IEEE Signal Processing in Medicine and Biology Symposium (SPMB11)

Saturday, December 10, 2011

Polytechnic Institute of New York University
5 Metrotech Center
333 Jay Street
Brooklyn, NY 11201

http://www.poly.edu/SPMB2011

Signal processing plays a broad role in the development of medical devices and in the analysis of physiological signals. This symposium provides a forum for a discussion of ongoing research in the development and application of signal processing methods in medicine and biology.

The symposium is sponsored by IEEE Region 1, Polytechnic Institute of NYU (NYU-Poly) and the City College of New York (CCNY). The symposium is also supported by the National Science Foundation (NSF) and is endorsed by the Biomedical Engineering Society (BMES).

Keynote speaker

William Bialek   Princeton University

Invited speakers

Simon Kelly   City College of New York
Elisa Konofagou and Jean Provost   Columbia University
Liam Paninski   Columbia University
Paul Sajda and Bryan Conroy   Columbia University
Eero Simoncelli   New York University
Mario Svirsky and Matthew Fitzgerald   New York University

Committee Chairs

Conference Chair   Ivan Selesnick, Polytechnic Institute of New York University
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

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9:00 AM	Welcome	Kurt Becker Polytechnic Institute of NYU
9:10 AM	Fundamental physical limits in biological systems	William Bialek Princeton University
10:10 AM	Poster session 1	
10:50 AM	Optimal estimation in the human visual system	Eero Simoncelli New York University
11:30 AM	Fusing simultaneous EEG and fMRI via linked single-trial variability	Bryan Conroy Columbia University
12:10 PM	Lunch	
1:10 PM	Challenges and opportunities in statistical neuroscience	Liam Paninski Columbia University
1:50 PM	Continuous stimulation paradigms for attention and decision making	Simon Kelly City College of New York
2:30 PM	Neuronal and hemodynamic source modeling of optogenetic BOLD signals	Henning Voss Weill Cornell Medical College
2:50 PM	Poster session 2	
3:30 PM	Adaptation to a degraded signal improves speech perception by cochlear implant users	Matthew Fitzgerald New York University
4:10 PM	Physiologic cardiovascular strain and intrinsic wave imaging	Elisa Konofagou Jean Provost Columbia University
4:50 PM	Sparse coding of movement-related neural activity	Marcello DiStasio SUNY Downstate and NYU-Poly
5:10 PM	Closing	Charles Rubenstein Pratt Institute

Poster Session 1

Title	Authors	Affiliation	City
Signal Processing in Acoustic Systems for the Capsule Endoscopy	Yuri Okunev, Michael Arneson, William Bandy, and Brian Jamieson	Innurvation, Inc.	Columbia, MD
Training Oscillatory Dynamics with Spike-Timing-Dependent Plasticity in a Computer Model of Neocortex	Samuel A. Neymotin, Cliff C. Kerr, Joseph T. Francis and William W. Lytton	SUNY Downstate	Brooklyn, NY
Bayesian Reconstruction of Trichromatic Images using Cauchy Priors in the Wavelet Domain	Grace Tan and David H. Brainard	University of Pennsylvania	Philadelphia, PA
An Effective Novel Patient Specific Gaussian Template based Scheme for Somatosensory Evoked Potential Detection	Mohammed Goryawala, Mercedes Cabrerizo, Krishnatej Vedala, and Malek Adjouadi	Florida International University	Miami, FL
	Ilker Yaylali	Oregon Health & Science University	Portland, OR
Accurate 3D Source Localization of Focal Epileptic Foci Using Interictal EEG Spikes	Mercedes Cabrerizo, Mohammed Goryawala, Armando Barreto, Sakhrat Khizroev and Malek Adjouadi	Florida International University	Miami, FL
	Prasanna Jayakar	Miami Children's Hospital	Miami, FL
Dependence of Functional Vulnerabilities to the Parameters of the Caspase Molecular Network	I. Habibi and A. Abdi	New Jersey Institute of Technology	Newark, NJ
	E. S. Emamian	Advanced Technologies for Novel Therapeutics	Newark, NJ
An Asynchronous Scale Decomposition for Biomedical Signals	Azime Can, Ervin Sejdić and Luis F. Chaparro	University of Pittsburgh	Pittsburgh, PA

Poster Session 2

Title	Authors	Affiliation	City
Comparison of Instantaneous Frequency Analysis Methods for Acoustic Detection of Coronary Artery Disease	Benjamin Griffel Mohammad K. Zia and John L. Semmlow	University of Medicine and Dentistry of New Jersey	New Brunswick, NJ
	Vladimir Fridman and Cesare Saponieri	Long Island College Hospital	Brooklyn, NY
Non-invasive Respiration and Ventilation Prediction Using a Single Abdominal Sensor Belt	Shaopeng Liu and Robert X. Gao	University of Connecticut	Storrs, CT
	Patty S. Freedson	University of Massachusetts	Amherst, MA
Learning-Based Detection of Acne-like Regions Using Time-Lapse Features	Siddharth K. Madan and Kristin J. Dana	Rutgers University	Piscataway, NJ
	Oana G. Cula	Johnson & Johnson Consumer and Personal Products Division	Piscataway, NJ
Estimation of Physiological Parameters in the Subspace of Arterial Input Function in Dynamic Contrast-Enhanced Magnetic Resonance Imaging	Yi Sun	The City College of New York	New York, NY
No EEG Evidence for Subconscious Detection During Rapid Serial Visual Presentation	Joao Filipe Dias and Lucas C. Parra	The City College of New York	New York, NY
A Motion Compensating Prior for Dynamic MRI Reconstruction using Combination of Compressed Sensing and Parallel Imaging	Cagdas Bilen, Ivan Selesnick, Yao Wang	Polytechnic Institute of NYU	Brooklyn, NY
	Ricardo Otazo, Daniel K. Sodickson	NYU School of Medicine	New York, NY
Only Mostly Blind Source Separation: Using Source Hypotheses to Augment Blind Source Separation	Richard Goldhor, Keith Gilbert, and Joel MacAuslan	Speech Technology & Applied Research Corp.	Bedford, MA
	Karen Payton	University of Massachusetts	Dartmouth, MA
Classification of Individual Finger Flexions Using an Optimized Two-Channel Surface EMG	Matthew Galligan, Irving Campbell, and Matthew Campisi	Polytechnic Institute of NYU	Brooklyn, NY

The Symposium will be located in the Pfizer Auditorium of the Dibner Building (#3 on the map).
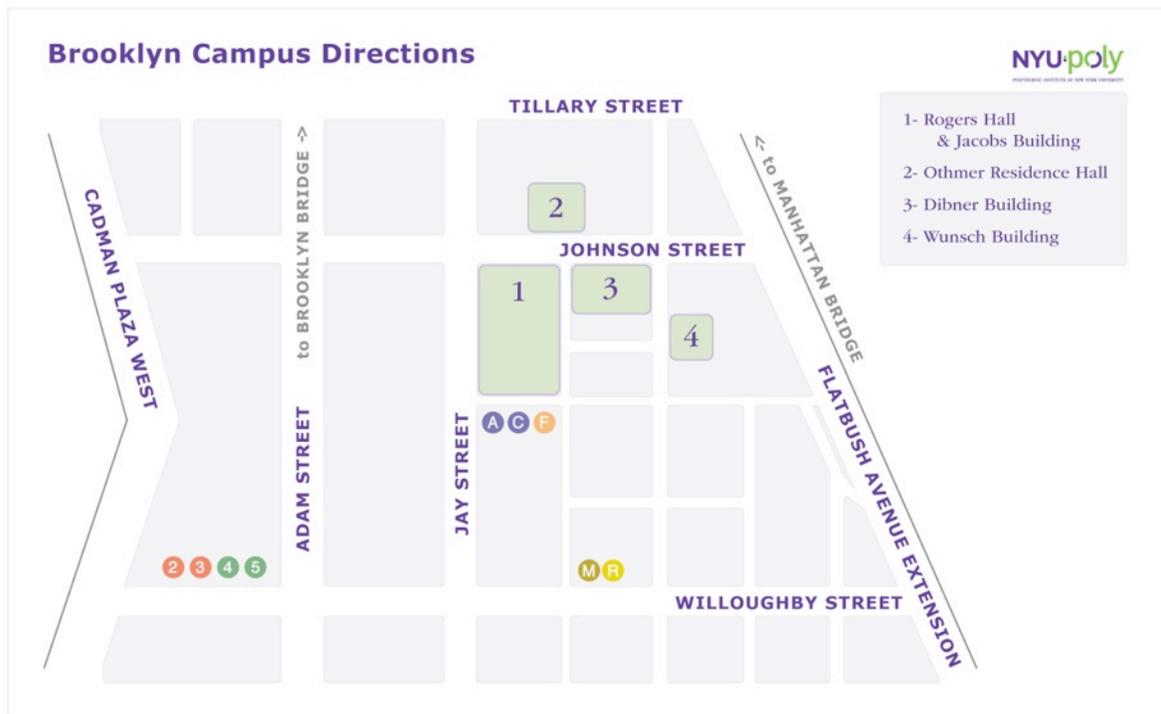
Detailed directions to the Brooklyn campus of NYU-Poly are available on the web at

http://www.poly.edu/about/contacts/brooklyn

The Brooklyn campus of Polytechnic Institute of NYU is a member of MetroTech Center:

http://www.metrotechbid.org/