## BARRELS XXIX Program

10-11 November 2016  
Brain and Creativity Institute  
University of Southern California, Los Angeles

**Thursday, November 10**

<table>
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<th>Time</th>
<th>Session</th>
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<tr>
<td>9:00 – 9:05</td>
<td>Welcome: <strong>Joshua Brumberg</strong>, Queens College, CUNY</td>
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<tr>
<td>9:05 – 9:15</td>
<td><strong>Thalamocortical Interactions in Motor Control</strong></td>
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| 9:45 – 10:15 | **Carl Petersen**, EPFL  
**Neural circuits for goal-directed sensorimotor transformation** |
| 10:15 – 10:45 | **Bernardo Sabatini**, Harvard  
**Signaling in the cortex-basal ganglia-thalamus loop during action selection** |
| 10:45 – 11:15 | **Naoki Yamawaki**, Northwestern  
Thalamo-cortico-thalamic circuits in the motor system |
| 11:15 – 11:45 | **Dieter Jaeger**, Emory  
**Neural circuits for goal-directed sensorimotor transformation** |
| 11:45 – 12:00 | Coffee Break                                                |
| 12:00 – 12:15 | **Short Platform Talks 1** (Moderator: **Alison Barth**):  
**Christian Ebbesen**, Guy Doron, Constanze Lenschow & Michael Brecht,  
Berstein and Humboldt-Universität  
**Vibrissa motor cortex activity suppresses contralateral whisker touch.** |
| 12:15 – 12:30 | **Edward Zagha**, UC Riverside  
**Modulation of sensory processing by cortical feedback pathways** |
| 12:30 – 12:45 | **Julian Hofmann**, Bettina Joachimsthaler & Cornelius Schwarz, Tübingen  
**The role of mouse barrel cortex in tactile trace eye blink conditioning** |
| 12:45 – 1:00 | Discussion                                                   |
| 1:00 – 2:30 | Lunch Break                                                  |
| 2:30 – 2:40 | **Touch in Rodent, Monkey, and Man**  
Introduction/Overview: **Andrew Prusznyski**, Western University, Canada  
**Feature extraction in the human tactile periphery** |
| 2:40 – 3:10 | **Silman Bensmaia**, Chicago  
**The neural basis of texture perception in primates** |
| 3:10 – 3:40 | **Mitra Hartmann**, Northwestern  
**“Grasping" with whiskers** |
| 3:40 – 4:10 | **Gerald Loeb**, USC and SynTouch  
**Understanding human haptics by building robotic systems** |
| 4:10 – 4:40 | **Andrew Prusznyski**, Western University, Canada  
**Feature extraction in the human tactile periphery** |
| 4:40 – 5:00 | Discussion                                                   |
| 5:10 – 5:30 | Break                                                        |
| 5:30 – 8:00 | Poster Session                                               |
| 6:30     | Dinner                                                       |
Friday, November 11

**Short Platform Talks 2 (Moderator: Randy Bruno)**

9:00 – 9:15  
**Naoya Takahashi & Matthew Larkum**, Humboldt University  
*Dendritic dynamics in sensory perception*

9:15 – 9:30  
**William Muñoz, Robin Tremblay, Daniel Levenstein & Bernardo Rudy**, NYU  
*Layer-specific reorganization of neocortical dendritic inhibition during active wakefulness.*

9:30 – 9:45  
**Jianing Yu, Ariel Agmon & Karel Svoboda**, HHMI Janelia  
*Cell-type-specific temporal dynamics of GABAergic interneurons in mouse barrel cortex during active sensation.*

9:45 – 10:00  
**Mirko Witte, Florian Walker, Dirk Schubert, Michael Feyerabend, Martin Möck & Jochen Staiger**, University Medicine Göttingen  
*Temporally distinct inhibitory control of Martinotti cells by PV- and VIP-cells*

10:00 – 10:15  
**Shane Crandall, Saundra Patrick, Scott Cruikshank & Barry Connors**, Brown  
*Infrabarellae: Ensembles of structurally and functionally distinct neurons in layer 6a of mouse somatosensory cortex.*

10:15 – 10:30  
Discussion

10:30 – 11:00  
Coffee Break

**Short Platform Talks 3 (Moderator: Jochen Staiger)**

11:00 – 11:15  
**Sunmee Park, Akhil Bandi, Christian Lee & David Margolis**, Rutgers  
*New ways to wiggle whiskers: optogenetic control of whisker movement and active sensation.*

11:15 – 11:30  
**Yan Yu**, Matthew Graff, Chris Bresee, Yan Man & Mitra Hartmann, Northwestern  
*Rat whiskers are used in airflow sensing*

11:30 – 11:45  
**Mostafa Nashaat, Hatem Oraby, Laura Blanco, Sina Dominiak, Matthew Larkum & Robert Sachdev**, Humboldt Universität  
*Pixying Behavior: Real time optical tracking of whisker motion in a real-world floating maze.*

11:45 – 12:00  
Discussion

12:00 – 12:30  
Directed Discussion: Ideas, Theories, Techniques.

12:30 – 2:00  
Lunch Break

**Cortical Multisensory Computations**

2:00 – 2:10  
Introduction/Overview: Nader Nikbakht, SISSA

2:10 – 2:40  
Brice Bathellier, CNRS  
*Uni and multisensory processing of looming and receding stimuli in mouse cortex*

2:40 – 3:10  
Jan Drugowitsch, Harvard  
*Optimal multisensory integration under time pressure*

3:10 – 3:40  
Conrad Lee, Australian National University  
*Neuronal correlates of sensory prioritization in rats*

3:40 – 4:10  
Nader Nikbakht, Davide Zoccolan & Mathew Diamond, SISSA  
*Visual tactile integration in rats and underlying neuronal mechanisms*

4:10 – 4:30  
Discussion

4:30  
Adjourn - Andrew Hires Party or travel to SfN at San Diego