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The Kitchener-Waterloo Section of the Institute of Electrical and Electronics Engineers serves members whose mailing address is in Bruce, Grey, Perth, Waterloo or Wellington counties. It collects news relevant to local engineers and is published monthly.

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<http://kw.ieee.ca>

IEEE KW Section, c/o Electrical & Computer Engineering (EIT 3028)

University of Waterloo

Waterloo, ON, N2L 3G1

## KW Section Executives

<http://www.ieeekw.com/executive.php>

### Officers :

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Dr. Shahab Ardalan

Vice-chair

Dr. Amin Mobasher

Secretary

Vacant

Treasurer

Dr. Amir Khatibzadeh

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Professional & Publicity Activities

Vacant

Student Activities (Conestoga College)

Ms. Jane Carr

Student Activities (University of Guelph)

Vacant

Student Activities (University of Waterloo)

Dr. Siva Sivoththaman

Educational Activities

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Mr. Jameson Hyde

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Awards

Dr. Alaa Khamis

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Antennas and Propagation (AP03)

Dr. Raafat Mansour

/Microwave Theory (MTT17)

Circuits and Systems (CAS04)

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Communications (COM19)

Dr. Raouf Boutaba

Computational Intelligence Society (CIS11)

Dr. Fakhri Karray

Computer (C16)

Dr. Ladan Tahvildari

Control Systems (CS23)

Dr. Fakari Karray

Electron Devices (ED15)

Dr. Siva Sivoththaman

Engineering in Medicine & Biology (EMB18)

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Information Theory (IT12)

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Power and Energy (PE31)

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Signal Processing (SP01)

Dr. Mohamed Kamel

Solid State Circuits (SSC37)

Dr. Shahab Ardalan

Systems, Man, & Cybernetics (SMC28)

Dr. Mohamed Kamel

Vehicular Technology (VT06)

Dr. Weihua Zhuang

### Affinity Group Chair :

GOLD (Graduates of the Last Decade)

Vacant

WIE (Women In Engineering)

Dr. Ladan Tahvildari

Consultants Network

Dr. Shahab Ardalan

LM (Life Members)

Vacant

### Student Branches :

Conestoga College Student Branch

Mr. Justin Swance

University of Guelph Student Branch

Vacant

University of Waterloo Student Branch - Stream A

Mr. Haosen Cai

University of Waterloo Student Branch - Stream B

Ms. Joanna Ma

## Vacant Positions

The IEEE Kitchener-Waterloo Section is looking for interested volunteers to fill a number of available positions on the board. Anyone interested should contact one of the executive for further details.

<http://www.ieeekw.com/executive.php>

## Upcoming Events

Updated information can be found at <http://www.ieeekw.com/activities.php>.

### EPTECH Hi-Tech Electronics Show

### 10th International Conference for Upcoming Engineers

May 5, 2011

Ryerson University, Toronto, ON

The International Conference for Upcoming Engineers (ICUE) was initiated by members of Ryerson University in 2001 to explore different options after graduation and to network with successful professionals in various engineering fields. To benefit upcoming engineers from a wide range of locations, the conference has been hosted by different universities each year. This year IEEE student branch at Ryerson University is proud to be hosting the ICUE conference for the third time.

ICUE has been developed as an International Conference to provide young engineers with the opportunity to expand their understanding of both academic and industrial sections of their field, and to present students with the opportunity to express their technical knowledge in public.

ICUE 2011 will feature industrial speakers, academic speakers, panel discussions, short course, design projects demonstrations, and social gatherings. This one day conference will focus on emerging technologies in all areas of engineering design and innovations. On behalf of the ICUE 2011 organizing committee, we are delighted to invite you to join us on May 5, 2011 at Ryerson University for the 10th annual International Conference for Upcoming Engineers.

<http://www.rnet.ryerson.ca/icue2011/>

### Canadian Conference on Electrical and Computer Engineering – Technology Driving Innovation

May 8 – 11, 2011

Niagara Falls, ON

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.

This conference, organized by local IEEE sections, provides a forum for Canada's best emerging Engineering talent and industrial leaders to present, participate, sponsor and network between partners in Canada's High Technology Frontier.

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

## The Development of Defence Electronics Systems – A Personal Perspective

IEEE Toronto Section

May 9, 2011, 5:30 PM

Niagara Falls, ON

Co-located with IEEE Canada - CCECE 2011

Speaker:

Robert Inkol

Senior Scientist - Defence Research and Development Canada

The successful development of complex defence electronics systems involves a host of technical and other issues, including the definition of requirements, technology choices, design trade-offs, and technology life cycle considerations. Drawing on his 33 years of experience in Electronic Warfare systems R&D, the speaker describes his involvement in the development of several systems with an emphasis on practical lessons.

<http://toronto.ieee.ca/events/may0911.htm>

## Seminar: Debugging Embedded Designs with Modern Oscilloscopes

May 17, 2011, 10:00 AM

Mississauga, ON

Speaker:

Mike Hertz

LeCroy

A two-hour technical seminar on debugging embedded designs with special emphasis on serial data busses, presented by a technical expert.

Mike Hertz is an expert in the field and holds several patents in measurement techniques and has many years of extensive work in the field.

[May2011seminar.pdf](#)

## Electrical Power Leveling

May 24, 2011, 7:00 PM

McMaster University, Hamilton, ON

Speaker: Eric Harrison, SMIEEE

In the efforts to use green energy, there is a need to equalize the timing of power generation and power consumption. No longer do we have base load supplied by nuclear and hydro plants that run constantly; we have solar panels and windmills that have varying output that must be used.

We can not tell electric car users that they can only recharge when the sun is shining. But, there are some clever things that can be done to industrial machinery control systems to speed them up when the excess power needs to be consumed.

[meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/6211](http://meetings.vtools.ieee.org/meeting_view/list_meeting/6211)

## 2nd International Workshop on Real-Time Measurement, Instrumentation and Control

June 2 – 3, 2011

University of Ontario Institute of Technology, Oshawa, ON

Speakers:

Computer-aided Safety Engineering

Professor Paul Chung

Associate Dean (Research), Faculty of Science &

Director, Research School of Informatics,

Loughborough University, UK

Dynamic Analysis and Monitoring of Process Control Loops

Professor Yoshiyuki Yamashita

Department Chair Department of Chemical Engineering Tokyo University of Agriculture and Technology, Tokyo, Japan

Topics:

The workshop will have papers in the area of real-time measurement, instrumentation and control, which include (but not limited to) the following topics:

- Real time measurement techniques
- Advanced energy systems
- Oil & gas process systems
- Advanced risk and reliability engineering
- Advanced safety design
- Advanced instrumentation technologies
- Control system design and analysis
- Applications on radiation detection & protection
- Nuclear reactor internal and external measurements
- Advanced nuclear power systems
- Advanced plant inspection & maintenance

- Real time monitoring & diagnosis
- Applications on health physics
- Applications on space

[http://ewh.ieee.org/conf/rtmic/2011/#\\_Venue](http://ewh.ieee.org/conf/rtmic/2011/#_Venue)

## 21st International Conference on Noise and Fluctuations

June 12 – 16, 2011  
Toronto, ON

The International Conference on Noise and Fluctuations (ICNF) is a biennial event, with the aim of bringing together specialists in fluctuation phenomena from different fields in science and engineering, to address both fundamental and applied issues. Recent past conferences in this series were organized in St. Louis (1993), Palanga (1995), Leuven (1997), Hong Kong (1999), Gainesville (2001), Prague (2003), Salamanca (2005), Tokyo (2007), and Italy (2009).

For queries about ICNF 2011 you can use the e-mail address  
[icnf2011@icnf2011.org](mailto:icnf2011@icnf2011.org)

## International Conference on Autonomous and Intelligent Systems

June 22 – 24, 2011  
Burnaby, BC

The 2nd International Conference on Autonomous and Intelligent Systems (AIS 2011) is held in conjunction with the 8th International Conference on Image Analysis and Recognition in the beautiful city of Burnaby on the outskirts of Vancouver, Canada. It aims at providing a platform for researchers, engineers, academics and industrial professionals to present their recent research work and to explore future trends in various areas of autonomous and intelligent systems. The conference will address recent advances in theory, methodologies and applications in the field.

The scientific program will include keynote and invited speakers and fully refereed contributions. The organizers are working with Springer to have the proceedings published as a special volume in Springer Lecture Notes in Computer Science Series. It will be also indexed in major indexing sites. As with the first edition of AIS, selected articles will be published in the International Journal of Robotics and Automation and The International Journal on Control and Intelligent Systems, among other journals. AIS 2011 is technically co-sponsored by the IEEE.

<http://www.ais.uwaterloo.ca/ais11/>

## IEEE UW Guest Speakers

IEEE UW Student Branch

Keep an eye on the IEEE UW Student Branch website for further details on two very exciting guest speakers that will be visiting in the fall.

Canadian astronaut, Dr. Robert Thirsk will be sharing his experiences with the American and Russian space programs and his recent involvement on the International Space Station.

A representative from Blizzard Entertainment will be returning to Waterloo for the second year to talk about products and career opportunities.

[http://ieee-sb.uwaterloo.ca/upcoming\\_events.aspx](http://ieee-sb.uwaterloo.ca/upcoming_events.aspx)

## Engineers and the World

### Quantum Entanglement as a Game-Changer

Institute for Quantum Computing

March 15, 2011

Researchers at Waterloo's Institute for Quantum Computing recently demonstrated that "quantum entanglement — the powerful correlation between particles — can significantly enhance the accuracy of communication between parties," the IQC web site reports. "While entanglement cannot itself be used to communicate, the IQC optics researchers demonstrated that one can transmit information over a certain channel with higher success when using entanglement than with the means available in classical physics. The research team — Robert Prevedel, Yang Lu, Rainer Kaltenbaek, Will Matthews and Kevin Resch — published their results in the March 14 edition of Physical Review Letters."

## Convocation Awards and Honorary Degrees

University of Waterloo Bulletin

April 26, 2011

Victor Quintana, professor of electrical and computer engineering, is among six retired University of Waterloo faculty members that will become "distinguished professors emeritus" (or the feminine form, "emerita") during eight sessions of the 102nd Convocation, to be held in mid-June.

Also announced were 11 people who will receive honorary doctorates during Convocation week. Among them: Ian McPhee, co-founder of Waterloo's first spinoff company, WATCOM, who has also served on the university's board of governors. McPhee, a Waterloo math graduate, has provided leadership in the Canadian software business and the high-tech sector in Waterloo Region. He co-founded WATCOM with the late Wes Graham in 1981. WATCOM is now a division of Sybase, under the name iAnywhere, and remains a Waterloo-based company. McPhee has also served as chair of the Accelerator Centre in the University of Waterloo's David Johnston Research and Technology Park and as chair of the centre's entrepreneurship council.

Jamal Deen, a McMaster University professor and senior Canada Research Chair in information technology, will receive a Doctor of Engineering degree and address convocation. A highly accomplished researcher, inventor and scholar, Deen has helped McMaster become a major centre for innovation and cutting-edge research in opto-electronics. He is a fellow of the IEEE, the world's largest professional

association for the advancement of technology, as well of the Royal Society of Canada and the American Physical Society.

## Digital High-Flyers Converge on Stratford

University of Waterloo Bulletin  
April 28, 2011

Canada's premier national digital media event — the annual Canada 3.0 digital media forum — “will have a strong lineup of speakers including MacroWikinomics co-author and consultant Anthony D. Williams” when it takes place in Stratford next week, organizers promise.

The university, through its Stratford campus, was a founder of Canada 3.0 when it was first held in 2009, and this year ranks as a “supporter” along with the city of Stratford. Platinum sponsors are Open Text, Pricewaterhouse Coopers, and Research in Motion.

The Canadian Digital Media Network, which is organizing the event, says in a news release that the goal continues to be the “Moonshot” — that anyone can do anything online in Canada by 2017. “The Moonshot goal is what drives the discussion and action items resulting from the event,” said Kevin Tuer, managing director of the CDMN. “Canada 3.0 2011 will be examining how ICT — Information and Communications Technologies — can advance Canada's productivity.”

[http://www.canada30.com/press\\_room.html](http://www.canada30.com/press_room.html)

For Fun...

### Brain Teaser

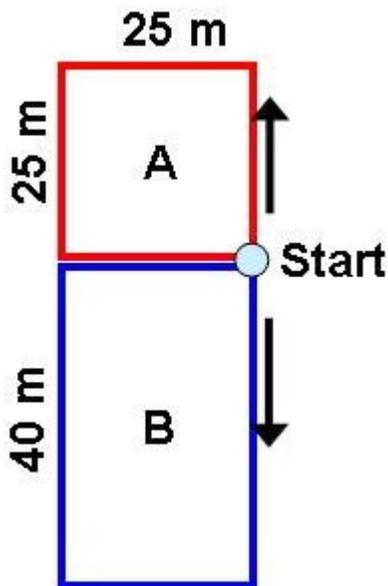
Joe McCrea (Logain)

The Grey Labyrinth

Two skaters skating in rectangles have one side which overlaps. If the pressure on the ice for the overlapping strip is equal to both their body weights, the ice weakens. The ice will break after 25 seconds of weakening pressure. How long before the ice breaks after the two skaters start at the same time traveling as the diagram shows?

Skater A goes at 5m/s

Skater B goes at 6m/s



### Engineering Humour

Q: What do you get when you cross a mosquito with a cat?

A: mosquitocat  $\sin\Theta$

Q: What do you get when you cross a mosquito with a mountain climber?

A: You can't cross a vector with a scalar.