

Schedule of Events

- 12:40 pm Podium Session 3**
Devyani Nanduri
Predicting the Percepts of Electrical Stimulation in Retinal Prosthesis Subjects
Tim Nayar
Viscoelastic Characterization of Agar
- 1:30 pm Coffee & Posters**
Group 3 (G3): 1:35-2:05pm
Group 2 (G4): 2:05-2:35pm
- 2:40 pm Department Chair Address**
Professor Norberto M. Grzywacz
- 2:55 pm Keynote Talk**
Victor Chan—Qualcomm R&D
- 3:30 pm Awards**
- 4:00 pm Conclusion**

*Each Presenter is assigned a Poster Number and a Group Number. The times for each group are as follows:

- Group 1 (G1): 9:25-9:55 am
Group 2 (G2): 9:55-10:25 am
Group 3 (G3): 1:35-2:05pm
Group 4 (G4): 2:05-2:35pm

Sponsors



The Fred S. Grodins Graduate Research Symposium began in 1997 as a forum for Biomedical Engineering graduate students to present their current research work and future plans. It also affords the faculty and students the opportunity to exchange ideas on the various areas of on-going research activities within the department, and provides new graduate students first-hand exposure to the research conducted by department faculty.

About USC Biomedical Engineering

Established in 1976, the Department of Biomedical Engineering offers some of the most reputable undergraduate and graduate bioengineering training programs in the nation.

Its mission is to conduct original biomedical research involving the development and application of engineering approaches in biology and medicine, and to apply the knowledge acquired to improve human health and well-being.

15th Annual Fred S. Grodins Graduate Research Symposium

April 9th, 2011
Marina del Rey Hotel



University of Southern California
Department of Biomedical
Engineering

<http://grodins.usc.edu/>
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Schedule of Events

- 7:30 am Registration & Breakfast**
- 8:20 am Welcome**
- 8:30 am Podium Session 1**
Brittany Kay
Modeling the Antitumoral Effects of Two Extrinsic Apoptotic Pathway Agonists
Jeremy Fishel
Development of a Testbed to Explore the Contributions that Force and Velocity Have on Sensed Vibrations in the BioTac
- 9:20 am Coffee & Posters***
Group 1 (G1): 9:25-9:55am
Group 2 (G2): 9:55-10:25am
- 10:30 am Podium Session 2**
Jay Mung
Real-time 3D Catheter Localization System Using Ultrasound
Flavia Oliveira
Obstructive Sleep Apnea in Childhood Obesity and its Effects on the Autonomic and Metabolic Systems
Fei Yu
Multi-Modality Assessment of Functional Regeneration of Zebrafish Heart
- 11:45 pm Networking Lunch**

Biosystems and Signals

Devices and Diagnostic Technology, continued

Devices and Diagnostic Technology, continued

Imaging, continued.

Poster/ Group	Presenter	Title	Poster/ Group	Presenter	Title	Poster/ Group	Presenter	Title	Poster/ Group	Presenter	Title
1/1	Beebe, Tyler	<i>In Vitro Investigations into Endothelial Cell Dysfunction</i>	17/1	Cole, Marc	<i>Optimal Electrical Stimulation of Smooth Muscle</i>	39/3	Sheybani, Roya	<i>High Efficiency Electrochemical Bellows Actuators Enabling Rapid and Repeated Bolus Drug Delivery for Mouse Drug Addiction Studies</i>	54/2	Wang, Ximing	<i>An Online Imaging Informatics Tool for the Interdisciplinary Comprehensive Arm Rehabilitation Evaluation(ICARE)</i>
2/2	Bush, Adam	<i>A Comparison of Optical Hemodynamic Devices in Sickle Cell Anemia Patients</i>	18/2	Crew, Joseph	<i>Music Perception by Cochlear Implant Users</i>				55/3	Wilkins, Bryce	<i>Effect of Truncated Sampling on Estimated Fiber Directions in Q-space Diffusion Magnetic Resonance Imaging</i>
3/3	Chalacheva, Patjanaporn	<i>Development of Autonomic Dysfunction with Intermittent Hypoxia and Hyperglycemia</i>	19/3	Feinman, Adam	<i>Extracting a Control Signal from EMG using Stochastic and Bayesian Filtering Methods</i>	40/4	Walston, Steven	<i>Delivering Genetically Encoded Indicators via Organically Modified Silica Nanoparticles to Assess Retinal Prostheses Electrical Stimulation</i>	56/4	Zhang, Lequan	<i>A 64 Channel Analog Receive Beamformer for High Frequency Linear Arrays</i>
Oral	Kay, Brittany	<i>Modeling the Antitumoral Effects of Two Extrinsic Apoptotic Pathway Agonists</i>	Oral	Fishel, Jeremy	<i>Development of a Testbed to Explore the Contributions that Force and Velocity Have on Sensed Vibrations in the BioTac</i>	41/1	Zheng, Fan	<i>Development of a C-Scan Phased Array Ultrasonic Imaging System using a 64-element 35MHz Transducer</i>	<h2><u>Neuroengineering</u></h2>		
5/1	Kurse, Manish	<i>A First Rigorous Experimental Validation Of Biomechanical Models Of The Human Index Finger</i>	21/1	Gensler, Heidi,	<i>Rapid Non-lithography Based Fabrication and Implementation of Parylene C Bellows for Applications in MEMS Electrochemical Actuators</i>	20/4	Chia-Hsien Lin	<i>Fabrication and Implementation of multiple Biomimetic Tactile Sensor Arrays with Force, Microvibration and Thermal Modalities</i>			
6/2	Lee, Jae Kyoo	<i>Examining the Dynamics of Retinal Ganglion Cell Apoptosis Using Real-time Live-Cell Imaging of Multiple-Markers and Growth Factor Uptake</i>	22/2	Gutierrez, Christian	<i>Parylene-based Electrochemical Sensors for Biomedical Applications</i>	35/3	Zhe Su	<i>Spatial Features Extraction Using a Biomimetic Tactile Sensor and Implementation in LabVIEW</i>	57/3	Allam, Sushmita	<i>EONS: Computational model of Glutamate Dynamics at a Single Synapse</i>
7/3	Mallen-Ornelas, Gabriela	<i>Combined Parameter and Covariate PK/PD Population Analysis Using Mixture Models</i>	23/3	Hara, Seth	<i>MEMS Electrochemical Sensors for In Vitro Dopamine Detection</i>				58/2	Behabadi, Bardia	<i>The Impact of Synaptic Distribution on Dendritic Nonlinearities</i>
Oral	Oliveira, Flavia Maria	<i>Obstructive Sleep Apnea in Childhood Obesity and its Effects on the Autonomic and Metabolic Systems</i>	24/4	Held, Laura	<i>Frontal Plane Control of Lower Extremity Subsystem during Land and Go Tasks</i>				59/3	Chan, Rosa	<i>Changes in Hippocampal Population Nonlinear Dynamics Across Different Training Sessions in Behaving Animals</i>
9/1	Soleymani, Sadaf	<i>Response of Cerebral and Renal Blood Flow to Arterial Desaturation Episodes in Preterm Infants</i>	25/1	Holt, Brendan	<i>A Prototype Video Game System for Studying Rehabilitative Learning</i>	Poster/ Group	Presenter	Title	60/4	Cho, Alice	<i>Intracellular Response of Mouse Retinal Ganglion Cells to Electrical Stimulation</i>
Oral	Yu, Fei	<i>Multi-Modality Assessment of Functional Regeneration of Zebrafish Heart</i>	26/4	Inouye, Joshua	<i>Calculation of Grasp Quality Metrics for Tendon-Driven Hands</i>	42/2	Borzage, Matthew	<i>Regional Assessment of BOLD Changes due to Hypoxia</i>	61/1	Davuluri, Navya	<i>Design of a Multi-Electrode Array for Chronic Implantation in the Rat's Eye</i>
11/3	Zaferiou, Antonia	<i>Multijoint Control of the Lower Extremity during Landings with Different Degrees of Hip External Rotation</i>	27/3	Joseph, Anika	<i>New Algorithm Elements Towards More Objective Measurement in Processing-assisted Evaluation of Atypical Nevi</i>	43/3	Chen, Ruimin	<i>High-frequency Ultrasonic Ring Transducer Technology Development for Photoacoustic Endoscopy</i>	62/2	Hu, Eric	<i>Tools for Simulation and Optimization of SBML-based Models</i>
12/4	Zhang, Yaping	<i>Analysis of Glucose Kinetics in Women with a History of Gestational Diabetes Mellitus</i>	28/4	Kang, Bong Jin	<i>Embedded System for Portable Image Processing Devices</i>	44/4	Chen, Yuling	<i>Recent Results from Dual-Layer Array Transducers for 3-D Imaging</i>	63/3	Hu, Wenhsin	<i>Optimized Hand Position for Push-Up Exercise through Minimization of Muscle Energy Consumption</i>
			29/1	Kim, Brian	<i>Development of User Interface for Implantable Parylene-based Electrochemical-MEMS Force Multi-Sensor Array</i>	45/3	Cummins, Thomas	<i>Ultrasonic Imaging Contrast Agents: Current and Future Design Approaches</i>	64/4	Ivzan, Nadav	<i>Distribution of Retinal Responses to Natural Images: Contrast and Texture Dependence</i>
			30/2	Kuo, Jonathan,	<i>Microfabricated Platform with Integrated Optical Fibers for Photostimulation Studies</i>	46/2	Deshpande, Ruchi	<i>Development and Clinical Integration of a Stand-Alone Computer Aided Detection System (CAD) for Acute Intracranial Hemorrhage</i>	65/1	Lee, Junkwan	<i>Strong Bias Observed in Human Perception of Centers of Masked Expansion and Rotation Optic-flows And its Modeling Account</i>
			31/3	Lee, Changyang	<i>Acoustic Trapping of Micro Lipid Particles by Single High Frequency Transducer</i>	47/3	Gajawelli, Niharika	<i>Segmentation of Brains with Cerebral Infarcts using FreeSurfer</i>	66/2	Murali, Karthik	<i>Computational Model of Retinal Ganglion Cell With Varying Sodium Channel Concentration</i>
Poster/ Group	Presenter	Title	32/4	Lee, Curtis	<i>Using Parylene-C Coating for Improved Gauge Factor in Carbon-based Implantable Strain Sensors</i>	48/4	Hwang, Darryl	<i>Multiple Tensor Reconstruction of Multiple Fibers Using ICA</i>	Oral	Nanduri, Devyani	<i>Predicting the Percepts of Electrical Stimulation in Retinal Prosthesis Subjects</i>
13/1	Jen, Nelson	<i>Effects of Irregular Pulsatile Flow Associated with Cardiac Arrhythmias on Endothelial Function</i>	33/1	Li, Xiang	<i>Intravascular Imaging with Integrated Hhigh Frequency Ultrasound and OCT Probe</i>	49/1	Lee, Namgyun	<i>The application of Compressed Sensing on Diffusion Spectrum Imaging</i>	68/4	Nandyala, Sirish	<i>Build-a-Brain: An Electronic Implementation of the Human Motor Cortex</i>
Oral	Nayar, Vinod,	<i>Viscoelastic Characterization of Agar</i>	34/2	Mante, Nii Tete	<i>A Synergistic Object Detection and Haptic Feedback System</i>	50/2	Ma, Kevin	<i>Evaluation of an Automatic Multiple Sclerosis Lesion Quantification Tool in an Informatics-based MS e-Folder system</i>	69/1	Ramachandra, Chaithanya	<i>Computing Local Edge Probability from a Population of Simple Cells</i>
15/3	Zitting, Madison	<i>Physiological Characteristics of the Adult \hat{P}-Cell</i>	Oral	Mung, Jay	<i>Real-time 3D Catheter Localization System Using Ultrasound</i>	51/3	Shin, Jun Seob	<i>Improved Image Quality Using Phase Aberration Correction and Dual Apodization with Cross-correlation</i>	70/2	Srinivasan, Arthi	<i>Relating Loudness Growth to Virtual Channel Discrimination</i>
			36/4	Oh, Jin Ho	<i>Topological Analysis of DNA Methylation by 3-D Image Analysis</i>	52/4	Sohn, Won Joon	<i>A Comparison of Two Phase Correction Strategies in Multi-Channel MRSI Reconstruction</i>	71/3	Tsianos, George	<i>Biologically Inspired Learning Algorithm for Controlling Biologically Plausible Neuro-Musculoskeletal Systems</i>
Poster/Gr oup	Presenter	Title	37/4	Park, Jinhyoung	<i>Wideband Linear Power Amplifier for High frequency Coded Excitation</i>	53/1	Tsao, Sinchai	<i>Differences in Appetite-Related Brain Activity with High and Low Caloric Food in Girls: A Pilot fMRI Study at 3 Tesla</i>	72/4	Wang, Boshuo	<i>Strength-Duration Relationship of Retinal Ganglion Cells</i>
16/4	Adebiyi, Aminat	<i>Evaluating Visual Sensors for an Assistive Device for People with Low-vision</i>	38/2	Reyes, Alexander	<i>Wireless Multi-Channel Device to Capture Dynamics of Complex Sensorimotor Tasks</i>				73/1	Weitz, Andrew	<i>Electrical Stimulation of Retinal Ganglion Cells: Effect of Interphase Gap Duration on Threshold</i>
									74/2	Yu, Pen-Ning	<i>Model of Seizures in Hippocampus</i>