

Neurons, synapses & circuits | from function to disease

16–18 August 2018, Q Station, Sydney

DAY 1: THURSDAY AUGUST 16

6:00pm–7:00pm Session 1: Plenary speaker

Chair: David Bredt

6:00pm Richard Huganir, JOHNS HOPKINS UNIVERSITY
Regulation of AMPA receptors and synaptic plasticity in cognitive disorders

7:00pm Welcome reception and drinks

DAY 2: FRIDAY AUGUST 17

8:30am–10:30am Session 2: Disorders of the nervous system

Chair: Peter Silburn

8:30am David Bredt, JOHNSON AND JOHNSON
Getting a handle on neuropharmacology by targeting receptor-associated proteins

9:00am Susannah Tye, THE UNIVERSITY OF QUEENSLAND
Impaired metabolic capacity and cellular resilience in antidepressant resistance

9:30am Shengtao Hou, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
Profiling phytohormones in stroke brain—challenges and opportunities

10:00am Robert Malenka, STANFORD UNIVERSITY
Neural mechanisms of social reward

10:30am–11:00am Morning Tea

11:00am–12:30pm Session 3: Neural networks and systems

Chair: Bernardo Sabatini

11:00am Liping Wang, SHENZHEN INSTITUTES OF ADVANCED TECHNOLOGY
Optogenetic dissection of neural circuits underlying processing of innate fear

11:30am Anatol Kreitzer, UCSF
Striatal circuit dysfunction underlies motor deficits in a model of human dyskinesia

12:00pm Ehsan Arabzadeh, THE AUSTRALIAN NATIONAL UNIVERSITY
Information processing in the rodent sensory cortex: population dynamics across behavioural states

12:30pm–1:30pm Lunch

1:30pm–3:30pm Session 4: Inhibitory systems

Chair: Greg Stuart

1:30pm Julie Kauer, BROWN UNIVERSITY
Inhibitory synapses and plasticity in the ventral tegmental area

2:00pm Chris McBain, NATIONAL INSTITUTES OF HEALTH
Neuronal pentraxins control glutamate receptor driven development of hippocampal inhibitory circuits

2:30pm Pankaj Sah, THE UNIVERSITY OF QUEENSLAND
The amygdala, prefrontal cortex and hippocampal circuit in fear learning

3:00pm Bernardo Sabatini, HARVARD UNIVERSITY

3:30pm–6:00pm Afternoon free time

6:00pm–7:30pm Poster session

7:30pm–9:30pm Conference Dinner

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DAY 3: SATURDAY AUGUST 18

8:30am–10:30am Session 5: Synaptic function and plasticity

Chair: Rob Malenka

- 8:30am Morgan Sheng, GENENTECH
Molecular and cellular mechanisms of synapses loss in Alzheimer's disease and tauopathy
- 9:00am Katherine Roche, NIH
NMDA receptor regulation: clues from rare variants implicated in disease
- 9:30am Andres Villu Maricq, UNIVERSITY OF UTAH
A novel auxiliary protein that regulates the function of NMDA receptors
- 10:00am Frederic Meunier, THE UNIVERSITY OF QUEENSLAND
Neurotransmitter release machinery in a nanoscale Brownian world

10:30am–11:00am Morning Tea

11:00am–12:00pm Session 6: Plenary speaker

Chair: Pankaj Sah

- 11:00am Diane Lipscombe, BROWN UNIVERSITY
Cell-specific splicing of neuronal calcium channels: mechanism, function and disease

12:00pm–1:00pm Session 7: Short talks (selected from posters)

Brian Billups, AUSTRALIAN NATIONAL UNIVERSITY
Bryony Winters, UNIVERSITY OF SYDNEY
Jianyuan Sun, CHINESE ACADEMY OF SCIENCES
Tristan Wallis, UNIVERSITY OF QUEENSLAND

1:00pm–2:00pm Lunch

2:00pm–3:30pm Session 8: Therapeutics and diagnostics

Chair: Susannah Tye

- 2:00pm Peter Silburn, THE UNIVERSITY OF QUEENSLAND
- 2:30pm Elizabeth Coulson, THE UNIVERSITY OF QUEENSLAND
Cholinergic dysfunction in Alzheimer's disease
- 3:00pm Janet Keast, UNIVERSITY OF MELBOURNE
Mapping the visceral connectome for bioelectronic medicine

3:30pm–4:00pm Afternoon tea

4:00pm–6:00pm Session 9: Neural networks and systems (part 2)

Chair: Shengtao Hou

- 4:00pm Greg Stuart, THE AUSTRALIAN NATIONAL UNIVERSITY
Cellular and circuit mechanisms underlying processing of binocular visual information
- 4:30pm Marta Garrido, THE UNIVERSITY OF QUEENSLAND
An afferent subcortical white matter pathway to the amygdala facilitates fear recognition
- 5:00pm Bernard Balleine, THE UNIVERSITY OF NSW
The thalamostriatal network mediates flexible encoding for goal-directed action
- 5:30pm Geoffrey Goodhill, THE UNIVERSITY OF QUEENSLAND
The development of neural coding in the zebrafish brain

Closing remarks: Katherine Roche