

# Proposal

from the

Department of Chemistry  
University of Toronto



to host the

23<sup>rd</sup> International Conference on  
Chemical Education  
ICCE 2014

July 13 – 18, 2014

The Department of Chemistry of the University of Toronto is pleased to present this bid to host the 23<sup>rd</sup> International Conference on Chemical Education, ICCE 2014. We are quite excited about the opportunity to bring the ICCE to North America where it has not been held since 1989.

Much has changed since then, particularly in the area of communications. The opportunities for teaching and learning “without borders” have never been greater. And communication, both of information and between peoples, will form the underlying theme to our conference, “Developing Learning Communities in the Chemical Sciences.” Our goal is to investigate how best to forge global links in the chemistry teaching and learning communities and to consider best practices in exploiting technological advances in communications in order to establish innovative learning communities. Symposia will focus on communication amongst chemistry professionals, educators, students and the lay community



## VENUE

### 1. The University

The conference will be held on the St. George campus of the University of Toronto, a campus of approximately 40,000 undergraduate and 14,000 graduate students, situated in the heart of the downtown. The campus offers a full range of sizes of air-conditioned, wheelchair accessible electronic classrooms with many in the 100–200 seat range that could accommodate concurrent symposia, a number with 500 seats and one 1500 seat auditorium which could be used if needed. Recently renovated, state-of-the-art laboratories are available for practical workshops.

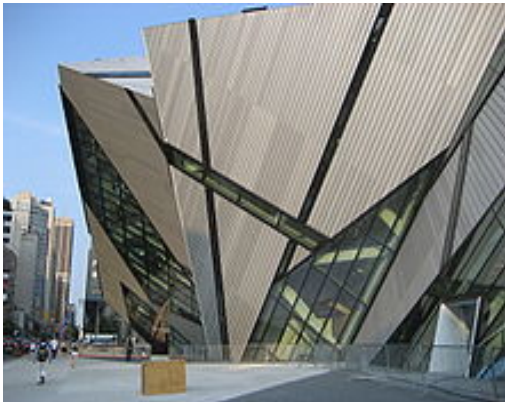
The University is also home to the Ontario Institute for Studies in Education. We will make every effort to bring the expertise of those colleagues to the conference.



## 2. The City

Toronto is Canada's largest city and its cultural, entertainment and financial capital. The city is the 5<sup>th</sup> largest in North America with more than 5.5 million people in the Greater Toronto Area. One-quarter of Canada's population is located within 160 km of the city, mainly along the corridor leading to Niagara Falls. Its southern border is Lake Ontario which separates it from the State of New York. It is a hub of multiculturalism as illustrated by the fact that its web site is available in over 50 languages ([www.toronto.ca](http://www.toronto.ca)) and its emergency services are able to respond in over 150 languages. Multicultural festivals abound throughout the summer months. Within walking distance from the University are a wide variety of hotels, restaurants, theatres and museums.

During the month of July the average day-time high temperature is 26.4°C; night-time low is 17.9°C.



Lee-Chin Crystal, Royal Ontario Museum



Canadian National Tower

## **TRAVEL**

Toronto's Pearson International Airport is served by most major international airlines. There are also frequent flights between Toronto and major American cities such as Boston, Chicago and New York, so that routing through one of them is also a possibility. Within the city there is good public transport, bus and subway, and ample taxi service. For those with the desire to exercise there is BIXI, Toronto's new public bicycle system, patterned on the Velib bicycle rental system in Paris.



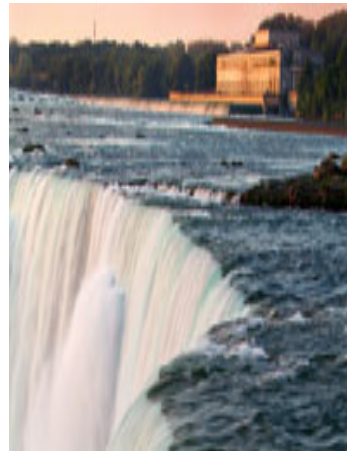
## ACCOMMODATIONS AND MEALS

Accommodation at University of Toronto residences is currently available for between \$30 and \$80 per night. Also close to the campus are bed and breakfast establishments charging \$75 to \$150. There is, of course, a range of hotels also within easy walking distance of the University, both moderately priced (Holiday Inn, \$130) and luxurious (Intercontinental, from \$200). We will do our best to secure group rates for accommodations.

Moderately priced meals are available on campus and most lunches will be so arranged. But undoubtedly delegates will want to explore Toronto's many ethnic restaurants in Little India, Corso Italia, Greektown, Koreatown or one of the many other areas of fine foods and cultures. We will prepare an appropriate restaurant guide for the delegates and, where desired, provide guides for dinner excursions. A conference banquet will be planned.

## EXCURSIONS

Niagara Falls, one of the natural wonders of the world, is a 1.5 hr drive from Toronto. A round-trip bus tour is currently available for \$79. This includes a spectacular view of the Falls by boat, The Maid of the Mist.



A CityPass which provides admission to the Royal Ontario Museum, the CN Tower, the Ontario Science Centre, the Toronto Zoo and Casa Loma is \$68. Individual admission to the Royal Ontario Museum is \$19; to the Art Gallery of Ontario is \$17. Again, we will try to secure group rates for attractions of interest.

Sports fans may wish to join Mort Hoffman as he leads an excursion to see the Toronto BlueJays play baseball.



**TENTATIVE BUDGET**

Based upon information from previous conferences, we estimate the need for a budget of ~\$250,000 for a conference with an attendance of ~500 people. This might be raised as follows:

Regular Registration Fees:	\$150,000	(\$500 x 300 delegates)
Discounted Registration Fees: (students, school teachers, delegates from developing countries)	50,000	(\$250 x 200 delegates)
Corporate Donors:	20,000	
Exhibitors:	10,000	
CIC Chemical Education Fund:	10,000	
National Research Council	5,000	
IUPAC	5,000	

**EXHIBITION**

Academic publishers, teaching laboratory equipment companies, smart classroom equipment suppliers and computer companies will be invited to participate. In addition we will encourage the chemical societies of the countries represented by the delegates to display their literature.

**TECHNICAL PROGRAM**

“Developing Learning Communities in the Chemical Sciences” will be a themed conference, accommodating a wide range of topics within symposia focused on communication amongst chemistry professionals, educators, students and the lay community. Thus far, five symposia have been proposed. We welcome additional suggestions.

1. Communicating across the Educational Levels
  - a. chemical industry ↔ post-secondary institutions, in response to the changing jobs environment
  - b. colleges & universities ↔ secondary schools (Grades 9–12)
  - c. colleges & universities ↔ elementary/middle schools (Grades K–8)
  - d. professional development for teachers
  - e. developing a coherent science curriculum from elementary through post-secondary education
  
2. Outreach to the Lay Community
  - a. responsibility of the chemical industry to promote public understanding of chemistry
  - b. liaison between schools, colleges and universities and the community
  - c. service-learning in secondary and post-secondary education
  - d. chemistry education of non-science major students

3. International Student Learning Communities
  - a. developing global college and university learning teams
  - b. undergraduate and graduate chemistry research “without borders”
  - c. chemistry student exchange programs
  - d. developing international links between school teachers
  - e. global conversations on issues of ethics in chemistry education
4. Technological Support of Chemistry Learning and Learning Communities
  - a. use of social networking communications
  - b. web-based teaching and learning
  - c. diverse educational strategies
  - d. chemistry apps for the future...
5. Greening Attitudes in Chemistry Education
  - a. how a “green philosophy” transcends different disciplines
  - b. green, sustainable and environmental chemistry education for global citizens
  - c. developing green and sustainable chemistry communities and networks

In addition to contributed talks of 15–20 minutes, we plan to have 3–5 plenary lectures, a poster session accommodating up to 100 poster presentations and laboratory workshops defined by expressions of interest.

## **PUBLICATION**

We would hope to publish the proceedings of this conference in an open-access, on-line venue. One such has been suggested by Dietmar Kennepohl, chemist and Associate Vice-President Academic at Athabasca University (Canada’s on-line university) and is being investigated.

## **ORGANIZING COMMITTEE**

The organizing committee thus far consists of five chemistry faculty and two member of the administrative staff from the three campuses of the University of Toronto – St. George, Mississauga and Scarborough. In addition we will be seeking symposium organizers from the faculty at surrounding universities in southern Ontario (of which there are 10).

Conference Co-chairs: Andrew Dicks and Judith Poë – Both are Chemical Institute of Canada Chemical Education Award recipients. Both have previously been Chemical Education Program Chair for the annual Canadian Chemistry Conference and Exhibition and will share overall program responsibilities for this conference.

- Secretary & Treasurer: Penny Ashcroft Moore – Ms. Moore is the Manager in the Office of the Chair of the Department of Chemistry. She has experience in this conference role, having acted in a similar capacity for the Canadian Chemistry Conference and Exhibition when it was held in Toronto in 1999 and in 2010.
- Fund Raising: Paul Piunno – Dr. Piunno had extensive experience in industry before joining the faculty of the Department of Chemical and Physical Sciences at the Mississauga campus.
- Lab Workshop Coordinator: David Stone – Dr. Stone is an analytical chemist at the St. George campus with strong interests in the secondary school–university interface.
- Poster Session Coordinator: TBA
- Teacher Liaison: Svetlana Mikhaylichenko – Outreach to teachers is a particular interest of the Chemical Institute of Canada. Dr. Mikhaylichenko, an inorganic chemist in the Department of Physical and Environmental Sciences at the Scarborough campus, will work with the CIC Toronto local section to attract teachers to the conference.
- Webmaster: Patrick Wong – Mr. Wong is currently the webmaster for the Department of Chemistry