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Formation of the Humanitarian Initiatives Committee Vancouver branch

Wednesday 14 March
5:00 pm
UBC Campus,
Fred Kaiser Building Room 2020 (Volta)

The problems facing humanity today are complex and interdisciplinary. However, many of the present world leaders have their expertise in financial, political and/or legal domains. The application of science through engineering to find solutions is currently missing from many of today's dialogues. As one of the world's largest and most influential technical bodies, the IEEE has identified an opportunity for it to promote technical and engineering aspects when addressing these complex solutions.

The IEEE 2011 president Moshe Kam announced last October that the IEEE would be implementing a new program focused on humanitarian projects and technology and encouraged the membership to support this work. The announcement was made at the inaugural Global Humanitarian Technology (GHTC) conference in Seattle in October 2011.

The IEEE Vancouver branch has accepted this invitation and is in the process of defining a local Humanitarian Initiative Committee (HIC).

The Vancouver HIC will work with industry, academic and student members to learn and identify how engineering expertise can help. It will be part of a broader network of national and international IEEE committees and will partner with existing NGO's.

On March 14 2012, IEEE members are invited to attend an information and organizational meeting. The agenda will cover: * Description of the IEEE's objectives for promoting technology in solving humanitarian problems * Experiences from the 2011 GHTC conference * Discussion of Vancouver HIC opportunities to involve local industry and academics

Additional information will be posted on the CONTACT website (www.ieeecontact.org) and the IEEE Vancouver section site (vancouver.ieee.ca) closer to the event.

If you have any questions or wish to become involved in planning, please contact Paul Lusina (paul.lusina@ieee.org or paul.lusina@gmail.com).

Boyan Mohar
Simon Fraser University

Five-Colour theorem and beyond

Tuesday 06 March
11:30 am to 12:20 pm

ASB 10900 (IRMACS
presentation studio),
Simon Fraser U, Bby

In 1994, Carsten Thomassen published a beautiful simple proof confirming that every planar graph is 5-list-colourable. Another beautiful proof on a similar topic was given a few years later by Mike Albertson who proved that every precolouring of a set of vertices

in a planar graph that are far apart from each other can be extended to a 5-colouring of the whole graph. After presenting these enlightening contributions, the speaker will discuss possible common generalizations of these results and report on some recent progress.

Chris Eliasmith
University of Waterloo

How to build a brain: from single cells to cognitive systems

Tuesday 20 March
11:30 am to 12:20 pm

ASB 10901
(IRMACS boardroom),
Simon Fraser U, Bby

How do billions of single neurons result in the complex behaviors we observe in animals and in ourselves? In this talk, I discuss my lab's approach to answering this question. In short, we build large-scale simulations at the level of single cells, which exhibit a wide range

of flexible, dynamic, and cognitive behaviors. I discuss why the principles we employ are reasonable, and describe the benefits, successes, and challenges of this research.

David Hill
University of Sydney

Planning and control of massive networks

Tuesday 03 April
11:30 am to 12:20 pm

ASB 10901
(IRMACS boardroom),
Simon Fraser U, Bby

The modernization of infrastructure networks requires coordinated planning and control. Considering traffic networks and electricity grids raises similar issues on how to achieve substantial new capabilities of effectiveness and efficiency. For instance, power grids need to integrate renewable energy sources and electric vehicles. It is clear that all this can only be achieved by greater reliance on systematic planning

in the presence of uncertainty and sensing, communications, computing and control on an unprecedented scale, these days captured in the term 'smart grids'. This talk will outline current research on planning future grids and control of smart grids. In particular, the possible roles of network science will be emphasized and the challenges arising

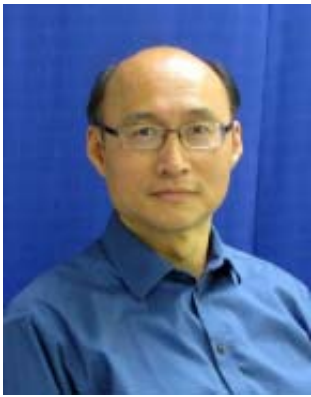
Sponsored by
IEEE Circuits and
Systems Society
joint chapter of the
Vancouver/Victoria
sections and
IRMACs Coast to Coast
Seminars Spring 2012

Updates to these three events (bios, etc) at:

<http://vancouver.ieee.ca/CASS/upEvents.htm>
<http://www.irmacs.sfu.ca/events/coast-coast-abs#24875>

Information
Circuits and Systems
chair Ljiljana Trajkovic
ljilja@cs.sfu.ca





Michael Tang
CSA International

Wednesday 18 April
6:00PM
(finger food at 5:30PM)

Alpha Technologies Ltd
Training Room B
77000 Riverfront Gate
Burnaby

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Info & Registration

Joint Aerospace and
Electromagnetics
vice chair
Peter Lim
peter.lim@alpha.ca

Transition from CSA/UL/IEC 60950-1 to new standard product safety UL/IEC 62368-1

Keynote Speaker: Randy Tkatch, VP of Engineering,
Alpha Technologies Ltd

Presenter: Michael Tang – Technical Adviser, CSA
International

Host: Peter Lim - vice chair, EMC, PSES, Aerospace
Vancouver joint chapter

Topic: An introduction to a new safety standard for
audio/video, information technology and
communication technology equipment, Part 1 - Safety
requirements, IEC 62368-1 which is a new safety
standard containing requirements developed using
Hazard Based Safety Engineering (HBSE) principles.

1. Background and purpose of this new safety standard
– 5 ~ 10 min.

- 2. Principles of HBSE – 20 ~ 30 min
- 3. General safety principles of IEC 62368-1- 10 min
- 4. Application overview of IEC 62368-1 with respect to
potential injuries – 5 ~ 15 min
- 5. CSA's position as it relates to transitioning from IEC
60950-1 to IEC 62368- 2 ~ 5 min
- 6. Questions and answers period: 30 ~ 60 min

Speaker: Michael Tang is Professional Engineer in
BC, Canada and a Chartered Engineer in the United
Kingdom with a Bachelor of Science degree in Electrical
and Electronic Engineering. He has 12 years of
experience in ITE products safety. In addition, he also
has 18 years of experience in the field of Electrical,
Electronic and Instrumentation Engineering which
included the design, installation, maintenance and
commissioning of electrical/instrumentation projects.



*IEEE Joint Aerospace and
Electromagnetics Chapter*

**ICICS-ECE-IEEE Workshop on
Future Communications and Multimedia Systems**

**EMPOWERING
COMMUNICATIONS**

Featuring

- Wireless Networks
- Multimedia
- Communications for Smart Grid

Friday, March 9, 2012

To register: icics.ubc.ca/workshops/comm2012



Sanja Boskovic
BCIT

Tuesday 27 March
6:00 - 7:30 PM

Room 1525 SFU Harbour
Centre, 515 W Hastings St

Open to public and free
but space limited so
please RSVP at:
<https://vancouver.ieee.ca/wie>

Information

Women In Engineering
Affinity Chair
Zahra Ahmadian
zahraa@ece.ubc.ca

An engineer’s journey through war, cancer and life

The sustainable power engineer, Dr. Sanja Boskovic is not a typical power engineer. Raised in Yugoslavia and educated in Mechanical Engineering at the University of Sarajevo, Sanja was one of the few women practicing in power and process engineering in her country. But that was just the beginning.

In this talk Sanja will share her amazing journey through the Bosnian war, family life, graduate school, fighting cancer and finally her successful career as chief instructor at BCIT.

Speaker: Dr. Sanja Boskovic is Chief instructor and the lead Virtual Classroom Thermodynamics and Applied Mechanics instructor for BCIT’s Power Engineering innovative distance education methodologies. She launches successful on site programs and ensure successful completion for all students. She has been pivotal in establishing quality instruction for clients like Norske Canada and Celgar Pulp Mill. She was the 2011 recipient of the BCIT Alumni Association Excellence in Teaching Award.



Judi Richardson
Richardson Management

Monday 16 April
6:00pm - 8:00pm
Room 1530 SFU Harbour
Centre, 515 W Hastings St

The power and peril of vision

‘Vision’ or a painted picture of future “success” is powerful. The ability to clearly guide, challenge and inspire an organization to achieve its long term goals is the sign of an excellent leader. Yet vision alone does not lead to success and vision without strategy and execution can lead to chaos.

Speaker: Judi Richardson MBA ICD.D is the principal of Richardson Management Inc., a strategic consultancy established in 1998 to help organizations articulate and achieve their vision. RMI focuses on critical areas such as Vision & Values, Strategy and Branding. Diverse clients have included HSBC Capital, APG Hong Kong, COBS Breads and the UBC Department of Electrical & Computer Engineers among many others.

Armed with an MBA from York University and the drive of a former Canadian National Ski Team member, Judi has held leadership positions in several organizations including ACNielsen, Scott Paper, Dairyworld, Starbucks and KremeKo Inc. where she spearheaded the record-breaking Canadian launch of Krispy Kreme as VP Marketing & Business Development.

With over 25 years of experience, Judi is a certified corporate director through the Institute of Corporate Directors (ICD.D) and sits on the Board of Directors for VRX Worldwide (TSX-V:VRW), Simpson Seeds Inc. and Parkinson’s Society Canada. Former board/ advisory board roles include 1800GOTJUNK, Nurse Next Door™, KremeKo Inc., North Star Montessori Elementary, kids.now and Climate Smart.

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Information

Adam Krolak
Joint Management chair
adamkrolak@gmail.com



OE22 Meeting Announcement: "The state of ocean related activities in Vancouver"



The Vancouver chapter of the IEEE Oceanic Engineering Society (OES) is pleased to announce our inaugural meeting, to be held 21 March, 2012. The theme of the evening is "The state of ocean related activities in Vancouver", and our keynote speaker will be James A.R. McFarlane, Vice President of International Submarine Engineering and previously the Head of the Office of Resources and Environmental Monitoring at the International Seabed Authority.

Meeting Details:

Date: Wednesday March 21, 2012.
Time: 19:00 - 21:00
Place: Royal Vancouver Yacht Club (<http://www.royalvan.com/>)
Address: 3811 Point Grey Road, Vancouver

"Coffee & cookies" will be provided.
All are welcome.

Preliminary Agenda:

19:00: Arrivals
19:10: Welcome & introductions
19:20: Plans for OE22 and future meetings
19:30: Main presentation, speaker: James A.R. McFarlane
20:15: Networking event
21:00: Close

Other OE22 Events planned for 2012

We aim to hold one OE22 meeting every quarter, i.e. March, June, September and December. These meetings are intended to be interesting to a broad audience, avoiding detailed technical presentations, and focussing on more high level topics.

Potential themes for upcoming meetings include:

- Surface applications (e.g. tankers, piloting etc.)
- Subsea applications (e.g. ROVs, AUVs, subsea networks etc.)
- Energy, Environment & Political (e.g. wave energy, effect of tankers on Haida culture etc.)



UNBC



**UNBC
DEPARTMENT
OF COMPUTER
SCIENCE AND
IEEE NBC**

Invite Faculty, Students,
Staff and the Public to attend
the following presentation:

“Distributed Intelligent Systems: A Paradigm Shift”

**Dr. William A.
Gruver**

**President,
Intelligent Robotics
Corporation
Professor Emeritus
Simon Fraser
University**

Friday

March 23, 2012

1:00 pm – 2:30 pm

Room: 5-176

Centralized systems are unsuitable for large-scale systems integration because of their high reliance on centralized communication, high complexity, lack of scalability, and high cost of integration. The use of distributed intelligence technologies avoids these weaknesses by building intelligent systems with physical and software agents that operate autonomously to independently handle specialized tasks, and cooperate to satisfy system-level goals and thereby achieve a high degree of flexibility.

This talk provides an introduction to the technologies and applications of distributed intelligent systems for dynamically changing, networked environments. It describes how a peer-to-peer environment can be built to distribute the logistical and strategic requirements of a system, while improving robustness and scalability.

The presenter will contrast centralized and distributed systems, describe development frameworks for distributed systems, present recent advances based on multi-agent and holonic systems, and survey applications involving manufacturing automation, distributed scheduling, automated decision support, RFID tracking, and distributed energy systems. Specific examples and success stories of implementations in industrial environments worldwide will be provided.

Dr. Gruver will also give a short presentation on the IEEE Systems, Man, and Cybernetics Society at the end of this talk.



Biomedical Engineering

THE UNIVERSITY OF BRITISH COLUMBIA

2011/12 Grand Rounds Seminar Series

Date: Wednesday, February 29, 2012

Time: 5 - 6 PM

Location: [Life Sciences Centre](#) Room 3, 2350 Health Sciences Mall, UBC

Speaker: Dr. J Maxwell Donelan; CIHR New Investigator and MSFHR Career Investigator Associate Professor Locomotion Lab Director, Department of Biomedical Physiology & Kinesiology, Simon Fraser University

Title: Controlling your every movement (but in a good way!)

Abstract: The talk will focus on two active areas of research within Dr. Maxwell Donelan's lab, beginning with biomechanical energy harvesting. This wearable technology uses principles similar to regenerative braking in hybrid cars to unobtrusively generate electricity from the natural motion of walking. At a comfortable walking speed, on the level, these devices can generate an average of 12 W of electrical power. While the current focus is on military applications, this human power production may prove useful for powering developed world biomedical devices, such as powered prosthetic limbs, and developing world health technologies, such as infrared water purification. The second half of the talk will focus on our research aimed at designing and implementing real-time controllers that accurately and automatically help runners control their training and performance. At the core of this invention is our finding that runners have a one-to-one relationship between cadence and speed, and when instructed to run at a new cadence, runners automatically and rapidly adjust their speed. We use this principle to automatically control running speed by using sensors to estimate actual speed and a controller to specify running cadence so as to minimize the difference between target speed and actual speed. A second application of our method provides automatic control of running intensity, rather than speed, by sensing and controlling heart rate. While our focus to date has been on controlling running in healthy subjects, this technology may also prove useful for helping to effectively rehabilitate gait.

Speaker's Bio: Dr. Donelan is an Associate Professor of Biomedical Physiology & Kinesiology at Simon Fraser University in Vancouver, British Columbia. He has a Ph.D. in Integrative Biology from Berkeley and did his postdoctoral work in Neuroscience at the University of Alberta. Dr. Donelan holds Career Investigator awards from the Michael Smith Foundation for Health Research and the Canadian Institutes of Health Research. He is also Chief Science Officer of Bionic Power - a university spin-off company that is developing energy harvesting technology for people whose lives depend on portable power.

We encourage you to pass this invitation on to others in your network who might be interested in attending.

Refreshments will be provided before the talk at 4:30 PM in Room 1410.

Department of Chemical and Biological Engineering
Wednesday February 29th, 2012 (CHBE 202, 12-1 pm)

- Speaker : George Karniadakis, Professor of Applied Mathematics, Brown University, and Research Scientist of Mechanical Engineering, MIT

Title: Multiscale Modeling of Physical and Biological Systems

Abstract : Many physical and biological systems exhibit strong coupling among different spatial and temporal scales and their simulation with standard methods is not straightforward. We will present the main ideas of Dissipative Particle Dynamics (DPD) - a stochastic coarse-grained molecular dynamics methods that can bridge seamlessly such scales and can be used in modeling complex fluids as well as soft matter. We will present specific DPD simulation studies of polymer brushes, glycocalyx, blood flow and hematological disorders such as malaria and sickle cell anemia along with microfluidic experiments for validation of our multiscale models.

