

## CALL FOR PAPERS

First annual IEEE Region 1 / NYU-Poly / CCNY

# IEEE Signal Processing in Medicine and Biology Symposium (SPMB11)

Saturday, December 10, 2011

Polytechnic Institute of New York University - Brooklyn, NY

Signal processing plays a broad role in the development of medical devices (hearing aids, imaging equipment, etc.) and in the analysis of physiological signals (EEG analysis for epilepsy and sleep disorders, measurement of ERPs, etc.). This symposium will provide a forum for a discussion of ongoing research in the development and application of signal processing methods in medicine and biology. The symposium, sponsored by IEEE Region 1, NYU-Poly, and the City College of New York, promises to be a stimulating meeting on biomedical signal processing. This symposium is endorsed by the Biomedical Engineering Society.

### Keynote speaker

[William Bialek](#), Princeton University

**Fundamental physical limits in biological systems**

### Invited speakers

[Simon Kelly](#), City College of New York

[Elisa Konofagou](#), Columbia University

[Liam Paninski](#), Columbia University

[Paul Sajda](#), Columbia University

[Eero Simoncelli](#), New York University

[Mario Svirsky](#), New York University

**Continuous stimulation paradigms for attention and decision making**

**Physiologic cardiovascular strain and intrinsic wave imaging**

**Challenges and opportunities in statistical neuroscience**

**Fusing Simultaneous EEG and fMRI via Linked Single-trial Variability**

**On computational neural science**

**Adaptation improves speech perception by cochlear implant users**

We invite engineers, scientists, practitioners, and students to submit papers for presentation in poster sessions or to attend the symposium which will be open to the public. Accepted papers will be published in IEEE Xplore online. The technical program, registration form, and directions are online at:

<http://www.poly.edu/SPMB2011>

The topics for the symposium may include, but are not limited to:

- Analysis of EEG, ECG, respiratory, and other biomedical signals
- Linear, nonlinear, and adaptive filtering and prediction
- Machine learning and classification
- Synchronization, coherence, coupling, connectivity, and causality
- Nonlinear dynamics and system modeling
- Multi-sensor and array processing
- Time-frequency and non-stationary signal analysis
- Signal processing methods in bioinformatics
- Medical imaging - image formation, analysis, etc.
- Component analysis (PCA, ICA, etc.) and source separation
- Brain-computer interfaces (BCI)
- Artifact rejection
- Biomedical instrumentation for novel signal measurement
- Open problems, emerging techniques and applications

### Submission of papers

Prospective speakers are invited to submit a title and paper with authors' names and contact information via the website above or by email to [biomedsigproc@poly.edu](mailto:biomedsigproc@poly.edu) by November 11, 2011 (Extended from Oct 31). Please see website for manuscript template.

### Registration

Special Early Registration (by Dec, 2): \$30 for IEEE members, \$45 for non-IEEE members, subsidized by Symposium Sponsors.

Late Registration (after December 2): \$75 for IEEE members, \$100 for non-IEEE members.

### Important dates

Submission of papers      November 11, 2011  
Program available        November 18, 2011  
Early registration deadline      December 2, 2011

### Committee Chairs

Conference Chair            Ivan Selesnick, Polytechnic Inst. of NYU  
Conference Co-chair        Charles Rubenstein, Pratt Institute  
Technical Program Chair    Lucas Parra, City College of New York  
Publications Chair         Susan Frank, IEEE Long Island Vice Chair

