The Neurobiology of Mental Health
Lake Conference
Thun, May 12-16, 2024

Sunday, May 12
Arrival / Registration; Buffet dinner starting at 18:30

Monday, May 13

9:00-9:35 Naomi Wray (Univ. Queensland) Genetic architecture of psychiatric disorders
9:35-10:10 Daniel Geschwind (UCLA) Tackling heterogeneity in neuropsychiatric disorders through high throughput biology.

Coffee

10:30-11:05 Weizhe Hong (UCLA) Neural basis of prosocial behavior
11:05-11:40 Nancy Padilla-Coreano (Univ. Florida) Neural circuits underlying social competence in mice
11:40-11:55 Xiaoke Chen (Stanford) Unveiling the role of retinal processing in empathetic pain and autism
11:55-12:10 Tilmann Achsel (Univ. Lausanne) Identification of a sociability signature in the dorsal striatum
12:10-12:30 Camilla Bellone/Marie Schaeer (Univ. Geneva) Translational research approach to social orienting deficits in autism: the role of superior colliculus-ventral tegmental pathway

Lunch 12:30-14:30

14:30-15:05 Hongkui Zeng (Allen Inst.) Transcriptomic changes of cell types in development, aging and disease
15:05-15:40 Sergiu Pasca (Stanford) Constructing and deconstructing the human nervous system to understand disease
15:40-16:15 Paola Arlotta (Harvard) Brain organoids as avatars to study human brain development and disease

Coffee

16:35-17:10 Deanna Barch (Washington Univ.) Developmental risk factors for psychosis emergence
17:10-17:45 Beatriz Rico (KCL, London) Cortical interneuron dysfunction and neurodevelopmental disorders
17:45-18:00 Martin Munz (IOB, Basel) Layer 5 pyramidal neuron circuits at the inception of neocortex in the living mouse embryo
18:00-18:15 Matthew Johnson (Broad Inst.) A comparative atlas of cell states and molecular vulnerability to mental illness in the adolescent prefrontal cortex

Dinner 18:30-20:30

20:45-21:20 Kelsey Martin (Simons SFARI, UCLA) From synaptic plasticity to autism research

Poster Session I (A-K)
Tuesday, May 14

9:00-9:35  Nadine Gogolla (MPI Munich) Whole-brain emotion state coding in mice
9:35-10:10  Catherine Dulac (Harvard) Neurobiology of sickness behavior
10:10-10:25  Adam Kepecs (Washington Univ.) Bridging bodily and mental illness: A neuro-immune circuit mediates cancer cachexia-induced apathy
10:25-10:40  Tatiana Korotkova (Univ. Koeln) Regulation of anxiety by leptin receptor-expressing hypothalamic neurons in health and in anorexia model

Coffee

11:00-11:35  Kay Tye (Salk) Longitudinal visualization of stress Induced anhedonia
11:35-12:10  Michael Bruchas (Univ. Washington) A diverse network of pericoerulear neurons control arousal and stress states
11:10-12:25  Adelaide Minerva (Princeton) Cellular resolution changes in the ventral tegmental area underlying susceptibility and resilience to chronic social stress

lunch 12:30-14:30

14:30-15:05  Christian Luescher (Univ. Geneva) Dopamine transients in the nucleus accumbens instructing reward choice
15:05-15:20  Iskra Pollak Dorocić (Stockholm Univ.) Mapping the transcriptional effects of SSRI treatment on serotonin subtypes
15:20-15:35  Clara Liao (Yale) 5-HT2A dependent effects underpinning the action of psilocybin

Coffee

16:30-17:05  Misha Ahrens (Janelia) Flexible computation in brainwide neuron-astrocyte zebrafish circuits
17:05-17:40  Hailan Hu (Zhejiang Univ.) The region-specific effect of ketamine and neuron-glia crosstalk in lateral habenula
17:40-17:55  Marc Duque-Ramirez (Harvard) Ketamine induces plasticity in a norepinephrine-astroglial circuit to promote behavioral perseverance in zebrafish

dinner 18:30-20:30

20:45-21:20  Bryan Roth (UNC Chapel Hill) Ultra-large-scale approaches for discovering transformative CNS therapeutics

Poster Session II (L-Z)
Wednesday, May 15

9:00-9:35  **Akira Sawa** (Johns Hopkins)  Multimodal, longitudinal study for psychotic disorders: homeostatic signaling to neural connectivity

9:35-10:10  **Kevin Mastro**/B. Stevens (Broad Inst.)  Cellular mechanisms of adolescent development and psychiatric vulnerability

10:10-10:25  **Flurin Cathomas** (Univ. Zurich)  Circulating myeloid-derived MMP8 in stress susceptibility and depression

10:25-10:40  **Yeong Shin Yim** (Univ. Penn.)  Non-conventional CD8+ T cells engage in brain homeostasis

Coffee

11:00-11:35  **Katharina Schmack** (Crick, London)  Hallucinating mice, dopamine and immunity: towards mechanistic treatments for psychosis

11:35-12:10  **Jonathan Flint** (UCLA)  A complementation test to find the genes involved in altering behavior and disease risk

lunch 12:30-14:30

14:30-15:05  **David Redish** (Univ. Minn.)  Episodic imagination in approach-avoid conflicts: implications for worry and anxiety

15:05-15:40  **David Kupferschmidt**/ J. Gordon (NIMH)  Optical reshaping of hippocampal-prefrontal communication

15:40-16:15  **Georg Keller** (FMI, Basel)  A cortical circuit approach to psychosis

16:15-16:30  **Sam Vesuna** (Stanford)  Deep posteromedial cortical rhythm in dissociation

Coffee

16:50-17:25  **Nolan Williams** (Stanford)  Interventional neuropsychiatry

17:25-18:00  **Edward Chang** (UCSF)  Closed-loop brain pacemakers for neuropsychiatric conditions

18:00-18:15  **Irene Rembado** (Allen Inst.)  Cell type-specific and area-dependent effects in cortex to sinusoidal electric stimulation in-vivo

18:15-18:30  **Kristin Raj** (Stanford)  SAINT in the treatment of bipolar depression

dinner 18:45-20:45

Posters (All)
Thursday, May 16

9:00-9:35  Chris Walsh (Harvard) You contain multitudes: somatic mutation in human neuropsychiatric disease
9:35-10:10  Elise Robinson (Broad Inst.) From genes to biology for autism

Coffee

10:30-11:05  Michael Gandal (Univ. Penn.) Interpreting neuropsychiatric genetics through the lens of human brain development
11:05-11:40  Mauro Costa-Mattioli (Baylor) Harnessing evolution and proteostasis networks to reverse cognitive dysfunction

lunch 12:00-14:00

Departure