

K Keynote **S** Social **T** Tutorial

JULY 16 • SATURDAY

9:00am – 12:30pm	T	T5: Characterizing neural dynamics using highly comparative time-series analysis	Meeting Room 107
9:00am – 5:00pm	T	T1: From single-cell modeling to large-scale network dynamics with NEST Simulator <i>Speakers: Pooja Babu, Charl Linssen</i>	Meeting Room 101
9:00am – 5:00pm	T	T2: Models of Neuron-Glial Interactions	Meeting Room 103
9:00am – 5:00pm	T	T3: A step-by-step tutorial on active inference and its application to empirical data	Meeting Room 102
9:00am – 5:00pm	T	T4: Building mechanistic multiscale models from molecules to circuits using NEURON and NetPyNE	Meeting Room 104
1:30pm – 5:00pm	T	T6: GPU enhanced Neuronal Networks	Meeting Room 107
1:30pm – 5:00pm	T	T7: Spectral analysis of neural signals	Meeting Room 108
3:30pm – 4:00pm	T	T8: Introduction to the Brain Dynamics Toolbox <i>Speakers: Stewart Heitmann</i>	Meeting Room 111 & 112
5:00pm – 5:15pm		Welcome	Plenary 1
5:15pm – 6:15pm	K	Keynote 1: How full is the brain's petrol tank? Evidence from models of metabolic depletion <i>Speakers: Michael Breakspear</i>	Plenary 1
6:15pm – 7:30pm	S	Welcome Reception	MCEC Foyer

F Featured **K** Keynote **O** Oral **P** Poster **S** Social

JULY 17 • SUNDAY

9:10am – 10:10am	K	Keynote 2: Enabling tools to model information processing in brains <i>Speakers: Joseph Lizier</i>	Plenary 1
10:40am – 11:00am	O	O1: Infomorphic Neurons: Locally learning pyramidal-inspired neurons derived from partial information decomposition <i>Speakers: Abdullah Makkeh, Michael Wibral, Marcel Graetz, Andreas Schneider</i>	Plenary 1
11:00am – 11:20am	O	O2: Balancing sequence robustness and interval variability in minimal CPG bursting models <i>Speakers: Pablo Varona, Pablo Sánchez-Martín, Roberto Latorre, Blanca Berbel</i>	Plenary 1
11:20am – 11:40am	O	O3: Temporal scaling of neural trajectories in a multiple-timescale network <i>Speakers: Tomoki Kurikawa</i>	Plenary 1
11:40am – 12:00pm	O	O4: Deep Simplicial Manifold Learning for Neural Spike Train Decoding <i>Speakers: Piotr Franaszczuk, Edward Mitchell, David Boothe, Vasileios Maroulas</i>	Plenary 1
12:00pm – 12:20pm	O	O5: Brain Wave Pattern Dynamics – Changes in Alzheimer’s Disease <i>Speakers: Yuri Dabaghian, Clarissa Hoffman, Jingheng Cheng, Daoyun Ji</i>	Plenary 1
1:50pm – 2:20pm	F	F1: Photoreceptor biophysics enables deep learning models to generalize across light levels <i>Speakers: Saad Idrees, Kiersten Ruda, Lindsey Chew, Greg Field, Fred Rieke, Joel Zylberberg</i>	Plenary 1
2:20pm – 2:40pm	O	O6: A large-scale survey of spatial and motion selectivity in an entire column in mouse V1 <i>Speakers: Reza Abbasi-Asl, Roozbeh Farhoodi, Josh Larkin, Kevin Takasaki, Daniel Millman, Daniel Denman, Jerome Lecoq, Anton Arkhipov, Nathan W. Gouwens, Jack Waters, R. Clay Reid, Saskia E. J. de Vries</i>	Plenary 1
2:40pm – 3:00pm	O	O7: A new formalism relating kinematic intention readout to action processing <i>Speakers: Eugenio Scaliti, Giulia Borghini, Andrea Cavallo, Stefano Panzeri, Cristina Becchio, Kiri Pullar</i>	Plenary 1
3:00pm – 3:20pm	O	O8: Context-dependent hubs in multisensory perception revealed by computational modeling of large-scale cortical networks <i>Speakers: Jorge Mejias, Ronaldo Nunes, Marcelo Reyes, Raphael de Camargo</i>	Plenary 1
3:50pm – 6:50pm	P	P10: Exploring evolutionary constraints on human connectomes through randomized networks <i>Speakers: Jayson Jeganathan, Michael Breakspear</i>	Main Foyer 1
3:50pm – 6:50pm	P	P11: Cognitive control system gates insula subregion processing of affective stimuli in early psychosis <i>Speakers: Luca Cocchi, Jayson Jeganathan, Michael Breakspear, Bjorn Burgher, Nikitas Koussis, James Scott</i>	Main Foyer 1
3:50pm – 6:50pm	P	P12: Decomposing neural circuit function into information processing primitives <i>Speakers: Demian Battaglia, Nicole Voges, Andrea Brovelli</i>	Main Foyer 1
3:50pm – 6:50pm	P	P13: Neural Model Simulations of the Efficacy and Safety of a Neural Activity Shaping Strategy for Visual Prostheses <i>Speakers: David Grayden, Hamish Meffin, Tatiana Kameneva, Martin Spencer, Anthony Burkitt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P14: Unifying sparse coding, predictive coding, and divisive normalization <i>Speakers: Yanbo Lian, Anthony Burkitt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P15: Modelling Working Memory functions of the Basal Ganglia <i>Speakers: Sandeep Nair, Vigneswaran Chandrasekaran, V Srinivasa Chakravarthy</i>	Main Foyer 1
3:50pm – 6:50pm	P	P16: Bifurcation of normal & AD brains detected by ensemble learning method applied to longitudinal EEG data <i>Speakers: Eunjin Hwang, Sergey Leksikov, Younghyun Yoon, Yeayoung Kim, Jee Hyun Choi</i>	Main Foyer 1
3:50pm – 6:50pm	P	P17: Artificial speech sounds synthesized from intracranial recordings during overt and silent speech tasks <i>Speakers: Kevin Meng, David Grayden, Mark Cook, Farhad Goodarzy, EuiYoung Kim, June Sic Kim, Chun Kee Chung</i>	Main Foyer 1

3:50pm – 6:50pm	P	P18: Decoding semantic categories in the anterior temporal lobe using intracranial recordings <i>Speakers: Kevin Meng, EuiYoung Kim, June Sic Kim, Chun Kee Chung</i>	Main Foyer 1
3:50pm – 6:50pm	P	P19: Understanding hyperexcitability of cortical malformations through network analyses <i>Speakers: Ana Aquiles, Hiram Luna-Munguía, Tatiana Fiordeliso, Mirelta Regalado, Luis Concha</i>	Main Foyer 1
3:50pm – 6:50pm	P	P1: Simulated responses of a model Marmoset pFC <i>Speakers: Bernard Pailthorpe</i>	Main Foyer 1
3:50pm – 6:50pm	P	P20: Modeling roles of Ca²⁺ dynamics in temperature coding mechanisms of Drosophila sensory neurons <i>Speakers: Gennady Cymbalyuk, Natalia Maksymchuk, Akira Sakurai, Daniel N. Cox</i>	Main Foyer 1
3:50pm – 6:50pm	P	P21: Multi-compartmental reconstruction and simulations of an entire module of the mouse cerebellar cortex <i>Speakers: Robin De Schepper, Alice Geminiani, Claudia Casellato, Stefano Masoli, Martina Rizza, Alberto Antonietti, Egidio D'Angelo</i>	Main Foyer 1
3:50pm – 6:50pm	P	P22: Spatial representability of neuronal activity <i>Speakers: Yuri Dabaghian, Danil Akhtiamov, Anthony Cohn</i>	Main Foyer 1
3:50pm – 6:50pm	P	P23: Discrete Brain Rhythms, Oscillons and Rapid Spectral Dynamics <i>Speakers: Yuri Dabaghian, Daoyun Ji, Ms Zobaer, Carl Marie Domenico, Luca Perotti</i>	Main Foyer 1
3:50pm – 6:50pm	P	P24: Investigating the Mechanisms Behind Experience-Dependent Place Cell Shifting <i>Speakers: Yanbo Lian, Kathrine Clarke, Simon R Schultz, Mary Ann Go, Catherine Davey, Anthony Burkitt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P25: Modelling the resonant neural activity evoked by deep brain stimulation of the subthalamic nucleus using a network of Kuramoto oscillators with STDP <i>Speakers: Rafal Bogacz, James Sermon, Benoit Duchet, Christoph Wiest, Huiling Tan, Timothy Denison</i>	Main Foyer 1
3:50pm – 6:50pm	P	P26: Large-scale and topographically detailed model of the sensorimotor thalamus with bidirectional connections to M1 and S1 <i>Speakers: Salvador Dura-Bernal, William W Lytton, Joao Moreira, Fernando Borges</i>	Main Foyer 1
3:50pm – 6:50pm	P	P27: Closed-loop brain-inspired meta-learning rules for action suppression in artificial agents <i>Speakers: Federica Robertazzi, Matteo Vissani, Guido Schillaci, Egidio Falotico</i>	Main Foyer 1
3:50pm – 6:50pm	P	P28: Disturbed Hierarchical Function in Schizophrenia and Early Psychosis <i>Speakers: James Pang, Kevin Aquino, Alex Fornito, Yu-Chi Chen, Sidhant Chopra, Priscila Levi, Alexander Holmes</i>	Main Foyer 1
3:50pm – 6:50pm	P	P29: The effects of different preprocessing steps and cortical parcellations on diffusion MRI connectomics <i>Speakers: James Pang, Jeggan Tiego, Mark Bellgrove, Alex Fornito, Mehul Gajwani, Stuart Oldham, Aurina Arnatkevičiūtė</i>	Main Foyer 1
3:50pm – 6:50pm	P	P2: Consolidating memory storage and retrieval <i>Speakers: Anu Aggarwal</i>	Main Foyer 1
3:50pm – 6:50pm	P	P30: Cortical geometry explains diverse patterns of brain activity <i>Speakers: James Pang, Kevin Aquino, Alex Fornito</i>	Main Foyer 1
3:50pm – 6:50pm	P	P31: Mode-based morphometry: a new approach to mapping human neuroanatomy <i>Speakers: James Pang, Kevin Aquino, Alex Fornito, Yu-Chi Chen, Trang Cao</i>	Main Foyer 1
3:50pm – 6:50pm	P	P32: Disinhibition of muscarinic modulated potassium channels in a hippocampal CA1 model reproduces memory impairment observed in vivo <i>Speakers: Dechuan Sun, Chris French, Ranjith Rajasekharan Unnithan</i>	Main Foyer 1
3:50pm – 6:50pm	P	P33: Is Catastrophic Forgetting Bayes-Optimal? <i>Speakers: Noor Sajid, Laura Convertino, Victorita Neacsu, Thomas Parr, Karl Friston</i>	Main Foyer 1
3:50pm – 6:50pm	P	P34: Characterizing schizophrenia neural dynamics using univariate time-series feature analysis <i>Speakers: Linden Parkes, Kevin Aquino, Alex Fornito, Ben Fulcher, Annie Bryant, Trent Henderson, Preethom Pal, Adithya Vignaraja</i>	Main Foyer 1
3:50pm – 6:50pm	P	P35: A feature-based transfer entropy approach to detect large-scale interactions in neural systems <i>Speakers: Joseph Lizier, Ben Fulcher, Aria Nguyen, Oliver Clif</i>	Main Foyer 1
3:50pm – 6:50pm	P	P36: Summarizing non-stationarity in spatio-temporal neural data <i>Speakers: Ben Fulcher, Brendan Harris</i>	Main Foyer 1

3:50pm – 6:50pm	P	P37: Bayesian model-based strategies in spatial location tasks: is there knowledge transfer? <i>Speakers: Chin-Hsuan Sophie Lin, Trang Thuy Do, Lee Unsworth, Marta I. Garrido</i>	Main Foyer 1
3:50pm – 6:50pm	P	P38: Mini EPSC Analysis of Synaptic Integration to Inform a Drosophila Motor Circuit Model <i>Speakers: Cengiz Gunay, Patrick Del Rio, Ekechi Nzewi, Caleb Gebremeskel</i>	Main Foyer 1
3:50pm – 6:50pm	P	P39: Modulation of dynamical interareal communication and visual attention <i>Speakers: Shencong Ni, Pulin Gong</i>	Main Foyer 1
3:50pm – 6:50pm	P	P3: Oscillatory local field potential signatures associated with chemosensory processing in the accessory olfactory bulb <i>Speakers: Marc Spehr, Yoram Ben-Shaul, Oksana Cohen, Sebastian Malinowski, Kahan Anat</i>	Main Foyer 1
3:50pm – 6:50pm	P	P40: Computational modelling of optic flow sensitive neurons in the dragonfly <i>Speakers: Edward Luong, Benjamin Cazzolato, Steven Grainger</i>	Main Foyer 1
3:50pm – 6:50pm	P	P41: Using unlabelled self-supervised machine learning to reduce the amount of data required for seizure detection <i>Speakers: David Grayden, Farhad Goodarzy, Andisheh Partovi, Anthony Burkitt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P42: An epileptic seizure prediction framework allowing for variable warning times <i>Speakers: David Grayden, Mark Cook, Jordan Chambers, Anthony Burkitt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P43: The role of epidemic spreading in seizure dynamics and epilepsy surgery <i>Speakers: Ana Millan, Ida A Nissen, Elisabeth C.W. van Straaten, Cornelis J. Stam, Sander Idema, Johannes C. Baayen, Piet Van Mieghem, Arjan Hillebrand</i>	Main Foyer 1
3:50pm – 6:50pm	P	P44: A realistic neural network model of the optokinetic response to identify the neuronal circuitry responsible for the velocity storage mechanism. <i>Speakers: Yusuke Shinji, Toshimi Yamanaka, Yutaka Hirata</i>	Main Foyer 1
3:50pm – 6:50pm	P	P45: Cross-comparison of state of the art morphologically detailed simulators on modern CPUs and GPUs using the Brain Scaffold Builder <i>Speakers: Robin De Schepper, Claudia Casellato, Egidio D'Angelo, Abigail Morrison, Nora Abi Akar, Thorsten Hater, Brent Huisman</i>	Main Foyer 1
3:50pm – 6:50pm	P	P46: Endogenous and exogenous brain fluctuations induce and block alpha activity <i>Speakers: Axel Hutt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P47: Efficient analysis of combinatorial neural codes with algebraic, topological, and statistical methods <i>Speakers: Thomas Burns, Irwansyah Irwansyah</i>	Main Foyer 1
3:50pm – 6:50pm	P	P48: Yet Another Brain, a graph-based framework for neural simulation <i>Speakers: Yuko Ishiwaka, Carlos Enrique Gutierrez, Minoru Owada, Izumi Kazutaka, Atsuya Tange, Hiroshi Kagawa</i>	Main Foyer 1
3:50pm – 6:50pm	P	P49: Motoneuron Base Firing Pattern Controller for Skeletal Muscle Model <i>Speakers: Yuko Ishiwaka, Shun Ogawa, Tomohiro Yoshida, Tadateru Itoh</i>	Main Foyer 1
3:50pm – 6:50pm	P	P4: A multiscale characterization of cortical shape asymmetries in early psychosis <i>Speakers: James Pang, Ashlea Segal, Kevin Aquino, Jeggan Tiego, Alex Fornito, Yu-Chi Chen, Sidhant Chopra</i>	Main Foyer 1
3:50pm – 6:50pm	P	P50: Learning Algorithm of Synaptic Connections for a Parser Based on the Assembly Calculus <i>Speakers: Yuko Ishiwaka, Carlos Enrique Gutierrez, Atsuya Tange, Shun Ogawa, Tomohiro Yoshida, Christos H. Papadimitriou</i>	Main Foyer 1
3:50pm – 6:50pm	P	P51: Deciphering clock cell network morphology and its functional role within the biological master clock, suprachiasmatic nucleus <i>Speakers: Kyoung Jin Lee, In Hoi Jeong</i>	Main Foyer 1
3:50pm – 6:50pm	P	P52: High-dimensional topological analysis of BOLD sliding window correlations <i>Speakers: Volker Steuber, Christoph Metzner, Shabnam Kadir, Emil Dmitruk</i>	Main Foyer 1
3:50pm – 6:50pm	P	P53: Measuring Functional Connectivity Changes with Simultaneous Transcutaneous Vagus Nerve Stimulation (tVNS) and Magnetoencephalography (MEG) <i>Speakers: Charlotte Keatch, Tatiana Kameneva, Elisabeth Lambert, Will Woods</i>	Main Foyer 1
3:50pm – 6:50pm	P	P54: Modelling stimulation and inhibition of retinal ganglion cells during nanoparticle-enhanced infrared neural modulation <i>Speakers: James Begeng, Tatiana Kameneva, Wei Tong, Michael Ibbotson, Paul Stoddart</i>	Main Foyer 1

3:50pm – 6:50pm	P	P55: Self-organized neuronal subpopulations and network morphology underlying superbursts <i>Speakers: Kyoung Jin Lee, In Hoi Jeong, Byoungsoo Kim</i>	Main Foyer 1
3:50pm – 6:50pm	P	P56: Efficient gradient descent by implementing eventProp in GeNN <i>Speakers: Thomas Nowotny, James Knight</i>	Main Foyer 1
3:50pm – 6:50pm	P	P57: Modelling the effect of ephaptic coupling on spike propagation in peripheral nerve fibres <i>Speakers: Thomas R. Knösche, Helmut Schmidt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P58: Estimating the neural dynamics from the evoked local field potentials in the primary auditory cortex of awake monkeys <i>Speakers: Thomas R. Knösche, Vincent S.C. Chien, Peng Wang, Yonatan I. Fishman, Burkhard Maess</i>	Main Foyer 1
3:50pm – 6:50pm	P	P59: Spike frequency adaptation mechanism leading to variability quenching in recurrent neural networks <i>Speakers: Tomas Barta, Lubomir Kostal</i>	Main Foyer 1
3:50pm – 6:50pm	P	P5: Radiomic Features Predictive of Treatment Response in HGG treated with CAR-T Therapy <i>Speakers: Aleksandr Filippov, Lawrence Shaktah, Chi Wah Wong, Christine Brown, Behnam Badie</i>	Main Foyer 1
3:50pm – 6:50pm	P	P60: Joint tensor decomposition of neural activity across consecutive sessions reveals rich multiscale and behaviorally relevant dynamics in mouse V1 <i>Speakers: Lazaros Mitskopoulos, Arno Onken, Nina Kudryashova</i>	Main Foyer 1
3:50pm – 6:50pm	P	P6: When local alterations meet collective oscillatory dynamics: On the causes of functional connectivity changes <i>Speakers: Demian Battaglia, Sophie Benitez Stulz, Matthieu Gilson</i>	Main Foyer 1
7:30pm – 10:00pm	S	CNS Conference Dinner	Aerial (17 South Wharf Promenade, South Wharf, Melbourne)

F Featured **K** Keynote **O** Oral **P** Poster **S** Social

JULY 18 • MONDAY

9:10am – 10:10am	K	Keynote 3: Moving beyond self-report: Longitudinal network mapping to track therapeutic progress in Interventional Psychiatry <i>Speakers: Kristin Sellers</i>	Plenary 1
10:40am – 11:10am	F	F2: Regional and circuit heterogeneity of brain abnormalities in psychiatric disorders <i>Speakers: Ashlea Segal, Linden Parkes, Kevin Aquino, Andrew Zalesky, Ben J.Harrison, Jeggan Tiego, Murat Yucel, Leah Braganza, Chao Suo, Mark Bellgrove, Alex Fornito, Seyed Mostafa Kia, Thomas Wolfers, Barbara Franke, Martine Hoogman, Christian F Beckmann, Lars T Westlye, Ole A Andreassen, Christopher Davey, Carles Soriano-Mas, Narcís Cardoner, Michael Berk, Sue Cotton, Andre F Marquand</i>	Plenary 1
11:10am – 11:30am	O	O9: The topochronic map of the human brain dynamics <i>Speakers: Pierpaolo Sorrentino, Viktor Jirsa, Spase Petkoski, Fabio Baselice, Maddalena Sparaco, Emahnuel Troisi Lopez, Elisabetta Signoriello, Simona Bonavita, Maria Agnese Pirozzi, Mario Quarantelli, Giuseppe Sorrentino</i>	Plenary 1
11:30am – 11:50am	O	O10: Spectral graph modeling of Alzheimer's disease neurophysiology <i>Speakers: Parul Verma, Kamalini Ranasinghe, Chang Cai, Xihe Xie, Hannah Lerner, Danielle Mizuiri, Bruce Miller, Katherine Rankin, Keith Vossel, Srikantan Nagarajan, Ashish Raj</i>	Plenary 1
11:50am – 12:10pm	O	O11: Perturbation-based approaches derived and tested in mathematical neural models generate biomarkers for seizure transitions in animal models. <i>Speakers: Wei Qin, Andre Peterson, Anthony Burkitt</i>	Plenary 1
1:30pm – 2:00pm	F	F3: Activity-dependent infrared laser stimulation to assess its biophysical effects on single neurons <i>Speakers: Alicia Garrido-Peña, Pablo Varona, Pablo Sánchez-Martín, Manuel Reyes-Sanchez, Javier Castilla, Jesus Tornero, Rafael Levi, Francisco B Rodriguez</i>	Plenary 1
2:00pm – 2:20pm	O	O14: Consequences of Dale's law on the stability-complexity relationship of partially random neural networks <i>Speakers: Andre Peterson, Jesper Ipsen</i>	Plenary 1
2:20pm – 2:40pm	O	O12: Linking connectivity to dynamics: How do coherent oscillations emerge in a partially random neural network? <i>Speakers: Andre Peterson, Isabelle Harris, Hamish Meffin, Anthony Burkitt</i>	Plenary 1
2:40pm – 3:00pm	O	O13: Inhibitory stabilization in a cortical neural mass model <i>Speakers: David Grayden, Parvin Zarei Eskikand, Artemio Soto-Breceda, Mark Cook, Anthony Burkitt</i>	Plenary 1
3:00pm – 3:20pm	O	O15: Evolutionary shaping of human brain dynamics <i>Speakers: James Pang, James Rilling, James A Roberts, Martijn van den Heuvel, Luca Cocchi</i>	Plenary 1
3:50pm – 6:50pm	P	P100: EEG tracking using neural field theory distinguish unconsciousness and disconnection across arousal states <i>Speakers: Vicente Medel, Brandon Munn, James Shine, Cameron Casey, Robert Sanders, Eli Müller</i>	Main Foyer 1
3:50pm – 6:50pm	P	P101: Modeling the dynamics of arbitrary partially known biochemical systems via hybrid mass action and neural kinetics endowed ODEs <i>Speakers: Domas Linkevicius, Angus Chadwick, Melanie I. Stefan, David C. Sterratt</i>	Main Foyer 1
3:50pm – 6:50pm	P	P102: Clustered stimuli and oscillations can improve pattern recognition in a detailed model of cerebellar cortex <i>Speakers: Volker Steuber, Ohki Katakura, Shabnam Kadir, Reinoud Maex</i>	Main Foyer 1
3:50pm – 6:50pm	P	P103: Homeostatic structural and synaptic plasticity both contribute to the repair of peripherally-lesioned balanced networks <i>Speakers: Volker Steuber, Christoph Metzner, Michael Schmuker, Ankur Sinha, Neil Davey, Rod Adams</i>	Main Foyer 1
3:50pm – 6:50pm	P	P104: Changes in age-related neurochemicals in the anterior cingulate cortex following brief mindfulness intervention <i>Speakers: Rongxiang Tang, Changho Choi, Yi-Yuan Tang</i>	Main Foyer 1

3:50pm – 6:50pm	P	P105: Thalamic clustering coefficient moderates vigor-sleep quality relationship <i>Speakers: Yi-Yuan Tang, Xiaoqian Ding, Qingmin Li</i>	Main Foyer 1
3:50pm – 6:50pm	P	P106: Deep Generative Adversarial Network Capturing Spiral Waves in Disinhibited Circuits of the Cortex <i>Speakers: Megan Boucher-Routhier, Jean-Philippe Thivierge</i>	Main Foyer 1
3:50pm – 6:50pm	P	P107: Key role of neuronal diversity in structured reservoir computing <i>Speakers: Jean-Philippe Thivierge, Éloïse Giraud, Annie Théberge Charbonneau</i>	Main Foyer 1
3:50pm – 6:50pm	P	P108: Evaluating functional vision for simulated visual prostheses using gait analysis <i>Speakers: Tatiana Kameneva, Daniel Petrovski, Christopher McCarthy, Oren Tirosh</i>	Main Foyer 1
3:50pm – 6:50pm	P	P109: Influence of electrical coupling in shaping time intervals and dynamical invariants of central pattern generator sequences <i>Speakers: Alicia Garrido-Peña, Pablo Varona, Pablo Sánchez-Martín, Rafael Levi, Francisco B Rodriguez, Blanca Berbel</i>	Main Foyer 1
3:50pm – 6:50pm	P	P110: Dynamical principles of functional neural sequences validated in hybrid robots built with living central pattern generators <i>Speakers: Alicia Garrido-Peña, Pablo Varona, Pablo Sánchez-Martín, Manuel Reyes-Sanchez, Rafael Levi, Francisco B Rodriguez, Pablo E. Soëtard, Rodrigo Amaducci</i>	Main Foyer 1
3:50pm – 6:50pm	P	P111: Model-based analysis of frequency-rich BOLD fMRI <i>Speakers: Parul Verma, Ashish Raj, Benjamin Sipes</i>	Main Foyer 1
3:50pm – 6:50pm	P	P112: Reflected Fractional Brownian Motion in 3D-Brain Shapes: Insights into the Distribution of Serotonergic Axons <i>Speakers: Skirmantas Janusonis, Ralf Metzler, Thomas Vojta</i>	Main Foyer 1
3:50pm – 6:50pm	P	P113: Neuromodulation of striatal D1 cells shapes BOLD fluctuations in anatomically connected thalamic and cortical regions <i>Speakers: Ben Fulcher, Marija Markicevic, Oliver Sturman, Johannes Bohacek, Markus Rudin, Valerio Zerbi, Nicole Wenderoth</i>	Main Foyer 1
3:50pm – 6:50pm	P	P114: Estimating the phase resetting curve of basal ganglia neurons from responses to pulsed noise and sine wave currents <i>Speakers: Erick Olivares, Charles Wilson</i>	Main Foyer 1
3:50pm – 6:50pm	P	P115: Spiking Neural Networks as Finite State Transducers for Temporal Pattern Recognition <i>Speakers: Yaqoob Muhammad, Volker Steuber, Borys Wróbel</i>	Main Foyer 1
3:50pm – 6:50pm	P	P116: Fractal correlation patterns of cognitive processing in working memory tasks <i>Speakers: Pawel Oświęcimka, Anna Ceglarek, Jeremi Ochab, Marcin Wątopek</i>	Main Foyer 1
3:50pm – 6:50pm	P	P117: Chronic cannabis use effects on brain structural connectivity: A connectome analysis. <i>Speakers: Murat Yucel, Chao Suo, Stuart Oldham, Suzan Maleki, Yann Chye, Karen Caeyenberghs, Rebecca Segrave, Karyn Richardson, Sam Hughes, Edouard Kayayan, Joseph Pitt, Warda Syeda</i>	Main Foyer 1
3:50pm – 6:50pm	P	P118: Analysis of multipoint activity in the mouse brain based on flocking algorithm <i>Speakers: Margarita Zaleshina, Alexander Zaleshin</i>	Main Foyer 1
3:50pm – 6:50pm	P	P119: A method for improving regression and correlation coefficient estimates in the presence of noise <i>Speakers: Joel Zylberberg, Jason Pina</i>	Main Foyer 1
3:50pm – 6:50pm	P	P120: Computational modeling of neuron-astrocyte interactions in large neural populations using the NEST simulator <i>Speakers: Jugoslava Acimovic, Han-Jia Jiang, Tiina Manninen, Jonas Stapmans, Mikko Lehtimäki, Marja-Leena Linne, Markus Diesmann, Sacha van Albada</i>	Main Foyer 1
3:50pm – 6:50pm	P	P61: Brain State Space Reconstruction Using LSTM <i>Speakers: David Grayden, Artemio Soto-Breceda, Mark Cook, Yueyang Liu, Yun Zhao, Phillipa Karoly, Daniel Schmidt, Levin Kuhlmann</i>	Main Foyer 1
3:50pm – 6:50pm	P	P62: Reproducing the macroscopic property of foraging behaviour using deep homeostatic reinforcement learning <i>Speakers: Naoto Yoshida, Yasuo Kuniyoshi</i>	Main Foyer 1
3:50pm – 6:50pm	P	P63: Inhibitory Networks Explain Selective Attention in Dragonfly Target Detecting Neurons <i>Speakers: Bernard Evans, Steven Wiederman, Benjamin Lancer</i>	Main Foyer 1

3:50pm – 6:50pm	P	P64: Intrinsic Firing Frequency Saturation in Single and Multi-compartment Neuronal Models <i>Speakers: Rimjhim Tomar, Charles E Smith, Petr Lansky</i>	Main Foyer 1
3:50pm – 6:50pm	P	P65: Generalizable perceptual embedding with noise-tuning alignment <i>Speakers: Jungwon Ryu, Myoung Hoon Ha, Sang Wan Lee</i>	Main Foyer 1
3:50pm – 6:50pm	P	P66: Inferring effective networks of spiking neurons using a continuous-time estimator of transfer entropy <i>Speakers: Joseph Lizier, Michael Wibral, David Shorten, Viola Priesemann</i>	Main Foyer 1
3:50pm – 6:50pm	P	P67: Electrophysiological Models of Right Atrial Ganglionic Plexus Principal Neurons Identified from Transcriptomics Data <i>Speakers: Suranjana Gupta, William W Lytton, Adam J. H. Newton, Alison Moss, James S. Schwarber, Rajanikanth Vadigepalli</i>	Main Foyer 1
3:50pm – 6:50pm	P	P68: What determines the frequency and the duration of intermittent epileptic episodes in local cortical networks? <i>Speakers: Nicolo Meneghetti, Alberto Mazzoni, Federico d'Alba, Riccardo Mannella</i>	Main Foyer 1
3:50pm – 6:50pm	P	P69: Simulating Temporal Interference Stimulation <i>Speakers: Joseph Tharayil, Michael Reimann, Esra Neufeld, Felix Schürmann, Henry Markram</i>	Main Foyer 1
3:50pm – 6:50pm	P	P70: Storing long and overlapping sequences in an attractor memory network with Bayesian-Hebbian learning <i>Speakers: Anders Lansner, Pawel Herman, Ramón Martínez</i>	Main Foyer 1
3:50pm – 6:50pm	P	P71: Insights on the dynamic origin of EEG pathological biomarkers of prodromic states of Alzheimer's Disease by using The Virtual Brain framework <i>Speakers: Lorenzo Gaetano Amato, Alberto Vergani, Alberto Mazzoni</i>	Main Foyer 1
3:50pm – 6:50pm	P	P72: SpikeDecoder: An explainable architecture for the temporal-spatial pattern extraction and position prediction <i>Speakers: Yi Wang, Roman Boehringer, Thomas McHugh</i>	Main Foyer 1
3:50pm – 6:50pm	P	P73: Different behavioral strategies revealed by recurrent neural networks trained in multisensory integration tasks <i>Speakers: Jorge Mejias, Shirin Dora, Amparo Gilhuis, Cyriel Pennartz</i>	Main Foyer 1
3:50pm – 6:50pm	P	P74: Hierarchical decoupling of electromagnetic and haemodynamic cortical networks <i>Speakers: Golia Shafiei, Sylvain Baillet, Bratislav Misic</i>	Main Foyer 1
3:50pm – 6:50pm	P	P75: Resting State fMRI Meta-Networks Improve Identifiability: A Hierarchical Functional Connectivity Study <i>Speakers: Wei Zhang, Maia Lazerwitz, Pratik Mukherjee</i>	Main Foyer 1
3:50pm – 6:50pm	P	P76: Compact Representation of Brain Structure and Dynamics via Eigenmodes and Resonances <i>Speakers: Brandon Munn, Kevin Aquino, Eli Muller, Peter Robinson, Tahereh Babaie-Janvier, Rawan El-Zghir, Natasha Gabay, Xiao Gao, James Henderson</i>	Main Foyer 1
3:50pm – 6:50pm	P	P77: Blue flicker stimulation enhances gamma rhythms in mouse visual cortex <i>Speakers: Ana-Maria Ichim, Harald Bârzan, Vasile Vlad Moca, Koen Vervaeke, Raul Muresan</i>	Main Foyer 1
3:50pm – 6:50pm	P	P78: Gaze lateralization bias during free visual exploration of faces <i>Speakers: Vasile Vlad Moca, Emanuela Loredana Dan, Mihaela Dînşoreanu, Raul C. Mureşan</i>	Main Foyer 1
3:50pm – 6:50pm	P	P79: Efficient training of sparse SNN classifiers with structural plasticity using GeNN <i>Speakers: Thomas Nowotny, James Knight</i>	Main Foyer 1
3:50pm – 6:50pm	P	P7: Structure or dynamics? On the role of the canonic circuit in the emergence of cortical multi-frequency oscillations <i>Speakers: Demian Battaglia, Samy Castro</i>	Main Foyer 1
3:50pm – 6:50pm	P	P80: Forecasting Psychogenic Non-Epileptic Seizure Likelihood from Ambulatory EEG and ECG <i>Speakers: Wenjuan Xiong, Mark Cook, Tatiana Kameneva, Elisabeth Lambert, Ewan Nurse</i>	Main Foyer 1
3:50pm – 6:50pm	P	P81: Neurally-informed modelling of ageing effects on the speed-accuracy trade-off <i>Speakers: Elaine Corbett, Cian Judd, Jessica Dully, Simon Kelly, David McGovern, Redmond O'Connell</i>	Main Foyer 1
3:50pm – 6:50pm	P	P82: Automating dynamic community detection by optimizing scalefreeness <i>Speakers: Italo Ivo Lima Dias Pinto, Kanika Bansal, Javier Omar Garcia</i>	Main Foyer 1

3:50pm – 6:50pm	P	P83: AnalySim: A web platform for collaborative data sharing and analysis for research <i>Speakers: Anca Doloc-Mihu, Cengiz Gunay, Ryan Gambrell, Ahkeelah Lindo, Joseph Ongchangco</i>	Main Foyer 1
3:50pm – 6:50pm	P	P84: A small-world network model for species-specific cortical circuits <i>Speakers: Seungdae Baek, Youngjin Park, Se-Bum Paik</i>	Main Foyer 1
3:50pm – 6:50pm	P	P85: Comparison of visual quantities in untrained deep neural networks <i>Speakers: Se-Bum Paik, Hyeonsu Lee, Woochul Choi, Dongil Lee</i>	Main Foyer 1
3:50pm – 6:50pm	P	P86: Emergence of symmetry recognition requires visual experience <i>Speakers: Se-Bum Paik, Jaeyoung Lew, Min Song</i>	Main Foyer 1
3:50pm – 6:50pm	P	P87: Effect of temperature and geometry on action potential propagation failure at axonal branch points in sympathetic preganglionic neurons <i>Speakers: Astrid A. Prinz, Yuxuan Wu, Mallika Halder, Alan Sokoloff, Yaqing Li, Michael Sawchuk, Shawn Hochman</i>	Main Foyer 1
3:50pm – 6:50pm	P	P88: A mathematical perspective on edge-centric brain functional connectivity <i>Speakers: Leonardo Novelli, Adeel Razi</i>	Main Foyer 1
3:50pm – 6:50pm	P	P89: A model of REM-NREM sleep state cycling with application to infancy <i>Speakers: Lachlan Webb, James A Roberts, Andrew Phillips</i>	Main Foyer 1
3:50pm – 6:50pm	P	P8: Optimisation for initialising Kalman Filter to estimate neural model parameters from M/EEG data <i>Speakers: David Grayden, Yun Zhao, Phillipa Karoly, Levin Kuhlmann, Phuc Luong, Simon Teshuva, Mario Boley</i>	Main Foyer 1
3:50pm – 6:50pm	P	P90: Modeling of chirps in seizures <i>Speakers: Shrey Dutta, James A Roberts, Michael Breakspear</i>	Main Foyer 1
3:50pm – 6:50pm	P	P91: Assessing the electromotor neural network topology through modeling and genetic algorithm optimization <i>Speakers: Pablo Varona, Angel Lareo, Francisco B Rodriguez</i>	Main Foyer 1
3:50pm – 6:50pm	P	P92: Closed-loop stimulation protocol driven by flexible neural codes based on Victor-Purpura distance <i>Speakers: Pablo Varona, Angel Lareo, Francisco B Rodriguez, Alberto Ayala</i>	Main Foyer 1
3:50pm – 6:50pm	P	P93: Fine temporal patterning of partial synchronization of gamma rhythms <i>Speakers: Leonid Rubchinsky, Quynh-Anh Nguyen</i>	Main Foyer 1
3:50pm – 6:50pm	P	P94: A computational model of the thalamocortical interactions resulting in the mixed selectivity of prefrontal cortical cells <i>Speakers: Sima Mofakham, Jessica Phillips, Chen Cui, Kurt Butler, Marzieh Ajirak, Jordan Saadon, Charles Mikell, Petar Djuric, Yuri Saalman</i>	Main Foyer 1
3:50pm – 6:50pm	P	P95: Determinants of input amplitude and slope detection in bursting neurons <i>Speakers: Volker Steuber, Rebecca Miko, Michael Schmuker</i>	Main Foyer 1
3:50pm – 6:50pm	P	P96: Entropy, free energy, symmetry and dynamics in the brain <i>Speakers: Viktor Jirsa, Hiba Sheheilli</i>	Main Foyer 1
3:50pm – 6:50pm	P	P97: Whole brain comparison of effective cortical micro-connectome. <i>Speakers: Masanori Shimono, Kouki Matsuda, Arata Shirakami, Ryota Nakajima, Yuki Yamaguchi</i>	Main Foyer 1
3:50pm – 6:50pm	P	P98: Network properties of the medial prefrontal cortex altered by chronic social stress in mice. <i>Speakers: Masanori Shimono, Arata Shirakami, Yuki Yamaguchi, Takeshi Hase, Ryota Shinohara, Shiho Kitaoka, Tomoyuki Furuyashiki</i>	Main Foyer 1
3:50pm – 6:50pm	P	P99: Neuromodulatory influence over cortico-thalamic basal ganglia function <i>Speakers: Brandon Munn, James Shine, Eli Muller, Natasha Taylor, Gabriel Wainstein</i>	Main Foyer 1
3:50pm – 6:50pm	P	P9: Sub-optimal modulation of gain by the cognitive control system in young adults with early psychosis <i>Speakers: Luca Cocchi, Michael Breakspear, Bjorn Burgher, Nikitas Koussis, Genevieve Whybird, James Scott</i>	Main Foyer 1
7:30pm – 11:00pm	S	CNS Party	State of Grace (27 King Street, Melbourne)

F Featured **K** Keynote **O** Oral **W** Workshop

JULY 19 • TUESDAY

9:10am – 10:10am	K	Keynote 4: Adventures in Neuroscience-enabled Technology: inside and outside the academy (neuromorphic hearing and machine learning) <i>Speakers: Tara Hamilton</i>	Plenary 1
10:40am – 11:10am	F	F4: Evidence of Criticality in Brain Neuronal Networks <i>Speakers: Dechuan Sun, Chris French, Forough Habibollahi Saatlou, Anthony Burkitt</i>	Plenary 1
11:10am – 11:30am	O	O16: Exploiting brain critical dynamics to inform Brain-Computer Interfaces performance <i>Speakers: Marie-Constance Corsi, Pierpaolo Sorrentino, Denis Schwartz, Nathalie George, Laurent Hugueville, Ari E. Kahn, Sophie Dupont, Danielle S. Bassett, Viktor Jirsa, Fabrizio De Vico Fallani</i>	Plenary 1
11:30am – 11:50am	O	O17: Latent Equilibrium: A unified learning theory for arbitrarily fast computation with arbitrarily slow neurons <i>Speakers: Paul Haider, Benjamin Ellenberger, Laura Kriener, Jakob Jordan, Walter Senn, Mihai A. Petrovici</i>	Plenary 1
11:50am – 12:10pm	O	O18: Reward Bases: Instant reward revaluation with temporal difference learning <i>Speakers: Rafal Bogacz, Beren Millidge, Mark Walton</i>	Plenary 1
1:30pm – 5:00pm	W	Workshop 1: Emergent perspectives and models for neuron-glia interactions <i>Speakers: Maurizio de Pitta</i>	Meeting Room 101 & 102
1:30pm – 5:00pm	W	Workshop 2: Methods on information theory in computational neuroscience <i>Speakers: Joseph Lizier</i>	Meeting Room 103
1:30pm – 5:00pm	W	Workshop 3: Highly comparative analysis of neural dynamics <i>Speakers: Ben Fulcher</i>	Meeting Room 104
1:30pm – 5:00pm	W	Workshop 4: White matter, axons, and the role of delays – modeling axonal transmission <i>Speakers: Thomas R. Knösche</i>	Meeting Room 111 & 112
5:00pm – 6:00pm		OCNS Members' Meeting	Plenary 1

W Workshop

JULY 20 • WEDNESDAY

9:00am – 6:00pm	W Workshop 1: Emergent perspectives and models for neuron-glia interactions <i>Speakers: Maurizio de Pitta</i>	Meeting Room 101 & 102
9:00am – 6:00pm	W Workshop 2: Methods on information theory in computational neuroscience <i>Speakers: Joseph Lizier</i>	Meeting Room 103
9:00am – 6:00pm	W Workshop 5: Bio-inspired active AI <i>Speakers: Thomas Nowotny, James Knight</i>	Meeting Room 104
9:00am – 6:00pm	W Workshop 6: Graph modeling of macroscopic brain functional activity dynamics <i>Speakers: Parul Verma</i>	Meeting Room 111 & 112
