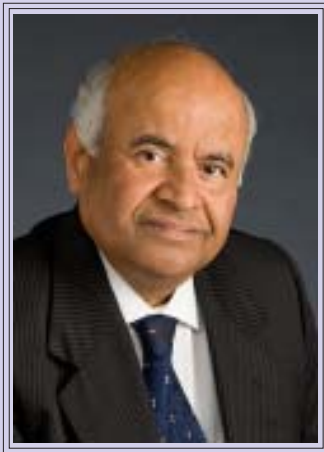




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- Professor Vijay Bhargava candidate for IEEE ComSoc President-Elect
- IEEE mini-symposium on engineering for biomedical applications
- IEEE Canada President to present Outstanding Section Award in Vancouver
- An Engineer's Journey: On Career, Work-Family Balance and IEEE
- Structural Results in Networked Sensor Management
- Cooperation Stimulation in Peer-to-Peer Live Streaming
- Electromagnetic Compatibility - First Steps Eptech 2010 Electronics Show
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- **Special AGM 2010**
- **Chair's Message**



## Professor Vijay Bhargava

is a candidate for  
IEEE ComSoc President-Elect

The Section Executive Committee would like to remind IEEE ComSoc members that a member of our Section, Prof. Vijay Bhargava is a candidate for IEEE ComSoc President Elect.

We urge all members of IEEE ComSoc to carefully review the candidate position statements and biographies at <http://www.comsoc.org/about/bog/election/current> and to vote in the election.

Balloting starts on 28 May and closes on 23 July. Past experience suggests that the election will be a close one so **every vote will count!**

## IEEE Canada President to present Outstanding Section Award in Vancouver

On Monday 21 June 2010, IEEE Canada President Om Malik will present the Outstanding Section Award to Vancouver Section at the Section's Annual General Meeting.

Vancouver Section had an outstanding year in 2009 as evidenced by substantial increases in the Section's membership, formation of new subsections in Northern BC and

the Okanagan, creation and expansion of its technical chapters, formation of a Women in Engineering Affinity group, and so forth.

The IEEE Canada Exemplary Section Award recognizes outstanding Section activity, leadership, management and administration for the immediate past Section year.

## An Engineer's Journey: On Career, Work-Family Balance and IEEE



Meliha B. Selak  
BC Hydro

### Distinguished Lecture

Wednesday 09 June  
630 pm

Room 1415  
SFU Harbour Centre  
515 West Hastings Street  
Vancouver

### Information

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

Meliha Selak will be guest lecturer who will share her stories about career, work-family balance and importance of IEEE to her success.

Recently, Meliha together with her women colleagues from PES Governing Board were guest lecturers in Abu Dhabi, where there were approximately 200 women in the audience who enthusiastically asked questions, shared their experiences of engineering studies in the UAE and openly discussed their challenges to overcome adversity. There was a meeting of women from different parts of the world; a meeting of their minds, their hopes, their dreams, and a deep sharing that changed the parties forever.

As a tribute to that day, to the women who participated and to the hope that is inspired by simple acts of kindness, Cheryl Warren wrote the on-line book "Women in Engineering – You Can Do It!"

Meliha B. Selak is a Specialist Engineer with BC Hydro where she is working in the Power System Protection & Control Planning group. She holds a degree in Electrical Engineering from the University of Sarajevo and has over 30 years of experience in various aspects of power systems engineering including utility protection, research & development, project management and consulting on international projects.

Prior to joining BC Hydro in 2000, she worked as a research engineer in the Power System Group at the University of British Columbia, in connection with the development of an EMTP based real-time power system simulator. Her technical activities include power system protection and control applications, power system analysis, evaluations and interconnection studies for the various plants connecting to the power system, as well as development of BC Hydro's power system protection guidelines.

She is a registered professional engineer in the Province of British Columbia and she is a senior member of IEEE. Meliha is a member of the IEEE Power & Energy Society (PES) Governing Board and she is currently serving as the Vice President for Chapters. Also, she is a member of the IEEE Power System Relay Committee (PSRC). She has written numerous technical reports and papers on the power system subjects and she is also a paper reviewer. Meliha is a distinguished lecturer of IEEE PES.

Meliha received numerous awards for her service to British Columbia's Power and Energy community through her leadership role in IEEE Vancouver Section and IEEE PES Chapter Chair. She is the recipient of the 2010 IEEE E.F. Glass Western Canada Merit Award.

As a VP Chapters, Meliha is responsible for the operation of the PES Chapters organization for the chapters throughout Regions 1 – 10 and has both line responsibility for chapters and staff responsibility for the support functions within the Chapters organization. The Chapter organization includes Region Representatives for USA, Canada, Latin America, Europe, Middle East & Africa, Asia & Pacific, PES Distinguished Lecturers Program (DLP), Awards and Resources, Electronic Communications who report to the Vice President Chapters.

*The IEEE Women in Engineering in Vancouver is proud to present the new series of talks "An Engineer's Journey...". In this series our invited guests will share their experiences on topics related to women in engineering profession with you. The talks will be followed by question & answer and a casual networking. Refreshments will be provided. Join us on Wednesday June 9, 2010 at the SFU Harbour Centre in Downtown Vancouver for an evening of networking and experience transfer.*

## Structural Results in Networked Sensor Management



Vikram Krishnamurthy  
University of British  
Columbia

### Distinguished Lecturer

Thursday 03 June  
330 - 430pm  
Room KAIS 2020  
Fred Kaiser Building  
2332 Main Mall, UBC

### Information

Signal Processing Chair  
Z. Jane Wang  
zjanew@ece.ubc.ca

This seminar deals with sensor activation and social learning in sensor networks using game theoretic and stochastic control methods.

The talk comprises of three parts. In the first part, we describe how social learning leads to rational herding and how optimized social learning has a threshold structure on the simplex of Bayesian posterior distributions.

In the second part of the talk, we illustrate how the theory of global games gives a powerful method for designing decentralized data-aware sensor activation algorithms in dense sensor networks. We show that the Nash equilibrium of the sensor network has a simple threshold structure and exhibits a remarkable phase transition as more data is collected.

In the third part of the talk we describe how decentralized adaptive filtering algorithms with regret matching can be deployed in sensor networks to guide network behavior to a correlated equilibrium. A major theme of the talk will be the focus on structural properties and convergence analysis that result in numerically effi-

cient algorithms rather than brute force computational methods.

**Speaker:** Vikram Krishnamurthy received his Ph.D from the Australian National University, Canberra, in 1992. He currently is a professor and Canada Research Chair at the Department of Electrical Engineering, University of British Columbia, Vancouver, Canada.

His current research interests include computational game theory and stochastic control in sensor networks, and stochastic dynamical systems for modeling of biological ion channels and biosensors. In 2009-2010, he serves as Distinguished lecturer for the IEEE signal processing society. He also serves as editor in chief of IEEE journals selected topics in Signal Processing.



## Cooperation Stimulation in Peer-to-Peer Live Streaming



H. Vicky Zhao  
University of Alberta

Monday 04 June 14  
330 - 430pm

Room KAIS 2020  
Fred Kaiser Building  
2332 Main Mall, UBC

### Information

Signal Processing Chair  
Z. Jane Wang  
zjanew@ece.ubc.ca

With recent advances in multimedia, communications and networking technologies, peer-to-peer (P2P) live streaming becomes increasingly popular, and we have seen many successful deployments, for example, PPLive, CoolStreaming, Sopcast, etc.

To provide reliable and satisfactory level of service, it is of crucial importance to stimulate user cooperation, to understand how users interact with each other, and to analyze the impact of human factors on P2P live streaming systems. Such an understanding provides fundamental guidelines to better design of P2P live streaming systems, and to offer more secure and personalized services. Human and social dynamics has recently been identified by US National Science Foundation as one of its five priority areas, which also shows the importance of this emerging interdisciplinary research area.

This talk introduces our recent works on cooperation stimulation for P2P live streaming systems. First, the mesh-pull peer-to-peer live streaming systems will be introduced. Then, a game-theoretic framework will be proposed to model and analyze user dynamics in P2P live streaming and to stimulate user cooperation. Finally, different defensive mechanisms will be explored to resist pollution attacks and stimulate user cooperation even under attacks.

**Speaker:** H. Vicky Zhao (M'05) received the B.S. and M.S. degree from Tsinghua University, China, in 1997 and 1999, respectively, and the Ph. D degree from University of Maryland, College Park, in 2004, all in electrical engineering. She was a Research Associate with the Department of Electrical and Computer Engineering and the Institute for Systems Research, University of Maryland, College Park from Jan. 2005 to July 2006.

Since August 2006, she has been an Assistant Professor with the Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada. Dr. Zhao's research interests include information security and forensics, multimedia social networks, digital communications and signal processing.

Dr. Zhao received the IEEE Signal Processing Society (SPS) 2008 Young Author Best Paper Award. She co-authored the book "Multimedia Fingerprinting Forensics for Traitor Tracing" (Hindawi, 2005). She is the Associate Editor for IEEE Signal Processing Letters and Elsevier Journal of Visual Communication and Image Representation.



# Electromagnetic Compatibility - First Steps

## Eptech 2010 Electronics Show

Wednesday 02 June 2010

12:30 - 16:00

Red Robinson Show Theatre  
2080 United Blvd, Coquitlam BC

12:30 - 14:00 Introduction to EMC and Safety

This presentation will give a general overview of Electromagnetic Compatibility and Safety Certification requirements for products destined for North America, Europe and the rest of the world.

14:30 - 16:00 Designing for Electromagnetic Compatibility

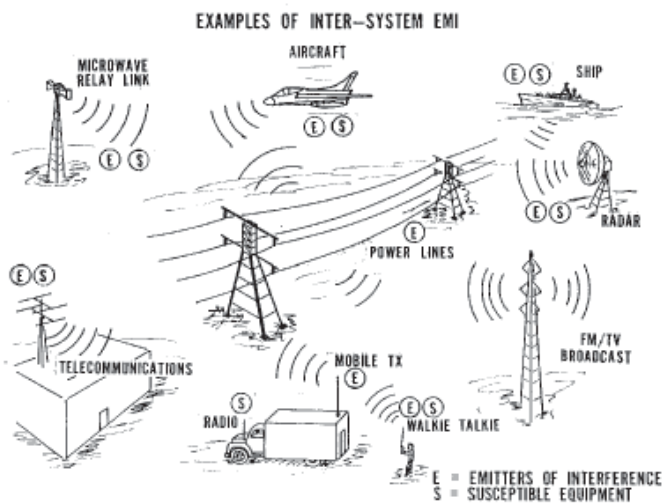
This presentation will help electronics engineers and technologists develop robust and stable EMC design tactics. Topics will include: • Facts about Electromagnetic Interference (EMI) that all manufacturers need to know • Summary of EMC requirements in North America for FCC and Industry Canada • FAQs about EMC, EMI, for FCC, ICES, CE, including ESD and EFT • CE Mark: Compliance for all of the European Union under one mark • Grounding, Bonding and Shielding Techniques for Electromagnetic Compatibility

### Information & pre-registration (required)

Presenters: Rob Stirling,  
PEng and Parminder Singh  
Organized by Protocol EMC

Joint Aerospace chairs  
Dave Michelson [dmichelson@ieee.org](mailto:dmichelson@ieee.org)  
Steven McClain [StevenMcClain@ieee.org](mailto:StevenMcClain@ieee.org)

Technically co-sponsored by the  
IEEE Joint Aerospace and  
Electromagnetics Chapter



US FCC/Federal Communication  
Commission



Russia Gost R-mark



CE EMC Certificate



Australia C-Tick



Korea MIC



Taiwan BSMI



CE Marking (EU EMC Directive 2004/108/EC)

Canada ICES-003 Class B  
Canada NMB-003 Classe B

Canada ICES

e E

eMark (International)



China CCC (China Compulsory Certification)



Japan VCCI

## Chair's Message

I was delighted to learn from IEEE Canada president Om Malik that Vancouver Section has been recognized by IEEE Canada as the country's outstanding section and even more pleased that Om will be able to present the award to the Section at our Annual General Meeting on Monday, 21 June 2010.

Our guiding principle during the past year has been to pursue initiatives that offer long term value to the local economy and which strengthen our ties to the community. By and large, I believe that we are succeeding.

- Involving industry and government leaders in the Section by inviting them to serve on our newly formed Industry Advisory Council has allowed us to add considerable depth to the technical program that we offer to the local engineering community.
- Establishing Subsections in the Interior has allowed us to begin offering IEEE services to a vital and important part of our province that has not previously been well served.
- Becoming more involved with the local community and offering events in partnership with others has allowed us to further extend our reach and help engineers acquire the insights and make the connections required to succeed in our fast-paced and highly competitive industry.
- Establishing a History Committee and nominating several BC engineering accomplishments for recognition as IEEE Milestones reminds us of the giants upon whose shoulders we stand.

It has been a privilege to lead the Section at such an exciting time. Thank you to all of you for your continuing support of IEEE Vancouver Section and for your participation in Section activities. And stay tuned. I promise that the next six months will be even more exciting as many more of our initiatives begin to reach fruition.

Dave Michelson [davem@ece.ubc.ca](mailto:davem@ece.ubc.ca)



# Successful Design Using 3D Electromagnetic Simulation Software

Tuesday 01 June 2010

08:45 - 15:00

The Westin Wall Centre - Vancouver Airport  
3099 Corvette Way  
Richmond, British Columbia

## Agenda

08:45 - 09:00 Introduction

An introduction to the scope and focus of CST's 2010 workshop series

09:00 - 09:40 High Speed Serial Link Channel Modeling

With the demand for faster data rates increasing each year, the need to account for more parasitics and higher order effects is also on the rise. The undesirables appear in a variety of places like vias, escape routes, and transitions. Having a full wave, 3D EM simulation tool is vital to uncovering and understanding these effects, but a high quality, efficient workflow is also required. Robust import and/or geometry creation mechanisms are also essential along with efficient numerical techniques. This presentation will focus on the workflow for analyzing high speed serial links and present a real world model with comparisons to measurements

09:40 - 10:15 Rapid Sensitivity Analysis for RF and Antenna Simulations

When virtual prototyping with 3D EM tools, sensitivity and yield analysis was traditionally impractical due to the large number of simulations required. New advances in CST STUDIO SUITE(tm) 2010 has not only made this possible, but also extremely efficient. This capability will be presented in the form of a real world application example. 10:15 - 10:30: Break

10:30 - 11:00 Accelerating CST MWS performance with GPU and MPI Computing

The advancement in modern day computer systems over the past decade is staggering, and high value software packages are expected to evolve in turn. Recent CST MICROWAVE STUDIO® (CST MWS) benchmarks and performance improvements possible with GPU and MPI computing will be presented and the applicability of each approach analyzed

11:00 - 11:30 Accurate Mobile Phone Simulation with CST MICROWAVE STUDIO

The complexity and functionality in modern mobile phones is continually being enhanced which drives increased demand on the tools used during their design. CST MWS has risen to this challenge at every step of the way...from pre-processing and geometry import to simulating entire mobile phones to SAR and Diversity Gain. This presentation will be a testament to the capacity of CST MWS for these demanding tasks in the form of a real world mobile phone example

11:30 - 12:30 Lunch

12:30 - 13:00 TBA Dr. Tekamül Büber, Senior Development Scientist, Weyerhaeuser

13:00 - 13:30 Latest Developments

An overview of the new features and workflows introduced in the CST STUDIO SUITE(tm) 2010 including Nth order dispersion models, mixed order meshing, CST MPHYSICS STUDIO, and much more.

13:30 - 15:00 Wrap up and open forum

A summary of the days presentations followed by an open forum. Specific topics of interest to attendees can be discussed and all questions are welcome.

Presenter: Jeremy Fejfar et al.

Organized by CST America

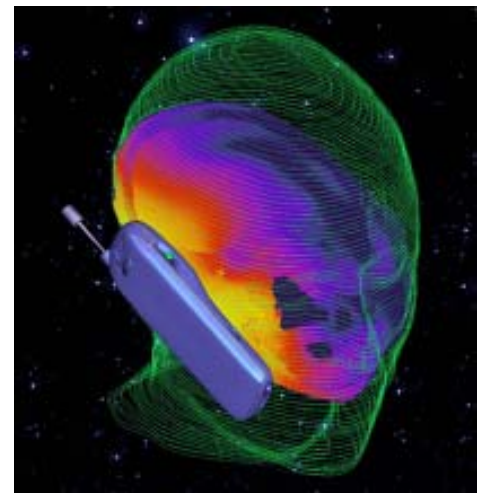
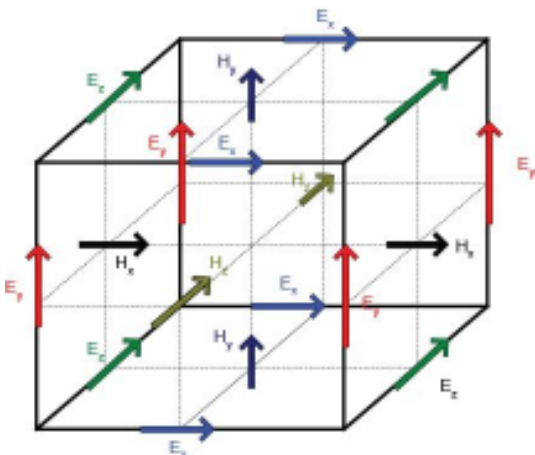
Technically co-sponsored by the IEEE Joint Aerospace and Electromagnetics Chapter

## Information & pre-registration (required)

Joint Aerospace chairs

Prof. Dave Michelson [dmichelson@ieee.org](mailto:dmichelson@ieee.org)

Steven McClain [StevenMcClain@ieee.org](mailto:StevenMcClain@ieee.org)





# IEEE mini-symposium on engineering for biomedical applications

Friday 28 May 2010  
13:00 - 16:30

Organized by  
IEEE Vancouver Section Chapters of:  
Joint Communications  
Signal Processing Society  
Engineering in Medicine and Biology Society



This event is free-of-charge and open to all members of the engineering community. However, pre-registration is required.

Please send your name and affiliation to **2010biomed@gmail.com** with the subject line "Registration - 28 May 2010" and indicate if you are an IEEE member.

**Symposium chairs**  
**Prof. Dave Michelson**  
**and Prof. Rob Rohling, UBC**

Hosted by  
**McKESSON**  
*Empowering Healthcare*

**McKesson Medical Imaging Group**  
**130-10711 Cambie Road**  
**Richmond, BC V6X 3G5**

This three-hour event will bring together academic researchers and industry experts to review recent progress and opportunities related to engineering for biomedical applications. A keynote presentation will be followed by several shorter presentations. The timing and location of the event is designed to facilitate participation by attendees from the BC Interior, Vancouver Island, Alberta and Washington State.

- 13:00 - 13:05 Welcome and introduction  
Prof. Dave Michelson, UBC, chair, IEEE Vancouver section
- 13:05 - 13:55 The IEEE 802.15 task group 6 (TG6) on body area networks  
Arthur Astrin, PhD, chair, IEEE 802.15 TG6, president, Astrin Radio  
The IEEE 802.15 task group 6 (BAN) is developing a communication standard optimized for low power devices and operation on, in or around the human body (but not limited to humans) to serve a variety of applications including medical, consumer electronics / personal entertainment and other. This presentation will provide a summary of recent achievements and current challenges.  
**Speaker:** Dr. Art Astrin currently serves as chair of IEEE 802.15 TG 6 and as president of Astrin Radio. He previously served as a professor at San Jose State University and held engineering positions with Apple, IBM, Memorex and Citibank. He earned his PhD in electrical engineering from UCLA and his MA in mathematics from UCSD.
- 13:55 - 14:17 Propagation and Channel Modelling for Body Area Networks  
Dave Michelson, UBC
- 14:17 - 14:40 The biomedical engineering sector in BC  
Moderator: Brendan Payne, Life Sciences BC
- 14:40 - 15:02 Biomedical engineering education in BC  
Moderator: Prof. Rob Rohling, UBC
- 15:02 - 15:22 Refreshment break and demonstrations
- 15:22 - 15:45 Past, present, and future of the Picture Archiving and Communications Systems (PACS)  
Allan Noordvyk, McKesson MIG
- 15:45 - 16:07 Human interface technology for PACS  
Cliff Edwards and Brian Stachniak, McKesson MIG
- 16:07 - 16:30 Signal processing for brain connectivity analysis  
Prof. Z. Jane Wang and Prof. Martin McKeown

# IEEE Vancouver Section 2010 Special AGM and Dinner

Monday 21 June 6 - 9 pm

Vancouver Convention Centre  
(East Building - with the sails at 999  
Canada Place)

or 1055 Canada Place (Main en-  
trance - West Building)

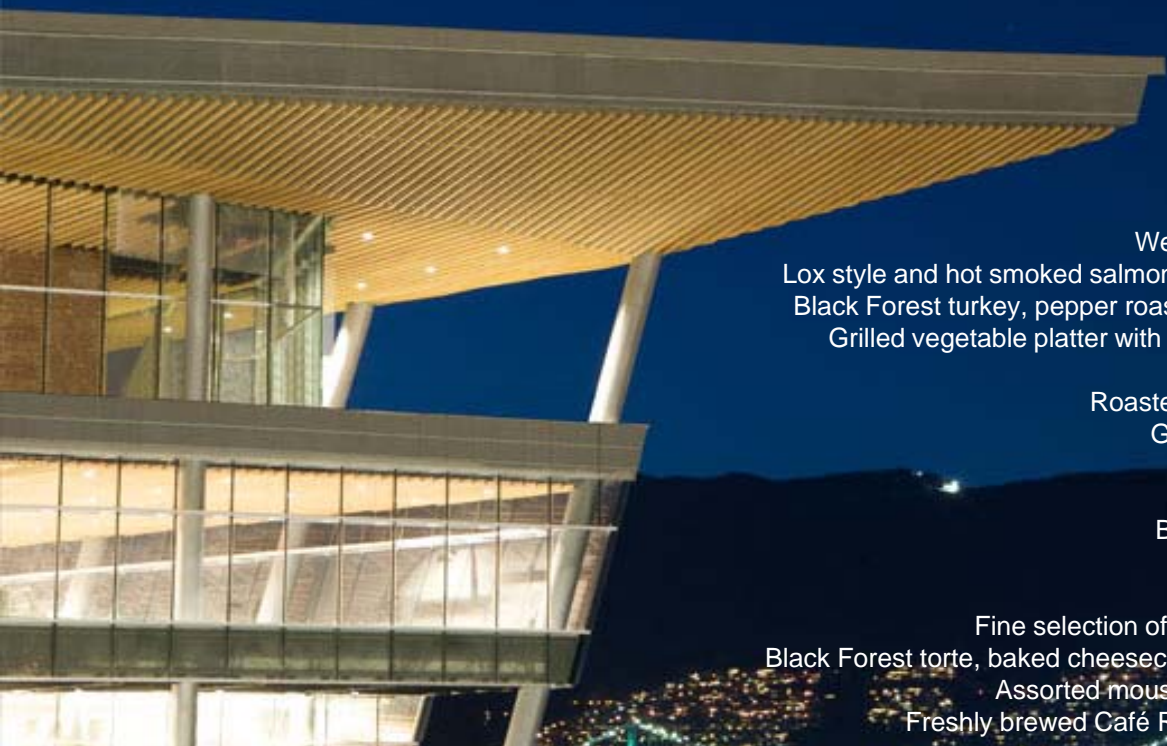
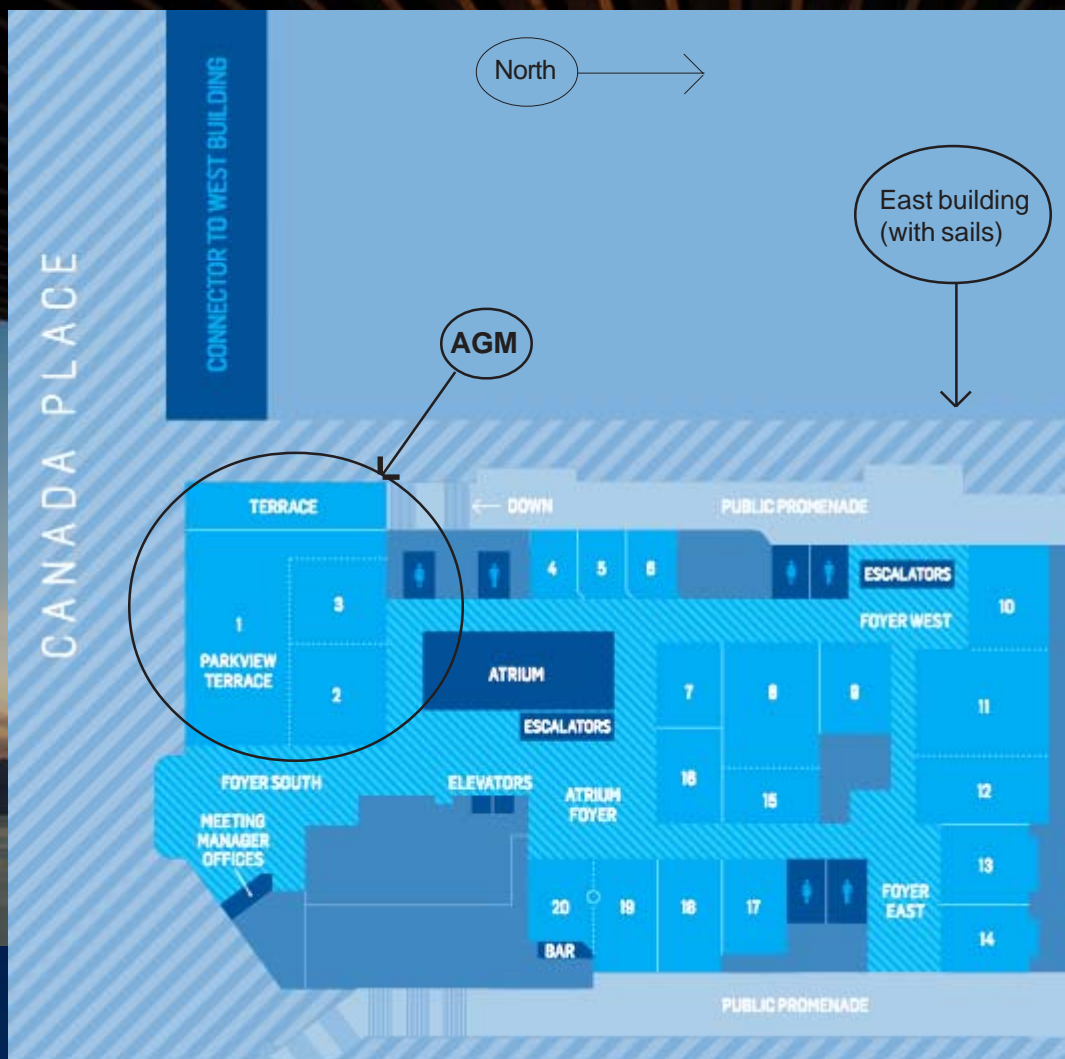
Reception 6 pm  
Meeting and dinner 7 pm

Please come and join us for this year's Special Annual General Meeting and Dinner! We have an exciting evening planned for our members and friends – a fabulous location overlooking the Burrard Inlet, delicious food, and the opportunity to network with your friends and colleagues.

We will be celebrating our successes over the past year including being recognized as the IEEE Canada Exemplary Section. The feature presentation by Frank Plumptre of BC Hydro will be an entertaining journey through the history of electrical engineering – not to be missed!

\$25 students and life members  
\$30 members  
\$35 non-members

For more information or to register please email Mazana Armstrong at [events-vancouver@ieee.org](mailto:events-vancouver@ieee.org).



Hearts of Caesar salad  
Red potatoes with yogurt and dill  
Tortellini in creamy pesto dressing  
Greek style salad  
Prawn, jicama, and orange salad  
Fresh asparagus mimosa

West Coast smoked seafood platter with:  
Lox style and hot smoked salmon, Indian candy, smoked tuna and trout  
Black Forest turkey, pepper roast beef, capicollo and prosciutto salami  
Grilled vegetable platter with handmade Bocconcini, balsamic glaze

Roasted pepper crust top sirloin of aged beef  
Grilled piri piri chicken breast, fruit salsa  
Wild mushroom ravioli alla panna  
Roasted nugget potatoes  
Bouquetiere of market fresh vegetables

Sliced seasonal fruits  
Fine selection of cakes, tarts, french pastries including:  
Black Forest torte, baked cheesecake, chocolate eclairs, fresh fruit flans,  
Assorted mousses and tiramisu, house-made biscotti  
Freshly brewed Café Rojas organic coffee and imported teas