Program

Day 1 – Wednesday, November 3rd, 10:00 AM (ET)

10:00-10:05

Welcome to the 34th annual meeting

Randy Bruno (Columbia University)

10:05-10:10

Introduction of keynote speaker

David Kleinfeld (UC San Diego)

10:10-10:50

Keynote 1

Alipasha Vaziri (Rockefeller University)

"Towards cortex-wide volumetric recording of neuroactivity at cellular resolution"

11:00-12:40

Invited Session 1: Cortical Layer 1

11:00-11:10

Introduction

Gordon Arbuthnott

(Okinawa Institute of Science & Technology)

11:10 -11:40

Naoya Takahashi (University Bordeaux)

"Under cortical L1, active dendritic mechanism for touch detection"

11:40 -12:10

Ann E Takesian (Harvard University)

"Diverse layer 1 circuits for auditory cortical processing and plasticity"

12:10 -12:40

Naoki Yamawaki (Aarhus University)

"Long-range inhibitory intersection of a retrosplenial thalamocortical circuit by apical tuft-targeting CA1 neurons"

Short Talks 1:00 – 2:30

1:00 - 1:10

Katayun Cohen-Kashi Malina (Hebrew University of Jerusalem)

"NDNF interneurons in layer 1 gain-modulate whole cortical columns according to an animal's behavioral state"

1:10-1:20

Matthew Larkum (Humboldt University Berlin)

"Neocortical layer 1 - the memory layer?"

1:20-1:30

Marcel Oberlaender (Caesar Institute)

"Ion channel distributions in cortical neurons are optimized for energy-efficient active dendritic computations"

10-minute break

1:40-1:50

Julia Ledderose (Humboldt University Berlin)

"Local input to Layer 1 numerically outweighs long-range input and can drive layer 1 interneurons"

1:50-2:00

Gordon H. Petty (Columbia University)

"Effects of arousal and movement on secondary somatosensory and visual thalamus"

2:00-2:10

Christina Mo (University of Chicago)

"A transthalamic pathway via the posterior medial nucleus is necessary for whisker discrimination"

2:10-2:20

Jia Qi (NIH)

"Higher-order thalamic nucleus contributes to sensory perception during active sensing"

POSTER Session 2:30-4:00

Day 2 – Thursday, November 4th, 10:00 AM (ET)

10-10:05

(Welcome to Day 2)

Short talks 10:05-11:05

10:05 - 10:15

Oliver M. Gauld (University College London)

"All-optical interrogation of barrel cortex during sensory discrimination"

10:15 - 10:25

Rikki Rabinovich (Columbia University)

"Learning enhances encoding of time and temporal surprise in primary sensory cortex"

10:25 -10:35

William Zeiger (UC Los Angeles)

"Plasticity of local L2/3 pyramidal neurons after a focal lesion of the barrel cortex"

10:35 – 10:45

Adam M. Packer (University of Oxford)

"All-optical interrogation of neural code transmission between primary and secondary somatosensory cortex"

10:45 – 10:55

Yunmiao Wang (Emory University)

"Wide-field imaging with JEDI, a novel and fast genetically encoded voltage sensor"

10:55 – 11:05

Xin Ye (Boston University)

"Multi-beam ultra-fast two-photon microscope for population-level voltage imaging in mouse cortex"

Invited Session 2: Navigation and Locomotion 11:05-12:40

11:05-11:15

Introduction

Robert Sachdev (Humboldt University Berlin)

11:15-11:45

Diana Amaro (MPI for Neurobiology)

"Source identity shapes spatial preference in primary auditory cortex during active navigation"

11:45-12:15

Asli Ayaz (Neuro-Electronics Research Flanders)

"Layer-specific processing of touch during locomotion"
12:15-12:45

John Issa (Northwestern University)

"***Neural circuits supporting navigation through space and time in the medial entorhinal cortex and beyond"***

Discussion 12:45-12:55

Short Talks 1:00-3:00

1:00-1:10

Sevgi Öztürk (Boğaziçi University)

“Relationship between psychophysical sensitivity index and Bayesian prediction accuracy in behaving rats”

1:10-1:20

Zhaoran Zhang (UC Riverside)

"Proactive and context-dependent motor to sensory cortical feedback regulation of network excitability"

1:20-1:30

Gregorio L. Galiñanes (University of Geneva)

"Modular organization of motor cortex activity in a multi-directional reaching task"

10-minute break

1:40-1:50

Sam Kwon (University of Michigan)

"Role of somatosensory cortex in control of paw movement during locomotion"

1:50-2:00

John M Barrett (Northwestern University)

"Cortico-kinematic coupling during dexterous food-handling"

2:00-2:10

Krista Marrero (UC Riverside)

"Global, Low-Amplitude Cortical State Predicts Response Outcomes in a Selective Detection Task in Mice"

20-minute break

2:30-2:40

Maxime Chevée (Johns Hopkins University School of Medicine)

"Neural activity in the mouse claustrum in a cross-modal sensory selection task"

2:40-2:50

Lisa Meyer-Baese (Georgia Institute of Technology & Emory University)

"Spatiotemporal Patterns of Cortical Coupling to Pupil Fluctuations During Spontaneous Behavior"

2:50-3:00

K. Aruljothi (UC Riverside)

"Cortical Feedback Activity Under Anesthesia is Pathway Dependent"

Day 3 – Friday, November 5th, 10:00 AM (ET)

10:00-10:05

(Welcome to Day 3)

10:05-10:10

Introduction of keynote speaker

Randy Bruno (Columbia University)

10:10-11:00

Keynote 2:

Dorothy Schafer (University of Massachusetts)

"Leveraging the power of the barrel cortex circuit to study microglia function"

Short Talks 11:00-11:30

11:00-11:10

Jim McBurney-Lin (UC Riverside)

"Pupil diameter is not an accurate real-time readout of locus coeruleus activity"

11:10-11:20

Keerthi Krishnan (University of Tennessee)

"Elucidating the molecular and cellular mechanisms of cerebral lateralization"

11:20-11:30

Qian-Quan Sun (NIH)

"A long-range, recurrent neuronal network linking the emotion regions with the somatic motor cortex"

Invited Session 3: Psychedelics and Perception 11:30-1:40

11:30 -11:40

Introduction

Yi Zuo (UC Southern California)

11:40-12:10

Carine Becamel (Universite de Montpellier)

"Effect of Serotonin 5-HT2A receptor activation on plasticity gating and fear processing"

12:10-12:40

Ju Lu (UC Southern California)

"An analog of psychedelics restores functional neural circuits disrupted by unpredictable stress"

12:40-1:10

Da-Ting Lin (NIH)

"Deep Behavior Mapping reveals the formation of neural ensembles across learning"

1:10-1:40

Cris Niell (University Oregon)

"The impact of a serotonergic hallucinogen on cortical visual processing and dynamics"

Discussion 1:40-1:50

1:50-2:30

Group Photo, Meeting Feedback, and Close