Welcome

Hello and Welcome to the ACNS 2012 Conference

This is the 3rd Australasian Cognitive Neuroscience Conference, and the first to be run officially under our new society – the Australasian Cognitive Neuroscience Society. The Society was founded only in April this year and now has members from across Australia, New Zealand, Japan, China, Singapore, and Indonesia.

We are expecting over 250 people at this conference. We have put together a scientific program of international Keynote Speakers, invited Symposia each day, 72 oral presentations in two parallel streams, and over 100 poster presentations.

Topics are very diverse, ranging from studies of cognition and brain function, in health and disorder, using EEG, fMRI, TMS methods, to computational models in neuroscience, to pure psychophysics in vision sciences, to animal models in neuropsychiatry. We hope that across this broad range of scientific work you find things a little off your primary topic to surprise and inspire you, and spark new ideas.

We also have our opening reception, to meet and greet everyone, and hope many of you can come to our conference dinner. There will be plenty of opportunity to meet and chat during the posters sessions, and over the lunches provided during lunch breaks.

We hope you enjoy the ACNS 2012 Conference!

Ross Cunnington
Founding President, Australasian Cognitive Neuroscience Soc

ACNS 2012 Organising Committe

Ross Cunnington, *Chair*
Sakinah Alhadad
Jeff Bednark
Megan Campbell
Luca Cocchi
Merryn Constable
Harriet Dempsey-Jones
Paul Dux
Natasha Matthews
Jason Mattingley
Martin Sale
Chase Sherwell

Conference Information

Venues
The conference will be held in the Queensland Brain Institute (QBI), University of Queensland (Building 79), with the oral presentation sessions in the UQ Physiology lecture theatres (Building 63) just next door.

QBI Foyer (level 3)	Conference Registration (from 5pm Thursday and 8am Friday)
QBI Auditorium (level 7)	Keynote Lectures and Symposia (9am and 4:30pm each day)
QBI Level 7	Poster Sessions and Company Exhibitors
Physiology Theatres	Oral Presentation Sessions (11:00am and 1:30pm each day)

Company Exhibitors
Some of our sponsors have exhibition spaces in the Poster room (QBI Level 7). Please make sure you stop by to have a look at their latest products and have a chat. Exhibitors include: BESA and Neurospec (BioSemi), Compumedics, Symbiotic Devices (Brain Products and Brainsight systems), and Siemens.

Conference Dinner
The conference dinner will be at Watt Restaurant + Bar, Brisbane Powerhouse, New Farm, from 7:30pm on Saturday 1st December. It's a great restaurant just by the Brisbane River in a converted power-station that is now a popular theatre and entertainment venue.

It is very easy to get to New Farm on the CityCat ferry along the Brisbane River. It is a 1-hour trip from the University along the river – 30 min from Southbank or the City. We will have some volunteer Guides leaving from QBI to the CityCat stop after the Keynote Lecture on Saturday evening to help you find your way to the dinner.

Instructions for Poster Presenters
There are two sessions Poster Sessions, on Friday 3pm to 4:30pm and Saturday 3pm to 4:30pm. You will present your poster in one of those sessions, so check the Program to see in which session you are presenting. You are expected to stand by your poster during your poster session.

Posters should be put up on the poster boards before the morning tea break on the day you are presenting (the poster room will be open from 8am before the morning Symposium) and should be taken down at the end of the day. Poster boards are numbered, so please find the number of your poster in the Program and put your poster in your numbered space.

Instructions for Oral Presenters
All Oral Presentation sessions will be in the UQ Physiology lecture theatres (Building 63; just next to the Queensland Brain Institute). We have PowerPoint available on both PC and Mac computers in the lecture theatres.

Please load your presentation onto the computer in the correct room during the break before your talk. Because times for talks are short, and we are keeping to a strict schedule, you must load your talk onto the computer before the session starts.

Our AV helpers will be in the lecture theatres 30 minutes before each session, from 10:30am each morning (during the morning tea break) and from 1:00pm (during the lunch break). If you want to check your slides on our system, you are very welcome see one of our AV helpers in the lecture theatre during any morning tea or lunch break.

	Thursday 29 Nov	Friday 30 Nov	Saturday 1 Dec	Sunday 2 Dec
9:00		**9am:** Symposium – *QBI Auditorium* **Understanding Schizophrenia**	**9am:** Symposium – *QBI Auditorium* **Action Understanding, Autism, and Mirroring**	**9am:** Symposium – *QBI Auditorium* **Vision and Perceptual Awareness**
10:30		Morning Tea	Morning Tea	Morning Tea
11:00		**11am:** Talks – *Physiol. Theatres*	**11am:** Talks – *Physiol. Theatres*	**11am:** Talks – *Physiol. Theatres*
12:30		Lunch	Lunch	Lunch
13:30		**1:30pm:** Talks – *Physiol. Theatres*	**1:30pm:** Talks – *Physiol. Theatres*	**1pm:** ACNS Society – *Physiol.* Annual General Meeting
15:00		**3pm:** Posters – QBI level 7 Afternoon Tea	**3pm:** Posters – QBI level 7 Afternoon Tea	**2pm:** Talks – *Physiol. Theatres*
16:30		**4:30pm:** Keynote – *QBI Auditorium* **Professor Christian Keysers** *The empathic brain*	**4:30pm:** Keynote – *QBI Auditorium* **Professor Kia Nobre** *Temporal expectations: The fourth dimension of attention*	**3:30pm:** Conference Closing
17:00	**5pm:** Registration - QBI Foyer			
18:00	**6pm:** Keynote – QBI Auditorium ***Dr John Serences*** *Attention and the efficiency of information processing*			
19:00	**7pm:** Opening Reception QBI Level 7		**7:30pm:** Conference Dinner Watt Restaurant + Bar, New Farm	

Thursday 29th November, 5:00pm – 9:00pm

Queensland Brain Institute Auditorium – Level 7

17:00-18:00	Registration in QBI Foyer
18:00-18:10	Conference Opening – Welcome A/Prof Ross Cunnington
18:10-19:00	Keynote Lecture – QBI Auditorium **Dr John Serences, University of California, San Diego, USA** *Attention and the efficiency of information processing in human visual cortex*
19:00-21:00	**Opening Reception** Drinks and Nibbles

Keynote Lecture

Dr John Serences, University of California, San Diego, USA

John Serences is Associate Professor of Psychology at the University of California San Diego (UCSD). Work in his lab employs converging methods including computational modeling, psychophysics, fMRI and EEG to study how attentional factors influence perceptual processing, working memory and decision making. Serences did his undergraduate work at the University of California, San Diego under the guidance of Dr. Harold Pashler, his graduate work at Johns Hopkins University with Dr. Steven Yantis, and a Postdoctoral Fellowship at the Salk Institute with Dr. Geoffrey Boynton. He was a faculty member in the department of Cognitive Sciences at UC Irvine for 1.5 years before moving back to UCSD in 2008. Work in his lab is generously funded by the National Institutes of Mental Health and a James S. McDonnell Foundation Scholar Award.

Keynote Lecture sponsored by Cambridge Research Systems

Attention and the efficiency of information processing in human visual cortex

Current behavioral goals and motivational drives play a critical role in shaping and refining information processing so that only the most relevant sensory stimuli are perceived and allowed to influence decision making. Traditional accounts hold that these 'top-down' attentional factors are critically important in information processing precisely because attention enhances the gain of the sensory neurons that are selectively tuned to relevant stimulus features. These models are intuitively appealing and suggest that attention effectively increases the intensity of important stimuli in a manner analogous to turning up the volume knob on a stereo. Using the early visual system as a model, I will use fMRI and a novel analytic approach to show that attention modulates the gain of the most informative sensory neurons given whatever specific perceptual task confronts the observer. Counter-intuitively, enhancing the gain of the most informative sensory neurons often means biasing patterns of neural activity away from the patterns evoked by sensory stimuli. Thus, contrary to most traditional accounts, these observations suggest that the primary function of attention is not simply to enhance the gain of stimulus-driven responses, but to optimize performance on the current perceptual task.

Friday 30th November, 9:00am – 10:30am

Queensland Brain Institute Auditorium – Level 7

8:30-9:00 Registration in QBI Foyer

9:00-10:30 Symposium – QBI Auditorium

Understanding Schizophrenia:
Phenomenological, cognitive, and neuroscience perspectives.
Chaired by Professor Pat Michie, University of Newcastle

Speakers

Professor Sohee Park, Vanderbilt University, USA
Abandoned body, weakened self and the internal landscape of schizophrenia

Professor Ulrich Schall, University of Newcastle
Brain Imaging Correlates of Emerging Schizophrenia

Dr Alex Fornito, University of Melbourne
Connectomic disturbances in schizophrenia

Dr Sharna Jamadar, Monash University
Functional mapping of semantic association in schizophrenia

10:30-11:00 **Morning Tea Break**

Friday 30th November, 11:00am – 12:30pm

Physiology Lecture Theatres

	STREAM 1 – Room 358 ***Chair: Ottmar Lipp***	STREAM 2 – Room 360 ***Chair: Paul Dux***
11:00-11:15	**Affective prosody in psychosis: Recent evidence and future directions** Susan Rossell, Tamsyn Van Rheenen and Christopher Groot	**Decoding reveals distributed neural mechanisms for temporal individuation in the human brain** Claire Naughtin, Benjamin Tamber-Rosenau and Paul Dux
11:15-11:30	**Facial expression recognition and medication effects in Huntington's disease** Izelle Labuschagne, Rebecca Jones, Jenny Callaghan, Daisy Whitehead, Eve Dumas, Miranda Say, Ellen Hart, Damian Justo, Allison Coleman, Rachelle Dar Santos, Chris Frost, David Craufurd, Sarah Tabrizi and Julie Stout	**Finding a single guy: The role of attention in masked priming under conditions of high attentional load** Genevieve Quek and Matthew Finkbeiner
11:30-11:45	**Face facts: BD patients show impairments in emotion processing** Tamsyn Van Rheenen, Susan Rossell and Greg Murray	**Neural correlates of contingent attentional capture during sustained visual monitoring** Oscar Jacoby, Roger Remington, Marc Kamke, Kristy Butler and Jason Mattingley
11:45-12:00	**Neural correlates of emotional processing in Parkinson's disease and the influence of affective disturbances** Nadeeka Dissanayaka, Tiffany Au, Anthony Angwin, David Copland, John O'Sullivan, Gerard Bryne, Rodney Marsh, George Mellick and Peter Silburn	**Sustained target-driven interference under optimal preparation in a cued task switching paradigm using orthogonal polynomial trend analysis (OPTA)** Alexander Provost, Andrew Heathcote, Scott Brown, Sharna Jamadar and Frini Karayanidis
12:00-12:15	**Influence of attention and 5-HTTLPR variation on amygdala responses to emotion** Daniel Stjepanovic, Jason Mattingley, Ziarih Hawi and Mark Bellgrove	**Binocular rivalry and schizotypal personality traits in non-clinical individuals** Anna Antinori, Luke Smillie, Phillip Smith and Olivia Carter
12:15-12:30	**Behavioural evidence suggesting expressions of emotion and emotion recognition are not mediated by the same neural substrates** Rick Van Der Zwan and Rayshell Harkin-Allen	**The effects of serotonergic drugs citalopram and buspirone on perceptual rivalry** Jody Stanley, Suresh Sundram and Olivia Carter
12:30-13:30	**Lunch Break**	

Friday 30th November, 1.30pm—3.00pm

Physiology Lecture Theatres

	STREAM 1 – Room 358 ***Chair: Natasha Matthews***	**STREAM 2 – Room 360** ***Chair: Frini Karayanidis***
13:30-13:45	**Face processing in pre-school aged children: An MEG neuroimaging study** Wei He, Jon Brock and Blake Johnson	**Fronto-striatal involvement in strategic adjustments of response caution: A combined DWI and ERP study** Elise Mansfield, Birte Forstmann, Andrew Heathcote and Frini Karayanidis
13:45-14:00	**Orientation and spatial frequency selective surround suppression impairment in high autistic tendency** Christina Van Heer and David Crewther	**The degree of functional independence between motor sequencing and motor rhythm** Jeff Bednark, Megan Campbell and Ross Cunnington
14:00-14:15	**Altered contextual modulation of primary visual cortex responses in schizophrenia** Kiley Seymour, Timo Stein, Matthias Guggenmos, Ines Theophil and Philipp Sterzer	**Sustained effects of anodal tDCS over the dominant motor cortex on response preparation processes** Alexander Conley, Jodie Marquez, Mark Parsons, Ross Fulham, Jim Lagopoulos and Frini Karayanidis
14:15-14:30	**Visual mismatch negativity and early visual ERPs in healthy ageing, mild cognitive impairment and Alzheimer's disease** George Stothart, Andrea Tales and Nina Kazanina	**Modulation of attentional network coherence during manipulation of cognitive load in Parkinson's freezing** James Shine, Elie Matar, Philip Ward, Sharon Naismith and Simon Lewis
12:30-14:45	**Is the rodent brain capable of auditory deviance detection and MMN-like responses?** Patricia Michie, Lauren Hams, Ross Fulham, Markku Penttonen, Juanita Todd, Mick Huner, Timothy Budd, Ulrich Schall and Deborah Hodgson	**Multilevel complex interactions between cognitive and motor domains in Williams syndrome** Darren Hocking, Jasmine Menant, Melanie Porter, Christine Gamham, Hannah Kirk and Kim Cornish
14:45-15:00	**Longitudinal functional and connectivity changes during working memory performance in Huntington's disease: The IMAGE-HD study** Nellie Georgiou-Karistianis, Julie Stout, Govinda Poudel, Marcus Gray, Juan Dominguez, Andrew Churchyard, Phyllis Chua and Gary Egan	**Online control of reaching is impaired in adults with developmental coordination disorder – DCD** Ian Fuelscher, Reannon Ivancic, Chevelle Smalley, Emra Oguzkaya, Jacqueline Williams and Christian Hyde
15:00-16:30	**Afternoon Tea and Poster Session - QBI**	

Friday 30th November, 3:00pm – 5:30pm

Queensland Brain Institute Auditorium – Level 7

15:00-16:30	Afternoon Tea and Poster Session
16:30-17:30	Keynote Lecture – QBI Auditorium **Professor Christian Keysers, Netherlands Institute for Neuroscience** *The empathic brain*

Keynote Lecture

Professor Christian Keysers, Netherlands Institute for Neuroscience

Professor Christian Keysers studied Biology and Psychology in Germany (University of Konstanz) and Boston (MIT, Harvard) and made his PhD in St Andrews with David Perrett on the neural basis of facial perception. In 2000, he moved to Parma, Italy where he worked with Giacomo Rizzolatti in the laboratory where mirror neurons were discovered. He contributed to the discovery of auditory mirror neurons in primates and showed that the idea of mirror neurons also applies to our emotions and sensations using fMRI in humans. He then moved to Groningen, the Netherlands, where he became a full professor for the social brain in 2008. In 2010, he moved to Amsterdam to become a department head at the Netherlands Institute for Neuroscience, a research institute of the Royal Dutch Academy of Arts and Sciences. His work has been published in leading journals, including Science, Neuron, Trends in Cognitive Sciences and Current Biology. He is the author of the award winning book “The Empathic Brain” (empathicbrain.com) that explains how the science of mirror neurons has changed our understanding of human nature and psychiatric disorders.

The empathic brain

One of the most remarkable features of human interactions is our intuitive sense that the people around us have intentions, sensations and emotions like our own. In this talk, I will review evidence that neurons and brain regions involved in controlling our own actions become activated while we see or hear those of others (1, 2). I will address the less recognized fact that regions involved in sensing our own body (SI/SII) become active while we see the movements and tactile sensations of others (3). I will show that insular and cingulate cortices become active while we view the emotions of others (4). These three sets of data show that we have an empathic brain: a brain that activates representations of our own actions, sensations and emotions whenever we see those of others, as if we were in their stead. I will suggest, that these vicarious activations are not the mysterious product of some genetic predisposition to empathize with others, but, at least in part, the result of simple Hebbian learning between executing an action and seeing/hearing oneself do the action (5). I will then review evidence, that disturbing regions of the empathic brain can lead to impairments in understanding the inner states of others. I will then present behavioral data from a study in which we find evidence for empathy in rats (6), and data from a study with participants with psychopathy where we find the empathic brain to be hypoactive.

Saturday 1st December, 9:00am – 10:30am
Queensland Brain Institute Auditorium – Level 7

9:00-10:30 Symposium – QBI Auditorium

Action Understanding, Autism, and Mirroring
Chaired by A/Professor Ross Cunnington, University of Queensland

Speakers

Dr Kevin Pelphrey, Yale University, USA
Building a translational social neuroscience of autism

Dr Valeria Gazzola, Netherlands Institute for Neuroscience
Somatosensation in action

Dr Peter Enticott, Monash University
Do mirror systems play a role in social cognition and autism?

10:30-11:00 **Morning Tea Break**

Saturday 1st December, 11:00am – 12:30pm

Physiology Lecture Theatres

	STREAM 1 – Room 358 ***Chair: Mark Williams***	STREAM 2 – Room 360 ***Chair: Nellie Georgiou-Karistianis***
11:00-11:15	**The effects of cognitive context on visual-motor interactions** Marta Bortoletto, Jason Mattingley and Ross Cunnington	**Cognitive processes involved in fluency tests: A neuropsychological investigation** Gail Robinson
11:15-11:30	**Mu-rhythm desynchronisation demonstrates action representation in pianists during passive listening of piano melodies** Carolyn Wu, Vanessa Lim, Jeffrey Hamm and Ian Kirk	**Distinctive semantic feature loss in Alzheimer's disease** Kieran Flanagan, David Copland, Helen Chenery, Gerard Byrne and Anthony Angwin
11:30-11:45	**Motor simulation underpins temporal coordination in joint action** Giacomo Novembre, Luca Ticini, Schütz-Bosbach and Peter Keller	**Brain activity during word rhyming: Are two disorders better than one?** Karen Waldie and Anna Wilson
11:45-12:00	**Using a virtual hand to investigate body representations** Regine Zopf, Jason Friedman and Mark Williams	**Optimising speech outcomes in Deep Brain Stimulation for essential tremor** Adam Vogel, Hugh McDermott, Richard Peppard and Colette McKay
12:00-12:15	**Action processing under attentional load** Veronika Halasz, Jason Mattingley and Ross Cunnington	**New evidence for a complex interaction between executive control and motor functioning in young female FMR1 premutation carriers** Claudine Kraan, Darren Hocking, John Bradshaw, Nellie Gerogiou-Karistianis and Kim Cornish
12:15-12:30	**Differences in connectivity of putative mirror neuron network between stroke survivors and healthy controls** Susan Palmer, Ross Cunnington, Katherine Reynolds and Leeanne Carey	**The use of eye movements to detect cognitive changes in carriers of medium expansions of the FMR1 gene** Annie Shelton, Claudine Kraan, Kim Cornish and Joanne Fielding
12:30-13:30	**Lunch Break**	

Saturday 1st December, 1:30pm – 3:00pm

Physiology Lecture Theatres

	STREAM 1 – Room 358 *Chair: Paul Corballis*	STREAM 2 – Room 360 *Chair: Rob Hester*
13:30-13:45	**The effects of race and experience on neural empathy for pain** Yuan Cao, Luis Contreras and Ross Cunnington	**Impaired learning from errors in chronic cannabis users: Dorsal anterior cingulate cortex and hippocampus hypoactivity** Susan Carey, Liam Nestor, Jennifer Jones, Hugh Garavan and Robert Hester
13:45-14:00	**Neural oscillations related to self-evaluation in social comparison context: An EEG study** Yan Mu	**Dopamine gene variants are associated with EEG measure of error processing** Tarrant Cummins, Mykalos Byrne, Ziarih Hawi and Mark Bellgrove
14:00-14:15	**Degrees of separation: Are mirror neurons human language specific?** Bernadine Cocks, Graham Jamieson, Ian Evans and Bruce Stevenson	**ERP-based multivariate pattern classification predicts errors before an over response is executed** Stefan Bode and Jutta Stahl
14:15-14:30	**Acquired 'mirror pain' in amputees** Bernadette Fitzgibbon, Peter Enticott, Melita Giummarra, Paul Fitzgerald, Nellie Georgiou-Karistianis and John Bradshaw	**Interactions between proactive and reactive response inhibition** Paul Sowman
12:30-14:45	**Where I feel is where I attend: Proprioceptive locationalisation and visuospatial attention near hands** Hayley Colman, Roger Remington and Ada Kritikos	**Inhibitory control of a rewarding stimulus under different reward and distractor conditions: A fMRI study** Franco Scalzo, David O'Connor and Robert Hester
14:45-15:00	**Can't take my eyes off you: Goal-irrelevant kinematics of observed actions prime subcomponents of motor output under perceptual load** Samuel Sparks and Ada Kritikos	**Disruption to frontal white matter pathways related to performance on the stop-signal task** Todd Jolly, Ross Fulham, Pat Michie, Christopher Levi, Mark Parsons and Frini Karayanidis
15:00-16:30	**Afternoon Tea and Poster Session - QBI**	

Saturday 1st December, 3:00pm – 5:30pm
Queensland Brain Institute Auditorium – Level 7

15:00-16:30	Afternoon Tea and Poster Session
16:30-17:30	Keynote Lecture – QBI Auditorium **Professor Kia Nobre, University of Oxford, UK** *Temporal expectations: the fourth dimension in attention*
19:30-22:30	**Conference Dinner** Watt Restaurant + Bar, Brisbane Powerhouse, New Farm

Keynote Lecture

Professor Kia Nobre, University of Oxford, UK

Anna Christina (known as Kia) Nobre is a cognitive neuroscientist interested in understanding the principles of the neural systems that support cognitive functions in the human brain. Her current research investigates how neural activity linked to perception and cognition is dynamically modulated according to memories, task goals, and expectations. She is also interested in understanding how these fine and large-scale regulatory mechanisms develop, and how they are disturbed in disorders of mental health. Her work integrates behavioural methods with a powerful combination of non-invasive techniques to image and stimulate the human brain. Kia obtained her PhD from Yale University. She moved to Oxford in 1994 where she is now Professor of Cognitive Neuroscience at the University of Oxford and Tutorial Fellow of Psychology at New College. Kia directs the Oxford Centre for Human Brain Activity, a state-of-the-art facility for scientists investigating the neural dynamics that underpin human cognition and the neural deficits in psychiatric and neurological disorders, and heads the Brain & Cognition Lab, in the Department of Experimental Psychology.

Temporal expectations: the fourth dimension in attention

The field of 'selective attention' has convincingly established that our sampling and experience of the external environment is highly selective. When all works well, dynamic regulatory mechanisms adapt sensory, cognitive, and motor mechanisms to prioritise events that are relevant to current task goals according to our expectations. The last few decades have witnessed significant advances in unveiling the neural mechanisms for attention to spatial locations and object features. The fourth dimension, time, is a relative newcomer to the field. By now it clear that we are able to orient attention flexibly in anticipation of the predicted timing of relevant events. But we still know little about the mechanisms by which we code temporal expectations and how they come to tune neural excitability to the relevant moments of our unravelling environment. In my laboratory, we have developed different experimental paradigms to manipulate temporal expectations according to informative temporal cues, probability functions, and rhythms and have demonstrated that temporal expectations can enhance speed of responses as well as perceptual discrimination of events. By recording brain activity during task performance, we have shown that these behavioural benefits come about through mechanisms that complement those for spatial attention. Interestingly, when temporal expectations are combined with spatial expectations they enhance early modulatory effects of spatial attention. Neural oscillations appear to play a major role in orchestrating the effects of temporal expectations, enabling the regulation of neural excitability associated with spatial or other features over time, in order to optimise the processing of relevant events at their expected moments.

Sunday 2nd December, 9:00am – 10:30am
Queensland Brain Institute Auditorium – Level 7

9:00-10:30 Symposium – QBI Auditorium

Vision and Perceptual Awareness
Chaired by Professor Jason Mattingley, University of Queensland

Speakers

Dr Derek Arnold, University of Queensland
Why is binocular rivalry uncommon?

Dr Olivia Carter, University of Melbourne
Onset rivalry: Brief presentation isolates an early independent phase of perceptual competition.

Dr Joel Pearson, University of New South Wales
Accumulating decisional evidence without awareness

Dr Nao Tsuchiya, Monash University
Towards a system-level understanding of conscious vision

10:30-11:00 **Morning Tea Break**

Sunday 2nd December, 11:00am – 12:30pm

Physiology Lecture Theatres

	STREAM 1 – Room 358 ***Chair: Joel Pearson***	STREAM 2 – Room 360 ***Chair: Olivia Carter***
11:00-11:15	**Atypical neural response to high and low spatial frequency stimuli in a rare case of visual perseveration** Mark Williams, Bhuvanesh Awasthi, Paul Sowman, Matthew Finkbeiner and Anina Rich	**Measuring the level of consciousness based on the amount of integrated information** Masafumi Oizumi, Toru Yanagawa, Shun-ichi Amari, Naotsugu Tsuchiya and Naotaka Fujii
11:15-11:30	**Autistic children show more efficient parvocellular visual processing** Alyse Brown and David Crewther	**Brain networks in health and disease – Epilepsy as a dynamic network phenomena** John Terry, Oscar Benjamin and Mark Richardson
11:30-11:45	**The magnitude and spatial extent of visual crowding are reduced during saccade preparation** Will Harrison, Roger Remington and Jason Mattingley	**Early visual evoked potentials are modulated by matching odarants: Evident for olfactory-visual interactions in humans** Amanda Robinson, Jason Mattingley and Judith Reinhard
11:45-12:00	**Testing theories of visual position perception by manipulating magnocellular processing for various motion trajectories** Mark Chappell, Zach Potter and Trevor Hine	**Multimodal EEG-fMRI integration using DCM to study network interactions during perception of faces** Vinh Nguyen, Michael Breakspear and Ross Cunnington
12:00-12:15	**Shape aftereffects reflect a weighted function of retinal and surface slant information** Katherine Storrs and Derek Arnold	**Perceptual decision making and the time-order effect: A neural circuit model of biased vibrotactile discrimination** Angela Langdon, John Rinzel and Michael Breakspear
12:15-12:30	**Spatio-temporal structure of multi-focal magnetoencephalographic visual evoked potentials (MVEP)** David Crewther, Alyse Brown and Laila Hugrass	**It's beginning to look a lot like my hand: Fake hand perceived to resemble own hand for people with body dysmorphic disorder but not controls** Ryan Kaplan, Susan Rossell, Peter Enticott, Jakob Hohwy and David Castle
12:30-13:00	**Lunch Break**	
13:00-14:00	Annual General Meeting of the *Australasian Cognitive Neuroscience Society* Room 358	

Sunday 2nd December, 2:00pm – 3:30pm

Physiology Lecture Theatres

	STREAM 1 – Room 358 ***Chair: David Crewther***	STREAM 2 – Room 360 ***Chair: Luca Cocchi***
14:00-14:15	**Medial temporal lobe substructures differentially contribute to processing within- and between-domain associative recognition memory for semantic and non-semantic stimuli** Marshall Dalton, Michael Hornberger and Olivier Piguet	**Disruption to frontal white matter pathways on performance in the task-switching paradigm** Frini Karayanidis, Todd Jolly, Patrick Cooper, Christopher Levi, Marks Parsons and Pat Michie
14:15-14:30	**The influence of Brain-Derived Neurotrophic Factor val66met Polymorphism on the degree of long-term potentiation of human visual evoked potentials predicts memory performance** Ian Kirk	**Modulation of fronto-parietal connectivity by cognitive interference and working memory: A dynamic causal modeling study** Ian Harding, Murat Yucel, Ben Harrison, Christos Pantelis and Michael Breakspear
14:30-14:45	**Dissociable hippocampal representations of environmental size and complexity during active spatial navigation** Oliver Baumann and Jason Mattingley	**Resting-state functional connectivity in Huntington's disease: The IMAGE-HD study** Govinda Poudel, Gary Egan, Andrew Churchyard, Phyllis Chua, Julie Stout and Nellie Georgiou-Karistianis
14:45-15:00	**Distinct reinstatement of multi-voxel patterns predicts memory for complex audio-visual stimuli** Alexandra Woolgar, Alexander Walther, Mark Williams, Anina Rich and Nikolaus Kriegeskorte	**Dissociable effects of focal inhibition and excitation of primary motor cortex on functional connectivity within the motor network** Luke Hearne, Luca Cocchi, Martin V. Sale, Andrew Zalesky, Amy Taylor and Jason B. Mattingley
15:00-15:15	**Interaction of spatial- and feature-based attention during distractor processing in the human brain** Inga Laube, Jason Mattingley and Mark Bellgrove	**Morphology and connectivity of the anterior cingulate cortex in unilateral cerebral palsy** Simon Scheck, Kerstin Pannek, Roslyn Boyd and Stephen Rose
15:15-15:30	**The role of working memory in spatial contextual cueing** Susan Travis, Jason Mattingley and Paul Dux	**Connectivity-based parcellation of subcortical structures in the preterm infant's brain at term age** Kerstin Pannek, Giulia D'Acunto, Andrea Guzzetta, Simon Finnigan, Roslyn Boyd, Paul Colditz and Stephen Rose
15:30-16:00	**Conference Closing – Student Prize Awards** Room 358	

Symposium Abstracts
Friday 9:00am to 10:30am

Understanding Schizophrenia: Phenomenological, cognitive, and neuroscience perspectives

Chair: Professor Pat Michie, University of Newcastle

Abandoned body, weakened self and the internal landscape of schizophrenia

Sohee Park
Department of Psychology, Vanderbilt University, USA

Splitting of the self and anomalous agency were central to early concept of schizophrenia but self disturbance as a core feature is absent from the current diagnostic criteria and has not been fully addressed in the context of social impairments that prevent recovery. We studied the control of mental representation in social perception, perspective taking, self-other transformations, and simulation to elucidate the relationship between core cognitive deficit of schizophrenia and self-disturbances using behavioral and neuroimaging techniques. The results from these studies indicate that a unique profile of cognitive deficits and enhancement when combined with social isolation may contribute to anomalous sense of self and agency. Specifically, individuals with schizophrenia appear to show superior mental imagery generation, inspection and manipulation abilities in spite of their permanent working memory deficits and their enhanced imagery ability extends to perspective taking that is related to a porous sense of the body boundary and self. Further investigation revealed that schizophrenia spectrum is associated with weakened body ownership and about half of outpatients with schizophrenia as well as prodromal individuals have experienced out-of-body phenomenon. These disturbances of self seem to be associated with reduced social interactions and increased social isolation, as observed empirically as well as in published first person accounts across the past three decades. Taken together, these results depict a complex and richly contoured internal landscape of schizophrenia. Severe cognitive deficits coupled with superior abilities may lead to misperception, misinterpretation and miscalculation of the internal and external worlds and contribute to a subjective experience of unreality. This brings us back to the core nature of schizophrenia as the disorder of self, and highlights the importance of integrating the methods of cognitive neuroscience with the subjective phenomenology of the psychosis experience.

Brain Imaging Correlates of Emerging Schizophrenia

Ulrich Schall
Priority Centre for Translational Neuroscience & Mental Health Research, The University of Newcastle, Australia
Schizophrenia Research Institute, Australia
Hunter Medical Research Institute, Australia

The early detection of the schizophrenia prodrome in young people considered at-risk of developing this severe mental illness has entered mainstream clinical practice despite the limitations in the predictive specificity of the clinical criteria that define the At-risk Mental State Syndrome (ARMS). These limitations are increasingly addressed by brain imaging research which has added substantial evidence to the notion of emerging and progressive grey and white matter abnormalities in the early phase of illness. The association of the apparent neuropathology with the clinical signs and symptoms of the disorder – along with cognitive impairment and the underlying pathophysiology – will be reviewed in an “ultra-high risk” cohort of the Minds in Transition (MinT) project.

Connectomic disturbances in schizophrenia

Alex Fornito
Melbourne Neuropsychiatry Centre and Centre for Neural Engineering, University of Melbourne, Australia
NICTA Victorian Research Laboratory, Australia

Accumulating evidence indicates that schizophrenia is not caused by focal pathology in a single, specific brain region. Rather, it arises from disordered interactions within and between distributed neural circuits. In other words, it is a disorder of brain connectivity. A great deal of insight into the pathophysiology of the disorder can therefore be gained from recent attempts to map the human connectome–the complete set of neural elements and connections comprising the brain. This talk will overview some of the basic concepts and methods of the burgeoning field of human connectomics and illustrate how these techniques can be used to characterize disruptions at either the level of specific neural circuits or the entire brain in patients with schizophrenia. Many of these changes have a genetic basis, suggesting that they represent viable risk biomarkers for the disorder.

Functional mapping of semantic association in schizophrenia

Sharna Jamadar[1,2] Godfrey Pearlson[1,3] and Michal Assaf[1,4]
[1]*Institute of Living, Olin Neuropsychiatry Research Center, USA*
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[3]*Departments of Psychiatry & Neurobiology, Yale University, USA*
[4]*Department of Psychiatry, Yale University, USA*

Individuals with schizophrenia show a broad range of language impairments, including abnormalities in verbal production and comprehension, reduced sentence complexity and semantic processing deficits. Here, I will present the results of two recent studies of language dysfunction in schizophrenia using the Semantic Object Retrieval Task (SORT). SORT indexes non-compositional semantic association, where participants are presented with word-pairs that either recall a third unpresented word (e.g. ‘honey’ and ‘stings’ activates ‘bees’, Retrieval trials) or do not (e.g. ‘teacher’ and ‘plastic’, No-Retrieval trials). Individuals with schizophrenia reported more associations between unrelated word pairs than healthy controls, and this over-retrieval increased with formal thought disorder severity. Individuals with schizophrenia also failed to report associations between related word pairs, this under-retrieval increased with negative symptom severity. Retrieval vs. no-retrieval trials activated a distributed fronto-parietal-temporal network, group differences (FWE $p<.05$) were obtained in bilateral inferior parietal lobule, with schizophrenia showing significantly reduced activity in this region compared to healthy controls. The IPL plays a central role in both the semantic system and heteromodal association network, serving as a ‘supramodal convergence zone’, binding representations from multiple sensory/motor/affective zones to allow efficient, rapid processing of the current context. Implications of the results for models of the semantic system and psycholinguistic impairment in schizophrenia will be explored.

Symposium Abstracts
Saturday 9:00am to 10:30am

Action Understanding, Autism, and Mirroring

Chair: A/Professor Ross Cunnington, University of Queensland

Building a translational social neuroscience of autism
Kevin A. Pelphrey
Yale Child Study Center, Yale University, USA

Humans are intensely social beings that have evolved and developed within highly social environments in which each individual is dependent upon others. We constantly engage in social perception, using cues from facial expressions, gaze shifts, and body movements, to infer the intentions of others and plan our own actions accordingly. My laboratory has been investigating the properties of specialized brain systems that are important for social perception using functional magnetic resonance imaging (fMRI), eye tracking, and molecular genetics in typically developing adults and children, as well as in children and adults with autism, a neurodevelopmental disorder marked by severe dysfunction in aspects of social perception. In this talk, I will describe these studies in three parts: First, I will describe our basic research using fMRI to identify the basic brain mechanisms for social perception in typically developing children and adults. Second, I will describe our most recent efforts to chart the typical and atypical development of brain mechanisms for social perception in children with and without autism, as well as in unaffected siblings of children with autism. Finally, I will discuss our latest studies involving the study of treatment effects (drug and behavioral treatments) on brain function in children with autism.

Somatosensation in Action
Valeria Gazzola
University Medical Center Groningen, Netherlands
Netherlands Institute for Neuroscience, Netherlands

The mirror neuron system (MNS), active both during action execution and observation, is classically thought to include only premotor and posterior parietal areas. Recently, the primary somatosensory cortex (the BA1/2 inparticular) was also shown to be activated during action execution and observation. In my talk I will therefore focus on the role that the somatosensory cortices could play within the action perception circuits. In particular I will show that (1) TMS induced changes in BA1/2 activity predicted changes of action-specific brain activation in premotor nodes of the MNS, supporting the idea that BA1/2 plays a causal role in the MNS, (2) BA1/2 plays a causal role in extracting somatosensory features (heavy/light) from observed action, and (3) μ-suppression actually correlates more with activity in BA1/2 than the premotor nodes. I will conclude with the idea that the MNS might provide an integrated, somato-motor representation of other's actions.

Do mirror systems play a role in social cognition and autism?
Peter Enticott
Monash Alfred Psychiatry Research Centre, Central Clinical School, Monash University, Australia

Mirror systems have been implicated in a range of social cognitive processes, whereby they are thought to represent a neurobiological substrate for understanding other's minds. It has also been widely suggested that autism spectrum disorder (ASD), which is characterised by impairments in social relating, might involve dysfunction within mirror system circuitry. We have conducted a series of studies utilising transcranial magnetic stimulation (TMS) and electromyography (EMG) that examine the role of mirror systems in a range of social cognitive processes, including facial affect recognition, social perception, and emotion processing, in both healthy adults and individuals diagnosed with ASD. Results provide some support for a link between mirror system activity and social cognition, although this is most evident for tasks involving an overt emotional element. With respect to autism, individuals with ASD display reduced mirror system activity when viewing other people's motor behaviour, and this is associated with the severity of their social symptoms. There are, however, instances in which mirror system activity in ASD does not appear to be impaired (e.g., during the observation of interactive behaviour). These findings provide somewhat inconsistent support for the link between mirror systems, social cognition, and autism. More recent theoretical models of mirror system function, which stress the importance of top-down social processing and associative learning, may provide a more tenable account of the functional significance of mirror systems.

Symposium Abstracts
Sunday 9:00am to 10:30am

Vision and Perceptual Awareness

Chair: Professor Jason Mattingley, University of Queensland

Why is binocular rivalry uncommon?
Derek Arnold
School of Psychology, University of Queensland, Ausralia

Most binocular rivalry papers and abstracts begin with an incautious fib. Not this one. When different images project to corresponding points in the two eyes they can instigate a phenomenon called binocular rivalry (BR), wherein each image seems to intermittently disappear such that only one of the two images is seen at a time. Note the important caveat – this situation can instigate BR, but usually it doesn't. Unmatched monocular images are frequently encountered in daily life, but this does not tend to induce BR. In this talk I will explore the reasons for this and discuss implications for BR in general. I will argue that BR is resolved in favor of the instantaneously stronger neural signal, and that this process is driven by an adaptation that enhances the visibility of distant fixated objects over more proximate obstructions of an eye. Accordingly, BR would reflect the dynamics of an inherently visual operation that usually deals with real-world constraints.

Onset rivalry: Brief presentation isolates an early independent phase of perceptual competition.
Olivia Carter
School of Psychological Sciences, University of Melbourne, Australia

When the left and right eyes are simultaneously presented with different images, observers typically report exclusive awareness of only one image. This phenomenon is termed binocular rivalry reflecting the fact that the dominant image "competes" for perceptual awareness and leads to alternations in perception every few seconds. Despite the apparent continuity in perceptual switching, we now demonstrate that the initial "onset" period is fundamentally different to all subsequent rivalry epochs. Using brief intermittent presentations, rivalry dominance shows strong biases such that the same target is perceived with each successive stimulus onset. These biases remain consistent within any given location, but vary across the visual field in a distribution that is stable over multiple weeks but highly idiosyncratic across observers. If the presentation exceeds ~1sec at any location, however, the very different and much more balanced alternations of sustained binocular rivalry become apparent. The effects of high-level cognitive and affective factors at onset are less clear but also show differences from their effects in sustained viewing. Together these findings suggest these phases may be driven, at least partly, by different neural mechanisms. This talk will summarize current research and explore the factors influencing this initial 'onset' stage of perceptual competition. It will also discuss the important implications for the interpretation of any rivalry experiments using brief presentation paradigms and for understanding how the brain copes with binocular discrepancies in natural viewing conditions in which our eyes constantly move around an ever-changing environment.

Accumulating decisional evidence without awareness
Joel Pearson and Alexandra Vlassova
Psychology, The University of New South Wales, Australia

The mystery of the possible functions of conscious awareness has captivated the minds of scientists and philosophers for generations. Recently, there has been a surge of interest in exploring the role of awareness in the context of decision-making. A particularly controversial and heavily debated claim is that information can be processed and evaluated unconsciously. Here, we address this issue through a novel paradigm that allows us to control and manipulate both awareness and the decision variables. Random- dot-motion stimuli, which require the gradual accumulation of evidence for a decision to be reached, were suppressed from conscious awareness by a dichoptic dynamic noise pattern.
We found that information in the suppressed signal modulated decision accuracy, which suggests that evidence was accumulated outside of awareness. This unconscious boost to accuracy was not accompanied by a similar boost to confidence. These results indicate that information that is accumulated in the absence of conscious awareness can improve accuracy on a sensory decision-making task. Our findings present compelling evidence that perceptual and metacognitive awareness are not necessary for evidence to be accumulated and an accurate decision to be made.

Towards a system-level understanding of conscious vision: a study with electrocorticogram (ECoG) recording under continuous flash suppression (CFS).
Naotsugu Tsuchiya
School of Psychology and Psychiatry, Monash University, Australia

When physical inputs to the visual system are dissociated from subjective conscious perception under various visual illusions, such as binocular rivalry, previous studies have shown that activities of the single neurons in higher visual areas correlates with the conscious perception while those in lower visual areas correlates more with the physical inputs. However, how the visual system as a whole integrates information from the low- to high-level visual areas and generates conscious vision remains poorly understood. To understand the system-level dynamics underlying conscious vision, we recorded the electrocorticogram (ECoG) from 64-128 channels implanted in various cortical regions in monkeys and humans while subjects performed a detection task under continuous flash suppression (CFS). Under CFS, an otherwise highly salient visual object presented to one eye becomes invisible due to a rapid sequence of flashes presented to the other eye. Depending on the strength of suppression, we found that reaction times (RTs) can be rendered highly variable across trials and that longer suppression trials were associated with the strong evoked power at low-frequency bands in the early visual areas as well as in the prefrontal cortex. We will also present some preliminary results on the inter-areal interaction using Granger causality analysis. Our preliminary results are consistent with a view that conscious vision is dynamically regulated at the system level through interaction among various cortical areas at various frequencies.

Poster Session
Friday 3:00pm to 4:30pm
Queensland Brain Institute – Level 7

1. **The influence of subliminal threat cues on successful response inhibition**
   Catherine Orr, Hugh Garavan, Karen Weierstall and Robert Hester
2. **The "weaker" conditioning paradigm: Differences in fear learning and the propensity to develop phobias**
   Yiling Ho and Ottmar V. Lipp
3. **Evidence for functionally distinct regions of the right inferior frontal gyrus during motivationally-modulated inhibitory control**
   David A. O'Connor and Robert Hester
4. **A direct comparison of controlled and automatic cognitive inhibition using EEG source analysis**
   Tara Spokes, Tim Cutmore and David Shum
5. **Mental rotation in an n-back task: Performance related working memory manipulation in parietal cortex**
   Gemma Lamp, Bonnie Alexander, Andrea Rockliffe, Sheila Crewther and David P. Crewther
6. **At-risk alcohol users show decreased sensitivity to punishment severity in learning from errors**
   Jennifer L. Moore, Sarah Rossiter, Elizabeth Beadle and Robert Hester
7. **Examining the Neural Correlates of Learning From Errors: The Respective Roles of the pMFC and Insula Cortex**
   Kathleen Charles-Walsh[1*], Catherine Orr[1] and Robert Hester
8. **Modelling of cognitive functions in driving environment using EEG**
   Nabaraj Dahal, Nanda Nandagopal, R. Vijayalakshimi, Bernadine Cocks, Andrew Nafalski and Zorica Nedic
9. **The contributions of lower order cognitive skills to executive function performance in schizophrenia**
   Erica Neill and Susan L. Rossell
10. **What causes misattribution of meaning in schizophrenia? Evaluations and implications from the single word level**
    Eric J. Tan, Gregory W. Yelland and Susan L. Rossell
11. **Pre-attentive processing as the link between schizotypy and autistic tendencies**
    Talitha Ford
12. **Greater disruption to the control of voluntary saccades and online refinement of saccade accuracy in high-functioning autism than Asperger's disorder**
    Beth Johnson, Nicole Rinehart, Chloe Stanley-Cary, Owen White and Joanne Fielding
13. **Neural correlates of inverted faces in individuals with high and low autistic-like traits**
    Svjetlana Vukusic, David P. Crewther, Joseph Ciorciari and Jordy Kaufman
14. **Neural mechanisms underlying emotional processing in healthy older adults: Electrophysiological correlates of visual affective word processing**
    Tiffany Au, Anthony Angwin, David Copland, George Mellick, John O'Sullivan, Peter Silburn, Gerard Byrne and Nadeeka Dissanayaka
15. **Posterior hippocampus contributes differentially to long-term consolidation of contextual memory across age groups**
    Sicong Tu and Michael Hornberger
16. **Generating multiple false autobiographical memories in single subjects**
    Aleea Devitt, Edwin Monk-Fromont, Daniel Schacter and Donna Rose Addis
17. **The functional epistasis of 5-HTTLPR and BDNF Val66Met on emotion processing: A preliminary study**
    Tim Outhred, Pritha Das, Carol Dobson-Stone, Kristi Griffiths, Kim L. Felmingham, Richard A. Bryant and Andrew H. Kemp
18. **How the Thatcher illusion reveals evolutionary differences in the face processing of primates**
    Kimberly Weldon, Jessica Taubert and Lisa A. Parr
19. **Contrast orientation and recognition of facial identity across variable lighting conditions**
    Samuel L. Pearce
20. **Does the visual mismatch negativity (vMMN) care about eye-of-origin information?**
    Bradley N. Jack, Urte Roeber and Robert P. O'Shea
21. **Distinct signatures of visual target selection and distractor suppression investigated using high-density electroencephalography**
    Dion T. Henare and Paul M. Corballis
22. **Is there a magnocellular advantage? A TMS study of early visual cortex**
    Alexandra L. Shilton, Robin Laycock, Claire L. Hoysted and Sheila Crewther
23. **Measurement of human visual cortex excitability using suprathreshold phosphene perception**
    Alice K. Lagas, Cathy M. Stinear, Winston D. Byblow, Bruce R. Russel, Robert R. Kydd and Benjamin Thompson
24. **Critical periods of early visual cortex activation for abrupt and ramped object identification: a TMS study**
    Claire L. Hoysted, Robin Laycock, Alexandra L. Shilton and Sheila Crewther
25. **Statistical segmentation of streams of syllables: a pilot EEG study**
    Leidy J. Castro-Meneses, Paul Sowman and Blake W. Johnson
26. **Does semantic content influence differential ERP responding in males and females?**
    Rosemaree Miller and Frances Martin
27. **If you want your writing to be remembered, use a disfluent font**
    Owen Churches, Mark Kohler, Scott Coussens, Myra Thiessen and Hannah Keage
28. **An ERP analysis of the world-sense and semantics mismatches in Japanese sentences**
    Yu Odagaki, Sakriani Sakti, Graham Neubig, Tomoki Toda and Satoshi Nakamura

29. **Tracking eye movements in attentional asymmetries**
Nicole A. Thomas

30. **Moving to the direction of the eyes: Finding the masked gaze cueing effect**
Shahd Al-Janabi and Matthew Finkbeiner

31. **The causal attribution between self-made actions, others' actions and their sensory consequences**
Simmy Poonian, Guy Wallis and Ross Cunnington

32. **The neural dynamics of temporal attention: Evidence from EEG and fMRI**
Chase S. Sherwell and Ross Cunnington

33. **Manipulation of intergroup relationships does not reduce racial bias in empathetic neural responses**
Emily R. Hielscher, Luis S. Contreras and Ross Cunnington

34. **Investigating Shared Task Representations in the Social Simon Paradigm: Effects of Friendship and Empathy**
Ruth Ford and Brad Aberdein

35. **The effect of visual spatial attention on bilateral plasticity in the human motor cortices**
Daina S. Dickins, Martin V. Sale, Jason B. Mattingley and Marc R. Kamke

36. **Visual spatial attention influences plasticity in the human motor cortex**
Marc R. Kamke, Alexander Ryan, Martin V. Sale, Stephan Riek, Timothy J. Carroll and Jason B. Mattingley

37. **A Neuronavigated TMS Investigation of the Functional Chronometry of V5 and Middle and Posterior Intraparietal Sulcus in Motion-Driven Attention**
Robin Laycock, Bonnie Alexander, David P. Crewther and Sheila G. Crewther

38. **Motor cortical plasticity is enhanced by passive observation of mirror-matched limb movements**
Martin V. Sale and Jason B. Mattingley

39. **Objective measures of efficacy of deep brain stimulation for treatment of tremor**
Colette M. Mckay, Thushara Perera, Richard Peppard, Hugh J. McDermott and Adam P. Vogel

40. **Dual Task Performance in Huntington's Disease Using Cancellation and Auditory Tasks**
Eleftheria Vaportzis, Nellie Georgiou-Karistianis, Andrew Churchyard and Julie Stout

41. **Potential diffusion and volume biomarkers of longitudinal neuropathological change in premanifest and early symptomatic Huntington's disease: Results of IMAGE-HD 18-month follow-up**
Juan F. Domínguez, Gary F. Egan, Marcus A. Gray, Andrew Churchyard, Phyllis Chua, Julie C. Stout and Nellie Georgiou-Karistianis

42. **The role of the corpus callosum in regulating voluntary and involuntary unimanual movement in multiple sclerosis**
Anne-Marie Ternes, Jerome J. Maller, Joanne Fielding, Patricia Addamo, Owen White and Nellie Georgiou-Karistianis

43. **Acute administration of escitalopram increases salience of trait responsivity to stressful events: A potential EEG marker of individual differences in therapeutic effectiveness of SSRIs**
Matthew A. Beauregard

44. **Inflammation in Major Depressive Disorder and psychophysiological correlates**
Peter Goodin, Joseph Ciorciari and Susan Rossell

45. **Neurological and affective vulnerability to depression: A prospective study**
Michael D. Tooley, Rosie Moody and Gina M. Grimshaw

46. **Quantifying sub-optimal decision making in depression**
Matthew P. Hyett, Gordon B. Parker and Michael Breakspear

47. **Exploring biological motion using binocular rivalry: Starting conditions and preliminary findings**
Graeme A. Hacker, Anna Brooks and Rick van der Zwan

48. **Discriminating sex from representations of the human hand: Evidence of a pan-stimulus male bias**
Justin Gaetano, Anna Brooks and Rick van der Zwan

49. **Cross-modal connectivity of secondary auditory cortex with higher visual area in the congenitally deaf**
Yulwan Sung and Seiji Ogawa

50. **Using diffusion tensor imaging to investigate how BDNF genotype influences thalamo-cortical tracts**
Nicole S. Mckay, Sarina J. Iwabuchi, Chris S. Thompson and Ian J. Kirk

51. **Visualisation of complex neural connections during cognitive load using EEG data**
Naga M. Dasari, Doraisamy Nandagopal, Vijayalakshmi Ramasamy, Bruce Thomas, Nabaraj Dahal and Bernadine Cocks

52. **Pre-discharge QEEG can inform prognoses of post-stroke cognitive impairments**
Emma Schleiger, Nabeel Sheikh, Tennille Rowland, Stephen Read, Andrew Wong and Simon Finnigan

53. **A systematic review of obstetric complications as risk factors for eating disorder and a meta-analysis of delivery method and prematurity**
Isabel Krug, Emma Taborelli, Hannah Sallis, Janet Treasure and Nadia Micali

54. **Social and emotional processing as a behavioural endophenotype in eating disorders: A pilot investigation in twins**
Natalie Kanakam, Isabel Krug, Charlotte Raoult, David Collier and Janet Treasure

55. **Suppression of memory acquisition due to co-administration of lithium and atorvastatin in male mice: Role of nitric oxide pathway**
Mehrak Javadi-Paydar, Amir Reza Honarmand, Nasim Pourtabatabaei and Ahmad Reza Dehpour

56. **Influence of isoflurane duration on permeability of the blood-brain barrier in mice**
Emma Morrisroe and Stephen Robinson

57. **Exposure to inhalational anaesthetics causes neuroinflammation**
Sasha M. Zaman and Stephen R. Robinson

58. **The effect of midazolam and sevoflurane anaesthesia on the permeability of the blood-brain barrier**
Ari Pinar and Stephen R. Robinson

59. **Psychological needs and indices of well-being among physical disabilities**
Behzad Behzadnia and Malek Ahmadi

Poster Session
Saturday 3:00pm to 4:30pm
Queensland Brain Institute – Level 7

1. **Measures of white matter decline and global cognitive ability in older adults**
   Jaime L. Rennie, Todd A. Jolly, Pat Michie, Christopher Levi, Mark Parsons, Rhoshel Lenroot and Frini Karayanidis
2. **The relationship between arterial and venous pulsatility and microstructural white matter changes**
   Todd A. Jolly, Grant Bateman, Christopher Levi, Mark Parsons and Frini Karayanidis
3. **Audiovisual Speech Processing depends on Context: a high-density EEG study**
   Tim Paris, Jeesun Kim and Christopher Davis
4. **Object information in the brain**
   Chris Davis, Tim Paris, Bronson Harry and Jeesun Kim
5. **Beyond modality-specific brain regions: The neural implementation of object colour knowledge requires anterior temporal lobes**
   Rocco Chiou, Paul Sowman, Andy Etchell and Anina N. Rich
6. **MEG neuroimaging in preschool-aged children: New insights into the developing brain**
   Blake W. Johnson and Stephen Crain
7. **Objective automated analysis of natural language: The Fluency Profiling System as a measure of the efficiency of dynamic language networks**
   Kathryn M. Hird, Kim Kirsner, Daniel Little, Raoul Oehmen and John Dunn
8. **Language lateralisation and cognitive performance in young children: A functional transcranial doppler study**
   Amie Hartland, Mark Kohler, Owen Churches, Hannah Keage, Nicholas Badcock, Rachael Spooner and Scott Elliot
9. **Spatiotemporal correlation of MEG data and language models**
   Mehdi Parviz, Mark Johnson and Jon Brock
10. **Neural responses to speech and nonspeech sounds and language impairment in children with ASD**
    Shu H. Yau, Blake W. Johnson and Jon Brock
11. **Oscillatory phase tracking of acoustic signal: Inter-trial phase locking response as a sensitive measure**
    Huizhen Tang, Jon Brock, Katherine Demuth, Stephen Crain and Blake W. Johnson
12. **Children's neuromagnetic beta-band oscillations to isochronous sounds reflects predictive timing**
    Andrew C. Etchell, Paul F. Sowman and Blake W. Johnson
13. **Effects of to-be-ignored information on performance judging point light walker sex**
    Anna Brooks and Jacalyn Hall
14. **Assessing the functional significance of the horizontal effect**
    Arnab Ahmed and Tamara L. Watson
15. **Multisensory integration of temporal processing in the auditory and somatosensory modalities: A psychophysical and EEG study**
    Justin Timora and Timothy Budd
16. **Visual N1 peak latency predicts individual location of point of subjective simultaneity and prior-experience in audiovisual temporal order judgments**
    Lars T. Boenke, David Alais[1] and Frank W. Ohl
17. **The influence of cognitive load on visual perceptual processing**
    Ping Liu, Luca Cocchi, Jason Forte, David K. Sewell and Olivia Carter
18. **EEG alpha power and methadone treatment**
    Grace Y. Wang, Trecia A. Wouldes, Rob Kydd and Bruce R. Russell
19. **Alpha peak training in sensory motor areas increases efficiency of executive attention networks**
    Russell D. Downham, Harley S. Macnamara and Graham A. Jamieson
20. **Source localisation of cortical oscillation differences in Yoga meditation between medium and advanced level practitioners**
    Graham A. Jamieson, John Thomas and Marc Cohen
21. **Hypnosis and the dissociation of cognitive control**
    Janelle Cleary, Graham Jamieson, Rodney Croft, Bruce Findlay and Simon Hammond
22. **On the transfer of training in perception and decision-making.**
    Kelly G. Garner, Mike Tombu and Paul E. Dux
23. **Effects of context and training on meta-learning and about unattended sound sequences**
    Juanita Todd and Andrew Heathcote
24. **Research in progress: Investigating the intersections of attention and self-regulated learning through stimulated recall and student's eye-tracking behaviour**
    Nayadin Persaud and Matt Eliot
25. **Neural Correlates of Uncertain Decision Making: ERP Evidence from the Iowa Gambling Task**
    Ya Wang, Ji-fang Cui, Raymond C. Chan and David H. Shum
26. **Unconfounding of reward frequency and magnitude in the Iowa Gambling Task: A comparison between the Iowa and Soochow gambling tasks in opiate users**
    Julie Stout, Rebecca Kerestes, Dan Upton, Junyi Dai and Jerome Busemeyer
27. **Variability in resting state EEG and task switching performance**
    Patrick Cooper, Chris Brown, Anna Tuyl, Ross Fulham, Pat Michie and Frini Karayanidis
28. **Scopolamine reduces top-down control of selective attention: An SSVEP study**
    Natasha Matthews, Inga Laube, Angela Dean and Mark A. Bellgrove
29. **Facial affect recognition and schizotypal characteristics: A cross-cultural study**
    Linda Byrne, Christopher Wilson and David Mellor
30. **Is visual attraction for human eyes present at birth?**
    Eve Dupierrix, Anne Hillairet de Boisferon, David Méary, Elisa Di Giorgio, Francesca Simion, Kang Lee, Paul C. Quinn, Masaki Tomonaga and Olivier Pascalis

31. **Modulation of spontaneous emotional facial expressions during modality-specific emotion processing: A simultaneous EEG and EMG study**
Aimee L. Mavratzakis and Peter Walla

32. **Attentional capture by angry faces depends on the distribution of attention**
Joshua J. Foster, David Carmel and Gina M. Grimshaw

33. **Faces and scenes elicit qualitatively different emotions: An electroencephalography (EEG) study**
Peter Walla and Aimee Mavratzakis

34. **The effect of emotional arousal and valence on the delayed recall of neutral images**
Jessica L. Boglis, Leslie C. Schachte and Agnes Hazi

35. **Distractibility and top-down attentional control in children using a cochlear implant**
Marc R. Kamke, Jeanette Van Luyn and Jill Harris

36. **Disentangling motor control processes in the basal ganglia using high-resolution fMRI in a 3T scanner**
Megan E. Campbell, Jeff Bednark and Ross Cunnington

37. **Focal disruption to primary motor cortex causes widespread changes in functional connectivity**
Amy L. Taylor, Luca Cocchi, Martin V. Sale, Luke Hearne and Jason B. Mattingley

38. **Does motor imagery ability predict reaching correction efficiency? A test of recent models of human motor control**
Christian Hyde, Kate Wilmut, Ian Fuelscher and Jacqueline Williams

39. **Does the ability to represent movement at a neural level influence movement planning?**
Kate Wilmut, Christian Hyde, Ian Fuelscher and Jacqueline Williams

40. **Sensori-motor rhythm neurofeedback increases fine motor skills in elite racket sport athletes**
Trevor Brown, Graham Jamieson and Nick Cooper

41. **Handedness and proprioceptive position estimation: Are left handed people more accurate in self representation and is this representation resistant to manipulation by the Rubber Hand Illusion?**
Harriet Dempsey-Jones and Ada Kritikos

42. **The interplay between learnt representations and asymmetries in task-switch costs.**
Ayla Barutchu, Stefanie I. Becker, Olivia Carter, Robert Hester and Neil Levy

43. **A preliminary structural MRI study of neurological soft signs in patients with major depression**
Qing Zhao, Jia Huang, Ya Wang, David Shum and Raymond Chan

44. **Examining the changes in neural activity during cognitive processing in depression following a traumatic brain injury**
Neil Bailey, Kate Hoy and Paul Fitzgerald

45. **Is age or culture important for the use of speech as a marker of depression?**
Adam P. Vogel and James C. Mundt

46. **Using QEEG parameters (asymmetry, coherence, and P3a Novelty response) to track improvement in the treatment of depression**
Leon Petchkovsky, Kirstin Robertson-Gillam and Yury Kropotov

47. **A network-based approach to diagnosis of Autism Spectrum disorders**
Joon Yong An, Alexandre S. Cristino, Qiongyi Zhao, David Ravine, John A. Wray, Vikki M. Marshall, Andrew J. Whitehouse and Charles Claudianos

48. **Electrophysiological measures of infant siblings of children with autism**
Jordy Kaufman, Leila Dafner, Angela Mayes, Lauren Pigdon and Shuk Man Sumie Leung

49. **Cognitive profiles in intellectual disability**
Katrina Tsoutsoulis, Nahal Goharpey and Sheila G. Crewther

50. **Raven's Coloured Progressive Matrices performance as a valid predictor of cognitive and motor delay in Intellectual Disability regardless of etiology**
Nahal Goharpey, Katrina Tsoutsoulis and Sheila G. Crewther

51. **Does parametric fMRI analysis with SPM yield valid results? – An empirical study of 1484 rest datasets**
Camilla Josephson

52. **Empirically validating fully automated EOG artifact correction using independent components analysis**
Ian D. Evans, Graham Jamieson, Rodney Croft and Trieu T. Pham

53. **Emotiv versus Neuroscan: Validating a gaming EEG system for research quality ERP measurement**
Nicholas A. Badcock, Betty Mousikou, Yatin Mahajan, Peter de Lissa, Johnson Thie and Genevieve McArthur

54. **The Flinders Handedness survey (FLANDERS) and its relation with other measures of lateral preference, sex and familial handedness**
Michael E. Nicholls

55. **Dissecting childhood and adulthood obsessive-compulsive personality traits in eating disorders using a discordant sister-pair design: a multicenter European study**
Isabel Krug, Natalie Kanakam, Marija Anderluh, Fernando Fernandez-Aranda, Nadia Micali, Emma Taborelli, Kate Tchanturia, Andreas Karwautz, Gudrun Wagner, David Collier and Janet Treasure

56. **Impairment of memory formation, consolidation and retrieval of inhibitory avoidance task in acute mitragynine-treated rates**
Farah Wahida Suhaimi, Zurina Hassan, Visweswaran Navaratnam and Christian P. Müller

57. **Effects of acute mitragynine exposure on the establishment of conditioned place preference and locomotor activity**
Nurul Hasnida Mohammad Yusoff, Zurina Hassan, Visweswaran Navaratnam and Christian P. Müller

58. **Changes in the spontaneous EEG and locomotor activity of freely moving rats in mitragynine-treated animals.**
Zurina Hassan, Zarif M. Sofian and Visweswaran Navaratnam