

24th Australasian Society for Psychophysiology Conference

& Annual Meeting of the Australasian Society for
Psychophysiology

PROGRAM, ABSTRACTS, AND INFORMATION

Hosted by the Discipline of Psychology, School of Health and Human
Sciences, Southern Cross University

Southern Cross University
November 26 – 28 2014



**Australasian
Society for
Psychophysiology, Inc**

increase
your
opportunities
for
neuroscience

- active electrodes
- up to 160 EEG channels + 8 AUX channels
- extremely high sampling rate
- wide hardware bandwidth
- number of channels easily expandable

Symbiotic devices offers innovative, user-friendly systems, in-depth practical knowledge of all systems and complete support.



BrainSight2
TMS Navigation



BrainAmp MR Plus
EEG & fMRI
ERP / EP



ActiChamp
EEG/ERP, ExG,
BCI



ActiCap
Active electrodes



Analyzer2
EEG analysis, ICA &
MRI artifact correction



NeuroConn DC
tdcs &
multichannel tdcs



EasyCap
EEG applications



BrainSight NIRS
fNIRS, TMS-NIRS,
EEG-NIRS & MEG-NIRS



CED Spike2
Single and multi-unit
spike processing &
analysis

and many more.....



SYMBIOTIC
DEVICES

symbioticdevices.com.au
info@symbioticdevices.com.au

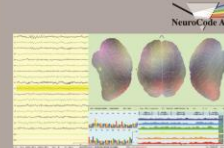


BIOSEMI ActiveTwo - The original EEG



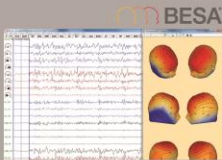
BIOSEMI - bringing EEG and ERP to a new level with the original Active Electrode and ActiveTwo EEG Amplifier.

NEUROCODE neoCATEEM - High Standard Bio-Feed-back Software



NEUROCODE - Bio-Feedback, real-time software for the ActiveTwo and g.TEC amplifiers for neurophysiological methods during drug and market research.

BESA Research 6.0 - Leading EEG Software



BESA - the leading innovators in digital EEG, MEG and MRI software for research and clinical applications.

SHIMADZU LABNIRS - Next-Generation NIRS



SHIMADZU - Next-Generation Optical Brain-Function Imaging with functional near-infrared spectroscopy (fNIRS)

NEUROSPEC AG
Stansstadterstrasse 10
CH-6370 Stans
Switzerland

Tel +41 41 371 07 04
Fax +41 41 371 07 03
info@neurospec.com
www.neurospec.com



Welcome

Welcome to the **24th Annual meeting of the Australasian Society for Psychophysiology** at Southern Cross University. The 3 day conference will feature a range of fascinating keynote speakers, scientific plenary sessions, methods workshops, poster session, and two social events. Day 1 will end with a celebratory reception and poster session, with the conference dinner to be held on Thursday 27th November overlooking the harbour. The conference brings together researchers from psychology, psychiatry, and neuroscience, with a focus on relationships between the brain and behaviour. We hope you find the conference program to be stimulating and thought-provoking!

ASP2014 Organising Committee

Convenors

Dr Stephen Provost, Dr Alison Bowling, and Mr Royce Willis

Scientific Committee

Conference convenors and members of the ASP Executive

Support Team

Mr Kevin Minotti, Ms Natalie Doring, Mr Zeb Caslick-Waller

Registration and Conference Information

Venue and times

ASP2014 will be held in D.150 (upstairs in D-Block) and the D-Block Foyer at the Coffs Harbour Education Campus, Hogbin Drive, Coffs Harbour, commencing 10.40 am on Wednesday November 26th 2014 and concluding 1.30 pm Friday November 28th. A campus map is provided below.

Registration

The registration desk will be open from 9.00 am Wednesday, and from 8.30 am Thursday, in the D-Block Foyer.

Name Badges

Please wear your name badge at all times at the venue to facilitate interactions with other delegates and to verify entitlements to refreshments.

Refreshments and Lunch

Arrival tea and coffee will be available each morning before the first session. Morning teas will be provided on Thursday and Friday, afternoon teas on Wednesday and Thursday, and lunch will be provided on all three days. The cost is included in your registration.

Day 1 Evening Event

Drinks and canapés will be served during the poster session in the D-Block Foyer from 5.00 to 7.00 pm Wednesday 26th November. The cost is included in your registration.

Conference Dinner

Will be held at the *Coffs Harbour Deep Sea Fishing Club* (located at Jordon Esplanade, Coffs Harbour Jetty, Coffs Harbour, NSW 2450) on Thursday 27th November. Included is a buffet dinner. A cash-bar will be in operation from 6.00 pm.

Parking on campus

Parking on campus is free of charge. See map below for areas close to the conference venue where parking is available.

Trade Displays

Symbiotics will have a display in the D-Block Foyer during the conference, and we encourage you to visit them.

Notes for presenters

Platform

The lecture theatre contains a Windows PC, document viewer, and laptop connection facilities. Please notify the registration desk if alternative equipment is required. Powerpoint presentations should be loaded using a USB memory stick. **Speakers should ensure that their equipment needs are met and their presentation slides are loaded no later than 15 mins before the start of their session.**

The maximum speaking time for each presentation will be 15 minutes, with an additional 5 minutes for questions. The session chair will warn you as you approach this time limit.

Posters

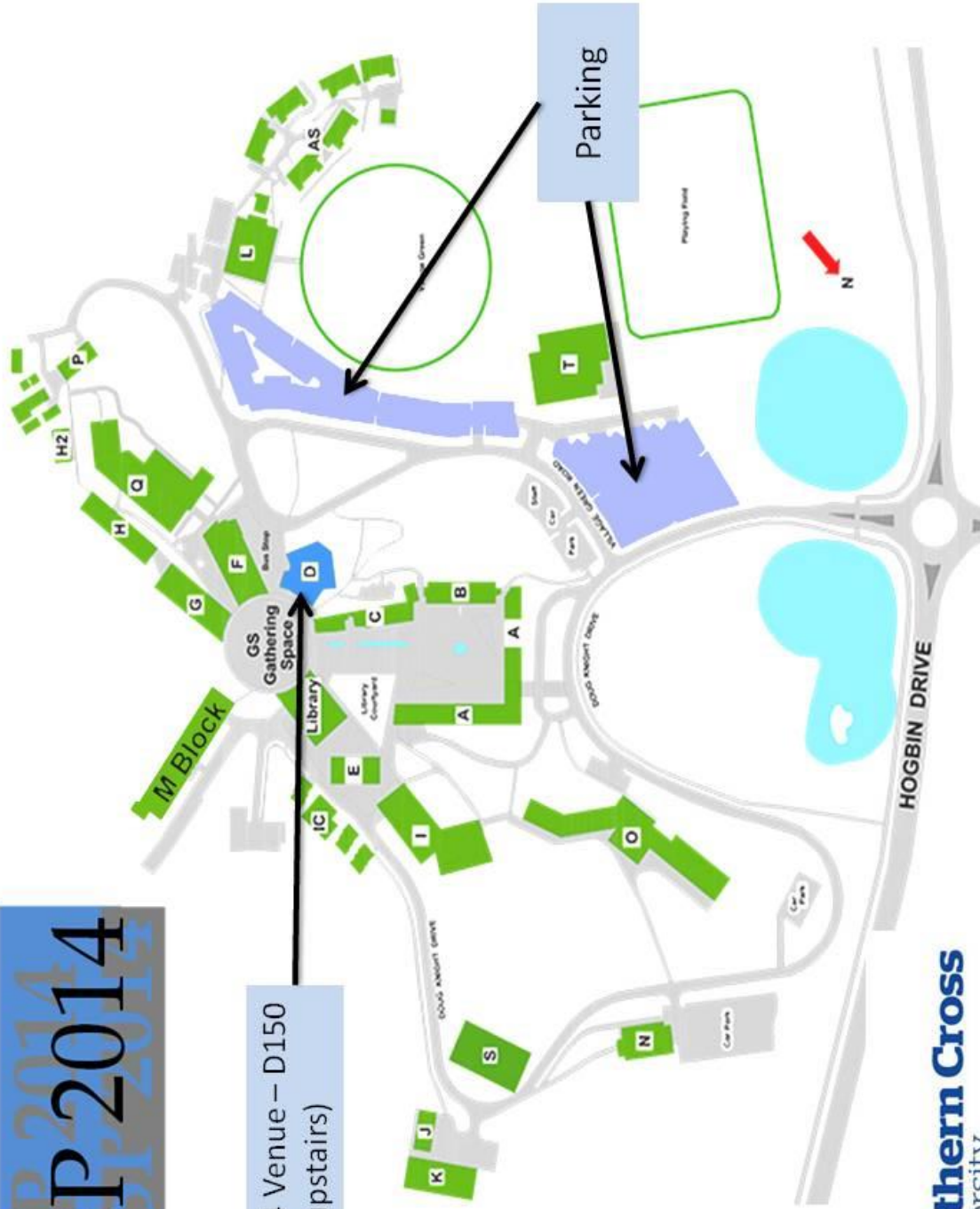
The poster session will be held at 5.00 to 7.00 pm Wednesday 27th November. Posters should be provided to the registration desk before lunch on Wednesday (Day 1), and will be put up by ASP2014 helpers following afternoon tea. Posters will remain on display for the conference sessions on Thursday, and should be collected after the final session, prior to leaving for the conference dinner. Poster size should be A0 (841 mm x 1189 mm) in either portrait or landscape orientation.

Edit your slides

There will be a Windows PC available in M-Block for delegates to view/edit their slides. Please ask one of the ASP2014 helpers for information.

ASP 2014

ASP 2014 Venue – D150
(upstairs)



Program

D-Block Lecture Theatre D-150

Wednesday November 26th

9.00-10.40 Registration

10.40-11.00 Welcome and opening, ASP President Jason Bruggemann

11.00-12.00 Individual presentations

Christopher Sufani, Jacqueline A. Rushby and Skye McDonald

Attending to the Sound of Feelings: An ERP Investigation of Vocal Emotion Perception Deficits in Traumatic Brain Injured Patients

Katie L. Osborne-Crowley, Skye McDonald and Jacqueline A. Rushby

Reduced feedback-related negativity amplitude elicited by social and non-social error feedback in traumatic brain injury patients compared with controls

Jacqueline A. Rushby, Heather Francis, Alana Fisher and Skye McDonald

Regulation of arousal and heart rate variability via biofeedback in severe traumatic brain injury.

12.00-1.00 Lunch and tour of SCU psychophysiology labs for interested parties

1.00-2.00 Keynote

Associate Professor Frini Karayanidis

Individual variability in cognitive control processes – does it translate to real life outcomes?

2.00-3.00 Workshop

Dr Alison Bowling

Eyetracking for fun and profit

3.00-3.30 Afternoon tea

3.30-4.30 Individual presentations

Robert J. Barry and Frances M. De Blasio

Rethinking Inhibition in the Equiprobable Go/NoGo Task

Diana Karamacoska, Robert J. Barry and Frances M. De Blasio

Prestimulus EEG Effects on ERPs in a Variable ISI Equiprobable Go/NoGo Task

Genevieve Z. Steiner, Robert J. Barry and Craig J. Gonsalvez

Sequential processing and the matching-stimulus interval effect in ERP components: An exploration of the mechanism

5.00-7.00 Reception and Poster Session (Foyer of D-Block)

Thursday November 27th

8.00-9.10 Registration

9.10-10.30 Individual presentations

Tara Spokes, Tim Cutmore and David Shum

Using EEG source analysis to understand changes to neural processing of inhibitory control in healthy ageing

Justin R. Timora and Timothy W. Budd

A Psychophysical and EEG Investigation of Cross-Modal Amplitude Modulation

Leigh Grant

A potential link between cognitive and behaviour theories of problem gambling?

Nicholas Benikos, Stuart J. Johnstone and Steven Roodenrys

A comparison of two training protocols to improve inhibitory control in healthy adults

10.30-11 Morning tea

11.00-12.00 Keynote

Dr Bill Budd

Integrating Time and Repetition: The Psychophysiology of Temporal Processing

12.00-1.00 Lunch

1.00-2.00 Annual General Meeting of the Society

2.00-3.00 Keynote

Associate Professor Nadia Solowij

Cannabis, the brain, cognition and psychosis: the good, the bad and the unknown

3.00-3.30 Afternoon tea

3.30-4.50 Individual presentations

Sarah Boyall, David Camfield and Rodney J. Croft

Startle is modulated by approach/avoidance rather than valence stimuli.

David A. Camfield, Sarah Boyall, Emma J. Kornfeld, Monique Taylor, Keith A. Wesnes, Robert J. Barry, Genevieve Z. Steiner, Frances De Blasio and Rodney Croft

Exploring individual differences in Affective processing using psychophysiology

Jane Bairnsfather and Kristen Pammer

Reading and the Posterior Parietal Cortex: A tDCS Study

Holly R. Blunden and Kristen Pammer

The posterior parietal cortex and serial visual search: a tDCS study

6.00-10.00 Dinner at the Coffs Harbour Deep Sea Fishing Club

Friday November 28th

8.30-9.00 Registration

9.00-10.00 Workshop

Dr Jacqueline Rushby

Tips and Pitfalls in Writing Early Career Research Grants

10.00-10.30 Morning tea

10.30-11.50 Individual presentations

Kyla Brogmus and Alison Bowling

Food for Thought: Is the Obesity Epidemic a reflection of our Attentional Bias to Food?

Steve Provost and Lachlan Foster

Evidence for a divergence between psychophysiological and behavioural measures of expectancy and prediction in a roving mismatch negativity paradigm.

Janette L. Smith, Jaimi M. Iredale and Richard P. Mattick

Heavy alcohol use is not associated with disinhibition in young males

Jason M. Bruggemann, Natalie Goulter, Jason R. Hall, Rhoshel K. Lenroot and Eva R. Kimonis

Emotional processing and heart rate in incarcerated male adolescents with callous unemotional traits: the role of anxiety.

11.50-1.30 Awards, prizes, farewells followed by lunch

Posters

Num	Author(s)	Title
1	Robert J. Barry, Stephen Palmisano, Mark M. Schira ¹ , Frances M. De Blasio, Diana Karamacoska and Brett MacDonald	EEG Markers of Visually Experienced Self-motion (Vection)
2	Jay P. Borchard, Robert J. Barry and Frances M. De Blasio	Sequential Processing and Stimulus Temporal Uncertainty in an Auditory Equiprobable Go/NoGo Task.
3	Timothy W. Budd, Elle K. Gillard and Justin R. Timora	A Psychophysical and Steady-State EEG Study of Cross-Modal Integration with Temporal and Spatial Manipulation of Auditory and Tactile Stimulation.
4	Zeb Caslick-Waller and Steve Provost	Syntactic processing and mismatch negativity.
5	Adele E. Cave, Frances M. De Blasio, Jay P. Borchard and Robert J. Barry	Resting EEG Source Localisation in Young and Older Adults.
6	Katie I. Dalton, Janette L. Smith, Jacqueline A. Rushby and Meryem Joseph	Beginning to binge drink: Its effect on behavioural inhibition in adolescents and young adults.
7	Michelle Hedgcoe, Justin R. Timora and Timothy W. Budd	An event-related potential and psychophysical investigation of cross-modal integration of auditory and tactile stimulation at rapid stimulus rates.
8	Melinda A. Hickey, Stuart J. Johnstone and Jacqueline A. Rushby	Neurocognitive training for traumatic brain injury: A pilot feasibility study.
9	Emily Hindman, Jeff Nelson, Tony Broe and John Hodges	Modelling the effects of individual, family and community level characteristics on executive functioning.
10	Meryem Joseph, Jacqueline A. Rushby, Janette L. Smith and Katie Dalton	The impact of initiating binge drinking on psychophysiological indices of emotional arousal in young adults.
11	Emma J. Kornfeld, David A. Camfield and Rodney J. Croft	The role of valence and arousal in 'fear' conditioning of face processing?
12	Ryuma Kuribayashi and Hiroshi Nittono	Prolonged exposure to high-resolution music with inaudible high-frequency components increases high-alpha and low-beta EEG powers and a feeling of relaxation.
13	Melanie Lum, Thanoja Fernando, Diana Karamacoska, Robert J. Barry and Genevieve Z. Steiner	EEG Topographies in High and Low Extraverts.
14	Monique M. Taylor	Electrophysiological indices of Object Pattern Separation Ability.
15	Belinda Smith, Alison Bowling, Shi Zhou and Jacqui Yoxall	Eye movement tasks as a measure of cognitive functioning in ageing and Alzheimer's disease
16	Janette L. Smith and Christopher Sufani	Repetition expectancy vs. conflict adaptation: which better explains the congruency sequence effect?
17	Genevieve Z. Steiner, Alan Yueng, David A. Camfield, Frances M. De Blasio, Andrew Pipingas, Andrew B. Scholey, Con Stough and Dennis H. Chang	The effect of a standardised Chinese herbal medicine formula (Sailuotong) on N1, PN, P2, MMN, P3a, and P3b amplitudes: a pilot study.
18	Genevieve Z. Steiner, Francesca Z. Fernandez-Enright, Emma Barkus and Robert J. Barry	The effects of catechol-O-methyltransferase polymorphism Val158Met on resting EEG spectral activity in healthy adults.
19	Lee D. Walsh	Internal maps of the hand are mislocated in space and affected by posture and vision.

Keynotes

Keynote 1: Associate Professor Frini Karayanidis

Individual variability in cognitive control processes – does it translate to real life outcomes?

Cognitive control processes are crucial for goal-directed behaviour and decision-making across the entire lifespan. Like prefrontal brain networks, these processes show a 'last-in, first-out' pattern of development, maturing late and declining early across the lifespan. However, it remains to be established whether individual variability in cognitive control ability underlies variability in real-life adaptive/maladaptive outcomes. I will present work from our lab that has sought to establish lifespan variability in one aspect of cognitive control, the ability to flexibly adapt to rapid changes in task context, and examine whether individual variability in cognitive flexibility is related to variability in a range of age-appropriate outcome measures.

Keynote 2: Dr Timothy Budd

Integrating Time and Repetition: The Psychophysiology of Temporal Processing.

Temporal processing refers to our ability to resolve information conveyed within the time-varying properties of sensory stimulation. This unique ability allows us to form a dynamic and coherent perceptual representation of the environment as well as forming the basis for multisensory integration and music and speech perception.

In this talk I will review evidence from a range of psychophysiological studies which provide support for the proposal that a better understanding of the complex neural mechanisms underlying temporal processing can be gained by examining the fundamental interaction between time and repetition on sensory measures of brain activity. The focus will be on studies that directly examine the correspondence between perceptual (psychophysical) and neurophysiological measures (EEG, ERP and fMRI) that are exquisitely sensitive to interactions between experimental manipulations of time and repetition.

This review will include evidence from human studies in both normal and clinical populations, where dysfunction in neural mechanisms underlying temporal processing is implicated, as well as corresponding neurophysiological evidence from recent animal studies. Traditional neurophysiological and perceptual models of temporal processing will be evaluated and key emerging approaches described. Directions for future research that offer the potential to capitalise on recent advances in analytic methods in psychophysiology as well as conceptual developments will also be discussed.

Keynote 3: Associate Professor Nadia Solowij

Cannabis, the brain, cognition and psychosis: the good, the bad and the unknown

Debates about the relative harms of cannabis, the most popular illicit drug, continue to polarise the lay, medical and scientific communities. Alongside a push toward medical marijuana for a range of ailments, evidence for an association between cannabis use and schizophrenia has strengthened, and studies show that long-term or heavy exposure to cannabis results in cognitive impairment, especially in the domains of memory, attention and executive functions. There is evidence that these adverse effects are greater when cannabis use commences during adolescence when the brain is maturing. There is also evidence from neuroimaging studies for alteration to the structure and function of the brain. Some of these changes are similar to those observed in schizophrenia, and are associated with the development of subclinical psychotic-like symptoms in otherwise healthy cannabis users. Most of the adverse effects of cannabis on the brain and its function are associated with THC, the primary psychoactive constituent of cannabis. But another compound in cannabis plant matter, cannabidiol or CBD, has been shown to have anxiolytic and antipsychotic properties and to ameliorate some of the adverse effects of THC. This talk will provide an overview of the program of research from my team that has used neuropsychological, psychophysiological and brain imaging methods to address the above topics.