

# CONTACT

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

**Circuits and Systems**

**Power and Energy**

## DISTINGUISHED LECTURER

**Building High Performance  
Neuromorphic and Bioinspired Systems:  
Spike-based Digital Vision**  
Dr. Tobi Delbrück  
Institute of Neuroinformatics

Monday 28 July 28 1100am -1200pm  
IRMACS ASB 10900  
Simon Fraser University

Webcast information:

[http://www.ensc.sfu.ca/~jdel/ieee/2008\\_Delbruck.html](http://www.ensc.sfu.ca/~jdel/ieee/2008_Delbruck.html)

Conventional machine vision for the past 40 years has been based on sequences of image frames that are pulled from the camera and then processed on computers. Frame based image sensors are highly evolved but have fundamental drawbacks, including limited dynamic range, limited sampling rate, and the necessity for expensive post processing.

Biology teaches us that the outputs of the eye are asynchronously pushed to the brain in the form of digital spikes based on local decisions involving spatio temporal context. Recent developments in building asynchronous vision sensors that offer this same form of spike output have shown that they offer unique advantages in terms of latency, dynamic range, temporal resolution, and especially post processing cost. This lecture will discuss these developments and show a live demonstration of the unique capabilities of a silicon retina for machine vision.

**Speaker:** Tobi Delbrück is a group leader at the Inst. of Neuroinformatics (INI), part of ETH Zurich and the University of Zurich, Switzerland and visiting scientist at Caltech. His group develops neuromorphic electronics, particularly vision sensor chips. He studied physics and applied mathematics as an undergraduate and received his PhD from Caltech in 1993 in Computation and Neural Systems with Carver Mead. He co-invented the stand-

## PES BOARD APPOINTMENTS

Since July 1, 2008, Meliha Selak has been appointed to the IEEE Power and Energy Society's Governing Board as the Vice President of Chapters. This role provides training, products, services, resources and organizational support for approximately 180 Chapters around the globe. Initiatives sponsored by the VP Chapters include a membership contest, chapter training for chairs, and recruitment activities.

Since January 1, 2008, Glen Tang has been appointed to the IEEE Power and Energy Society as the GOLD Coordinator, reporting to the Governing Board. This role provides targeted outreach to GOLD PES members and prospective members, and improves the retention rate of members. Additionally, the GOLD Coordinator works to help attract engineers into Power and Energy Careers through PES. Initiatives sponsored by the GOLD Coordinator include the GOLD Evening Seminar at the General Meeting and a Career Testimonials brochure from GOLD members.

ard neuromorphic adaptive photoreceptor circuit and bump circuit. Subsequently he worked for several years for Arithmos, Synaptics, and National Semiconductor, was one of the founding employees of Foveon. In 1998 he moved to Switzerland to join INI.

In 2002 he was lead developer of the tactile luminous floor used in INI's exhibit "Ada: Playful Intelligent Space". He has been awarded 8 patents, and has over 30 refereed papers in journals and conferences, 4 book chapters, and 1 book. He has been awarded 7 IEEE awards, including the 2006 ISSCC Jan Van Vessel Outstanding European Paper Award. He co-organized the demonstration sessions at the Neural Information Processing Systems (NIPS) meeting in 2004-2005 and the ISCAS demonstration session in 2007-2008, is an organizer of the Telluride Neuromorphic Engineering Workshop, is an officer of the CAS Sensory Systems Technical Committee and associate editor of the IEEE Transactions of Biomedical Circuits and Systems.

**Sponsor:** IEEE Circuits and Systems Society Joint Chapter of the Vancouver/Victoria Sections

**Info:** CAS Chair Ljiljana Trajkovic - [ljilja@cs.sfu.ca](mailto:ljilja@cs.sfu.ca)

## Joint Communications

### WiMedia UWB: Status of the Industry

Dr. Roberto Aiello  
Staccato Communications  
Monday 11 August 700 - 900pm  
BCIT SW3-1750

Both the USB-IF and the Bluetooth SIG have selected WiMedia UWB as the technology of choice for their new generation wireless networks, that support up to 480Mbps and up to 10m range. The technology was originally proposed as a IEEE 802.15.3a alternate PHY before it was disbanded. The Main applications include the replacement of the USB



cables, fast file transfers, and in-room video connections. In this talk I will give the status of the WiMedia and the industry, I will provide a brief history of the technology and its characteristics, and I will describe the current world wide standard and regulatory situation.

**Speaker:** Dr. Roberto Aiello is the founding CEO and now CTO of Staccato Communications. Prior to working at Staccato, he was founder, president and CEO of Fantasma Networks, an ultra-wideband product company. Previously, Roberto lead the wireless research and built the first documented UWB network at Interval Research, Paul Allen's research laboratory. Earlier, he held senior positions at the Stanford Linear Accelerator Center and the National Superconducting Super Collider Laboratory in Texas. Dr. Aiello is a recognized leader in the UWB community, and his efforts were instrumental in getting UWB spectrum allocated in the United States. He is a Board Member and VP of Technology for the WiMedia Alliance. Dr. Aiello holds a PhD in physics from the University of Trieste. He is the author of two books and more than 20 patents on UWB technology.

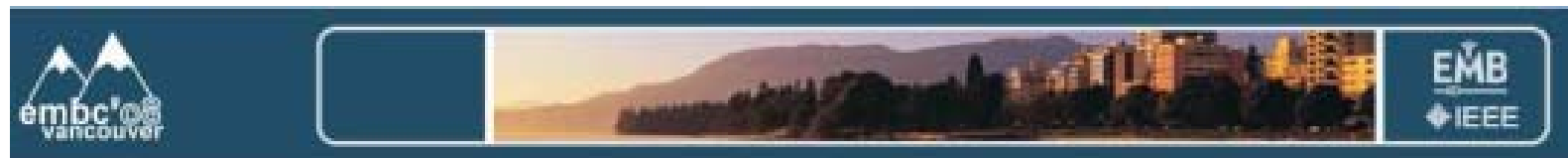
**Info:** Email Joint Communications Chair Alon Newton, [anewton.ieee@gmail.com](mailto:anewton.ieee@gmail.com)

## Continuing Education

IEEE Vancouver Section  
PES Continuing Education Course

### A Practical Approach to Electric Power System Protection

This 36 hour course will be presented over 12 weeks on Wednesday evenings from September to December. It is intended to give practicing electrical engineers an understanding of the fundamentals of protective relaying applied to electric power systems. (cont p2)



## IEEE Engineering in Medicine and Biology Society's GOLD Networking Reception 2008

Friday 22 August 2008 - 7:00-9:00pm - Vancouver Marriott Pinnacle Hotel - 1128 West Hastings Street, Vancouver

In its effort to increase the value of IEEE and EMBS membership for young engineers, the IEEE Engineering in Medicine and Biology Society will host, for the third time, an IEEE EMBS-GOLD Networking Reception at its 30th Annual International Conference in Vancouver, BC, Canada (EMBC'08).

What is GOLD? The Graduates Of the Last Decade (GOLD) program is an IEEE entity working at providing benefits for young IEEE members after their 'Student Member' status has expired. If you are an IEEE Member who graduated with your first professional degree within the last ten years, you are automatically part of IEEE GOLD! Around the world, there are over 47,000 GOLD members and 100 GOLD Affinity Groups. Check out the official GOLD webpage for details: [www.ieee.org/gold](http://www.ieee.org/gold).

The continuing goal of GOLD is to find out what students need from their Societies at this particular stage of their careers and how their Societies can in turn offer additional value of membership. The purpose of the joint EMBS-GOLD Reception is to establish, in an informal networking environment, what exactly these transitioning members need, want and must-have from the EMB Society. The Reception is free of charge, includes beverages and accompanying snacks, and is an excellent opportunity to meet GOLD members within the Society and from around the world. If you are a GOLD member attending EMBC'08, or are a GOLD member living in Canada or visiting the Vancouver area - you are most cordially invited to this free event!

The Reception will be held on Friday, 22nd August 2008 from 7:00-9:00pm at the Vancouver Marriott Pinnacle Hotel (1128 West Hastings Street, Vancouver, BC). Unfortunately, IEEE/EMBS/GOLD cannot provide any financial remuneration for your participation in the Conference or cover travel costs. If interested in attending the entire EMB Conference, online conference registration may be completed via the official EMBC'08 website: <http://www.embc2008.com/>. Please contact the EMB Society GOLD Coordinator ([lisa.lazareck@eng.ox.ac.uk](mailto:lisa.lazareck@eng.ox.ac.uk)) for further details or queries.

### 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society August 20-24, 2008 Vancouver Convention & Exhibition Centre

### Personalized Healthcare through Technology

#### Keynote Speaker

Thursday, August 21, 8:00-8:50 am - Leroy Hood, (Institute for Systems Biology, Seattle, WA, USA)

#### Plenary Speakers

Thursday, August 21, 1:00-1:50 pm - Tom Hudson (President & Scientific Director, Ontario Institute for Cancer Research)

Friday, August 22, 8:00-8:50 am - Kathie Olsen, (National Science Foundation, Washington, DC, USA)

Friday, August 22, 1:00-1:50 pm - Leon Glass, (Isadore Rosenfeld Chair in Cardiology, McGill University, Montreal, QC, Canada)

Saturday, August 23, 8:00-8:50 am - Sean Hill, (EPFL, Lausanne, Switzerland)

Sunday, August 24, 8:00-8:50 am - Ted Berger, (University of Southern California, Los Angeles, CA, USA)

(from p1)

*The topics..*

Role of protection in power systems, transducers and protection accessories, short circuit calculations, protection measuring elements (including the principles of digital filtering), protection of transmission and distribution systems, protection of generators and interconnections to power systems, protection of substation equipment, special protection systems, analysis of real life disturbances, and power system components.

The course is planned to be offered from 4:30-

7:30 pm on Wednesday evenings starting September 3rd, 2008. Course location will be the BC Hydro Office, 6911 Southpoint Drive, Burnaby, BC (Near the Edmonds Skytrain station). Light refreshments will be provided.

The same course was delivered in 2007 and was oversubscribed. The course was very well received. Please register early to be sure of a place. The cost of the course will be \$700 for IEEE members, and \$800 for non members. For registration please contact PES Chapter Chair Glen Tang at

[glen.tang@bchydro.com](mailto:glen.tang@bchydro.com)

*The instructors..*

Dr. Mukesh Nagpal, principal engineer, BC Hydro and Charlie Henville, president Henville Consulting Inc. The combined protection engineering experience of the instructors is more than 50 years, and they are well regarded in the relaying community and have given several successful courses in the topic.

For detailed information on the course content, please contact Charlie Henville by phone at 604 943 5091 or by email at [chenville@dccnet.com](mailto:chenville@dccnet.com)

# 2008 Electrical Power & Energy Conference

## Energy Innovation

October 6 - 7, 2008

Vancouver, BC



### Conference Notification — EPEC 2008

*A forum for industry experts, business communities and academia to exchange ideas and current information related to energy systems.*

#### 2008 Conference Topics

##### Extending the Limits of Transmission and Distribution

- Physical Asset Condition Monitoring
- Real-time Operational Limits
- Power Flow Control
- Impact of Supply Continuity

##### Generation and Alternative Energy Expansion

- Large Generation Expansion
- Environmental Impact of Large Generation Expansion
- Small Distributed Generation
- Energy Storage
- Impact of Distributed Generation

##### Intelligent Grid Technologies

- Data gathering and information flow
- Wide area operation, control, and protection
- Cyber Security in the Automated Grid
- Self-healing networks, islanding, load shedding
- Microgrids operation

##### Conservation and Energy Efficient Technologies

- Shaping Consumer Habits and Smart Billing
- Power Factor Correction and Power Quality
- Energy Efficient Loads

#### Energy Policy and Innovation

The topics at this conference will reflect innovations in the social and economic aspects of electric energy policy and initiatives, as well as traditional papers addressing technical issues.



*Vancouver's Stanley Park offers a quiet place to relax with a great view of the city's skyline.*

IEEE Canada is proud to present the 8<sup>th</sup> Annual Electrical Power and Energy Conference (EPEC). Attracting a worldwide audience of energy professionals, our theme for 2008 is *Energy Innovation*. The 2008 EPEC will take place in the beautiful city of Vancouver, on the Canadian West Coast in the province of British Columbia. Registration available on-line (see conference URL below).

EPEC 2008 is jointly sponsored by:



BC Hydro PowerSmart, BC Transmission Corporation,  
IEEE Canada & PES (technical co-sponsor).



Conference occurs October 6-7<sup>th</sup>

For details and registration, please visit the conference website: <http://www.ieee.ca/epec08>