



Neuroengineering: From Cells to Systems

IGERT retreat January 5-6, 2017

South Shore Harbour Resort (Lalique Conference Rm), 2500 S Shore Blvd, League City, Texas 77573

AGENDA

January 5, 2017

- 3:00 – 3:15 pm Welcome and Introduction, **Robert Raphael, PhD**, IGERT Program Director
- 3:15 – 4:15 pm **Marcie O'Malley, PhD**, Professor, Mechanical Engineering, Rice University
What I did on my Sabbatical
- 4:15 – 6:30 pm **Jennifer Bell, BSc Eng, MBA**, Senior Engineering & Management Professional
Leadership in Science & Engineering
- 6:30 – 7:30 pm Dinner
- 7:30 – 8:00 pm **Robert Raphael, PhD**, Associate Professor, Bioengineering, Rice University
Discussion: Building Neuroengineering Presence in Social Media

January 6, 2017

- 9:30 – 10:00 am Continental Breakfast

THEME 1: CELLULAR AND MOLECULAR NEUROENGINEERING

- 10:00 – 10:15 am **Dan Sazer**, Bioengineering, Rice University
Low-cost Stereolithography for 3D Printing of Multi-Material Sensory Organ Mimics
- 10:15 – 10:30 am **Krishna Badhiwala**, Bioengineering, Rice University
Scalable Microdevices for Neuroscience with Small Organisms
- 10:30 – 10:45 am **Hamin Jeon**, Bioengineering, Rice University
Minimally Invasive High Resolution Imaging of Auditory Neurons Inside a Living Cochlea
- 10:45 – 11:00 am **BREAKOUT SESSION 1**

THEME 2: NEURAL CIRCUITS

- 11:00 – 11:15 am **Joshua Chu**, Electrical & Computer Engineering, Rice University
Probing Mechanisms of Working Memory and Decision Making Through Manipulation of Hippocampal Circuits
- 11:15 – 11:30 am **Sudha Yellapantula**, Electrical & Computer Engineering, Rice University
Analyzing Language Connectivity Networks during Articulation from Human ECoG data using Mutual Information in Frequency
- 11:30 – 11:45 am **Elizabeth Halfen**, Neuroscience, Baylor College of Medicine
Population receptive field estimation of visual eccentricity representations in human superior colliculus

- 11:45 – 12:00 pm **Minh Tan Nguyen**, Electrical & Computer Engineering, Rice University
Understanding the brain mechanisms underlying perception
- 12:00 – 1:15 pm **LUNCH and Discussion of Neural Circuit Research**

THEME 3: TRANSLATIONAL NEUROENGINEERING

- 1:20 – 1:40 pm **Amanda Wickens**, Applied Physics, Rice University
Magnetoelectric Nanomaterials for Neural Modulation
- 1:40 – 2:00 pm **Eric Lewis**, Electrical & Computer Engineering, Rice University
Deep Brain Stimulation (DBS) therapy and the reduction of symptoms associated with Parkinson's Disease (PD)
- 2:00 – 2:20 pm **Matthew Evan Pezent**, Mechanical Engineering, Rice University
Design and Control of a Robotic Exoskeletal Device for Hand-Wrist Rehabilitation
- 2:20 – 2:40 pm **BREAKOUT SESSION 2: Opportunities for Cross-Disciplinary Collaboration**
- 2:40 – 3:00 pm Closing, **Dr. Robert Raphael**