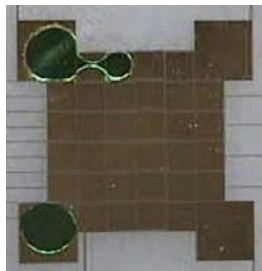
The lab-on-a-chip (LOC) paradigm is popular because of the advantages of reduced reagent consumption and analysis time, the capacity to integrate multiple functions onto a single device, and the potential for high-throughput analysis. Most LOCs have been implemented using channel microfluidics, a technology based on interconnecting, enclosed microchannels. Channel microfluidics has been used for a wide range of biological applications, including immunoassays, enzymatic digests, cell transport and analysis, and PCR. Even so, some of the initial enthusiasm for the technology has waned, as practical limitations of channel microfluidics have become apparent, such as the difficulty in maintaining spatial control over many reagents simultaneously.

Recently, a new mode of “digital microfluidics” has been introduced, in which droplets of fluid are manipulated by electrowetting or dielectrophoresis on the surface of a patterned array of electrodes. This technique, which straddles the interface between microfluidics and microelectromechanical systems (MEMS), has not yet been applied to many biochemical applications. Attractive characteristics of this technique include an array-based geometry, facile control over many reagents, and the quantitative packaging of analytes. A drawback for digital microfluidics is the arduous process of device fabrication.

channel microfluidics



digital microfluidics



Our lab at the University of Toronto is developing hybrid methods that rely on the unique advantages of channel and digital microfluidics for high-throughput bioanalytical applications. Our current projects include: (1) the development of tools for parallel scale proteome profiling, with integrated sample preparation, separations, and analysis by tandem mass spectrometry; (2) the development of low-volume, high-throughput, cell- and organism-based assay platforms, with applications for drug discovery and systems biology; and (3) the generation of rapid prototyping tools for fabrication of digital microfluidics devices. Each of these projects is dependent upon an interdisciplinary approach to problem solving, and we welcome correspondence from interested students with backgrounds in chemistry, biology, and engineering. Please see our website for more information.

Aaron Wheeler
Chemistry Department
University of Toronto
awheeler@chem.utoronto.ca
<http://www.chem.utoronto.ca/staff/WHEELER>

EXECUTIVE COMMITTEE MEMBERS

Chair

Dr. Karen C. Waldron
Département de Chimie
Université de Montréal
C.P. 6128 Succursale Centre-Ville
Montréal, QC H3C 3J7
Phone: (514) 343-6516
FAX: (514) 343-7586
E-mail: karen.waldron@umontreal.ca

Secretary-Treasurer

Dr. Mark McDermott
Department of Chemistry
University of Alberta
Edmonton, AB T6G 2G2
Phone: (780) 492-3687
FAX: (780) 492-8231
E-mail: mark.mcdermott@ualberta.ca

Vice-Chair

Dr. Robert McLaren
Department of Chemistry and
Centre for Atmospheric Chemistry
York University
4700 Keele St.
Toronto, ON M3J 1P3
Phone: (416) 736-2100 ext. 30675
FAX: (416) 736-5936
E-mail: rmclaren@yorku.ca

Past-Chair

Mr. Scott Willie
Institute for National Measurement
Standards
National Research Council
Ottawa, ON K1A 0R6
Phone: (613) 993-4969
FAX: (613) 993-2451
E-mail: scott.willie@nrc.ca

Members at Large

Dr. Nick Toltl
Lilly Analytical Research
Laboratories (LARL)
Eli Lilly and Company
3650 Danforth Avenue
Toronto, ON M1N 2E8
Phone: 416-699-7323
Fax: 416-693-3752
E-mail: toltl_nick@lily.com

Dr. Ken K.-C. Yeung
Department of Chemistry
University of Western Ontario
London, ON N6A 5B7
Phone: (519) 661-2111 ext.86439
Fax: (519) 661-3022
E-mail: kyeung@uwo.ca

Dr. Philip Britz-McKibbin
Department of Chemistry
McMaster University
1280 Main St. W.
Hamilton, Ontario L8S 4M1
Phone: (905) 525-9140 ext. 22771
Fax: (905) 522-2509
E-mail: britz@mcmaster.ca

Dr. Kevin Thurbide
Department of Chemistry,
University of Calgary
2500 University Dr., NW,
Calgary, AB. T2N 1N4
Phone: (403) 220-5370
Fax: (403) 289-9488
E-mail: thurbide@ucalgary.ca

Dr. Stephen J. Duffy
Chair, Department of Chemistry,
Mount Allison University
Barclay Building
63C York Street
Sackville, NB, E4L 1G8
Phone: (506) 364-2361
Fax: (506) 364-2313
E-mail: sduffy@mta.ca

2006 CSC Meeting Representative

Dr. Peter Wentzell
Chemistry Department
Dalhousie University
Halifax, NS. B3H 4R2
Phone: (902) 494-3708
Fax: (902) 494-1310
E-mail: peter.wentzell@dal.ca

2007 CSC Meeting Representative

Dr. Douglas Goltz
Department of Chemistry,
The University of Winnipeg
515 Portage Avenue, Winnipeg
Manitoba, R3B 2E9
Office: (204) 786-9748
Fax: (204) 775-2114
E-mail: d.goltz@uwinnipeg.ca