

**BARRELS XXX Program**  
**November 9<sup>th</sup> and 10<sup>th</sup> 2017**  
*Glass Pavilion at the Homewood Campus of  
Johns Hopkins University, Baltimore, Maryland*

*Registration is still open at [www.regonline.com/barrels30](http://www.regonline.com/barrels30)*

**Thursday, November 9**

9:00 – 9:05            Welcome: **Joshua Brumberg**, The Graduate Center & Queens College, CUNY

**Cortical GABAergic interneurons: New insights into classification and function**

9:05 – 9:15            Introduction/Overview: **Jochen Staiger**, University of Göttingen

9:15 – 9:45            **Alvar Prönneke**, University of Göttingen  
*Diversity of VIP neurons in the mouse barrel cortex*

9:45 – 10:15          **Xiaolong Jiang**, Baylor College of Medicine  
*Dissecting cortical microcircuit: From cell type, connectivity principles to cell-type specific functions*

10:15 – 10:45        **Hillel Adesnik**, University of California Berkeley  
*Complementary subnetworks of cortical somatostatin interneurons*

10:45 – 11:15        **Bernardo Rudy**, New York University  
*Structure and function of enigmatic layer 1*

11:15 – 11:35        **Discussion**

11:35 – 12:00        **Coffee Break**

**Short Platform Talks 1** (Moderator: **Solange Brown**)

12:00 – 12:20        **Hang Hu, Ariel Agmon**, West Virginia University  
*Direct thalamo-cortical drive onto somatostatin-containing interneurons*

12:20 – 12:40        **C. Waiblinger, P. Y. Borden, M. F. Bolus, G. B. Stanley**, Georgia Institute of Technology  
*Pushing the perceptual boundary towards optimal performance in a detection task with changing stimulus statistics*

12:40 – 1:00         **Daniel Udvary, Vincent J. Dercksen, Robert Egger, Bert Sakmann, Marcel Oberlaender**, Research Center Caesar  
*Sources of wiring specificity in a connectome model of rat barrel cortex*

1:00 – 2:30         **Lunch Break**

## **Role of Rapid 'Inhibitory' Dynamics in Perception and Motivation**

- 2:30 – 2:40 Introduction/Overview: **Christopher Moore**, Brown University
- 2:40 – 3:10 **Christopher Deister**, Brown University  
*Implications for inhibitory neuron heterogeneity in shaping pyramidal cell firing rate and correlations that predict sensory detection*
- 3:10 – 3:40 **Yeka Aponte**, NIDA  
*Glutamatergic fast-spiking parvalbumin neurons in the lateral hypothalamus regulate feeding*
- 3:40 – 4:10 **Shankar Sachidhanandam**, University of Bern  
*Sensory perception at the posterior parietal cortex*
- 4:10 – 4:40 **Kate Hong**, Columbia University  
*Sensation, movement, and learning in the absence of barrel cortex*
- 4:40 – 5:00 **Discussion**
- 5:00 – 5:10 **Barrels 30 Award** Recognizing **Tom Woolsey**  
(Presented by Joshua Brumberg)
- 5:10 – 5:30 **Break**
- 5:30 – 8:00 **Poster Session**
- 6:30 **Dinner**

## **Friday, November 10**

### **Short Platform Talks 2** (Moderator: **Robert Sachdev**)

- 9:00 – 9:20 **Shubhodeep Chakrabarti, Cornelius Schwarz**, University of Tübingen  
*Top down gating: cortical modulation of sensory flow during active touch*
- 9:20 – 9:40 **Arash Fassihi, Alessandro Toso, Sebastian Reinartz, Sara Sorella, Francesca Pulecchi, Mathew E. Diamond**, International School for Advanced Studies (SISSA)  
*Vibrotactile intensity vs. duration perception in rats and humans*
- 9:40 – 10:00 **Ricardo P. Montesinos, Frederick Schwaller, Annapoorani Udhayachandran, Gary R. Lewin, James F.A. Poulet**, Max Delbrück Center and Charité Universitätsmedizin Berlin  
*Sensory afferent coding of non-noxious thermal perception in mice*
- 10:00 – 10:20 **M. A. Goldin, E. R. Harrell, L. Estebanez, D. E. Shulz**, UNIC Gif Sur Yvette  
*Spatio-temporal coding representations in the rat primary and secondary*

somatosensory cortical areas

10:20 – 10:40 **Coffee Break**

**Short Platform Talks 3** (Moderator: **Garrett Stanley**)

10:40 – 11:00 **Mostafa A. Nashaat, Sina Dominiak, Amin Nasr, Keisuke Sehara, Hatem Oraby, Matthew. E. Larkum, Robert N. Sachdev**, Humboldt Universitaets Berlin  
*Bilateral whisker movement predicts decision-making in mice solving Air-Track plus maze*

11:00 – 11:20 **Christian R. Lee, James M. Tepper, David J. Margolis** Rutgers, The State University of New Jersey  
*Distinct effects of corticostriatal inputs from S1 and M1 on behavior via differential circuit activation of dorsal striatum*

11:20 – 11:40 **Keven J Laboy-Juarez, Sei Ahn, Daniel E. Feldman**, University of California Berkeley  
*Selectivity for multi-whisker stimuli by single neurons in mouse somatosensory cortex*

11:40 – 12:00 **Noa Bar, Erez Gugig, Rony Azouz**, Ben-Gurion University of the Negev  
*Differential coding schemes in the trigeminal system*

12:00 – 1:30 **Lunch Break**

**Short Platform Talks 4** (Moderator: **Randy Bruno**)

1:30 – 1:50 **Akiva N Rappaport and Ilan Lampl**, Weizmann Institute of Science  
*Externally induced arousal state modifies spontaneous and evoked synaptic activities in the somatosensory cortex*

1:50 – 2:10 **A. Che, R. Babij, A. Iannone, R. N. Fetcho, M. Ferrer, C. Liston, G. Fishell and N. V. De Marco Garcia**, Weill Cornell Medical College  
*Sensory inputs control network dynamics in the developing somatosensory Cortex*

2:10 – 2:30 **Maxime Chevée and Solange Brown**, Johns Hopkins University  
*Variation in activity state, axonal projection, and position define the transcriptional identity of individual neocortical projection neurons*

2:30 – 2:50 **Coffee Break**

**Orofacial Sensing and Circuitry**

2:50 – 3:00 Introduction/Overview: **David Kleinfeld**, University of California San Diego

3:00 – 3:30 **Kevin Yackle**, University of California San Francisco

*Molecularly defined breathing control center neurons with dedicated, specific and surprising roles in breathing*

3:30 – 4:00

**Fan Wang**, Duke University

*Whisking premotor oscillator neurons and their connectivity*

4:00 – 4:30

**Daniel O'Connor**, Johns Hopkins University

*What non-vibrissa primary afferents tell the mouse about whisking*

4:30 – 5:00

**Martin Deschênes**, Laval University

*Visual tactile integration in rats and underlying neuronal mechanisms*

5:00 – 5:20

**Discussion**

5:20

**Adjourn**