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- **Message from the chair**
- **BioXyce: an engineering platform for the study of cellular systems**
- **The 24th CCECE**
- **Laser Science @ Science World**
- **Workshop on commercialization of wireless technology**
- **Welcome to new arrivals to Vancouver section**
- **Ceremony celebrates Canadian cyclotron prowess at TRIUMF**
- **IEEE supports Vancouver-based centre to accelerate wireless commercialization**
- **UBC wins the 2010 IEEE EMC society university grant competition**
- **5 day Comsoc course on wireless communications**

## Message from the chair

Dear Member,

2011 will be an exciting year for our IEEE Section. The Vancouver Section (then part of the AIEE) was established in 1911, exactly one hundred years ago. IEEE members and volunteers from our



Section, both industry and academia, have been important contributors to our profession and the IEEE. We are proud of the many awards and recognitions received over the years, as well as in continuing this legacy. Our contributions to the IEEE range from: members delivering professional courses and presentations, volunteering in technical working groups and societies and developing standards and guidelines, publishing and reviewing technical papers, and serving in many leadership roles at various IEEE levels. Thank you all for your

commitment to advancing our profession.

As the new Section chair I will use this opportunity to briefly introduce myself. I am a senior electrical engineer with BC Hydro

Transmission Engineering working on various electrical aspects of BC Hydro's transmission system. I have been an IEEE member for about 14 years and on the Section executive since 2003. I served as a chapter chair for the Industry Applications Society before being recruited as a Section secretary in 2006. Since then I have filled the roles of treasurer and vice-chair. I look forward to this upcoming year and new opportunities to improve our service to the members.

This is the year when we will recognize and celebrate our accomplishments. I invite you on behalf of the Section and myself to participate in the events organized by our technical society chapters, affinity groups, and the Section, especially our centennial celebration events. We are in the process of planning for 2011 events and I would appreciate your thoughts and ideas. Please contact me at [mazana.armstrong@ieee.org](mailto:mazana.armstrong@ieee.org). We want to make this year special, and we encourage and welcome your engagement and participation in our Section's activities.

In closing, please join me in expressing our appreciation to the Section's volunteers for their time and effort dedicated to serving our membership.

I wish you Happy Holidays and a successful 2011!  
Mazana Armstrong, Ph.D., P.Eng.

## 5 Day Virtual Intensive Course on Wireless Communications Engineering

This five day online course will begin with a review of wireless communication technologies fundamental knowledge (basics) and move on to a more comprehensive discussion of RF Engineering, Propagation and Antennas which will be covered in two parts over the span of two days. In addition, the following areas will be covered during the week long session: Wireless Access Technologies, Network & Service Architecture, Network Management & Security, Facilities Infrastructure, and Agreements, Standards, and Policies.

This course is recommended for a broad audience, especially those with an engineering or technology background, or an appreciation of wireless communications engineering and practice. It is particularly suited for persons working in a relatively narrow or specialized aspect of wireless communications, as it aims to provide a comprehensive overview of how different facets of wireless practice fit into the overall design, implementation, and operation of wireless networks. It will

help attendees understand current technology and operations and assess prospective future developments in wireless communications. The course can also help candidates seeking certification in wireless communications engineering technology in their preparation for the exam.

Monday 17 January to Friday 21 January  
everyday from 9am to 3pm

System Requirements

PC-based attendees: Windows® 7, Vista, XP, 2003 Server 2000

Macintosh®-based attendees: Mac OS® X 10.4.11  
(Tiger®) or newer

\$549 Comsoc member - \$649 non-member  
CEU Credits: 2 credits

**ONLY A FEW SEATS LEFT**

**Registration closes 7 January 2011**

<http://www.comsoc.org/training/training-calendar/virtual-intensive-course-wireless-communications-engineering>

## BioXyce: an engineering platform for the study of cellular systems

Dr. Elebeoba E. May  
Sandia National  
Laboratories  
Albuquerque, NM

Monday 17 January  
1:00pm

Kaiser 2020  
UBC

Constructs from the field of electrical engineering have been used for the modeling and analysis of biological systems. In this work we exploit parallels between electrical and biological circuits for simulation of biomolecular processes and systems.

Electrical systems, like biological systems, are composed of large numbers of components and interacting subnetworks. Simulation of these systems must produce accurate results in an efficient manner. Parallel circuit simulation tools, such as Xyce (<http://www.cs.sandia.gov/xyce/>) allow engineers to model and test very large-scale systems. The theoretical framework used in developing Xyce also provides the necessary tools for constructing a biological circuit simulator that can model multivariate, multiscale, hybrid biological networks.

We discuss the development of BioXyce and demonstrate the use of BioXyce to simulate cellular systems and to model intracellular host and pathogen networks involved in the tuberculosis infection and onset of latency. This work was supported by Sandia National Laboratories Laboratory Directed Research Program and a NIH/NHLBI grant 5K25HL75105-3. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

**Speaker:** Dr. Elebeoba E. May received her Ph.D. in computer engineering from North Carolina State University and is a Principle Member Technical Staff in Sandia National Laboratories' Nanobiology Department. She is an Adjunct Research Assistant Professor in UNM-HSC's Internal Medicine Department with a joint appointment as an Adjunct Research Assistant Professor in UNM's Electrical and Computer Engineering Department.

Her research interests include: large-scale simulation and analysis of biological pathways and systems; use and application of information theory, coding theory, and signal processing to the analysis of genetic regulatory mechanisms; design and development of intelligent biosensors. Since joining SNL, Dr. May has provided computational biology leadership in the development of BioXyce, a large-scale systems biology simulation tool and continues leading development efforts in the application of BioXyce to simulation-based studies of host/pathogen interactions.

Dr. May is a recipient of the 2003 and 2008 Women of Color Research Sciences and Technology Award for Outstanding Young Scientist or Engineer and an NIH/NHLBI K25 Quantitative Research Career Development Grant to quantitatively decipher the genetic basis of latency in M. tuberculosis infection.

### Information

Control Systems chair  
Ryozo Nagamune  
[nagamune@mech.ubc.ca](mailto:nagamune@mech.ubc.ca)  
or  
Engineering in Medicine  
& Biology chair  
Rob Rohling  
[rohlink@ece.ubc.ca](mailto:rohlink@ece.ubc.ca)



## The 24th Canadian Conference on Electrical and Computer Engineering

May 8- 11, 2011  
Sheraton Fallsview Hotel  
Niagara Falls, Ontario

CCECE provides researchers, students, and practicing professionals in the area of Electrical and Computer Engineering with a Canadian venue in which they can present the latest technological advancements and discoveries.

It is also a valuable opportunity to network, exchange ideas, strengthen existing partnerships and foster new collaborations.

CCECE 2011 will feature mini-symposia with papers presented from a broad range of areas in Electrical and Computer Engineering.

There will be tutorial sessions in leading topics, plenary talks from senior executives in industry and academia, special sessions in hot topics, social programs, the IEEE Canada Awards and Banquet night, best student paper awards luncheon, and industrial exhibitions.

[http://www.ieee.ca/ccece11/index\\_en.php](http://www.ieee.ca/ccece11/index_en.php)

Conference Chair: Wai Tung Ng University of Toronto



Kathleen Maiman - SFU

## Laser Science @ Science World

Come and see the first Laser ever on display!

Watching your favorite movie on CD/DVD. Surfing the web. Scanning barcodes at the grocery store. Having corrective eyesight vision surgery. For the past 50 years, lasers have revolutionized the way we live. This milestone marks one of the greatest inventions of the 20th century!

When lasers were invented in 1960, they were called "a solution looking for a problem". Since then, they have become ubiquitous, finding utility in thousands of highly varied applications in every section of modern society, including consumer electronics, information technology, science, medicine, industry, law enforcement, entertainment, and the military.



Nissim Pillosof - Kodak

The term "laser" originated as an acronym for Light Amplification by Stimulated Emission of Radiation. A laser which produces light by itself is technically an optical oscillator. In the early technical literature, especially at Bell Telephone Laboratories, the laser was called an optical maser; this term is now obsolete. In 1917, Albert Einstein established the theoretic foundations for the laser and the maser in the paper Zur Quantentheorie der Strahlung (On the Quantum Theory of Radiation). In 1953, Charles Hard Townes and graduate students James P. Gordon and Herbert J. Zeiger produced the first microwave amplifier, a device operating on similar principles to the laser, but amplifying microwave radiation rather than infrared or visible radiation. In 1960, Theodore H. Maiman constructed the first functioning laser, at Hughes Research Laboratories, Malibu, California.

**Speakers:** Kathleen Maiman is the widow of Theodore Maiman, who invented, demonstrated, and patented the world's first laser in 1960. His achievement startled the scientific world and was recognized with Nobel-level prizes. He lived his last 10 years in Vancouver and was an adjunct professor at Simon Fraser University.

Dr. Nissim Pillosof studied physics in Sofia, Bulgaria and Prague, Czech Republic. He earned MSc in 1980 and PhD in Atomic Physics in 1988, both at the University of Sofia. >From 1988 to 1992 he worked as Senior Research Fellow in the University of Sofia. In 1992 he moved to Israel and joined Fabia Engineer as Senior Researcher and General Manager. In September 1997 he joined Scitex Corporation as Scitex Fellow responsible for assessment and development of novel imaging technologies. In Creo-Scitex (later Creo Israel) held the position of Physics Section Head. In 2004 Nissim accepted the position of Principal Engineer at Creo Products (now Kodak Graphic Communications Canada Company) and moved to Vancouver BC. As a Principal Engineer at Kodak Industrial Imaging Solution group he is responsible for development and design of High-power LD-based imaging devices. Nissim Pillosof is a member of the Research Program Committee of Canadian Institute for Photonic Innovations.

Holographic art display and various Laser devices by Gary Cullen

Science World  
TELUS World of Science  
1455 Quebec Street  
Vancouver

Monday 17 January  
6:15pm - 9:00pm

Entry fee is by donation and goes to Science World to cover their renovation expenses. Please give generously.

Maiman's functional laser used a solid-state flashlamp-pumped synthetic ruby crystal to produce red laser light, at 694 nanometres wavelength; however, the device only was capable of pulsed operation, because of its three-level pumping design scheme. In 1962, Robert N. Hall demonstrated the first laser diode device, made of gallium arsenide and emitted at 850 nm the near-infrared band of the spectrum. Later, in 1962, Nick Holonyak, Jr. demonstrated the first semiconductor laser with a visible emission.

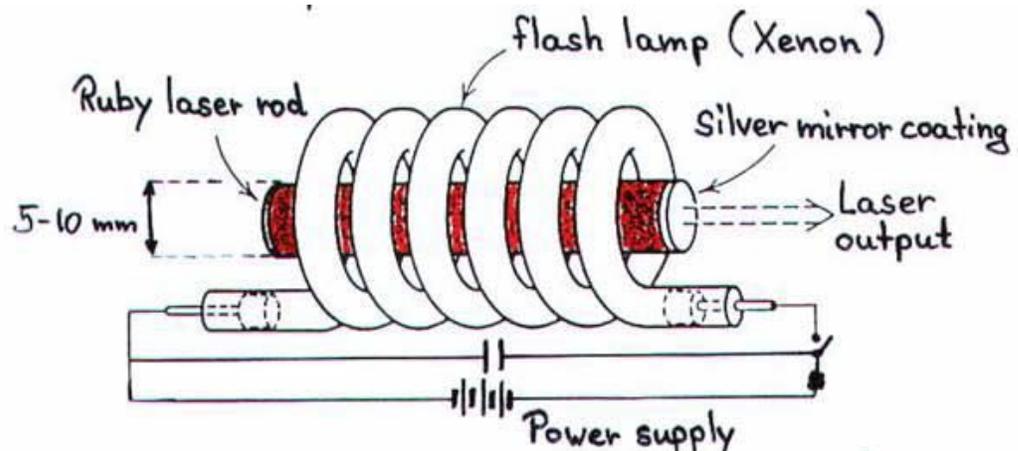
For an IEEE Institute milestone article on the world's first working laser please visit:  
<http://bmsmail3.ieee.org:80/u/17425/860410>

An IEEE Vancouver Joint Communications, IEEE Life Members & IEEE GOLD Affinity Groups joint event

**Registration required**

**Information and registration**

Joint Communications Chair Alon Newton  
alon.newton@gmail.com



## Ceremony celebrates Canadian cyclotron prowess at TRIUMF

A special ceremony on Thursday 16 December 2010 at 10:00 am celebrated the recognition of first beams from TRIUMF's main cyclotron in 1974 as an engineering milestone for Canada.

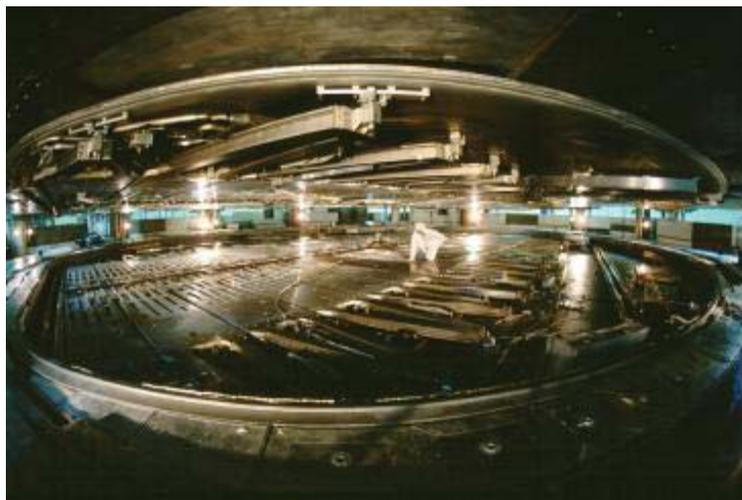
IEEE, the world's largest professional association for the advancement of technology, dedicated a pair of plaques in French and English to commemorate the award announced earlier in August. The ceremony was held at TRIUMF atop the concrete vault surrounding the main cyclotron. In addition to representatives from IEEE and the federal and provincial governments, three members of the pioneering team that helped design, build, and commission the device gave historical perspectives on the challenges and successes of this marvel of science, technology, and engineering.

The cyclotron at TRIUMF is the world's largest such device and while it is not the world's highest energy accelerator (that distinction belongs to the LHC at CERN in Geneva, Switzerland), it is one of the most intense. The TRIUMF cyclotron produces an intense beam of protons at energies of up to 500 million electron volts and with speeds up to 75% the speed of light. The success of the TRIUMF cyclotron helped drive the commercialization of smaller cyclotrons for medical uses such as for the production of medical isotopes. Advanced Cyclotron Systems, Inc., in Richmond, BC, is a current world leader in this area and was formed directly on the success of the TRIUMF activities. Since first beams were established, the TRIUMF cyclotron has been the primary engine behind a wide variety of programs including proton-based therapies for selected eye cancers, pre-flight irradiation tests and studies of aerospace components, production of selected medical isotopes, and a

broad program of research in particle and nuclear physics and materials science.

The text of the plaque reads:

First 500 MeV Proton Beam from TRIUMF Cyclotron, 1974.  
At 3:30 p.m. on 15 December 1974, the first 500 MeV proton beam was extracted from the TRIUMF cyclotron.  
Since then TRIUMF has used proton beams from its cyclotron (and secondary beams of pions, muons, neutrons, and radioactive ions produced in its experimental halls) to conduct pioneering studies that have advanced nuclear physics, particle physics, molecular and materials science, and nuclear medicine.



## IEEE supports Vancouver-based centre to accelerate wireless commercialization

Wavefront, the Vancouver-based commercialization centre that is accelerating the growth of Canada's wireless and new media development companies, will launch a new national Centre of Excellence for Commercialization and Research (CECR) for wireless technologies.

Beginning in 2011 and over the next five years, the new Wavefront Wireless Commercialization Centre (WWCC) will receive \$11.6 million in Government of Canada funding through the Networks of Centres of Excellence (NCE) Program in addition to \$11 million in cash and in-kind support that Wavefront's partners in industry, academia and government have pledged to date. The WWCC will have a national focus, driving the growth of Canadian wireless companies, enhancing their global competitiveness and productivity, and creating high value technology and jobs.

On the advice of IEEE Vancouver Section, IEEE Canada became an early supporter of the Wavefront proposal. IEEE

Canada president Om Malik provided letters of support at both the Letter of Intent (January 2010) and Full Proposal (July 2010) stages.

In October 2010, the IEEE Canada Board of Directors voted to form an Ad Hoc Committee on Wireless Technology that will:

- 1) provide a focal point for IEEE Canada members across Canada who wish to contribute to Wavefront's wireless commercialization efforts and
- 2) encourage the wireless industry and government officials to share their knowledge and insights concerning commercialization of wireless technology with IEEE members through IEEE Canada publications and technical activities.

The IEEE Ad Hoc Committee on Wireless Technology is chaired by Prof. Dave Michelson of the University of British Columbia and Past Chair of IEEE Vancouver Section.

For more information concerning Wavefront, please visit <http://www.wavefrontac.com>

## UBC wins the 2010 IEEE EMC society university grant competition

The IEEE EMC Society has announced that Prof. Dave Michelson, Past Chair of IEEE Vancouver Section and Co-Chair of the IEEE Joint Aerospace and Electromagnetics Chapter, has won the Society's 2010 University Grant for EMC Course Development.

The first section of EECE 585 - Electromagnetic Compatibility will be offered during the second term of the 2011/12 academic year. It will be the first university course devoted to Electromagnetic Compatibility in Western Canada.

Under the terms of the Western Dean's Agreement, students from other universities in Western Canada will be able to take the course at UBC and receive credit at their home institution.

In order to support the laboratory component of the course, a new teaching and research lab devoted to Antennas, Propagation and Electromagnetic Compatibility has been established at UBC with support from both local industry, and Western Economic Diversification Canada.

In order to accommodate participants from industry and other universities, the course will be delivered as a set of intensive weekend sessions throughout the term rather than as traditional lecture course.

Prof. Michelson is grateful to industry sponsors at

- Nokia (Rob McGarry, Ping Hui, et al.)
- VTech (Peter Mussenden, Ralph Tischler et al.)
- Protocol EMC (Rob Stirling et al.),
- LabTest Certification (Kavinder Dhillon et al.) ,
- Celltech Labs (Ben Hewson and Sean Johnston) and
- Tranzeo EMC (Andrew Marles et al.)

and

UBC Electrical and Computer Engineering (Andre Ivanov et al.) for their generous support of the course.

For more information, please contact Dave Michelson, [davem@ece.ubc.ca](mailto:davem@ece.ubc.ca).



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From: "Thomas Jerse" <[jjerset@citadel.edu](mailto:jjerset@citadel.edu)>  
Date: December 14, 2010 4:00:56 PM PST  
To: "Dave Michelson" <[davem@ece.ubc.ca](mailto:davem@ece.ubc.ca)>  
Subject: IEEE EMC Society University Grant >

Dear Professor Michelson:

Congratulations! Your proposal has been selected by the University Grant Committee of the IEEE EMC Society to receive the award for EMC course development. The award is in the amount of \$5000 US.

Under conditions of the grant, a course dealing with the principles of EMC must be begun at your school by January 2012. When the first course has been completed, please send me a syllabus and the number students who completed the course along with any comments you would like to make.

Formal recognition for your award will be presented at the 2011 IEEE International EMC Symposium this summer at the annual EMCS Awards Luncheon in Long Beach, CA on Thursday, August 18. We hope that you can attend the presentation and the symposium. Let me know if a formal letter of invitation from me would be useful for you in obtaining funding for your trip and I will be glad to write one.

Once again, please accept my congratulations on the award, and thank you for your commitment to EMC education.

Thomas Jerse, Chairman  
IEEE EMCS University Grant Committee

## **Welcome..! new arrivals to the best section on Earth \***

Felwa Abukhodair ..... GS	Md Wahedul Islam ..... GS	Muhammad Rizwan ..... ST
Omid Alemi ..... GS	Jaishankar Iyer ..... GS	Ashish Sachdeva ..... GS
Omar Altrad ..... GS	Mohsen Jamali ..... GS	Pedram Samadi Dinani ..... ST
Adama Amedu-Ode ..... ST	Chang Joo Jeon ..... ST	Roham Sameni ..... ST
Seyed Mohsen Amiri ..... ST	Marc Jones ..... M	Thecla Schiphorst ..... M
Eun Ji An ..... ST	Apaula Kabir ..... ST	Caitlin Schneider ..... GS
Kazu Arai ..... ST	Martin Kamron ..... ST	Katie Seaborn ..... ST
Ouldooz Baghban Karimi ..... GS	Paul Kealong ..... ST	Siriwan Sereewattana ..... M
Baldeep Baldeep ..... GS	Mohammed Khouj ..... GS	Xiaoben Shen ..... M
Wei Bao ..... GS	Jamie King ..... AM	Aaron Shields ..... ST
Ali Beik ..... GS	Xiangxiang Kong ..... ST	Mehran Shirazi ..... GS
Faizan Bhatti ..... ST	Leonard Lan ..... ST	Sushma Shrinivasan ..... GS
Tadeusz Bik ..... M	Brodie Lane ..... ST	Juha Sjoman ..... AM
Arber Borici ..... GS	Marc Langdon ..... M	Sid Srinivasan ..... AM
James Borthwick ..... ST	Adriel Lau ..... M	Xiaochuan Sun ..... GS
Rob Boutwell ..... AM	Keith Lee ..... ST	Michael Tang ..... M
Jeff Carpenter ..... ST	Eric Lee ..... GS	Jia-jia Tang ..... ST
Kevin Chawrun ..... GS	Wei Li ..... GS	Sara Tavakoli ..... ST
Chun-Yu Chen ..... ST	Mario Liverant ..... ST	Steve Thackray ..... M
Jing Cheng ..... GS	Nahid Mahmud ..... GS	Narjes Torabi ..... GS
Arthur Cheung ..... GS	Viswanathan Manickam ..... GS	Siamack V. Grayli ..... GS
Paul Chisholm ..... M	Malavika Mantripragada ..... ST	Jodie Vigar ..... ST
Benjamin Chung ..... M	Scott McLean ..... ST	James Vlasblom ..... ST
Mehdi Cina ..... GS	Omid Mohareri ..... GS	Kui Wang ..... M
Howard Clark ..... M	Muhammad Naeem ..... GS	Jason Waterman ..... M
Luke Cyca ..... M	Meghan Nagpal ..... ST	Chad Watson ..... ST
Behrooz Dalvandi ..... GS	Narek Nalbandyan ..... GS	Jan Westman ..... ST
Joshua Daniel ..... M	Kathy Nicolay ..... AM	Vincent Wirasaputra ..... ST
Jessica Dawson ..... ST	Anna Nosek ..... M	Vincent Wong ..... ST
Steven Dolling ..... M	Steve Oldridge ..... GS	Augustine Wong ..... AM
Ron Doria ..... ST	Dorte Ottesen ..... AM	Brandon Wong ..... ST
Jim Duxbury ..... M	Laura Patterson ..... AM	Ling Yan ..... ST
Funda Ergun ..... AM	Geoffrey Penford ..... ST	Amin Yazdani Salekdeh ..... GS
Karl Fort ..... ST	Daryl Percy ..... ST	Xiao Jun Ye ..... ST
Daniel Geil ..... M	Cosmin Pondiche ..... M	Brian Yuen ..... GS
Venkata Thulasi Prasad Gudivada . GS	Reza Qarehbaghi ..... ST	Daniel Yule ..... GS
Ibro Hadzismajlovic ..... M	Md Azizur Rahman ..... GS	Steve Zeng ..... M
Saeed Haratian ..... ST	Younes Rashidi ..... GS	Chao Zhang ..... M
Eric Heath ..... M	Justin Reiher ..... ST	Hao Zhang ..... ST
Chris Herbert ..... M	Kirkpatrick Richardson ..... ST	Garry Zhu ..... M

AF Affiliate - AM Associate Member - F Fellow - GS Graduate Student Member - LF Life Fellow  
LM Life Member - LS Life Senior - M Member - SM Senior Member - ST Student Member

\* IEEE Vancouver named Outstanding Large Section for 2009!



## **24th Canadian Conference on Electrical and Computer Engineering**

May 8-11, 2011 – Niagara Falls, Ontario

### **Workshop on Commercialization of Wireless Technology**

Organized by the IEEE Canada Ad Hoc Committee on Wireless Technology

Commercialization has been defined as everything a firm does that transforms knowledge and technology into new goods, processes or services to satisfy market demands. In recent years, governments around the world have devoted considerable effort to identifying the barriers to successful commercialization and to implementing programs that will increase both the rate and success of commercialization in their respective jurisdictions. Such efforts are ultimately intended to increase: 1) the number of high quality jobs available to its citizens, 2) the return on the government's current investment in research and development, 3) the tax revenue that funds the fundamental research that leads to further innovation, 4) the quality of life of its citizens.

This workshop will allow commercialization experts to share recent progress in advancing the commercialization of wireless technology by wireless startup companies and small and medium enterprises (SMEs) in Canada with members of the wireless research community. Topics of interest include, but are not limited to: 1) efforts by the federal government, such as the National Research Council's Industrial Research Assistance Program (NRC-IRAP) and various programs conducted by the Department of Foreign Affairs and International Trade (DFAIT), 2) the efforts of provincial and municipal governments and regional commercialization accelerators such as Wavefront, Communtech, and Prompt-Quebec, 3) recent success stories amongst the startups and SMEs themselves and 4) aspects of university-industry relations relevant to wireless commercialization.

Authors who wish to present at the workshop should submit a manuscript in IEEE conference format to the workshop co-chairs for review by the workshop program committee. Prospective authors are encouraged to contact the workshop co-chairs in advance and indicate their intention to submit a manuscript.

Standard conference registration at IEEE CCECE 2011 allows up to four pages to be included in the manuscript. Up to two additional pages may be included with a surcharge of \$50.00 per page.

#### **Deadlines and Important Dates**

Submission of Papers for Review	Friday February 4, 2011
Notification of Acceptance (by email)	Friday, February 18, 2011
Author's Registration Deadline	Friday March 4, 2011
Final Paper Submission Deadline	Friday March 18, 2011
Copyright Form Submission Deadline	Friday March 18, 2011
Advance Registration Deadline	Friday April 1, 2011

For more information, please contact the Workshop Co-Chairs,  
Dave Michelson, [davem@ece.ubc.ca](mailto:davem@ece.ubc.ca)  
Brad Lowe, [brad.lowe@wavefrontac.com](mailto:brad.lowe@wavefrontac.com)