

08:15 – 08:30

OPENING OF CONFERENCE

Dr Sam Solomon, Co-chair, ANS/AuPS 2010
Professor Roger Dampney, Co-chair, ANS/AuPS 2010
Professor David Vaney, President, ANS
Professor David Adams, President, AuPS

Location: Bayside Auditorium A

08:30 – 09:30

PLENARY 1

ANS/AuPS OVERSEAS LECTURE

Sponsored by Prince of Wales Medical Research Institute

Chair: Professor David Vaney, President ANS

Location: Bayside Auditorium A

PLE-MON-01

Circuits and dynamics for olfactory coding

Laurent, G. (Germany)

Professor Gilles Laurent

Gilles Laurent spent the first 11 years of his life in Morocco, before moving to France, where he studied veterinary medicine and neuroethology (Toulouse). He was rescued from a large-animal vet practice by Malcolm Burrows, who offered him a postdoc in his lab in 1985. Gilles spent the next four-and-a-half years in Cambridge and learned neuroscience from Malcolm Burrows, Simon Laughlin and Roger Hardie who were his neighbours. In 1990, Gilles moved to the California Institute of Technology and remained on its faculty until 2009. In August 2009, Gilles moved to the Max-Planck-Institute for Brain Research in Frankfurt, where Erin Schuman, Peter Mombaerts and he are co-directors of a new Institute focused on neural circuits. Gilles' research interests are in neural coding and network architecture. He is particularly interested in dynamics and the emergent properties of systems. His lab has worked principally on olfactory coding over the past 15 years, with occasional forays into vision and motor control.



09:30 – 10:00 MORNING TEA/EXHIBITION/POSTERS

Location: Bayside Grand Hall

10:00 – 12:00

SYMPOSIUM 1

FROM MOLECULAR MOTORS TO NEURODEGENERATION

Sponsored by Brain and Mind Research Institute

Chairs: A/Prof Brett Garner, Prince of Wales Medical Research
Institute, NSW

Professor James Vickers, University of Tasmania, TAS

Location: Bayside Auditorium A

10:00 SYM-01-01

Regulation of fast axonal transport and adult-onset
neurodegenerative disease

Brady, S.T. and Morfini, G.A. (USA)

10:30 SYM-01-02

Molecular mechanism of impaired axonal transport in
Alzheimer's disease models

Götz, J. (Australia)

11:00 SYM-01-03

Hyperexcitability, persistent Na⁺ conductances and
neurodegeneration in motor neurone disease

Kiernan, M.C. (Australia)

11:30 SYM-01-04

Neurodegeneration in ALS and AD: which comes first the
axon or the soma

Dickson, T.C. (Australia)

10:00 – 12:00

SYMPOSIUM 2

ION CHANNEL DYNAMICS

Sponsored by Victor Chang Cardiac Research Institute

Chair: A/Prof Jamie Vandenberg, Victor Chang Cardiac Research Institute, NSW
Location: Bayside 103

- 10:00** **SYM-02-01**
Molecular mechanisms of K⁺ channel activation and inactivation gating
Perozo, E. (USA)
- 10:30** **SYM-02-02**
Gating in inward rectifier potassium channels
Clarke, O.B., Caputo, A.T., Hill, A., Vandenberg, J., Smith, B.J. and **Gulbis, J.M.** (Australia)
- 11:00** **SYM-02-03**
The TRPC6 non-selective cation channel and cardiac α 1-adrenergic receptor signaling
Mohl, M., Xiao, X., Iismaa, S.E., Prosser, H., Wu, S.X., Yu, J., Allen, D., Feneley, M. and **Graham, R.M.** (Australia)
- 11:30** **SYM-02-04**
Title not available at time of publication.
Cook, D.I. (Australia)

10:00 – 12:00

ORAL SESSION 1

MUSCLES AND THEIR NEURAL CONTROL

Chair: Professor Graham Lamb, La Trobe University, VIC

Location: Bayside 102

- 10:00 ORAL-01-01**
Spinal inhibition during a sustained submaximal effort
McNeil, C.J., Giesebrecht, S., Taylor, J.L. and **Gandevia, S.C.** (Australia)
- 10:15 ORAL-01-02**
Pain changes the gain of postural responses
Hodges, P.W., Simms, K. and Tsao, H. (Australia)
- 10:30 ORAL-01-03**
Force control in the lower limb after stroke
McNulty, P.A. (Australia)
- 10:45 ORAL-01-04**
Substantia nigra echomorphology and motor cortex excitability
Todd, G., Taylor, J.L., Baumann, D., Butler, J.E., Duma, S.R., Hayes, M., Carew-Jones, F., Piguet, O., Behnke, S., Ridding, M.C., Berg, D. and Double, K.L. (Australia and Germany)
- 11:00 ORAL-01-05**
GABA-deficient mice regulate survival of hypoglossal and brachial, but not lumbar motoneurons during embryonic development
Smallcombe, K.L., Yanagawa, Y., Obata, K., Noakes, P.G. and Bellingham, M.C. (Australia and Japan)

- 11:15** **ORAL-01-06**
Myostatin inhibition attenuates atrophy and loss of muscle function in mice with cancer cachexia
Murphy, K.T., Chee, A. and Lynch, G.S. (Australia)
- 11:30** **ORAL-01-07**
Store-Operated Ca^{2+} entry in intact skeletal muscle fibres from healthy and dystrophic mice
Cully, T.R., Edwards, J.N., Stephenson, D.G., Friedrich, O. and Launikonis, B.S. (Australia)
- 11:45** **ORAL-01-08**
In vitro interactions between the β_{1A} subunit of the skeletal muscle DHPR and RyR1
Rebbeck, R., Karunasekara, Y., Gallant, E.M., Weaver, L., Beard, N.A., Casarotto, M.G. and **Dulhunty, A.F.** (Australia)

10:00 – 12:00

ORAL SESSION 2

VISION: FORM AND MOTION

Chair: Dr Alex Holcombe, University of Sydney, NSW

Location: Bayside 105

- 10:00 ORAL-02-01**
Spatiotemporal aliasing and the neural delay of motion detectors in nocturnal hawkmoths
O'Carroll, D.C., Theobald, J.C. and Warrant, E.J. (Australia and Sweden)
- 10:15 ORAL-02-02**
Distinct synaptic mechanisms mediate orthogonal orientation selectivity in rabbit retinal ganglion cells
Venkataramani, S. and **Taylor, W.R.** (USA)
- 10:30 ORAL-02-03**
Activity independent development of direction-selective circuitry in the mammalian retina
Sun, L., Han, X. and **He, S** (China)
- 10:45 ORAL-02-04**
Temporal limits for predicting stimulus changes and perception from single MT/MST neurons
Price, N.S.C. and Born, R.T. (USA and Australia)
- 11:00 ORAL-02-05**
Neural evidence for an extra-retinal mechanism underlying post-saccadic enhancement of visual sensitivity
Cloherly, S.L., Crowder, N.A., Mustari, M.J. and Ibbotson, M.R. (Australia and USA)

- 11:15** **ORAL-02-06**
Anisotropies in the response of human visual cortex to
grating orientation
Mannion, D.J., McDonald, J.S. and Clifford, C.W.G.
(Australia)
- 11:30** **ORAL-02-07**
Visual motion gradient sensitivity reveals integration
properties of global motion perception
Meso, A.I. and Hess, R.F. (Canada)
- 11:45** **ORAL-02-08**
Low intensity transcranial magnetic stimulation can
improve detection of visual stimuli
Abrahamyan, A., Clifford, C.W.G., Arabzadeh, E. and
Harris, J.A. (Australia)

10:00 – 12:00

ORAL SESSION 3

MOOD DISORDERS AND PSYCHOPHARMACOLOGY

Chair: A/Prof Cristina Morganti-Kossmann, National Trauma Research Institute, VIC

Location: Bayside 106

- 10:00 ORAL-03-01**
Regionally specific changes in levels of tumour necrosis factor in the dorsolateral prefrontal cortex obtained postmortem from subjects with major depressive disorder
Dean, B., Tawadros, N., Scarr, E. and Gibbons, A.S. (Australia)
- 10:15 ORAL-03-02**
The brain-specific microRNA, miR-128-2, belongs to an activity-dependent gene regulatory network associated with fear extinction
Lin, Q., Sun, Y. and **Bredy, T.** (USA and Australia)
- 10:30 ORAL-03-03**
Mapping microglial activation following chronic stress and exploring its implications for the regulation of mood state
Walker, F.R., Tynan, R., Hinwood, M.H., Ng, A., Smith, D., Nalivaiko, E. and Day, T.A. (Australia)
- 10:45 ORAL-03-04**
Olanzapine-induced metabolic dysfunction: a role for central muscarinic M3 receptors
Weston-Green, K., Huang, X.-F., Lian, J. and **Deng, C.** (Australia)

- 11:00 ORAL-03-05**
Antipsychotics reduce the power of ongoing gamma frequency oscillations, but only LY379268 attenuates ketamine-induced increases in gamma power
Jones, N.C., Reddy, M., Salzberg, M.R., O'Brien, T.J. and Pinault, D. (Australia and France)
- 11:15 ORAL-03-06**
Differential effects of the synthetic cannabinoid HU210 in adolescent and adult brain: focus on serotonin
Zavitsanou, K., Dalton, V.S., Wang, H. and Nguyen, V. (Australia)
- 11:30 ORAL-03-07**
Cognitive enhancement by GABA_C receptor antagonists
Kim, H.-L., Kumar, R.J., Hanrahan, J.R., Fernandez, S.P., Johnston, G.A.R. and Chebib, M. (Australia)
- 11:45 ORAL-03-08**
Chemotherapy causes memory and executive function deficits in rats
Johnston, I.N., Fardell, J. and Vardy, J. (Australia)

12:00 – 12:30	LUNCH (Lunch Provided)
Location:	Bayside Grand Hall
12:00 – 14:00	AUSTRALIAN BRAIN BEE CHALLENGE – NATIONAL FINAL
Location:	Bayside 104
12:30 – 14:30	POSTER VIEWING/EXHIBITION
	<i>Presenters of odd numbered posters in attendance 12:30 – 13:30</i>
	<i>Presenters of even numbered posters in attendance 13:30 – 14:30</i>
Location:	Bayside Grand Hall

14:30 – 16:30

SYMPOSIUM 3

MOLECULAR MECHANISMS OF NEURONAL GROWTH
AND PLASTICITY

Chair: A/Prof Helen Cooper, Queensland Brain Institute, QLD

Location: Bayside Auditorium A

- 14:30** **SYM-03-01**
The actin cytoskeleton and synaptic plasticity
Matus, A.I. (Switzerland)
- 15:00** **SYM-03-02**
Seizure-related gene 6 affects filopodial dynamics and
dendritic arbor development
Gunnensen, J.M., Barwood, J.M., Hammond, V.E., Britto,
J.M., Mateos, J.-M., Sonderegger, P., Faber, E.S.L., Sah, P.
and Tan, S.-S. (Australia and Switzerland)
- 15:30** **SYM-03-03**
Identification of the proline rich inositol polyphosphate 5-
phosphatase (PIPP): CRMP2 polarity complex that
regulates neurite outgrowth
Mitchell, C.A., Astle, M., Ooms, L., Cole, A.R., Binge, L.,
Petratos, S., McLean, C. and Sutherland, C. (Australia and
UK)
- 16:00** **SYM-03-04**
Regulation of calcium homeostasis in growth cone motility
Gasparini, R., Mitchell, C.B. and **Foa, L.** (Australia)

14:30 – 16:30

SYMPOSIUM 4

**AUDITORY NEUROSCIENCE – NEURONAL SIGNALING IN
DEVELOPMENT, REPAIR AND INNOVATION IN BIONICS**

Sponsored by Garvan Institute of Medical Research

Chair: Professor Gary Housley, University of New South Wales,
NSW

Location: Bayside 103

- 14:30** **SYM-04-01**
From plasticity to stability of brain circuitry: a lesson from
studies of cell death and cell survival in the cochlear
nucleus
Rubel, E.W., Harris, J.A. and Wang, Y. (USA)
- 15:00** **SYM-04-02**
Microfluidics and micropatterning for the in vitro
evaluation of neurite targeting in the spiral ganglion
Ryan, A.F. (USA)
- 15:30** **SYM-04-03**
Cochlear pathologies: from animal models to feasible
clinical treatments
Pujol, R. and Puel, J.L. (France)
- 16:00** **SYM-04-04**
Medical bionics in deafness: current and future
developments
Shepherd, R.K. (Australia)

14:30 – 16:30

SYMPOSIUM 5

**ENERGY EXPENDITURE AND BODY WEIGHT - NEW VIEWS
OF AN OLD VISTA**

Chair: Professor Iain Clarke, Monash University, VIC

Location: Bayside 104

- 14:30** **SYM-05-01**
Central neural control of Brown Adipose Tissue.
Implications for therapeutic strategies
Oldfield, B.J. (Australia)
- 15:00** **SYM-05-02**
Brown adipose tissue and variations in basal metabolic rate
Blessing, W.W. (Australia)
- 15:30** **SYM-05-03**
New insights into the regulation of energy expenditure in
skeletal muscle
Henry, B.A. (Australia)
- 16:00** **SYM-05-04**
The role of AMPK in the regulation of fat oxidation and
energy expenditure
Cooney, G.J. (Australia)

14:30 – 16:30

ORAL SESSION 4

CHANNELS AND TRANSPORTERS

Chair: Dr Brett Cromer, Howard Florey Institute, VIC

Location: Bayside 102

- 14:30 ORAL-04-01**
Identification of components of a glutamate homeostasis complex in astrocytes
Poronnik, P., Lee, A. and Pow, D.V. (Australia)
- 14:45 ORAL-04-02**
Phenylalanine 124 at GABA_C rho1 receptors influences the on-off time constants for GABA
Carland, J.E., Yamamoto, I., Habashy, D., Abdel-Halim, H., Absalom, N., Hanrahan, J.R. and Chebib, M. (Australia)
- 15:00 ORAL-04-03**
Differential expression of glycine receptor subunits in the rat basolateral and central amygdala
Delaney, A.J., Esmaili, A., Sedlak, P.L., Lynch, J.W. and Sah, P. (Australia and Iran)
- 15:15 ORAL-04-04**
Loop 9 residues adjacent to loop 2 are involved in glycine receptor activation
Cederholm, J.M.E., Sugiharto, S., Schofield, P.R. and Lewis, T.M. (Australia)
- 15:30 ORAL-04-05**
Modulation of KCC2 function by tyrosine phosphorylation
Moorhouse, A.J., Watanabe, M., Wake, H. and Nabekura, J. (Australia and Japan)

- 15:45** **ORAL-04-06**
The epilepsy associated GABA_A receptor γ_2 R43Q mutation increases sensitivity to Zn²⁺ inhibition
Bennetts, B., Walsh, P.J., Tan, K.S., Cromer, B.A., Clarke, A.L., Petrou, S. and Parker, M.W. (Australia)
- 16:00** **ORAL-04-07**
Altered CRAC channel gating in the Orai1 E106D mutant
Scrimgeour, N.R. and Rychkov, G.Y. (Australia)
- 16:15** **ORAL-04-08**
Further analysis of counterion permeation through anion channels: liquid junction potentials and offset corrections
Barry, P.H., Sugiharto, S., Lewis, T.M. and Moorhouse, A.J. (Australia)

14:30 – 16:30

ORAL SESSION 5

ALZHEIMER'S DISEASE

Chair: A/Prof Anthony Hannan, Howard Florey Institute, VIC

Location: Bayside 105

14:30 ORAL-05-01

The tau amino-terminus in A β toxicity in mouse models of Alzheimer's disease

Ittner, L.M., Ke, Y.D., Staufenbiel, M., Hardeman, E. and Goetz, J. (Australia)

14:45 ORAL-05-02

Upper airway dysfunction and brainstem tauopathy in ageing Tau-P301L mice: possible implication for Alzheimer disease

Menuet, C., Dutschmann, M., Stettner, G., Gestreau, C., Hilaire, G. and Van Leuven, F. (France, UK, Germany and Belgium)

15:00 ORAL-05-03

Rescue of spatial learning performance in Alzheimer's disease mice by knockdown of the p75 neurotrophin receptor

Barrett, G.L. and Murphy, M. (Australia)

15:15 ORAL-05-04

Intramuscular delivery of a single chain antibody gene prevents brain A β deposition and cognitive impairment in a mouse model of Alzheimer's disease

Wang, Y.J., Gao, C.Y., Yang, M., Pollard, A., Valadares, D., Liu, X.H., Wu, X.B., Zhong, J.H., Zhou, H.D. and **Zhou, X.F.** (Australia and China)

- 15:30 ORAL-05-05**
A β decreases AMPARs on the cell surface by increasing intracellular calcium and phosphorylation of GluR2
Liu, S.J., Gasperini, R.J., Foa, L.C. and Small, D.H. (Australia)
- 15:45 ORAL-05-06**
Cofilin and phosphorylated tau co-localize in Alzheimer-like cytoskeletal inclusions triggered by energy depletion or amyloid peptides
Goldsbury, C., Bamburg, J.R., Cullen, K.M., Gervasio, O.L., Goh, D., Guillemin, G.J., Minamide, L.S., Nergenu, D., Weil, M.-T. and Whiteman, I.T. (Australia and USA)
- 16:00 ORAL-05-07**
The excitotoxin quinolinic acid increases tau phosphorylation. A new neurotoxic mechanism for Alzheimer's disease
Raham, A., Ting, K., Cullen, K.M., Braidy, N., Brew, B.J. and **Guillemin, G.J.** (Kuwait and Australia)
- 16:15 ORAL-05-08**
Different dominant effects from different truncations of *PRESENILIN1*
Verdile, G., Newman, M., Wilson, L., Wijaya, L., Martins, R.N. and **Lardelli, M.** (Australia)

14:30 – 16:15

ORAL SESSION 6

NEUROTECHNIQUES

Chair: Dr Atomu Sawatari, University of Sydney, NSW

Location: Bayside 106

- 14:30 ORAL-06-01**
Development of an improved ivermectin-activated receptor for neuronal silencing
Lynagh, T.L., Webb, T.I. and **Lynch, J.W.** (Australia)
- 14:45 ORAL-06-02**
Functional enhancer trapping in the zebrafish optic tectum
Human, T. and **Scott, E.** (Australia)
- 15:00 ORAL-06-03**
Extracellular recording of viscerofugal neurons in colon
Hibberd, T.J. and Brookes, S.J.H. (Australia)
- 15:15 ORAL-06-04**
High resolution fibre optic colonic manometry in patients with slow transit constipation indicates the potential of signal aliasing and misinterpretation of propagating events
Arkwright, J.W., Szczesniak, M.M., Wiklendt, L., Lubowski, D.Z. and Dinning, P.G. (Australia)
- 15:30 ORAL-06-05**
Synchrotron x-ray fluorescence microscopy: high definition mapping of trace elements in the hippocampus in a model of closed-head traumatic brain injury
Myers, D.E., Ryan, C.G., Kirkham, R., Cardamone, L., Paterson, D., Altissimo, M., O'Brien, T.J., Jones, N.C. and Moorhead, G. (Australia)

- 15:45** **ORAL-06-06**
Fast method for precise phosphene threshold identification
in research using transcranial magnetic stimulation
Abrahamyan, A., Clifford, C.W.G. and Harris, J.A.
(Australia)
- 16:00** **ORAL-06-07**
In vivo 2-Photon imaging of laser-mediated micro-lesions
in the adult brain
Canty, A.J., Huang, L. and De Paola, V. (UK)

16:30 – 17:00 **AFTERNOON TEA/EXHIBITION/POSTERS**
Location: Bayside Grand Hall

17:00 – 18:00

PLENARY 2

AuPS INVITED LECTURE

Chair: Professor Graham Lamb, La Trobe University, VIC
Location: Bayside Auditorium A

PLE-MON-02

Analgesic conotoxins modulating pain pathways
Adams, D.J. (Australia)

Professor David J. Adams

David Adams was awarded BSc (Hons I) in 1974 and PhD in physiology under the supervision of Peter Gage from UNSW in 1979. He received his postdoctoral training with Bertil Hille at the University of Washington, Seattle (1978-1980) and with David Colquhoun at University College London (1981- 1983). He was appointed as Assistant Professor at the University of Miami School of Medicine, Miami, FL in 1984, promoted to Professor in 1993 before returning to Australia in



1995 to take up the Chair of Physiology at the University of Queensland. He was Head of Department of Physiology & Pharmacology (1998-2000) and Head of the School of Biomedical Sciences (2000-2007) before joining the Queensland Brain Institute as a Professorial Research Fellow. In mid-2009, he moved to RMIT University, Melbourne as Director of the Health Innovations Research Institute. Professor Adams' research interests are in the expression, function and modulation of ion channels. His recent research has identified novel peptides obtained from the venom of cone snails as probes for ion channel structure and function and as potential analgesics. He is currently President of the Australian Physiological Society (AuPS).

18:30 **AuPS HISTORICAL LECTURE/
50th ANNIVERSARY COCKTAIL PARTY**

Location: Eastern Avenue Auditorium, University of Sydney

08:00 – 09:00

PLENARY 3

**THE PHYSIOLOGICAL SOCIETY (UK)
EXCHANGE LECTURE**

Chair: Professor David Allen, University of Sydney, NSW

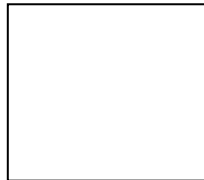
Location: Bayside Auditorium A

PLE-TUE-03

Brain power: how the brain's energy supply determines the computational power of neurons

Attwell, D. (UK)

Professor David Attwell



David Attwell did an undergraduate degree in physics and a PhD in neurophysiology with Julian Jack in Oxford, followed by post-doctoral work on the retina with Frank Werblin in Berkeley, before joining the Physiology Department at University College London. He has worked extensively on neuron-glial interactions in the brain, particularly on how, in conditions of energy deprivation such as stroke, perinatal

asphyxia and spinal cord injury, glutamate transporters reverse and release glutamate, which damages neurons and oligodendrocytes. His recent work has been on the energy supply and energy use of the brain, how energy provision determines the computational power of neurons, and the consequences of a loss of energy supply in pathological conditions. Specific recent findings include the discovery of a type of oligodendrocyte precursor glial cell which fires action potentials, and showing that brain blood flow can be controlled at the capillary level by contractile cells called pericytes. He was made a Fellow of the Royal Society in 2001.

09:00 – 09:30 MORNING TEA/EXHIBITION/POSTERS

Location: Bayside Grand Hall

09:30 – 11:30

SYMPOSIUM 6

**NEUROHARDWARE:
RESTORING BRAIN FUNCTION AND BIONICS**

Chair: Dr Brendan O'Brien, Australian National University, ACT

Location: Bayside Auditorium A

- 09:30** **SYM-06-01**
Precise and patterned electrical stimulation of the retina for
prosthetic design
Chichilnisky, E.J. (USA)
- 10:00** **SYM-06-02**
Vision prosthesis - where engineering meets neuroscience
Suaning, G. (Australia)
- 10:30** **SYM-06-03**
Analogue VLSI modelling of signal processing in the
auditory pathway
Van Schaik, A. (Australia)
- 11:00** **SYM-06-04**
Neural interface systems to restore movement in paralysis
Donoghue, J.P. (USA)

09:30 – 11:30

SYMPOSIUM 7

**TRP AND STORE OPERATED Ca²⁺ CHANNELS IN
HEALTH AND DISEASE**

Chair: Dr Grigori Rychkov, University of Adelaide, SA

Location: Bayside 103

- 09:30 SYM-07-01**
Role of calcium signalling in prostate cancer
Bidaux, G., Gordienko, D., Flourakis, M., Skryma, R. and
Prevarskaya, N. (France and UK)
- 10:00 SYM-07-02**
TRP channels in mechanosensation and chemosensation in
visceral afferents
Brierley, S.M., Hughes, P.A., Page, A.J., Harrington, A.M.
and **Blackshaw, L.A.** (Australia)
- 10:30 SYM-07-03**
Ca²⁺ influx in duchenne muscular dystrophy - membrane
tears, SACs, SOCs, TRPC1, or TRPV2
Allen, D.G., Yeung, E.W., Gervasio, O.L. and Whitehead,
N.P. (Australia, Hong Kong and USA)
- 11:00 SYM-07-04**
The role of TRP channels in oxidative stress damage in
liver
Barritt, G.J. and Rychkov, G.Y. (Australia)

09:30 – 11:30

SYMPOSIUM 8

**GET MOVING – CELL MIGRATION DURING
DEVELOPMENT**

Sponsored by Florey Neuroscience Institutes

Chair: Professor Seong-Seng Tan, Howard Florey Institute, VIC
Location: Bayside 104

- 09:30** **SYM-08-01**
Insight into the roles of Elongator in cerebral cortical
neurogenesis
Nguyen, L. (Belgium)
- 10:00** **SYM-08-02**
Co-ordinating neural crest stem cell migration with cell
specification
Schwarz, Q., Kabarra, S., Scherer, M., Davidson, K. and
Ruhrberg, C. (Australia and UK)
- 10:30** **SYM-08-03**
Master control of cortical neuron migration and maturation
Heng, J.I. (Australia)
- 11:00** **SYM-08-04**
Activation of signal transduction pathways during neuronal
migration in corticogenesis
Thomas, T. and Voss, A.K. (Australia)

09:30 – 11:30

ORAL SESSION 7

NEURONAL EXCITABILITY

Chair: A/Prof Heather Young, University of Melbourne, VIC

Location: Bayside 102

- 09:30 ORAL-07-01**
Topiramate modulates axonal ion channel function *in vivo*
Krishnan, A.V., Park, S.B., Lin, C.S., Zagami, A.S. and Kiernan, M.C. (Australia)
- 09:45 ORAL-07-02**
Region- and transmitter-specific involvement of presynaptic sodium channels in selective inhibition of glutamate vs. GABA release by volatile anaesthetics
Westphalen, R.I., Yu, J., Jih, T.-Y., Krivitski, M. and Hemmings, H.C. Jr (USA)
- 10:00 ORAL-07-03**
Dopaminergic and GABAergic neurons in the mouse ventral tegmental area
Chieng, B., Azriel, Y., Mohammadi, S. and Christie, M.J. (Australia)
- 10:15 ORAL-07-04**
Corticostriatal plasticity after visual activation of subcortical pathways
Schulz, J.M., Redgrave, P. and Reynolds, J.N.J. (New Zealand and UK)

- 10:30** **ORAL-07-05**
Adenosine receptor mediated cellular and synaptic changes underlying local network modulation by adenosine receptor acting drugs
Pietersen, A.N.J. and Vreugdenhil, M. (UK)
- 10:45** **ORAL-07-06**
Presynaptic scaling: a novel homeostatic scaling plasticity
Lin, Y.Q., Gonzalez, J.M., Day, W.A. and **Karunanithi, S.** (USA and Australia)
- 11:00** **ORAL-07-07**
Altered synaptic plasticity in intersectin-1 null mice
Lim, X.M., Coleman, H.A., Alexopoulos, N., Ruetens, D.C., Pritchard, M.A. and Parkinson, H.C. (Australia)
- 11:15** **ORAL-07-08**
Suppressing tonic inhibition *in vivo* mediates post-stroke functional improvements
Clarkson, A.N., Overman, J.J., Huang, B., Mody, I. and Carmichael, S.T. (USA and New Zealand)

09:30 – 11:30

ORAL SESSION 8

**PARKINSON'S DISEASE AND OTHER
NEURODEGENERATIVE DISEASES**

Chair: Dr Paul Lockhart, Murdoch Childrens Research Institute,
VIC
Location: Bayside 105

- 09:30 ORAL-08-01**
Lysosomal function in Parkinson's disease
Cottam, V.A., Halliday, G.M. and **Double, K.L.**
(Australia)
- 09:45 ORAL-08-02**
Excitability regulates tyrosine hydroxylase expression in
substantia nigra neurons
Egan, K., Lim, J., Horne, M.K. and **Aumann, T.D.**
(Australia)
- 10:00 ORAL-08-03**
Analysis of tyrosine hydroxylase isoforms and
phosphorylation in Parkinson disease
Shehadeh, J., Double, K.L., Reyes, S., Dunkley, P.R.,
Halliday, G.M. and **Dickson, P.W.** (Australia)
- 10:15 ORAL-08-04**
Alpha-synuclein and Parkinson's disease: inter-
relationships of mutants that sensitise cells to alpha-
synuclein toxicity
Kong, S., Thorp, S., Chan, B., Hill, K. and **Cooper, A.**
(Australia)

- 10:30** **ORAL-08-05**
Proteasome inhibition induced re-localization and aggregation of TDP-43 in neuronal cells
Van Eersel, J., Ke, Y.D., Bi, M., Gotz, J., Kril, J.J. and Ittner, L.M. (Australia)
- 10:45** **ORAL-08-06**
TRPM8 channels are necessary for transthyretin-induced calcium influx in sensory neurons
Gasperini, R.J., Foa, L.C. and Small, D.H. (Australia)
- 11:00** **ORAL-08-07**
Hypothalamic changes in Huntington disease
Petersen, A. (Sweden)
- 11:15** **ORAL-08-08**
IL-10-819 polymorphism and pathology in Parkinson's disease
Chan, S., Huang, Y. and **Halliday, G.** (Australia)

09:30 – 11:30

ORAL SESSION 9

AUTONOMIC AND ENTERIC NERVOUS SYSTEM

Chair: Professor Paul Pilowsky, Macquarie University, NSW

Location: Bayside 106

09:30 ORAL-09-01

Concurrent recording of spontaneous muscle sympathetic nerve activity and whole-brain fMRI signal intensity: real-time imaging of cardiovascular control in awake human subjects

Macefield, V.G., James, C. and Henderson, L.A. (Australia)

09:45 ORAL-09-02

Chronic footshock stress causes enduring changes in circadian rhythms, without provoking hypertension in rats
Beard, D., Bondarenko, E., Beig, M.I., Jobling, P., Walker, F.R., Day, T.A., Bobrovskaya, L. and **Nalivaiko, E.** (Australia)

10:00 ORAL-09-03

Diet-induced obesity alters sympathetic neurotransmission in rat small mesenteric arteries
Haddock, R.E. and Hill, C.E. (Australia)

10:15 ORAL-09-04

The heater is cold, the house is warm: nonshivering thermogenesis without brown adipose tissue
Vianna, D.M.L., Marks, A. and Carrive, P. (Australia)

- 10:30 ORAL-09-05**
Why gut smooth muscle needs to "equilibrate" before enteric motor innervation becomes fully functional
Carbone, S.E., Wattchow, D.A., Spencer, N.J. and Brookes, S.J.H. (Australia)
- 10:45 ORAL-09-06**
Stem cell therapy to treat intestinal motility disorders: *in vivo* studies using a mouse model
Hotta, R., Stamp, L., Thacker, M., Pontell, L., Bergner, A., Anderson, R., Furness, J., Newgreen, D. and Young, H. (Australia)
- 11:00 ORAL-09-07**
Exploring short term plasticity in guinea-pig myenteric neurons
Bertrand, R.L., Michel, K., Schemann, M. and Bertrand, P.P. (Australia and Germany)
- 11:15 ORAL-09-08**
Characterisation of voltage-gated sodium and calcium channel expression in the guinea-pig enteric nervous system and changes induced by intestinal inflammation
Bron, R., Hunne, B.L., Nurgali, K. and Furness, J.B. (Australia)

11:30 – 12:00	LUNCH (Lunch Provided)
Location:	Bayside Grand Hall
12:00 – 14:00	POSTER VIEWING/EXHIBITION
	<i>Presenters of odd numbered posters in attendance 12:00 – 13:00</i>
	<i>Presenters of even numbered posters in attendance 13:00 – 14:00</i>
Location:	Bayside Grand Hall

14:00 – 16:00

SYMPOSIUM 9

**INNOVATIVE MICROSCOPY; NEW APPROACHES TO
FLUORESCENCE MICROSCOPY**

Sponsored by Carl Zeiss Pty Ltd

Chairs: Professor David Allen, University of Sydney, NSW
Dr Sam Solomon, University of Sydney, NSW

Location: Bayside Auditorium A

- 14:00** **SYM-09-01**
Super-resolution fluorescence microscopy for cell signaling
Gaus, K. (Australia)
- 14:30** **SYM-09-02**
Influence of caveolin-3 upon membrane raft lipids and its
implications for trafficking in muscle
Gervasio, O.L., Cole, L., Phillips, W.D. and Allen, D.G.
(Australia)
- 15:00** **SYM-09-03**
Imaging tubular system, sarcoplasmic reticulum and
myoplasmic calcium with novel fluorescence methods
Launikonis, B.S. (Australia)
- 15:30** **SYM-09-04**
New insights into the experience-dependent emergence of
functional circuits in visual cortex derived from *in vivo* 2-
photon microscopy
Fitzpatrick, D., Li, Y., Vanhooser, S., White, L. and
Christensson, M. (USA)

14:00 – 16:00

SYMPOSIUM 10

GASTROINTESTINAL MOTILITY: NEURAL OR MYOGENIC?

Chairs: Professor Marcello Costa, Flinders University of South Australia, SA
Professor Joel Bornstein, University of Melbourne, VIC
Location: Bayside 103

- 14:00 SYM-10-01**
The first intestinal motility patterns in fetal mice are not mediated by neurons or interstitial cells of Cajal
Roberts, R.R., Ellis, M., Gwynne, R.M., Bergner, A.J., Lewis, M., Beckett, E.A., Bornstein, J.C. and **Young, H.M.** (Australia)
- 14:30 SYM-10-02**
Role of interstitial cells of Cajal in gastrointestinal motility
Ward, S.M. (USA)
- 15:00 SYM-10-03**
Colonic peristalsis: how does it work?
Keating, D.J., Gregory, S. and **Spencer, N.J.** (Australia)
- 15:30 SYM-10-04**
Integration of sensory information by multi-functional enteric neurons
Bertrand, P.P. (Australia)

14:00 – 16:00

SYMPOSIUM 11

**STRUCTURE AND REGULATION OF EPITHELIAL
TRANSPORTERS**

Chair: Professor Daniel Markovich, University of Queensland,
QLD

Location: Bayside 104

- 14:00** **SYM-11-01**
Sugar and amino acid symporters: common structure and
mechanism
Wright, E.M. (USA)
- 14:30** **SYM-11-02**
Identification of a distal GLUT4 trafficking event
controlled by actin polymerization
James, D.E. (Australia)
- 15:00** **SYM-11-03**
Transport metabolons in the apical membrane
Broer, S. (Australia)
- 15:30** **SYM-11-04**
NaS1 sulfate transporter, hyposulfataemia and autism
Dawson, P.A., Bowling, F.G., Heussler, H.S. and
Markovich, D. (Australia)

14:00 – 16:00

ORAL SESSION 10

BRAIN DISEASE AND OXIDATIVE STRESS

Chair: Dr Darryl Eyles, Queensland Brain Institute, QLD

Location: Bayside 102

- 14:00 ORAL-10-01**
Dental Pulp Stem Cell transplantation improves functional outcome in a rodent model of ischaemic stroke
Henshall, T., Leong, W.K., Arthur, A., Warming, S., Lewis, M., Gronthos, S. and **Koblar, S.A.** (Australia)
- 14:15 ORAL-10-02**
Oxidative stress in astrocytes: a trigger for secondary degeneration?
Fitzgerald, M., Bartlett, C.A., Harvey, A.R. and Dunlop, S.A. (Australia)
- 14:30 ORAL-10-03**
Interrupting the inflammatory cycle in chronic diseases
Nicholson, L.F.B., Chevyreva, I. and Green, C.R. (New Zealand)
- 14:45 ORAL-10-04**
Peroxiredoxin IV is a neuronal protein and associated with Lewy body formation in dementia with Lewy bodies and Parkinson's disease
Power, **J.H.T.** (Australia)
- 15:00 ORAL-10-05**
Time to fatigue is increased in mouse muscle at 37°C; the role of iron and ROS
Reardon, T.F. and Allen, D.G. (Australia)

- 15:15 ORAL-10-06**
Anti-epileptic effects of triheptanoin feeding in chronic epilepsy mouse models
Willis, S., Stoll, J. and **Borges, K.** (USA and Australia)
- 15:30 ORAL-10-07**
A genetic epilepsy rat model displays endophenotypes of psychosis
Jones, N.C., Martin, S., Megatia, I., Hakami, T., Salzberg, M.R., Pinault, D., Morris, M.J., O'Brien, T.J. and **Van den Buuse, M.** (Australia and France)
- 15:45 ORAL-10-08**
The effect of amygdala kindling on neuronal firing patterns in the thalamus: implications for the resistance to kindling of gaers
Carcak, N., Onat, F., French, C., Ali, I., Pinault, D. and **O'Brien T.J.** (Turkey, France and Australia)

14:00 – 16:00

ORAL SESSION 11

PAIN

Chair: A/Prof Kevin Keay, University of Sydney, NSW

Location: Bayside 105

- 14:00 ORAL-11-01**
Somatopic representation of muscle pain in the human insular cortex: fMRI evidence of intra-limb somatotopy
Henderson, L.A., Rubin, T.K. and Macefield, V.G. (Australia)
- 14:15 ORAL-11-02**
Sciatic nerve injury causes distinct changes in different classes of nociceptors
Forrest, S.L., Osborne, P.B. and Keast, J.R. (Australia)
- 14:30 ORAL-11-03**
Identification of vagal mechano-nociceptor endings in the guinea pig oesophagus
Reynolds, B.J., Montes, N.A. and Brookes, S.J.H. (Australia)
- 14:45 ORAL-11-04**
Vibration-evoked allodynia mediated by unmyelinated tactile afferents in human hairy skin
Nagi, S.S., Rubin, T.K., Macefield, V.G. and Mahns, D.A. (Australia)

- 15:00 ORAL-11-05**
Brain responses to noxious thumbnail pressure are reduced during the application of a heterotopic noxious conditioning stimulus
Cole, L.J., Gavrilescu, M., Egan, G.F. and Farrell, M.J. (Australia)
- 15:15 ORAL-11-06**
Rectal mechanoreceptors in wild type and lethal spotted mutant mice that lack a visceromotor pain reflex to rectal distension
Zagorodnyuk, V.P., Nicholas, S., Brookes, S.J.H. and Spencer, N.J. (Australia)
- 15:30 ORAL-11-07**
MicroRNA-143 in murine sensory DRG neurons
Bastian, I., Tam Tam, S., Gibbins, I.L., Zhou, X.F., Michael, M.Z. and **Haberberger, R.V.** (Australia)
- 15:45 ORAL-11-08**
 α 1-adrenergic receptor expression on sensory afferents in normal skin
Dawson, L.F., Inglis, J.J., Finch, P.M., Drummond, P.D. and **Phillips, J.K.** (Australia)

14:00 – 16:00

ORAL SESSION 12

CELL SIGNALLING

Chair: Professor John Rostas, University of Newcastle, NSW
Location: Bayside 106

- 14:00 ORAL-12-01**
Tyrosine hydroxylase activity used to determine active catecholaminergic circuits in mesolimbic pathways responding to stressors
Damanhuri, H., Ong, L.K., Bobrovskaya, L.B., Dunkley, P.R. and **Goodchild, A.K.** (Australia)
- 14:15 ORAL-12-02**
Huntingtin-associated protein 1 (HAP-1) is a novel regulator of exocytosis
Mackenzie, K., Phillips, L., Zhou, X.-F. and Keating, D. (Australia)
- 14:30 ORAL-12-03**
A high throughput method for studying synaptic vesicle endocytosis
Daniel, J.A., Malladi, C. and Robinson, P.J. (Australia)
- 14:45 ORAL-12-04**
Ndfip1 promotes ubiquitylation and nuclear translocation of PTEN during neuronal survival following brain injury
Low, L.H., Goh, C.P., Howitt, J. and Tan, S.S. (Australia)

- 15:00 ORAL-12-05**
MyD88, changing the outcome of stroke through communication
Downes, C.E., Wong, C., Guio-Aguliar, P. and Crack, P.J. (Australia)
- 15:15 ORAL-12-06**
Calcium release from inositol 1,4,5-trisphosphate receptors influences cardiac pacemaker function in mouse sino-atrial node
Ju, Y.K., Lee, B.H., Lai, D., Woodcock, E.A., Cannell, M.B. and Allen, D.G. (Australia, New Zealand)
- 15:30 ORAL-12-07**
The ubiquitylation of DMT1 by Ndfip1 regulates the level of metal ions within the brain
Howitt, J., Doan, A. and Tan, S.S. (Australia)
- 15:45 ORAL-12-08**
Role of autophagy in programmed cell death in primary cortical neurons under oxidative stress
Higgins, G.C., Devenish, R.J., Beart, P.M. and **Nagley, P.** (Australia)

16:00 – 16:30 AFTERNOON TEA/EXHIBITION/POSTERS
16:10 PASSPORT DRAW
Location: Bayside Grand Hall

16:30 – 17:30

PLENARY 4

ANS PLENARY LECTURE

Chair: Professor Sarah Dunlop, University of Western Australia,
WA

Location: Bayside Auditorium A

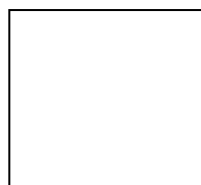
PLE-TUE-04

The role of NPY in health and disease: insights from
transgenic and knockout models

Herzog, H. (Australia)

Professor Herbert Herzog

Herbert Herzog is a Principal Research Fellow of the NHMRC and Director of the Neuroscience Program at the Garvan Institute of Medical Research. He received his PhD in Biochemistry from the University of Innsbruck and was awarded the prestigious 'Erwin Schrödinger Postdoctoral Fellowship' in 1991 to move to the Garvan. In 1996 he obtained his 'Habilitation' (Doctor of Science) from the Free University of Berlin. In 2000 he received a Wellcome Trust Fellowship to work as a Visiting Professor at King's College, London and in 2005 he was appointed Director of the Neuroscience Program at the Garvan Institute. Dr Herzog has received a number of awards during his career, including plenary lectures at International Congresses, and most recently the Victor Mutt Award from the Regulatory Peptide Society in 2009. The major areas of Dr Herzog's research interest are neuropeptides and their receptors, particular NPY receptors, and their actions on appetite control and regulation of energy homeostasis. Dr Herzog has published more than 150 papers in leading biomedical journals, including Nature, Nature Medicine, Journal of Clinical Investigation, Genes & Development, Cell Metabolism, J. Exp. Medicine, Proc Natl Acad Sci USA, Diabetes, Journal of Biological Chemistry and FASEB Journal, as well as several book chapters. His contributions include the first cloning of a NPY receptor and characterising its role in appetite control as well as demonstrating novel critical functions of NPY signalling in the central control of bone formation, fertility and stress induced obesity.



17:30 – 18:30 ANS ANNUAL GENERAL MEETING

Location: Bayside Auditorium A

19:00 CONFERENCE DINNER

Location: Dockside, Cockle Bay

08:30 – 10:30

SYMPOSIUM 12

PRESIDENTIAL SYMPOSIUM

Chairs: Professor David Vaney, President ANS
Queensland Brain Institute, QLD
Professor David J. Adams, President AuPS
RMIT University, VIC
Location: Bayside Gallery B

- 08:30 SYM-12-01**
Genetic clues to the pathogenesis of Parkinson's disease
Lockhart, P.J. (Australia)
- 09:00 SYM-12-02**
Nfia controls neural progenitor cell differentiation through
direct repression of the notch effector Hes1
Piper, M., Barry, G., Hawkins, J., Mason, S., Lindwall, C.,
Little, E., Moldrich, R., Gronostajski, R., Bailey, T.L. and
Richards, L.J. (Australia and USA)
- 09:30 SYM-12-03**
Follistatin-mediated muscle hypertrophy - a model for
studying muscle adaptation
Gregorevic, P. (Australia)
- 10:00 SYM-12-04**
The position of an arginine residue influences substrate
affinity and potassium coupling in the human glutamate
transporter, EAAT1
Ryan, R.M. (Australia)

10:30 – 11:00 MORNING TEA
Location: Bayside Foyer – Level 1

11:00 – 13:00

SYMPOSIUM 13: Session I

**IBRO/ANS SYMPOSIUM: CURRENT NEUROSCIENCE
RESEARCH ACROSS THE ASIA-PACIFIC**

*Sponsored by the International Brain Research Organisation and the
Australian Neuroscience Society*

Chair: Professor Elspeth McLachlan, University of Glasgow,
Scotland, UK

Location: Bayside Gallery B

11:00 SYM-13-01

Creating the cortex and the hippocampal organizer
Tole, S. (India)

11:30 SYM-13-02

Sponsored by the Queensland Brain Institute

Non-apoptotic role of caspase-3 in synapse refinement
Chen, F., Wang, J.Y., Qian, L., Ruan, M.J., Duan, B.Y.
and **Luo, Z.G.** (China)

12:00 SYM-13-03

Gene-environment interactions mediating experience-
dependent plasticity in the healthy and diseased brain
Pang, T.Y.C., Zajac, M.S., Burrows, E.L., Dux, X., Renoir,
T., Chan, G., McComish, C.E., Gray, L., Nithianantharajah,
J. and **Hannan, A.J.** (Australia, USA, Singapore and UK)

12:30 SYM-13-04

Molecular mechanism of familial Parkinson's disease
Chung, J.K. (South Korea)

13:00 – 14:00 LUNCH BREAK

(Lunch may be purchased at nearby cafés & restaurants)

14:00 – 15:00

SYMPOSIUM 13: Session II

**IBRO/ANS SYMPOSIUM: CURRENT NEUROSCIENCE
RESEARCH ACROSS THE ASIA-PACIFIC REGION**

*Sponsored by the International Brain Research Organisation and the
Australian Neuroscience Society*

Chair: Professor Elspeth McLachlan, University of Glasgow,
Scotland, UK

Location: Bayside Gallery B

14:00 SYM-13-05
Promoting plasticity and recovery after stroke
Stinear, C.M. (New Zealand)

14:30 SYM-13-06
Neural mechanisms of reinforcement learning
Doya, K., Ito, M., Miyazaki, K.W. and Miyazaki, K.
(Japan)

11:00 – 13:00

SYMPOSIUM 14

BREAKING THE CODE: THE THEORY OF SPIKES & AXONS

Chairs: Dr Dario Protti, University of Sydney, NSW
Dr Klaus Stiefel, OIST, Japan

Location: Bayside 103

- | | |
|--------------|--|
| 11:00 | SYM-14-01
Working memory, oscillations and disease
Ermentrout, G.B. (USA) |
| 11:30 | SYM-14-02
Role of the axon in action potential burst encoding
Kole, M.H.P. (Australia) |
| 12:00 | SYM-14-03
How do axons detect molecular gradients?
Goodhill, G.J. (Australia) |
| 12:30 | SYM-14-04
Cholinergic neuromodulation of neural excitability
Stiefel, K.M., Torben-Nielsen, B., Uusisaari, Y.M. and
Gutkin, B.S. (Japan and France) |

11:00 – 13:00

ORAL SESSION 13

NEURAL DIFFERENTIATION

Chair: Dr Lisa Foa, University of Tasmania, TAS

Location: Bayside 104

11:00 ORAL-13-01

Proliferation of neurons and non-neuronal cells in the developing mouse stellate ganglion

Gonsalvez, D.G., Cane, K.N. and **Anderson, C.R.** (Australia)

11:15 ORAL-13-02

Neogenin controls neural tube closure by regulating cell polarity

De Vries, M., Kee, N. and **Cooper, H.M.** (Australia)

11:30 ORAL-13-03

Complement factor C5a: a novel mediator of folate-deficient neural tube closure

Coulthard, L.G.J., Costantini, K., Simmons, D., Finnell, R.H., Woodruff, T.M. and Taylor, S.M. (Australia and USA)

11:45 ORAL-13-04

Norepinephrine directly activates adult hippocampal precursors via β_3 adrenergic receptors

Jhaveri, D.J., Mackay, E.W., Hamlin, A.S., Nandam, L.S., Vaidya, V.A. and Bartlett, P.B. (Australia and India)

- 12:00** **ORAL-13-05**
Ptf1a induces inhibitory neurons whose subtype depends on the excitatory lineages from which they arise in the developing retina
Jusuf, P.R. and Harris, W.A. (UK)
- 12:15** **ORAL-13-06**
Fgf8 is required for embryonic development of the mouse commissural plate
Moldrich, R.X., Gobius, I., De Juan, C., Britanova, O., Tarabykin, V., Shimogori, T. and Richards, L.J. (Australia, Germany and Japan)
- 12:30** **ORAL-13-07**
Brain-derived neurotrophic factor signals through the TrkB-MAPK signalling pathway in oligodendrocytes to regulate central nervous system myelination
Xiao, J., Wong, A.W., Denham, M., Willingham, M.M., Kilpatrick, T.J. and Murray, S.S. (Australia)
- 12:45** **ORAL-13-08**
Do levels of neurogenic factors in the human adult subventricular zone change with age?
Werry, E.L., Enjeti, S., Halliday, G.M., Sachdev, P. and Double, K.L. (Australia)

11:00 – 13:00

ORAL SESSION 14

CARDIOVASCULAR CONTROL

Chair: Professor Roger Dampney, University of Sydney, NSW

Location: Bayside 102

- 11:00 ORAL-14-01**
Complex influence of AT_{1A} receptors on cardiovascular reactivity to natural behaviours in mice
Chavez, C.A., Choy, K.H.C., Hawkes, D.J. and **Mayorov, D.N.** (Australia)
- 11:15 ORAL-14-02**
Reduction in cardiovascular stress reactivity in AT_{1A} receptor knockout mice is stimulus intensity – dependent
Chavez, C.A., Choy, K.H.C. and Mayorov, D.N. (Australia)
- 11:30 ORAL-14-03**
Mammalian differences in cholinergic control of coronary circulation
Hamut, M., **Quail, A.**, Seah, P., McLeod, D., Cottee, D. and White, S. (Australia)
- 11:45 ORAL-14-04**
Endothelial cell hyperpolarization and dysfunction in diabetes
Tare, M., Coleman, H.A. and Parkinson, H.C. (Australia)

- 12:00** **ORAL-14-05**
Relaxin induces differential arteriolar dilations and gap
junctionally mediated upstream arteriolar dilations
Willcox, J.M., Murrant, C.L. and Summerlee, A.J.S.
(Canada)
- 12:15** **ORAL-14-06**
Nonlinear relationship between hyperpolarisation and
relaxation enables long distance propagation of vasodilation
in vivo
Wölflle, S.E., Sandow, S.L., Edwards, F.R. and Hill, C.E.
(Australia)
- 12:30** **ORAL-14-07**
A pathway linking cardiovascular neurons on each side of
the brainstem
McMullan, S., Farnham, M.M.F., Lung, M.S.Y. and
Pilowsky, P.M. (Australia)
- 12:45** **ORAL-14-08**
Different neuropeptides distinguish subpopulations of
adrenally projecting sympathetic preganglionic neurons
Kumar, N.N., Allen, K., Parker, L., Dumanhuri, H. and
Goodchild, A.K. (Australia)

11:00 – 13:00

ORAL SESSION 15

AUDITORY AND OTHER SENSORY SYSTEMS

Chair: Dr Mark Bellingham, University of Queensland, QLD

Location: Bayside 105

11:00 ORAL-15-01

Efferent activation modulates hyperactivity in guinea pig inferior colliculus after acoustic trauma

Mulders, W.H.A.M. and Robertson, D. (Australia)

11:15 ORAL-15-02

Chronic neurotrophin infusion and electrical stimulation in the deaf cochlea: implications for cochlear implant spatial selectivity

Landry, T.G., Fallon, J.B., Wise, A.K. and Shepherd, R.K. (Australia)

11:30 ORAL-15-03

Inhibition of adenosine kinase in the cochlea delays the onset of hearing loss in aging mice

Vlajkovic, S.M., Guo, C.X., Telang, R., Wong, A.C.Y., Paramananthasivam, V., Housley, G.D. and Thorne, P.R. (New Zealand and Australia)

11:45 ORAL-15-04

Time-course of tonotopic changes in the auditory system following noise-induced hearing loss

Parsons, C.H., Calford, M.B., Browne, C.J., Chen, S.C. and Morley, J.W. (Australia)

- 12:00 ORAL-15-05**
Localisation of the stem cell compartment within adult mouse taste buds
Sullivan, J.M. and Oleskevich, S. (Australia)
- 12:15 ORAL-15-06**
Corticothalamic interactions in the whisker-barrel pathway: evidence from bilateral whisker stimulation
Arabzadeh, E. and Nasr, S. (Australia)
- 12:30 ORAL-15-07**
Mapping retinal degeneration in aged Rd1-FTL mice
O'Brien, E.E., Fletcher, E.L. and Greferath, U. (Australia)
- 12:45 ORAL-15-08**
Bipolar and amacrine input to midget and parasol ganglion cells in marmoset retina
Abbott, C.J., Percival, K.A., Martin, P.R. and Grunert, U. (Australia)

13:00 – 14:00 LUNCH BREAK
(Lunch may be purchased at nearby cafés & restaurants)

**14:00 – 14:50 FORUM FOR NSW/ACT ANS MEMBERS,
INCORPORATING THE AGM OF THE SYDNEY
CHAPTER OF THE SOCIETY FOR NEUROSCIENCE**

Location: Bayside 104

14:00 – 15:00 AuPS ANNUAL GENERAL MEETING

Location: Bayside 106

15:00 – 17:00

SYMPOSIUM 15

**PAIN, MOTONEURONES AND MOVEMENT:
UNRAVELLING THE EFFECTS AND MECHANISMS**
*Sponsored by the Centre of Clinical Research Excellence
in Spinal Pain, Injury and Health
University of Queensland*

Chair: Professor Paul Hodges, University of Queensland, QLD
Location: Bayside Gallery B

- 15:00** **SYM-15-01**
Motor cortex neuroplasticity and its role in pain and other
alterations in the orofacial region
Sessle, B.J. (Canada)
- 15:30** **SYM-15-02**
In-vivo decoding of the neural drive to muscles
Farina, D. (Denmark)
- 16:00** **SYM-15-03**
Motor unit recruitment strategy is altered with pain
Tucker, K.J. (Australia)
- 16:30** **SYM-15-04**
Orofacial pain and jaw motor control
Murray, G.M. (Australia)

15:00 – 17:00

SYMPOSIUM 16

**MECHANISMS UNDERLYING EXOCYTOSIS AND
ENDOCYTOSIS: POTENTIAL RELEVANCE
TO HEALTH AND DISEASE**

Chair: Professor Phil Robinson, Children's Medical Research
Institute, NSW

Location: Bayside 103

- 15:00** **SYM-16-01**
Activity-dependent regulation of the fusion pore and mode
of secretion from adrenal chromaffin cells
Smith, C. (USA)
- 15:30** **SYM-16-02**
An unbiased approach to identifying proteins critical to the
mechanism of calcium-triggered membrane fusion
Furber, K.L. and **Coorsen, J.R.** (Australia and Canada)
- 16:00** **SYM-16-03**
Identifying novel roles in cell communication for disease-
related proteins
Keating, D.J. (Australia)
- 16:30** **SYM-16-04**
Endocytosis in secretory epithelial cells
Soekmadji, C. and **Thorn, P.** (Australia)

15:00 – 17:00

ORAL SESSION 16

BRAIN DYSFUNCTION

Chair: Dr Michael Lardelli, University of Adelaide, SA

Location: Bayside 104

- 15:00 ORAL-16-01**
Developmental vitamin D deficiency (DVD) and brain dopamine ontogeny
Eyles, D., Cui, X., Pelekanos, M., Kesby, J., Burne, T. and McGrath, J. (Australia)
- 15:15 ORAL-16-02**
Changes in parvalbumin immunoreactivity in the hippocampus of the rat after neonatal lipopolysaccharide administration: modelling the pathophysiology of schizophrenia
Jenkins, T.A., Harte, M.K., Stenson, G. and Reynolds, G.P. (UK and Australia)
- 15:30 ORAL-16-03**
Promoter specific alterations of BDNF mRNA in people with schizophrenia
Wong, J., Cassano, H.L., Deep-Soboslay, A., Hyde, T.M., Kleinman, J.E. and Weickert, C.S. (Australia and USA)
- 15:45 ORAL-16-04**
Adolescent *Neuregulin 1* mutant mice are less susceptible to the effects of THC on object recognition memory and social interaction
Long, L.E., Chesworth, R.M., Arnold, J.C. and Karl, T. (Australia)

- 16:00 ORAL-16-05**
Molecular analysis of GTF21RD1: a gene implicated in the Williams-Beuren syndrome cognitive and behavioural profile
Hardeman, E.C., Palmer, S.J., Widagdo, J., Howard, M.L., Santucci, N., Taylor, K.M., Tay, E.S.E., Gunning, P.W. and Hannan, A.J. (Australia)
- 16:15 ORAL-16-06**
Diffuse traumatic axonal injury induces sensorimotor deficit, memory loss and hippocampal axonal hyperexcitability
Alwis, D.S., Coleman, H.A., Parkington, H.C., Zhang, A.M., Morganti-Kossmann, M.C. and **Yan, E.B.** (Australia)
- 16:30 ORAL-16-07**
The amyloid precursor protein is neuroprotective following mild traumatic brain injury
Corrigan, F., Cappai, R., Vink, R. and Van Den Heuvel, C. (Australia)
- 16:45 ORAL-16-08**
Spastic paralysis precedes overt demyelination in a transgenic model of inducible oligodendrocyte apoptosis
Oluich, L.J., Soo, P.Y., Ng, S.W., Cate, H.S., Kilpatrick, T.J. and **Merson, T.D.** (Australia)

15:00 – 17:00

ORAL SESSION 17

FORMATION OF NEURAL CONNECTIONS

Chair: A/Prof Helen Cooper, Queensland Brain Institute, QLD

Location: Bayside 102

- 15:00 ORAL-17-01**
Wnt5a regulates midbrain dopaminergic axon growth and guidance
Blakely, B.D., Horne, M.K., Fernando, C.V. Arenas, E. and **Parish, C.L.** (Australia and Sweden)
- 15:15 ORAL-17-02**
Defining the role of the olivo-cochlear system in the development of the auditory system in rats and mice
Rodriguez-Contreras, A. (USA)
- 15:30 ORAL-17-03**
Changes in pre- and postsynaptic protein components on afferent neurons in the cochlea during synapse remodeling
Huang, L.-C., Thorne, P.R., Housley, G.D. and Montgomery, J.M. (New Zealand and Australia)
- 15:45 ORAL-17-04**
The functional roles of RGMA domains within the embryonic vertebrate nervous system development
Lah, G.J., Claxton, C. and Key B. (Australia)
- 16:00 ORAL-17-05**
Semaphorin 3A-induced growth cone collapse in adult rat pelvic ganglion neurons is mediated by cyclic nucleotides and diminished by neurotrophic factors
Nangle, M.R. and Keast, J.R. (Australia)

- 16:15** **ORAL-17-06**
Cyclic nucleotide-dependent switching of mammalian axon guidance depends on gradient steepness
Thompson, A.W., Pujic, Z., Mortimer, D., Richards, L.J. and Goodhill, G.J. (Australia)
- 16:30** **ORAL-17-07**
Importance of Ten-m molecules in the development of the mouse visual pathway
Young, T.R., Sawatari, A., Fassler, R. and Leamey, C.A. (Australia and Germany)
- 16:45** **ORAL-17-08**
The motility of olfactory ensheathing cells: a hitchhiker's guide to olfactory axon migration
Windus, L.C.E., Claxton, C., Mackay-Sim, A., Key, B. and **St. John, J.A.** (Australia)

15:00 – 17:00

ORAL SESSION 18

REGULATION OF METABOLISM

Chair: Professor Bill Blessing, Flinders University of South Australia, SA

Location: Bayside 105

15:00 ORAL-18-01

The role of an endogenous inhibitor of calcineurin in the regulation of glucose homeostasis and islet function
Peiris, H. and Keating, D. (Australia)

15:15 ORAL-18-02

Glucoprivation increases tyrosine hydroxylase phosphorylation and the release of catecholamines from rat adrenals
Bobrovskaya, L., Damanhuri, H., Ong, L.K., Schneider, J., Dickson, P.W., Dunkley, P.R. and Goodchild, A.K. (Australia)

15:30 ORAL-18-03

High-fat feeding alters the cardiovascular role of the hypothalamic paraventricular nucleus
Badoer, E., Cham, J. and Feng, C. (Australia)

15:45 ORAL-18-04

Neurometabolomic analysis of the GABAergic system in guinea pig cortical slices
Maher, A.D., Griffin, J.L., Nasrallah, F.A., Balcar, V.J. and Rae, C. (Australia and UK)

- 16:00 ORAL-18-05**
Additive actions of the Cannabinoid and neuropeptide Y systems on adiposity and lipid oxidation
Zhang, L., Lee, N.J., Stehrer, B., Yulyaningsih, E., Lin, S., Shi, Y.C., Herzog, H. and Sainsbury, A. (Australia)
- 16:15 ORAL-18-06**
Pancreatic polypeptide reduces food intake via arcuate Y4 receptors and the melanocortin system in mice
Lin, S., Shi, Y.C., Yulyaningsih, E., Zhang, L., Lin, E.J.D., Sainsbury, A. and Herzog, H. (Australia and USA)
- 16:30 ORAL-18-07**
Age-related changes in NAD⁺ metabolism in the brain of aged female wistar rats
Braidy, N.B., Guillemin, G.J.G., Mansour, H.M., Chan-Ling, T.C.L. and Grant, R.S.G. (Australia)
- 16:45 ORAL-18-08**
IFN- γ modulates the proliferation and differentiation potential of human and mouse stem cells including neural stem cells via activation of indoleamine 2,3 dioxygenase (IDO)
Lamoury, J., Lamoury, F.M.J., Caristo, M., Suzuki, K., Walker, D., Takikawa, O., Taylor, R. and Brew, B.J. (Australia)

**17:00 FAREWELL DRINKS &
PRESENTATION OF AWARDS**
Location: Bayside Foyer – Level 1
