

10:00 – 10:30

OPENING CEREMONY

Chair: Prof Nicholas Hoogenraad, La Trobe University, VIC,
Australia

Location: Plenary Hall 2

10:00 Traditional Welcome

10:10 Prof David de Kretser, A.C., Governor of Victoria

10:15 Prof Nicholas Hoogenraad, Co-Chair, OzBio2010

10:20 Prof Angelo Azzi, President, IUBMB

10:25 Prof Masamitsu Futai, President, FAOBMB

In attendance:

Prof Phillip Nagley, Co-Chair, OzBio2010

Prof Ian Dawes, President, ASBMB

Prof Edna Hardeman, President, ANZSCDB

Dr Rana Munns, President, ASPSP

10:30 – 11:15

PLENARY LECTURE

Chair: Prof Phillip Nagley, Monash University, VIC, Australia

Location: Plenary Hall 2

10:30 PLE-MON-01

Immunity to influenza viruses

Doherty, P.C., Olson, M., Russ, B. and Turner, S. (Australia and USA)

Professor Peter Doherty



Professor Peter Doherty is best known for winning the Nobel Prize in Physiology or Medicine in 1996 with Swiss colleague, Rolf Zinkernagel, for their discovery of how the immune system recognises virus-infected cells. Peter graduated from the University of Queensland in Veterinary Science in 1962 and received his PhD from the University of Edinburgh Medical School in 1970. In 1972, he joined the John Curtin School of Medical Research Canberra, where he switched from animal to human-pathogen studies and carried out research on histocompatibility antigens with Rolf Zinkernagel. Peter has held the Michael F Tamer Chair of Biomedical Research at St Jude Children's Research Hospital, Memphis, Tennessee, since 1988. From July 2002, he has been Laureate Professor in the Department of Microbiology and Immunology at the University of Melbourne. His research is mainly in the area of defence against viruses. His key interest is in the part played by the CD8+ 'killer' T lymphocyte. This research attracted many other prestigious awards, including West Germany's Paul Ehrlich Prize (1983); the Albert Lasker Basic Medical Research Award USA (1995); and the 1986 Gairdner International Award for Medical Science, Canada. Professor Doherty holds honorary doctorates from 15 other universities including Australian National University, Edinburgh, London (Imperial), Berne and Pennsylvania. Declared a member of Australia's 100 Living National Treasures in 1997, his awards also include election to the Royal Society of London, the Australian Academy of Science and the US National Academy of Sciences. He is an advocate for innovation, liberal education and the role of science in society, and regularly devotes time to delivering public lectures, radio discussions and writing articles for newspapers and magazines. Peter is also the author of several books including *A Light History of Hot Air* and *The Beginner's Guide to Winning the Nobel Prize*.

11:20 – 11:23

**PRESENTATION OF CERTIFICATES
TO LONG STANDING MEMBERS OF THE ASBMB**

Chair: Prof Ian Dawes, University of New South Wales, Australia
Location: Plenary Hall 2

11:23 – 12:10

LEMBERG LECTURE
(Including presentation of Medal)

Chair: Prof Ian Dawes, University of New South Wales, Australia
Location: Plenary Hall 2

11:23 PLE-MON-02

Regulatory networks in the developing heart
Harvey, R.P. (Australia)

Professor Richard Harvey



Richard Harvey is Co-Deputy Director and Head of the Developmental Biology Program at the Victor Chang Cardiac Research Institute, and holds the endowed Sir Peter Finley Professorship of Heart Research at UNSW. He is an Associate Member of EMBO and in 2007 was elected member of the Australian Academy of Science. He currently holds an NHMRC Australia Fellowship and is Leader of the Adult Stem Cells Collaborative Stream of the Australian Stem Cell Centre. Since the early

1990s, Richard's research has focused on the genetic basis of heart development and congenital heart disease, largely using mouse models, but also applying key insights to human populations. In the early 1990s, he described the homeodomain transcription factor Nkx2-5, which provided a key entry point for genetic dissection of heart development and disease. His subsequent studies on Nkx2-5 and other core cardiac transcription factors have helped move cardiac development and congenital heart disease research into the molecular era, and have contributed important insights into cardiac evolution, the nature of cardiac patterning, and the cellular and molecular basis of congenital heart disease pathology. More recently, he has begun an exploration of the biology and origin of adult cardiac stem cells and cardiac regeneration. Progressively, his work shifts towards a more systems level understanding of these processes.

11:20 – 12:05

ANNALS OF BOTANY LECTURE

Chair: Dr Rana Munns, CSIRO Plant Industry, ACT, Australia

Location: Plenary Hall 3

11:20 PLE-MON-03

Early atmospheric CO₂ sensing and drought-induced abscisic acid signaling mechanisms in plants

Schroeder, J.I., Nishimura, N., Hu, H., Xue, S., Murata, Y., Park, S.Y., Cutler, S., Hitomi, K., Arvai, A. and Getzoff, E. (USA and Japan)

Professor Julian Schroeder



Julian Schroeder is Professor and Novartis Chair in Plant Sciences at the University of California San Diego. He received his PhD from the Max Planck Institute for Biophysical Chemistry in Göttingen Germany with Erwin Neher. He carried out postdoctoral work as a von Humboldt Fellow at the UCLA School of Medicine. He has received an NSF Presidential Young Investigator Award, the Charles Albert Shull Award from ASPB, and the Blasker Award in Environmental Science and Engineering from the SD Foundation and was elected Fellow of the American Association for the Advancement of Sciences. His research is directed at the signal transduction mechanisms and pathways that mediate resistance to environmental abiotic stresses in plants, in particular drought, salinity and heavy metal stress. These abiotic stresses have substantial negative impacts and reduce global plant growth and biomass production. Schroeder has pioneered studies of ion channel functions and molecular elucidation of signal transduction cascades in higher plant cells, examining the chain of events by which plant cells translate CO₂ sensing, drought stress and salinity stress to specific resistance responses.

12:10 – 13:10 LUNCH / POSTERS / EXHIBITION (*Boxed lunch provided*)

13:10 – 14:10 POSTER SESSION A (*Presenting authors to be in attendance*)

Location: Exhibition Hall

14:15 – 15:45

SYMPOSIUM 1

STEM CELLS & DIFFERENTIATION

Chairs: A/Prof Kate Loveland, Monash University, VIC, Australia
A/Prof Andrew Perkins, University of Queensland, QLD,
Australia

Location: Plenary Hall 3

14:15 SYM-01-01

Towards the generation of functional cell types from pluripotent stem cells

Clark, A. (USA)

14:45 SYM-01-02

Reprogramming code for pluripotency

Ng, H.H. (Singapore)

15:05 SYM-01-03

Genetic regulation of stem cell differentiation by transcriptional and translational repressors

Siddall, E.A., Monk, A.C., Horvay, K., Kalcina, M., Johanson, T.M., Casagrande, F., Quinn, L.M., McLaughlin, E.A., Abud, H.E. and **Hime, G.R.** (Australia)

15:25 SYM-01-04

The role of non-coding RNAs in sex determination and gonad development

Wainwright, E.N., Rakoczy, J., Dinger, M.E., Koopman, P., Mattick, J.S. and **Wilhelm, D.** (Australia)

14:15 – 15:45

SYMPOSIUM 2

ORGANELLES

Chairs: Prof Trevor Lithgow, Monash University, VIC, Australia
Dr Kaye Truscott, La Trobe University, VIC, Australia

Location: Meeting Room 210

14:15 SYM-02-01

Vesicle transport from the Mitochondria

Soubannier, V., McLelland, G.-L., Braschi, E., Zunino, R.,
Rippstein, P., Fon, E. and **McBride, H.M.** (Canada)

14:45 SYM-02-02

Nuclear pore complex formation on assembled nuclear
envelope in human cells: regulation and mechanism

Imamoto, N. (Japan)

15:05 SYM-02-03

Targeting of bacterial effector proteins to mitochondria

Foo, J.H., Culvenor, J.G., Ferrero, R.L., Kwok, T., Lithgow, T.
and **Gabriel, K.** (Australia)

15:25 SYM-02-04

Proteolytic regulation of the mitochondrial unfolded protein
response in mammals

Bezawork-Geleta, A., Fisher, L., Dougan, D. and Truscott, K.
(Australia)

14:15 – 15:45

SYMPOSIUM 3

PLANT MEMBRANE BIOLOGY

Chairs: Dr Matt Gilliam, Waite Institute, SA, Australia
Prof Steve Tyerman, University of Adelaide, SA, Australia

Location: Meeting Room 203/204

14:15 SYM-03-01

What are aquaporins doing in plants?

Tyerman, S.D., Vandeleur, R.K., Bramley, H., Shelden, M.C., Wang, Z., Tataranni, G., Gilliam, M., Mayo, G. and Kaiser, B.N. (Australia and Italy)

14:45 SYM-03-02

Regulation of cell expansion by membrane transporters and plasmodesmatal gating

Ruan, Y.-L. (Australia)

15:05 SYM-03-03

System analysis of the circadian regulation of calcium signalling in Arabidopsis

Webb, A.A.R. (UK)

15:25 SYM-03-04

Expression patterns and subcellular localisation of soybean transporters

Loughlin, P.C., Clarke, V.C., Chen, C., Qu, Y., Ludwig, M., Day, D.A. and Smith, P.M.C. (Australia)

14:15 – 15:45

SYMPOSIUM 4

PROTEOMICS

Chairs: Dr Anthony Purcell, University of Melbourne, VIC, Australia
Prof Victor Engelhard, University of Virginia School of
Medicine, USA

Location: Meeting Room 211

14:15 SYM-04-01

Immunological proteomics - identification of phosphorylated peptide antigens displayed on cancer cells and prospects for their use as immunotherapeutics

Engelhard, V.H. (USA)

14:45 SYM-04-02

Towards an SH2 interactome: using a pY-specific Y2H system to identify and analyse novel signalling pathways involved in erythropoiesis and cancer

Magno, A., Kunasegaran, K., Slavova-Azmanova, N., Tie, L., Murphy, S., Whiting, R., Payne, C. and **Ingle, E.** (Australia)

15:05 SYM-04-03

Global analysis of the mitochondrial N-proteome identifies a processing peptidase critical for protein stability

Voegtle, F.N., Wortelkamp, S., Zahedi, R., Gevaert, K., Sickmann, A., Pfanner, N. and Meisinger, C. (Germany and Belgium)

15:25 SYM-04-04

A systems biology approach to study conotoxin biosynthesis and delivery

Safavi-Hemami, H., Bulaj, G., Olivera, B.M., Young, N.D., Williamson, N.A. and Purcell, A.W. (Australia and USA)

14:15 – 15:45

SYMPOSIUM 5

RNA PROCESSING

Sponsored by Partners, WEHI and PeterMac

Chair: Dr Archa Fox, University of Western Australia, WA,
Australia

Location: Plenary Hall 2

14:15 **SYM-05-01**

Super experiments & second generation proteomics

Lamond, A.I. (Scotland)

14:45 **SYM-05-02**

Long noncoding RNAs: functional elements of the human transcriptome

Dinger, M.E., Amaral, P.P., Askarian-Amiri, M.E., Clark, M.G., Crawford, J., Gascoigne, D.G., Mercer, T.R., Smith, M.A. and Mattick, J.S. (Australia)

15:05 **SYM-05-03**

MicroRNAs bridge innate and adaptive immunity: inductor of TH2 mediated allergic airways disease

Foster, P.S., Mattes, J., Collison, A., Plank, M. and Phipps, S. (Australia)

15:25 **SYM-05-04**

Regulation of maternal mRNAs in the germline of *C. elegans*

Boag, P.R. (Australia)

14:15 – 15:45

SYMPOSIUM 6

SIGNALING ACROSS MEMBRANES

Chairs: Prof Michael Parker, St Vincents Institute of Medical
Reserach, VIC, Australia
Prof Tom Rapoport, Harvard Medical School/HHMI, USA

Location: Meeting Room 212

14:15 SYM-06-01

Molecular basis of cytokine receptor activation

Lopez, A.F., Ekert, P., Hercus, T.R., Sandow, J., Littler, D.R.,
Guthridge, M., Thomas, D., Ramshaw, H.S., Grimaldeston, M.
and Parker, M.W. (Australia)

14:45 SYM-06-02

Sodium channel dysfunction in human epilepsy

Petrou, S. and Thomas, E.A. (Australia)

15:05 SYM-06-03

The first structural view of the intact insulin binding site on its
receptor

Smith, B.J., Menting, J.G., Kong, G.K.-W., Ward, C.W. and
Lawrence, M.C. (Australia)

15:25 SYM-06-04

The intrinsic inhibition mechanism of ATP hydrolysis in ATP
synthase: single molecule observation

Sekiya, M., Hosokawa, H., Nakanishi-Matsui, M. and Futai, M.
(Japan)

15:45 – 16:25 AFTERNOON TEA / EXHIBITION

Location: Exhibition Hall

16:30 – 18:00

SYMPOSIUM 7

ABIOTIC STRESS: DROUGHT & SALINITY

Chairs: Dr Rana Munns, CSIRO Plant Industry, ACT, Australia
Prof Mark Tester, University of Adelaide, SA, Australia

Location: Meeting Room 203/204

16:30 SYM-07-01

Genetic and physiological basis of sorghum's drought tolerance
Mullet, J.E., Weers, B., Klein, P., George-Jaeggli, B., Mace, E., Jordan, D. and Borrell, A. (USA and Australia)

17:00 SYM-07-02

A novel protein kinase involved in Na⁺ exclusion revealed from positional cloning
Roy, S.J., Wang, X., Evrard, A., Schmoeckel, S. and Tester, M. (Australia and China)

17:20 SYM-07-03

Candidate genes for drought-adaptive traits in wheat: gene expression differences in wheat differing in levels of stem carbohydrates
McIntyre, C.L., Casu, R.E., Rattey, A., Dreccer, M.F., Van Herwaarden, A.F., Shorter, R. and Xue, G.P. (Australia)

17:40 SYM-07-04

Functional analysis of dehydration responsive genes from the resurrection grass *Sporobolus stapfianus*
Griffiths, C.A., Blomstedt, C.K., Hamill, J.D. and Neale, A.D. (Australia)

16:30 – 18:00

SYMPOSIUM 8

CELLULAR IMAGING

*Sponsored by ARC Centre of Excellence for
Coherent X-ray Science*

Chairs: Prof Leann Tilley, La Trobe University, VIC, Australia
Dr Brad Marsh, University of Queensland, QLD, Australia

Location: Plenary Hall 2

16:30 **SYM-08-01**

Localization-based super-resolution fluorescence imaging
Hess, S.T. (USA)

17:00 **SYM-08-02**

Building a 'visible cell' - fundamental new insights into
structure-function relationships in mammalian cells derived
from high-resolution 3D maps
Marsh, B.J. (Australia)

17:20 **SYM-08-03**

Novel bacterial cell biology revealed by OMX 3D structured
illumination microscopy
Turnbull, L., Harry, E.J. and **Whitchurch, C.B.** (Australia)

17:40 **SYM-08-04**

Molecular mechanism of chaperone catalysed disassembly of
complex structures
Boecking, T., Aguet, F., Xing, Y., Harrison, S.C. and
Kirchhausen, T. (USA)

16:30 – 18:00

SYMPOSIUM 9

CURRENT ADVANCES IN NEURAL REGENERATION
*Sponsored by the School of Medicine, University of Tasmania, the
Wicking Dementia Research and Education Centre and the
Australia New Zealand Spinal Cord Injury Network*

Chairs: Prof James Vickers, University of Tasmania, TAS, Australia
Prof Sarah Dunlop, University of Western Australia, WA,
Australia

Location: Meeting Room 210

16:30 SYM-09-01

The extracellular matrix and the control of plasticity in the CNS
Fawcett, J.W. (UK)

17:00 SYM-09-02

The other side of the coin: spread of oxidative stress during
secondary degeneration
Fitzgerald, M., Bartlett, C.A., Wells, J., Harvey, A.R. and
Dunlop, S.A. (Australia)

17:20 SYM-09-03

Plasticity and regeneration in the mature CNS
Dickson, T.C. (Australia)

17:40 SYM-09-04

Micro-RNA-145 expression in ischemic young stroke patients:
a potential novel biomarker for cardioembolic and
atherothrombotic ischaemic strokes
Gan, C.S., Wang, C.W. and Tan, K.S. (Malaysia)

16:30 – 18:00

SYMPOSIUM 10

EMERGING TECHNOLOGIES IN SYSTEMS BIOLOGY

Chairs: Dr Sue Forrest, Walter & Eliza Hall Institute, VIC, Australia
Prof German Spangenberg, Department of Primary
Industries, VIC, Australia

Location: Meeting Room 211

16:30 SYM-10-01

Studying Cancer Genomes at single nucleotide resolution
Grimmond, S.M. (Australia)

17:00 SYM-10-02

Bridging the translation gap between human genome re-sequencing and understanding the mechanistic basis for disease
Bertram, E.M., Andrews, D.T., Whittle, B., Kirk, M.F., Zhang, Y., Hamilton, A.E., Sjollem, G.E., Winslade, S.L., Enders, A.C. and Goodnow, C.C. (Australia)

17:20 SYM-10-03 (*The Beckman Coulter Discovery Science Lecture*)

A novel vitronectin: growth factor complex for treatment of wounds
Upton, Z. (Australia)

17:40 SYM-10-04

Building transcriptional regulatory networks for heart development
Bouveret, R., Doan, T., Ramialison, M. and Harvey, R.P. (Australia)

16:30 – 18:00

SYMPOSIUM 11

IMMUNOLOGY

Sponsored by CSL Limited

Chairs: Prof Frank Carbone, University of Melbourne, VIC, Australia
Prof Robyn O’Hehir, Monash University, VIC, Australia

Location: Meeting Room 212

16:30 SYM-11-01

The "Rosetta Stone" for understanding autoimmune and immunodeficiency diseases

Goodnow, C.C., Teh, C., Enders, A., Daley, S., Randall, K., Brink, R., Chan, S., Vinuesa, C. and Bertram, E. (Australia)

17:00 SYM-11-02

The role of BAFF in autoimmunity: a bench to bedside story

Figgett, W., Lepage, M., Saulep, D. and **Mackay, F.** (Australia)

17:20 SYM-11-03 (*Boomerang Award Lecture*)

Structural basis of the interleukin 17 cytokine signaling complex

Ely, L.K., Fischer, S. and Garcia, K.C. (USA)

17:40 SYM-11-04

Identifying the molecular changes underlying the survival of memory B cells.

Vikstrom, I., Luethje, K., Peperzak, V. and **Tarlinton, D.M.** (Australia)

16:30 – 18:00

SYMPOSIUM 12

SIGNALING

*Sponsored by Partners, WEHI and PeterMac
and Miltenyi Biotec Australia*

Chair: Dr Natasha Harvey, Centre for Cancer Biology, SA, Australia

Location: Plenary Hall 3

16:30 **SYM-12-01**

Regulation of angiogenesis by endothelial cell-cell interactions

Adams, R.H. (Germany)

17:00 **SYM-12-02**

The full-of-fluid mutant identifies *CCBE1* as a conserved regulator of lymphangiogenesis in zebrafish and humans

Hogan, B.M., Alders, M., Karpanen, T., Bos, F.L., Busmann, J., Witte, M., Chi, N.C., Duckers, H.J., Hennekam, R.C. and Schulte-Merker, S. (Australia, The Netherlands and USA)

17:20 **SYM-12-03**

Hedgehog regulates blood vascular development through VEGF dependent and independent mechanisms

Coultas, L., Nieuwenhuis, E., Anderson, G., Cabezas, J., Nagy, A., Henkelman, R.M., Hui, C.C. and Rossant, J. (Australia and Canada)

17:40 **SYM-12-04**

Regulation of VEGF signalling during vascular development

Schwarz, Q., Gurung, R., Davies, M., Roan, K. and Mitchell, C. (Australia)

18:00 – 20:00 **WELCOME MIXER / EXHIBITION**

Location: Exhibition Hall

09:00 – 09:45

FEBS LECTURE

Chair: Prof Israel Pecht, Weizmann Institute of Science, Israel

Location: Plenary Hall 2

09:00 PLE-TUE-04

Mechanisms of miRNA-mediated gene silencing

Izaurrealde, E. (Germany)

Professor Elisa Izaurrealde



Elisa Izaurrealde leads the Department of Biochemistry at the Max Planck Institute for Developmental Biology in Tuebingen, Germany. Her research focuses on the molecular mechanisms that regulate gene expression at the post-transcriptional level, with particular emphasis on mRNA surveillance, turnover and silencing in animal cells. Elisa was elected to membership of the European Molecular Biology Organization in 2000. She is a recipient of the Friedrich Miescher Award of the Swiss Society for Biochemistry, of the Young Scientist Award of the European Life Science Organization (ELSO) and of the Gottfried Wilhelm Leibniz Prize of the German Research Foundation (DFG). She serves on several scientific editorial and advisory panels.

09:00 – 09:45

PLENARY LECTURE

Chair: Prof Rod Devenish, Monash University, VIC, Australia

Location: Plenary Hall 3

09:00 PLE-TUE-05

Physiological role of autophagy and its regulation mechanism

Mizushima, N. (Japan)

Professor Noboru Mizushima



Noboru Mizushima graduated from School of Medicine at Tokyo Medical and Dental University in 1991, and received Ph.D. in 1996. He then moved to National Institute for Basic Biology as a post-doc and started works on autophagy in yeast and mammals in Dr. Yoshinori Ohsumi's laboratory. He moved to Tokyo Metropolitan Institute of Medical Science in 2004 as a laboratory head and made extensive studies on the physiological role of autophagy using mouse genetics. He was promoted to Professor of Physiology and Cell Biology, in Graduate School and School of Medicine at Tokyo Medical and Dental University in 2006. He was awarded the Young investigator award of the Japanese Biochemical Society in 2001, Mitsubishi Chemical Award of the Molecular Biology Society of Japan in 2005, FEBS Letters Young Scientist Award in 2007, JSPS (Japan Society for the Promotion of Science) Prize in 2008 and Inoue Prize for Science in 2009.

09:50 – 10:35

PLENARY LECTURE

Chair: Prof Mike Ryan, La Trobe University, VIC, Australia

Location: Plenary Hall 2

09:50 PLE-TUE-06

Mechanisms of protein transport across membranes

Rapoport, T.A. (USA)

Professor Tom Rapoport



Tom Rapoport is Professor of Cell Biology at Harvard Medical School and a Howard Hughes Medical Institute Investigator. He received his Ph.D. degree from Humboldt University, Berlin (East Germany), and his "Habilitation" from the same institution. Before assuming his current position, he was Professor of Cell Biology at the Academy of Sciences of East Germany and later at the Max Delbrück Center for Molecular Medicine. He is a member of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences, and a fellow of the American Association for the Advancement of Science. Tom Rapoport has won numerous prizes including the Johannes-Müller-prize of the Society for Experimental Medicine, the Rudolf-Virchow-prize, the Otto-Warburg-Medaille of the GBM in the field of Biochemistry (2004), the Max Delbrück Medal and the Sir Hans Krebs Medal (2007).

09:50 – 10:35

PLENARY LECTURE

Chair: A/Prof Andrew Hill, Bio21 Institute/University of Melbourne, VIC, Australia

Location: Plenary Hall 3

09:50 PLE-TUE-07

Flying in the face of neurodegeneration with *Drosophila*

Bonini, N.M. (USA)

Professor Nancy Bonini



Prof Bonini's laboratory focuses on using the powerful genetics of *Drosophila* to define genes that are critical to prevent human brain degeneration. Many human neurodegenerative diseases are poorly understood and untreatable including Huntington's, Parkinson's and Alzheimer's diseases. In order to pioneer new ways to prevent and treat these devastating diseases, they are applying the power of *Drosophila* genetics to the problem. Overall, genes in *Drosophila* are highly conserved to

humans, such that any genes critical to maintenance of the brain in flies are likely to have conserved homologs in humans - with conservation not only of protein sequence, but also of protein function. Toward this end, they have introduced human disease genes into *Drosophila* in order to recreate the respective human disease in flies. One example is human polyglutamine disease, of which Huntington's disease is an example. Expression of a mutant human polyglutamine disease gene in flies confers a phenotype remarkably reflective of the human disease - late-onset, progressive neural degeneration. With this fly model, they are using molecular and genetic approaches in order to define genes and mechanisms involved in progression of degeneration, and ways to stop the degeneration entirely. One powerful class of suppressor genes they have defined include the molecular chaperones, which alter protein folding, potentially masking and diminishing disease protein toxicity. They are generating fly models for additional human neurodegenerative diseases, and continuing with genetic approaches to identify and study suppressor mechanisms for preventing neural degeneration.

10:35 – 11:10 MORNING TEA / EXHIBITION

Location: Exhibition Hall

11:15 – 12:45

SYMPOSIUM 13

APOPTOSIS

Chairs: Dr Ruth Kluck, Walter & Eliza Hall Institute, VIC, Australia
Dr Chris Hawkins, La Trobe University, VIC, Australia

Location: Plenary Hall 2

11:15 SYM-13-01

Bax activation is prevented by transient direct interactions with Bcl-xL in healthy cells
Edlich, F. and **Youle, R.** (USA)

11:45 SYM-13-02

Apoptotic pore formation in mitochondria by two Bcl-2 proteins, Bak and Bax
Dewson, G., Kratina, T., Czabotar, P., Day, C.L., Adams, J.M. and **Kluck, R.M.** (Australia and New Zealand)

12:05 SYM-13-03

Role of apoptosis and autophagy in developmentally programmed cell death in Drosophila
Denton, D., Baehrecke, E.H. and **Kumar, S.** (Australia and USA)

12:25 SYM-13-04

The cellular inhibitor of Apoptosis protein (cIAP1) regulates its E3 ligase activities via distinct ring dependent mechanisms
Feltham, R.L., Vaux, D., Day, C.L. and Silke, J. (Australia and New Zealand)

11:15 – 12:45

SYMPOSIUM 14

CYTOSKELETAL NETWORKS

Sponsored by Landes Bioscience

Chairs: Prof Alpha Yap, University of Queensland, QLD, Australia
Prof Edna Hardeman, University of New South Wales, NSW,
Australia

Location: Plenary Hall 3

11:15 SYM-14-01

The cytoskeleton differentially impacts the nanomechanical response of cells and tissues to tumorigenesis

Aebi, U., Plodinec, M., Obermann, E., Suetterlin, R., Schweighauser, G., Zanetti, R. and Schoenenberger, C.-A. (Switzerland)

11:45 SYM-14-02

Regulation of actin dynamics during malaria parasite motility

Baum, J. (Australia)

12:05 SYM-14-03

miR-200 regulates cytoskeletal organization through direct targeting of multiple associated genes

Bracken, C.P., Gregory, P.A., Bert, A.G., Khew-Goodall, Y. and **Goodall, G.J.** (Australia)

12:25 SYM-14-04

The tropomyosin isoform Tm4 affects neuronal morphogenesis and differentiation

Curthoys, N.M., Schevzov, G., Gunning, P. and Fath, T. (Australia)

11:15 – 12:45

SYMPOSIUM 15

PLANT GENETICS

*Sponsored by the ARC Centre of Excellence for
Integrative Legume Research and the Australian Centre for
Plant Functional Genomics*

Chairs: Prof Peter Langridge, University of Adelaide, SA, Australia
Prof Peter Gresshoff, University of Queensland, QLD,
Australia

Location: Meeting Room 210

11:15 SYM-15-01

Recurrent genome duplications in legumes and the use of
genomics to exploit genetic variation

Jackson, S.A. (USA)

11:45 SYM-15-02

Cloning boron tolerance genes from barley and wheat

Sutton, T., Hayes, J., Schnurbusch, T., Pallotta, M., Hay, A.,
Baumann, U. and Langridge, P. (Australia and Germany)

12:05 SYM-15-03

Identifying novel factors required for legume nodule
development and autoregulation

Ferguson, B.J., Lin, Y.-H., Reid, D.E., Hayashi, S., Lin, M.-H.,
Zhang, H., Capon, R. and Gresshoff, P.M. (Australia)

12:25 SYM-15-04

Overgrowth mutants of barley and wheat; many new alleles in
the 'green revolution' dwarfing gene

Chandler, P.M. and Harding C.A. (Australia)

11:15 – 12:45

SYMPOSIUM 16

PROTEIN MISFOLDING & NEURODEGENERATION

Chairs: Prof Jürgen Götz, University of Sydney, NSW, Australia
Prof Nancy Bonini, University of Pennsylvania, USA

Location: Meeting Room 211

11:15 SYM-16-01

Therapeutic strategies for neurodegenerative diseases

Barnham, K.J. (Australia)

11:45 SYM-16-02

Truncated tau mitigates amyloid-beta pathology in mice

Ittner, L.M., Ke, Y.D., Van Eersel, J., Gladbach, A., Delerue, F. and Gotz, J. (Australia)

12:05 SYM-16-03

Zebrafish as a model organism to understand the function of fragile X Syndrome and Huntington's disease genes

Richards, R.I., Tucker, B., Lumsden, A., Henshall, T. and Lardelli, M. (Australia and USA)

12:25 SYM-16-04

Biochemical mechanisms underlying synaptic dysfunction in Alzheimer's disease

Liu, S.J., Gasperini, R., Foa, L. and **Small, D.H.** (Australia)

11:15 – 12:45

SYMPOSIUM 17

PROTEIN-PROTEIN INTERACTIONS

Chairs: Dr Tom Garrett, Walter & Eliza Hall Institute, VIC, Australia
Prof Ulrich Hartl, Max Planck Institute of Biochemistry,
Germany

Location: Meeting Room 212

11:15 SYM-17-01

Chaperone-assisted folding and assembly: the rubisco paradigm
Liu, C., Young, A.L., Windhof, A.S., Bracher, A.,
Saschenbrecker, S., Rao, B.V., Rao, K.V., Berninghausen, O.,
Mielke, T., Hartl, F.U., Beckmann, R. and **Hayer-Hartl, M.**
(Germany)

11:45 SYM-17-02 (*Applied Biosystems Edman Award Lecture*)

Structural insights into the specificity of DsbA within the
catalytic cycle
Paxman, J.J., **Borg, N.A.**, Home, J., Thompson, P.E., Kahler,
C.M., Sakellaris, P., Pearce, M., Bottomley, S.P., Rossjohn, J.
and Scanlon, M.J. (Australia)

12:05 SYM-17-03

A novel approach to monitoring protein-protein interactions
enables profiling and screening of specific heteromeric protein
complexes
Pfleger, K.D.G. (Australia)

12:25 SYM-17-04

Mixed-lineage kinase domain-like (Mlkl) is a novel
pseudokinase regulator of hematopoietic stem cell function
Murphy, J.M., Tannahill, G.M., Hatchell, E.C., Majewski, I.J.,
Stockwell, D., Zhang, J.G., Alexander, W.S. and Hilton, D.J.
(Australia)

11:15 – 12:45

SYMPOSIUM 18

THE TRANSCRIPTOME

Sponsored by Illumina

Chairs: Prof Kum Kum Khanna, Queensland Institute of Medical Research, QLD, Australia
Prof Tom Gonda, University of Queensland, QLD, Australia
Location: Meeting Room 203/204

11:15 **SYM-18-01**

Transcriptional regulatory network in embryonic stem cells
Ng, H.H. (Singapore)

11:45 **SYM-18-02**

Determining the basal chromatin signature of inducible genes in immune cells
Lim, P.S., Hardy, K., Peng, K., Bunting, K.L., Ma, L., French, H., Williams, R. and **Shannon, M.F.** (Australia)

12:05 **SYM-18-03**

Mammalian Kruppel like-transcription factor 3
Crossley, M. (Australia)

12:25 **SYM-18-04**

NF κ B family of proteins in concert with pTEFb control the elongation phase of *MYB* transcription through direct interaction with an intronic RNA stem loop structure
Pereira, L., Hugo, H., Cures, A., Purcell, D., Gerondakis, S., Brown, M., Gonda, T. and Ramsay, R. (Australia)

12:45 – 13:25 **LUNCH / POSTERS / EXHIBITION** (*Boxed lunch provided*)
13:25 – 14:25 **POSTER SESSION B** (*Presenting authors to be in attendance*)
Location: Exhibition Hall

14:30 – 16:00

SYMPOSIUM 19

COMPUTATIONAL & STRUCTURAL BIOLOGY

Chair: Dr Michelle Dunstone, Monash University, VIC, Australia

Location: Meeting Room 203

14:30 SYM-19-01

Pathways of transport protein evolution

Lam, V.H., Lee, J.-H., Silverio, A., Gomolpitanant, K.M.,
Povllotsky, T., Orlova, E., Sun, E.I. and **Saier, M.H.** (USA)

15:00 SYM-19-02

The role of dynamics in T cell receptor peptide-MHC
interactions

Meyer, G.R., Reboul, C., Borg, N.A. and **Buckle, A.M.**
(Australia)

15:20 SYM-19-03

Tracking mutant huntingtin aggregation kinetics in cells reveals
three major populations including an invariant oligomer pool

Olshina, M.A., Angley, L.M., Ramdzan, Y.M., Tang, J., Bailey,
M.F., Hill, A.F. and **Hatters, D.M.** (Australia)

15:40 SYM-19-04

Molecular evolution in quaternary structure of an essential
enzyme from bacterial extremophiles

Burgess, B.R., Griffin, M.D.W., Pearce, F.G., Voss, J.E.,
Wubben, J.M., Dobson, R.C.J., Parker, M.W., Gerrard, J.A.,
Dogovski, C. and **Perugini, M.A.** (Australia and New Zealand)

14:30 – 16:00

SYMPOSIUM 20

RESEARCH & TEACHING INTERSECTIONS

Chairs: A/Prof Hoon Eng Khoo, National University of Singapore, Singapore
A/Prof Susan Howitt, Australian National University, ACT, Australia

Location: Meeting Room 204

14:30 SYM-20-01

Has the content of introductory biochemistry courses reached a limit?

Voet, D. (USA)

15:00 SYM-20-02

Education and research in schools of pharmacy in Japan

Maeda, M. (Japan)

15:20 SYM-20-03

Development of a large scale biotechnology coursework Masters program to facilitate the transition from theory to research

Cartwright, P., Spencer, D. and Ward, L. (Australia)

15:40 SYM-20-04 (ASPS Teaching Award Lecture)

It's a green, green world: Teaching plant structure and function (sensu lato)

Cavagnaro, T.R., Baker, P.J. and Burd, M. (Australia)

14:30 – 16:00

SYMPOSIUM 21

EPIGENETICS & SMALL RNAs

Chairs: Prof Peter Waterhouse, University of Sydney, NSW, Australia
Dr Tony Millar, Australian National University, ACT,
Australia

Location: Plenary Hall 2

14:30 SYM-21-01

RNAi and epigenetics for crop improvement

Hauben, M., Laga, B., De Block, M. and **Bots, M.** (Belgium)

15:00 SYM-21-02

Polycomb proteins regulate the quantitative response to low temperatures

Finnegan, E.J., Goodrich, J., Helliwell, C.A., Peacock, W.J. and Dennis, E.S. (Australia and Scotland)

15:20 SYM-21-03

Translocation of microRNAs in phloem

Rodriguez, C., Ho, A., Atkins, C.A. and **Smith, P.M.C.** (Australia)

15:40 SYM-21-04

A role for the ribosome in plant development

Byrne, M.E. (Australia)

14:30 – 16:00

SYMPOSIUM 22

METABOLIC DISEASE

Chairs: A/Prof David Thorburn, Murdoch Children's Research Institute, VIC, Australia
A/Prof Greg Cooney, Garvan Institute of Medical Research, NSW, Australia

Location: Meeting Room 210

14:30 SYM-22-01

Roles of mitochondrial uncoupling proteins-2 and -3 in oxidative stress protection and energetic inefficiency

Harper, M.-E. (Canada)

15:00 SYM-22-02

Reactive oxygen species, protein tyrosine phosphatases and type 2 diabetes

Tiganis, T. (Australia)

15:20 SYM-22-03

Fatty acid oxidation, energy balance and insulin action in health and disease

Cooney, G.J. (Australia)

15:40 SYM-22-04

High-throughput, pooled sequencing of a patient cohort identifies novel genes that cause human complex I deficiency

Tucker, E.J., Calvo, S.E., Compton, A.G., Goldberger, O.A., Wiltshire, E., Wilson, C.J., Gabriel, S.B., Daly, M.J., Mootha, V.K. and Thorburn, D.R. (Australia, USA and New Zealand)

14:30 – 16:00

SYMPOSIUM 23

ORGANOGENESIS & REGENERATION

Sponsored by the Australian Regenerative Medicine Institute

Chair: Dr Don Newgreen, Murdoch Children's Research Institute,
VIC, Australia

Location: Meeting Room 211

14:30 SYM-23-01

Fat cadherins in kidney development and disease

McNeill, H., Saburi, S., Reginensi, A. and Bagherie-Lachidan,
M. (Canada)

15:00 SYM-23-02

Control of organ size and regeneration by the Hippo pathway

Grusche, F.A., Richardson, H.E. and **Harvey, K.F.** (Australia)

15:20 SYM-23-03

Neural crest cells regulate early muscle formation

Rios, A.C., Serralbo, O.P., Salgado, D.S. and **Marcelle, C.A.**
(Australia)

15:40 SYM-23-04

Snail proteins in the mouse intestinal stem cell niche

Horvay, K., Casagrande, F., Gany, A., Hime, G.R. and Abud,
H.E. (Australia)

14:30 – 16:00

SYMPOSIUM 24

SIGNALING AT THE SYNAPSE

Sponsored by the International Society for Neurochemistry

Chairs: Prof Phil Beart, University of Melbourne, VIC, Australia
Prof Nancy Ip, Biotech Research Institute & Molecular
Neuroscience Centre, Hong Kong, China

Location: Plenary Hall 3

14:30 SYM-24-01

Molecular basis of synaptic plasticity

Ip, N.Y. (Hong Kong)

15:00 SYM-24-02

Translational control: signaling, synapses, behavior, and disease

Klann, E. (USA)

15:20 SYM-24-03

Role of the beta isoform of CaMK2 (CaMK2b) in synaptic
function, plasticity and learning

Elgersma, Y. (Netherlands)

15:40 SYM-24-04

The role of targeting in the regulation of CaMKII *in vivo*

Rostas, J.A.P. and Skelding, K.A. (Australia)

14:30 – 16:00

SYMPOSIUM 25

UNDERSTANDING ENZYMES

Chairs: Prof Bruce Kemp, St Vincent's Institute, VIC, Australia
Prof Alice Vrielink, University of Western Australia, WA,
Australia

Location: Meeting Room 212

14:30 SYM-25-01

Structural and functional studies of trichothecene biosynthetic enzymes. A molecular approach to controlling fungal head blight

Rayment, I. (USA)

15:00 SYM-25-02

Regulation of inosine monophosphate dehydrogenase (IMPDH) - more than meets the eye

Thomas, E., Gunter, J., Webster, J., Oorschot, V., Parton, R. and **Whitehead, J.** (Australia)

15:20 SYM-25-03

Control of structure and catalytic activity of pyruvate carboxylase by acetyl CoA

Attwood, P.V., Adina-Zada, A., Jitrapakdee, S., Zeczycki, T.N., St. Maurice, M., Cleland, W.W. and Wallace, J.C. (Australia, Thailand and USA)

15:40 SYM-25-04

Biosynthetic enzymes of unusual microbial sugars

Holden, H.M. (USA)

16:00 - 16:30 AFTERNOON TEA / EXHIBITION

Location: Exhibition Hall

16:30 – 18:00

SYMPOSIUM 26

AUTOPHAGY

Sponsored by Landes Bioscience Autophagy

Chairs: Prof Rod Devenish, Monash University, VIC, Australia
Prof Noboru Mizushima, Tokyo Medical & Dental University,
Japan

Location: Meeting Room 203

16:30 SYM-26-01

Trafficking and signalling in mammalian autophagy

Tooze, S.A., Kalie, E., Longatti, A., Mcknight, N.C., Orsi, A.
and Polson, H.E.J. (UK)

17:00 SYM-26-02

Role of Parkin and Pink1 in mitochondrial quality control

Youle, R.J.Y. (USA)

17:20 SYM-26-03

How does *Burkholderia pseudomallei* evade the protective role
of autophagy in macrophage cells?

Gong, L., Li, X., Allwood, E., Treerat, P., D'Cruze, T., Adler,
B., Boyce, J., **Prescott, M.** and Devenish, R.J. (Australia)

17:40 SYM-26-04

Autophagy induction in zebrafish ribosomal RNA processing
mutants

Boglev, Y., Badrock, A.P., Trotter, A.J., De Jong-Curtain, T.A.,
Ober, E., Verkade, H., Stainier, D.Y.R., Hannan, R., Lieschke,
G.J. and Heath, J.K. (Australia and USA)

16:30 – 18:00

SYMPOSIUM 27

DRUG DISCOVERY & DESIGN

Sponsored by Cancer Therapeutics CRC Pty Ltd

Chairs: Dr Ian Street, Walter & Eliza Hall Institute, VIC, Australia
A/Prof Helen Blanchard, Griffith University, QLD, Australia

Location: Meeting Room 204

16:30 SYM-27-01

Drug development in an academic setting; a growing opportunity?

Denny, W.A. (New Zealand)

17:00 SYM-27-02

Modern drug design

Stevenson, G.I. (Australia)

17:20 SYM-27-03

PBT2 for cognitive aging and Alzheimer's disease

Bush, A.I. (Australia and USA)

17:40 SYM-27-04

Novel antimicrobials using a fragment-based approach to drug discovery

Soares Da Costa, T.P., Yap, M.Y., Tieu, W., Turnidge, J.D., Morona, R., Wallace, J.C., Wilce, M.C., Polyak, S.W., Abell, A.D. and **Booker, G.W.** (Australia)

16:30 – 18:00

SYMPOSIUM 28

HOST-PATHOGEN INTERACTIONS

Chairs: Prof Robin Anders, La Trobe University, VIC, Australia
A/Prof Heidi Drummer, Burnet Institute, VIC, Australia

Location: Meeting Room 210

16:30 SYM-28-01

The critical role of metal ions and their transporters in pneumococcal resistance to innate defences

Paton, J.C. (Australia)

17:00 SYM-28-02

Studies on the membrane fusion activation synapse of the HIV-1 envelope glycoproteins, GP120-GP41

Poumbourios, P., Laumaea, A., Bellamy-McIntyre, A.K., Bar, S., Maerz, A.L., Hill, M.K., Gorry, P.R. and Drummer, H.E. (Australia and Germany)

17:20 SYM-28-03

Chaperones away from home - exported DNAJ proteins of the malaria parasite

Proellocks, N., Mikkonen, A., Mckenzie, M., Cannon, P., Rug, M. and **Maier, A.G.** (Australia)

17:40 SYM-28-04

Structural implications for the design of new anti-malarial drugs targeting the *Plasmodium falciparum* neutral aminopeptidases

McGowan, S., Oellig, C.A., Gardiner, D.L., Greenbaum, D.C., Dalton, J.P. and Whisstock, J.C. (Australia, USA and Canada)

16:30 – 18:00

SYMPOSIUM 29

SECRETORY PATHWAY

Chairs: Prof Jenny Stow, University of Queensland, QLD, Australia
Dr Rachael Murray, Children's Hospital at Westmead, NSW,
Australia

Location: Plenary Hall 3

16:30 SYM-29-01

CHC22 clathrin functions in traffic of GLUT4 to an insulin-sensitive secretory compartment

Brodsky, F.M., Esk, C., Hoshino, S. and Vassilopoulos, S.
(USA and France)

17:00 SYM-29-02

The regulation of apoE secretion from macrophages

Kritharides, L. (Australia)

17:20 SYM-29-03

The role of VAMP8 in secretion

Thorn, P., Behrendorff, N., Hickey, A. and Chew, L.S.
(Australia)

17:40 SYM-29-04

The trafficking itinerary of the beta-secretase bace and its impact on amyloid precursor protein processing

Chia, P.Z.C., Gasnereau, I., Sharples, R.A., Hill, A.F. and Gleeson, P.A. (Australia)

16:30 – 18:00

SYMPOSIUM 30

PLANT ENERGY BIOLOGY

Chairs: Prof Steve Smith, University of Western Australia, WA, Australia
Prof Barry Pogson, Australian National University, ACT, Australia

Location: Meeting Room 211

16:30 SYM-30-01

Analysis of carbon partitioning to oil in seeds and vegetative biomass

Hernandez, L., Slocombe, S., Whitehead, L., He, Z., Dave, A.R., Larson, T.R. and **Graham, I.A.** (UK)

17:00 SYM-30-02

What does it take to be C4? A lesson from maize husk photosynthesis

Furbank, R.T., Pengelly, J., Kwasny, S., Bala, S., Evans, J.R., Voznesenskaya, E., Edwards, G. and von Caemmerer, S. (Australia and USA)

17:20 SYM-30-03

Peroxisome dynamics: importance to the restoration of reactive oxygen species (ROS) homeostasis during plant cell regeneration

Tiew, T.W.Y., Rose, R.J. and Sheahan, M.B. (Australia)

17:40 SYM-30-04

The in planta roles of the inositol-monophosphate-like proteins in *Arabidopsis thaliana*

Ingle, R.A., Petersen, L.N., Sewell, B.T. and Marineo, S. (South Africa and Italy)

16:30 – 18:00

SYMPOSIUM 31

GENES, DEVELOPMENT & DISEASE

*Sponsored by ARC Centre of Excellence
In Biotechnology & Development*

Chairs: Prof Peter Koopman, University of Queensland, QLD,
Australia
Dr Craig Smith, Murdoch Children's Research Institute, VIC,
Australia

Location: Plenary Hall 2

16:30 SYM-31-01

Functions of NANOS2 in the embryonic germ cells and
spermatogonial stem cells in mice

Saga, Y. (Japan)

17:00 SYM-31-02

The chicken embryo as a model for analysing gonadal
development

Smith, C.A., Roeszler, K.N., Ohnesorg, T., Cummins, D.,
Farlie, P.G., Doran, T. and Sinclair, A.H. (Australia)

17:20 SYM-31-03

Dissecting the role of the primary cilium in hedgehog signaling

Ashe, A., Butterfield, N.C., Town, L., Courtney, A., Barry, R.,
Ferguson, C., Parton, R.G., Wainwright, B., Whitelaw, E. and
Wicking, C. (Australia)

17:40 SYM-31-04

Notch signalling, somitogenesis and congenital vertebral
defects

Chapman, G., Sparrow, D.B. and **Dunwoodie, S.L.** (Australia)

16:30 – 18:00

SYMPOSIUM 32

TRANSLATION

Sponsored by Monash Institute of Medical Research

Chairs: A/Prof Ross Hannan, Peter MacCallum Cancer Centre, VIC, Australia

Dr Jackie Wilce, Monash University, VIC, Australia

Location: Meeting Room 212

16:30 **SYM-32-01**

mRNA quality control: Mechanisms of nonsense-mediated mRNA decay

Izaurralde, E. (Germany)

17:00 **SYM-32-02**

The small RNA profile of murine cardiomyocytes

Humphreys, D.T., Clancy, J.L., Hynes, C., Patel, H., Suter, C.M. and **Preiss, T.** (Australia)

17:20 **SYM-32-03**

AKT cooperates with c-MYC to control ribosome biogenesis and growth via mTORC1-dependent and independent pathways

Chan, J.C., Hannan, K.M., Riddell, K., Peck, A., Hemmings, B.A., Hannan, R.D. and **Pearson, R.B.** (Australia and Switzerland)

17:40 **SYM-32-04**

Differential regulation by microRNAs on endogenous mRNA targets at the level of translation, deadenylation and mRNA decay

Clancy, J.L., Beilharz, T.H., Hynes, C.J., Humphreys, D.T. and Preiss, T. (Australia)

18:00 – 19:00 **HAPPY HOUR / EXHIBITION**

Location: Exhibition Hall

09:00 – 09:05

**PRESENTATION OF
ANZSCDB YOUNG INVESTIGATOR AWARDS**

Sponsored by Carl Zeiss

Chair: Prof Edna Hardeman, University of New South Wales,
NSW, Australia

Location: Plenary Hall 2

To: Dr Ruth Arkell, Australian National University, ACT,
Australia - 2009 ANZSCDB Young Investigator Award

A/Prof Kat Gaus, University of New South Wales, NSW,
Australia - 2010 ANZSCDB Young Investigator Award

09:05 – 09:55

ANZSCDB PRESIDENT'S MEDAL LECTURE

(Including presentation of Medal)

Sponsored by Sigma Aldrich Pty Ltd

Chair: Prof Edna Hardeman, UNSW, Australia

Location: Plenary Hall 2

09:05 **PLE-WED-08**

Epigenetics and the determination of phenotype

Whitelaw, E. (Australia)

Professor Emma Whitelaw



Emma Whitelaw is a molecular biologist working at the Queensland Institute of Medical Research. After completing her undergraduate degree at the Australian National University, she obtained a D.Phil at the University of Oxford and remained working in London and Oxford for the next fifteen years, moving back to Australia in 1991. She took up a Senior Lectureship at the University of Sydney and carried out both teaching and research. She has focused her research on eukaryotic transcription using the mouse as a model organism. Her

most notable research achievements are in the area of epigenetics. In particular, her studies on the transgenerational inheritance of epigenetic marks have stimulated a great deal of interest from the wider scientific community. More recently she has extended her studies to include the interaction between the environment and the epigenome. In 2008 she was awarded a NHMRC Australia Fellowship, the most prestigious fellowship in medical research in Australia.

09:00 – 09:05

**PRESENTATION OF
ASPS-FPB BEST PAPER AWARD**

Chair: Dr Rana Munns, CSIRO Plant Industry, ACT, Australia

Location: Plenary Hall 3

To: Dr Meg Shelden, University of Melbourne, VIC, Australia

09:05 – 09:55

ASPS PETER GOLDACRE AWARD & LECTURE
(Including presentation of Award)
Sponsored by Functional Plant Biology

Chair: Dr Rana Munns, CSIRO Plant Industry, ACT, Australia

Location: Plenary Hall 3

09:05 **PLE-WED-09**

Epigenetic regulation of carotenoid composition and plant development in response to a changing environment

Cazzonelli, C.I., Burgess, A.L., Roberts, A.C., Yadav, A.K., Collinge, D. and Pogson, B.J. (Australia)

Dr Christopher Cazzonelli



Christopher Cazzonelli received his Bachelor of Science (Honours Class I) at the University of Queensland. He won an Australian Postgraduate Award to study plant genetic engineering as well as molecular gene regulation in Jimmy Botella's laboratory (University of Queensland), where he completed his PhD in 2002. He subsequently won a prestigious United States Department of Agriculture Postdoctoral Fellowship to work in Jeff Velten's laboratory (USDA-ARS, Lubbock, Texas, USA) and investigate the molecular nature of gene activation, gene silencing and remote sensing of plant stress events. In 2006, he was recruited by the ARC Centre of Excellence in Plant Energy Biology (Australian National University) to work with Barry Pogson and determine what regulates the production of carotenoid pigments in plants. Chris has since discovered epigenetic regulatory mechanisms controlling carotenoid accumulation as well as plant development and begun to establish a new wave in carotenoid regulatory biology.

10:00 – 10:45

BIOCHEMICAL SOCIETY/ASBMB LECTURE

Chair: A/Prof Mick Foley, La Trobe University, VIC, Australia

Location: Plenary Hall 2

10:00 PLE-WED-10

The evolution of therapeutic monoclonal antibodies

Winter, G. (UK)

Sir Gregory Winter



Sir Gregory Winter (FRS, CBE, FTSE) is a pioneer of protein engineering and therapeutic monoclonal antibodies, and an inventor and entrepreneur. He is currently the Deputy Director of the Medical Research Council Laboratory of Molecular Biology, and the Centre for Protein Engineering, Cambridge. In 1986, he invented techniques to humanize antibodies and to industrialize the discovery of fully human antibodies for therapeutic uses by antibody phage display technology. Most of the therapeutic antibodies on the market were developed using his inventions. Winter has founded three biotechnology companies based on his inventions. In 1989 he founded Cambridge Antibody Technology to develop human therapeutic antibodies; in 2000 Domantis, to develop antibodies based on single antigen-binding domains; and in 2009 Bicycle Therapeutics to develop small bicyclic peptides attached covalently to a chemical core. In 2006 CAT and Domantis were acquired by AstraZeneca and GSK respectively for a combined value of nearly GBP £1 bn. Winter has won several international prizes, including the Louis Jeantet Prize for Medicine (Switzerland) in 1989, the King Faisal International Prize for Medicine (Saudi Arabia) in 1995, the National Biotechnology Ventures Award (USA) in 2004, and the Biochemical Society Award (UK) in 2006. He is a Fellow of Trinity College, University of Cambridge and was knighted in 2004 for services to Science.

10:00 – 10:45

PLENARY LECTURE

Chair: Prof Masamitsu Futai, Iwate Medical University, Japan

Location: Plenary Hall 3

10:00 PLE-WED-11

Duplication, disease and the evolution of the human genome

Eichler, E.E. (USA)

Professor Evan Eichler



Evan Eichler is a Professor and Howard Hughes Medical Institute Investigator in the Department of Genome Sciences, University of Washington School of Medicine. He graduated with a B.Sc. Honours degree in Biology from the University of Saskatchewan, Canada in 1990. He received his Ph.D. in 1995 from the Department of Molecular and Human Genetics at Baylor College of Medicine, Houston. After a Hollaender post-doctoral fellowship at Lawrence Livermore National Laboratory, he joined the faculty of Case Western Reserve University in 1997 and later the Department of Genome Sciences in 2004. He was a March of Dimes Basil O'Connor Scholar (1998-2001), was appointed as an HHMI Investigator (2005), and awarded an AAAS Fellowship (2006) and the American Society of Human Genetics Curt Stern Award (2008). He is an editor of *Genome Research* and has served on various scientific advisory boards for both NIH and NSF. His research group provided the first genome-wide view of segmental duplications within human and other primate genomes and he is a leader in an effort to identify and sequence normal and disease-causing structural variation in the human genome. The long-term goal of his research is to understand the evolution and mechanisms of recent gene duplication and its relationship to copy-number variation and human disease.

10:45 – 11:25 MORNING TEA / EXHIBITION

Location: Exhibition Hall

11:30 – 12:45

COLLOQUIA 1

MOLECULAR CELL BIOLOGY

Chairs: Dr Diana Stojanovski, La Trobe University, VIC, Australia
Prof Paul Gleeson, University of Melbourne, VIC

Location: Plenary Hall 2

11:30 COL-01-01

Recognition of the CD1d- α -GalCer analogues by the semi-invariant NKT TCR

Wun, K.S., Pang, S.S., Cameron, G., Pellicci, D.G., Patel, O., McCluskey, J., Porcelli, S., Godfrey, D.I. and Rossjohn, J. (Australia and USA)

11:45 COL-01-02

LFA-1 fine-tuning by cathepsin X

Jevnikar, Z., Obermajer, N. and Kos, J. (Slovenia)

12:00 COL-01-03

Investigating the factors that sense and influence redox potential at the cellular and subcellular level

Ayer, A., Tan, S.-X., Fellermeier, S., Meyer, A.J., Dawes, I.W. and Perrone, G.G. (Australia and Germany)

12:15 COL-01-04

Sorting nexin 9 function during cytokinesis

Ma, M.P.C., Robinson, P.J. and Chircop, M. (Australia)

12:30 COL-01-05

Sorting nexin 5: a modulator of macropinocytosis in primary macrophages

Lim, J.P., Teasdale, R.D. and Gleeson, P.A. (Australia)

11:30 – 12:45

COLLOQUIA 2

DEVELOPMENTAL BIOLOGY

Chairs: Dr Ben Hogan, University of Queensland, QLD, Australia
Dr Richard Anderson, University of Melbourne, VIC,
Australia

Location: Plenary Hall 3

11:30 COL-02-01

Patched1 is essential for correct upper lip and nose development

Metzis, V., Courtney, A., Ferguson, C., Parton, R., Wainwright, B. and Wicking, C. (Australia)

11:45 COL-02-02

Drosophila melanogaster pupal disc eversion: a system for studying epithelial to mesenchymal transitions

Manhire-Heath, R.B., Saint, R.B. and Murray, M.J. (Australia)

12:00 COL-02-03

A mutation in a component of TFIIF results in a dysplastic intestinal epithelium in zebrafish

Christie, E.L., Trotter, A.J., Boglev, Y., Verkade, H., Ober, E., Field, H., Stainier, D.Y.R., Hannan, R., Lieschke, G.J. and Heath, J.K. (Australia and USA)

12:15 COL-02-04

Nodal signalling in germ cell development

Spiller, C.M., Bowles, J., Feng, C.W., Jackson, A. and Koopman, P.A. (Australia)

12:30 COL-02-05

LICAM is a modifier gene for members of the endothelin signalling pathway during enteric nervous system development

Wallace, A.S. and Anderson, R.B. (Australia)

11:30 – 12:45

COLLOQUIA 3

GENE REGULATION & SIGNALLING

Chair: Dr Linda Parsons, Peter MacCallum Cancer Centre, VIC,
Australia

Location: Meeting Room 210

11:30 COL-03-01

Nucleosomes mark exons

Schwartz, S., Meshorer, E. and Ast, G. (Israel)

11:45 COL-03-02

An erythroid regulatory network within the Klf family

Funnell, A.P.W., Mak, K.S., Pearson, R.C.M., Eaton, S.A.,
Pelka, G.J., Radziewicz, T., Power, M., Tam, P.P. and Crossley,
M. (Australia)

12:00 COL-03-03

Mixing protein-protein interactions into a transcriptional
network allows fine tuning of noise in a synthetic switch circuit

Pietsch, J., Pocock, M., Palmer, A., Dodd, I. and Shearwin, K.
(Australia)

12:15 COL-03-04

Translational control in folliculogenesis and oocyte
development: a role for RNA-binding protein Musashi-1

Gunter, K.M., Fraser, B.A., Sobinoff, A.P., Pye, V., Siddall,
N.A., Hime, G.R. and McLaughlin, E.A. (Australia)

12:30 COL-03-05

The Salvador-Warts-Hippo pathway in tissue regeneration

Grusche, F.A., Richardson, H. and Harvey, K.F. (Australia)

11:30 – 12:45

COLLOQUIA 4

MOLECULAR BASIS OF DISEASE

Chairs: Dr Mat McKenzie, La Trobe University, VIC, Australia
A/Prof Joerg Heierhorst, St Vincent's Institute of Medical
Research, VIC, Australia

Location: Meeting Room 211

11:30 COL-04-01

Peroxisome deficiency in brain leads to cerebellar
dysmorphology, reactive gliosis and cellular changes associated
with mitochondrial-mediated oxidative stress

Mueller, C.C., **Meshram, M.**, Nguyen, T.H., Ahlemeyer, B.,
Baumgart-Vogt, E. and Craine, D.I. (Australia and Germany)

11:45 COL-04-02

Biochemical and biophysical analysis of enzymatic domains
from the Parkinson's disease-associated protein kinase LRRK2

Mills, R.D., Ng, X.P., Knott, R.B, Hanley, T., Cheng, H.-C.,
Mulhern, T.D. and Culvenor, J.G. (Australia)

12:00 COL-04-03

Distinct HIV-1 membrane-proximal external region lipid
bilayer interactions of broad neutralizing mAbs 2F5 and 4E10
detected by combined AFM and confocal microscopy

Franquelim, H.G., Chiantia, S., Veiga, A.S., Santos, N.C.,
Schwille, P. and Castanho, M.A.R.B. (Portugal)

12:15 COL-04-04

Modulating DNA damage response pathways to enhance the
cytotoxicity induced by doxorubicin-DNA adducts

Forrest, R.A., Rephaeli, A., Nudelman, A., Phillips, D.R. and
Cutts, S.M. (Australia and Israel)

12:30 COL-04-05

Nuclear import mechanisms of rabies virus phospho-protein

Oksayan, S., Blondel, D., Jans, D.A. and Moseley, G.W.
(Australia and France)

11:30– 12:45

COLLOQUIA 5

PLANT SYSTEMS

Chair: Dr Tony Gendall, La Trobe University, VIC, Australia

Location: Meeting Room 212

11:30 COL-05-01 (*ASPS Best Paper Award Lecture*)

Identification and functional characterisation of aquaporins in the grapevine, *Vitis vinifera*

Shelden, M.C., Howitt, S.M., Kaiser, B.N. and Tyerman, S.D. (Australia)

11:45 COL-05-02

Functional domains of petal loss, a helix transcription factor in *Arabidopsis thaliana*

Quon, T. and Smyth, D.R. (Australia)

12:00 COL-05-03

The functionally redundant AtNHX4 and AtNHX6 antiporters are essential for plant development and stress tolerance of the model plant *Arabidopsis thaliana*

Das, P. and Gendall, A. (Australia)

12:15 COL-05-04

Aquaporins expression in relation to physiological bark disease of rubber tree

Tunggoen, K., Kongsawadworakul, P., Viboonjun, U., Katsuhara, M., Brunei, N., Sakr, S., Chrestin, H. and Narangajavana, J. (Thailand, Japan and France)

12:30 COL-05-05

Effector proteins trafficking from flax rust and their recognition by host resistance proteins

Rafiqi, M., Dodds, P.N., Lawrence, G.J., Jones, D.A. and Hardham, A.R. (Australia)

11:30 – 12:45

COLLOQUIA 6

PROTEINS: MACHINES OF LIFE

Chairs: Dr Chaille Webb, Monash University, VIC, Australia
Dr Peter Czabotar, Walter & Eliza Hall Institute, VIC,
Australia

Location: Meeting Room 203/204

11:30 COL-06-01

Mechanisms underlying the differential responses of cells over-expressing Bcl-2 pro-survival proteins to ABT-737

Lee, E.F., Colman, P.M. and Fairlie, W.D. (Australia)

11:45 COL-06-02

Structural insights into MACPF pore assembly

Kondos, S.C., Kan, W.T., Hatfaludi, T., Devlin, G.,
Voskoboinik, I., Hotze, E.M., Tweten, R.K., Whisstock, J.C.,
Law, R.H.P. and Dunstone, M.A. (Australia and USA)

12:00 COL-06-03

Molecular mechanisms of N-glycosylation site selection by
Ost3/6p

Jamaluddin, M.F. and **Schulz, B.L.** (Australia)

12:15 COL-06-04

Histidine-rich glycoprotein (HRG) - a novel pattern recognition
molecule that senses danger

Poon, I.K.H., Hulett, M.D. and Parish, C.R. (Australia)

12:30 COL-06-05

Chemical protein modification: tools for synthetic biology

Bernardes, G.J.L. and Davis, B.G. (UK)

12:50 – 13:45 LUNCH / POSTERS / EXHIBITION (*Boxed lunch provided*)

13:45 – 14:45 POSTER SESSION C (*Presenting authors to be in attendance*)

Location: Exhibition Hall

14:45 – 14:55

ASBMB PRESENTATIONS

Chair: Prof Ian Dawes, University of New South Wales, NSW,
Australia

Location: Plenary Hall 2

APPLIED BIOSYSTEMS EDMAN AWARD

To: Dr Natalie Borg, Monash University, VIC, Australia

BECKMAN COULTER DISCOVERY SCIENCE AWARD

To: Dr Zee Upton, Queensland University of Technology, QLD,
Australia

BOOMERANG AWARD

To: Dr Lauren Ely, Stanford University, USA

14:55 – 15:45

**THE MERCK RESEARCH EXCELLENCE
MEDAL & LECTURE**
(Including presentation of Medal)

Chair: Prof Ian Dawes, University of New South Wales, NSW,
Australia

Location: Plenary Hall 2

14:55 PLE-WED-12

Investigating the role of exosomes in the processing of proteins
associated with neurodegenerative diseases

Hill, A.F. (Australia)

A/Prof Andrew Hill



Associate Professor Andrew Hill is a Principal Research Fellow in the Department of Biochemistry and Molecular Biology at the University of Melbourne. His laboratory studies the molecular and cellular biology of neurodegenerative disorders such as Alzheimer's and prion diseases. In 1992, he began working on prion diseases in the UK, researched the molecular properties of human and animal prion strains, and identified the link between BSE and a new form of prion disease in humans – variant Creutzfeldt-Jakob disease that emerged in 1996. This work led to a number of high profile publications in Nature and Science and to the development of a diagnostic and classification system for human prion diseases. Andrew first came to Australia in 2000 as a Wellcome Trust Travelling Prize Research Fellow where he expanded his research interests into other neurodegenerative disorders such as Alzheimer's and Parkinson's diseases. Andrew's research team uses in vitro and in vivo models to look at how abnormal prion proteins travel from cell to cell and factors that affect prion infection. This work has extended into identifying similar pathways involved in the processing of the amyloid precursor protein (APP) involved in Alzheimer's disease. His laboratory also works on the basic biology of the prion protein and APP to understand their role in the disease process in more detail, with the goal of translating this into the design of novel therapeutics and diagnostics.

14:55 – 15:40

R.N. ROBERTSON LECTURE

Chair: Dr Rana Munns, CSIRO Plant Industry, ACT, Australia

Location: Plenary Hall 3

14:55 PLE-WED-13

Membrane physiology in leaves, Earth's lungs

Evans, J.R. (Australia)

Dr John Evans



John Evans gained his PhD from ANU in 1984 under the supervision of Graham Farquhar. His research has focussed on photosynthesis with particular emphasis on linking the underlying biochemistry and anatomy to leaf physiology. During a post doctoral fellowship spent in Jan Anderson's lab in CSIRO Plant Industry, he studied the composition and properties of chloroplast thylakoid membranes. He has argued that the acclimation of leaves to different light environments can be understood from the perspective of investing in nitrogen. Allocation towards photosynthetic capacity is increased in sunny situations at the expense of light capture while the opposite is true in shaded situations. Most of his career has been spent at the ANU, where in collaboration with Susanne von Caemmerer, they established the field of research investigating carbon dioxide diffusion within leaves. He has used a combination of techniques to measure the profiles of light absorption and carbon dioxide fixation through leaves. The impact of his research was recognised by being listed in the ISI highly cited Plant and Animal Sciences category.

15:45 – 16:25 AFTERNOON TEA / EXHIBITION

Location: Exhibition Hall

16:30 – 18:00

SYMPOSIUM 33

ANTIBODY & PROTEIN ENGINEERING

Sponsored by CRC Biomarkers

Chairs: Dr Daniel Christ, Garvan Institute of Medical Research,
NSW, Australia
Dr Greg Coia, CSIRO, VIC, Australia

Location: Plenary Hall 3

16:30 SYM-33-01

Next Generation Biologics

Jermutus, L. (UK)

17:00 SYM-33-02

Beyond antibodies - from IgG to domain antibodies and cyclic peptides

Winter, G. (UK)

17:20 SYM-33-03

Integrated development of therapeutic proteins

Kopsidas, G. (Australia)

17:40 SYM-33-04

Novel gadolinium dendrimer MRI contrast agents for non-invasive detection of thrombosis and vulnerable plaques

Hagemeyer, C.E., Wu, Z., Giannis, M.P., Karellas, P.,
Meissner, M., von zur Muhlen, C., von Elverfeldt, D., Krippner,
G.Y., Owen, D.J. and Peter K. (Australia and Germany)

16:30 – 18:00

SYMPOSIUM 34

MOLECULAR BIOLOGY OF CANCER

Chairs: Dr Andreas Strasser, Walter & Eliza Hall Institute, VIC,
Australia

Dr Vishva Dixit, Genentech Inc, USA

Location: Meeting Room 203/204

16:30 SYM-34-01

Engulfment and degradation of apoptotic cells

Nagata, S. (Japan)

17:00 SYM-34-02

The role of endogenously expressed pro-survival Bcl-2 family members in tumour development and sustaining tumour growth

Kelly, G., Kelly, P.N., Glaser, S., Grabow, S., Delbridge, A., Herold, M., Robb, L., Adams, J.M. and **Strasser, A.** (Australia)

17:20 SYM-34-03

Regulation of apoptotic and necroptotic death by IAPs and ubiquitin signalling

Silke, J., Wong, W.W.L., Nachbur, U., Feltham, R., Khan, N. and Moulin, M. (Australia)

17:40 SYM-34-04

Structural insights into how the Bcl-2 of proteins regulate apoptosis

Czabotar, P.E., Lee, E.F., Fairlie, W.D. and Colman, P.M. (Australia)

16:30 – 18:00

SYMPOSIUM 35

NUTRITION & HEALTH

Chairs: Dr David Topping, CSIRO Food Futures Flagship, SA,
Australia
Dr Steve Jobling, CSIRO Food Futures Flagship, ACT,
Australia

Location: Meeting Room 210

16:30 SYM-35-01

Metabolic engineering of crops for human nutritional benefit

Morell, M.K., Bird, A.R., Topping, D.L., Jobling, S.A.,
Regina, A., Li, Z., Petrie, J., Singh, S., Tanner, G.S. and Howitt,
C.A. (Australia)

17:00 SYM-35-02

Plant fibre carbohydrates and their potential for improving
human health

Topping, D. (Australia)

17:20 SYM-35-03

Exploring new science to understand nutritional value of rice

Fitzgerald, M.A. (Philippines)

17:40 SYM-35-04

Food security in the future may be compromised by lower
nutritional value and increased toxicity of crop plants

Gleadow, R., Hamill, J., Neale, A., Blomstedt, C., Miller, R.,
O'Donnell, N. and Cavagnaro, T. (Australia)

16:30 – 18:00

SYMPOSIUM 36

MEMBRANE DYNAMICS

Chairs: Prof Rob Parton, University of Queensland, QLD, Australia
A/Prof Katerina Gaus, University of New South Wales, NSW,
Australia

Location: Meeting Room 211

16:30 SYM-36-01

Plasma membrane domain organization in cancer cell signaling and migration

Nabi, I.R. (Canada)

17:00 SYM-36-02

Novel insight into the structure and functioning of Ras family proteins: a membrane reorientation and nanoclustering based codec for isoform diversity

Abankwa, D., Gorfe, A.A., Inder, K., Kohnke, M., Schmitt, S., Alexandrov, K. and Hancock, J.F. (Australia and USA)

17:20 SYM-36-03

Quantitative Proteomic Analysis of the Adipocyte Plasma Membrane Identifies Novel Insulin-Responsive Proteins

Prior, M.J., Larance, M., Lawrence, R.T., Soul, J., Humphrey, S., Kanazawa, H., Guilhaus, M. and James, D.E. (Australia and Japan)

17:40 SYM-36-04

The role of membrane domains and Annexin 6 in T cell migration

Cornely, R., Grewal, T. and Gaus, K. (Australia)

16:30 – 18:00

SYMPOSIUM 37

STRESS SIGNALING

Chairs: Dr Julie Atkin, La Trobe University, VIC, Australia
A/Prof Trevor Biden, Garvan Institute of Medical Research,
NSW, Australia

Location: Meeting Room 212

16:30 SYM-37-01

ER stress in disease

Kaufman, R.J. (USA)

17:00 SYM-37-02

Stress signalling from the endoplasmic reticulum and impaired cellular trafficking in amyotrophic lateral sclerosis

Atkin, J.D., Farg, M.A., Walker, A.K., Soo, K.Y., Turner, B.J., Nagley, P.N. and Horne, M.K. (Australia)

17:20 SYM-37-03

Stathmin (STMN) is a novel substrate of stress-activated c-Jun N-terminal kinase (JNK)

Zhao, T.T., Yeap, Y.Y.C., Ngoei, K.R., Bogoyevitch, M.A. and **Ng, D.C.H.** (Australia)

17:40 SYM-37-04

Ceramide accumulation in the endoplasmic reticulum (ER) promotes ER stress and apoptosis in lipotoxic β -cells by impairing protein trafficking

Boslem, E., Macintosh, G., Preston, A.M., Laybutt, D.R., Meikle, P.J. and **Biden, T.J.** (Australia)

16:30 – 18:00

SYMPOSIUM 38

RNAi

Sponsored by Millennium Science Pty Ltd

Chairs: Dr Ross Dickins, Walter & Eliza Hall Institute, VIC, Australia
Dr Kaylene Simpson, Peter MacCallum Cancer Centre, VIC,
Australia

Location: Plenary Hall 2

16:30 SYM-38-01

“Hitting cancer where it hurts most!”: The powers of RNAi
screening in target discovery and biomarker identification

Beijersbergen, R.L. (Netherlands)

17:00 SYM-38-02

Non-canonical functions of the microRNA biogenesis
machinery

Chong, M.M.W. (Australia)

17:20 SYM-38-03

Illuminating molecular pathways through integration of
functional genomics and proteomics

Saunders, D.N., Wong, J., Poon, S., Pu, C., Wan, A. and
Aparicio, S. (Australia and Canada)

17:40 SYM-38-04

Post-transcriptional control of neuronal differentiation

Khandelia, P., Yap, K., Lim, Z.Q. and **Makeyev, E.V.**
(Singapore)

18:30 – 20:00

OzBio2010 PUBLIC FORUM

This public forum does not require registration and is free of charge

**BIOSCIENCES AND GLOBAL WARMING – OPTIONS FOR
LOW CO₂ ENERGY PRODUCTION**

Sponsored by
*ANZAAS, La Trobe University
Bio21 University of Melbourne and
Department of Innovation Industry and Regional Development*

Co-ordinator: Professor David Vaux, La Trobe University, VIC
Australia

Location: Plenary Hall 2, Melbourne Convention & Exhibition
Centre

The program will consist of the 3 panel members who will give a 10-15 minute talk, and the rest of the time will be questions and answers, and general discussion.

Moderator / Host

Robyn Williams

Robyn Williams AM is a science journalist and broadcaster who has hosted the Science Show on the Australian Broadcasting Corporation since 1975, Ockham's Razor (created 1984) and In Conversation (created 1997).

Robyn Williams was born in Wales, and educated in London and Vienna. He graduated from the University of London with a Bachelor of Science (Honours) degree. During this period he was active in university acting and, like many other notable students, made (guest) appearances in the BBC series The Goodies, Monty Python's Flying Circus and Doctor Who.

09:00 – 09:45

PLENARY LECTURE

Chair: Prof Tony Bacic, University of Melbourne, VIC, Australia

Location: Plenary Hall 25

09:00 PLE-THU-14

Plant innate immunity proteins

Anderson, M.A. (Australia)

Professor Marilyn Anderson

Marilyn Anderson is a Professor in the Department of Biochemistry at La Trobe University. After completing a BSc Honours at The University of Melbourne and a PhD in Biochemistry at La Trobe University she spent seven years in the United States working on diabetes at the University of Miami and oncogenes at Cold Spring Harbor Laboratory. Professor Anderson returned to Australia in 1982 to establish a molecular biology group at the newly established Plant Cell Biology Research Centre at the University of Melbourne. Her current work is focussed on defence molecules produced by plants for protection against insect pests and pathogens. This interest was a spin off from work on genes that control pollination in flowering plants. She discovered that the female sexual tissues of plants produce high concentrations of molecules that protect reproductive capacity under adverse conditions in the field. Her current research spans from basic work on the structure and function of these molecules, to the practical application of creating crop plants which are protected from losses in the field due to predation and disease. This practical application is being developed within the company Hexima Limited, of which Professor Anderson is a founding scientist and Chief Science Officer.

09:00 – 09:45

PLENARY LECTURE

Chair: Prof Christina Mitchell, Monash University, VIC, Australia

Location: Plenary Hall 3

09:00 PLE-THU-15

Regulation by ubiquitin and ubiquitin-like proteins

Schulman, B.A. (USA)

Professor Brenda Schulman



Brenda Schulman is an Investigator of the Howard Hughes Medical Institute, and a Member at St. Jude Children's Research Hospital. She is also Co-Director of the Program in Molecular Oncology at the St. Jude Cancer Center, and holds affiliate faculty positions at the University of Tennessee College of Medicine and Vanderbilt University. Schulman received her B.A. in Biology from the Johns Hopkins University in 1989. Following obtaining her Ph.D. in Biology from M.I.T.

in 1996, she did postdoctoral studies in cell cycle research at Massachusetts General Hospital, and in X-ray crystallography at Memorial Sloan-Kettering Cancer Center. She has received a Pew Scholar Award in the Biomedical Sciences, a Beckman Young Investigator Award, and a U.S. Presidential Early Career Award for Scientists and Engineers. Her current research is focused on understanding the conjugation pathways for ubiquitin and ubiquitin-like proteins, and on the roles of these pathways in controlling cell division.

09:50 – 10:35

PLENARY LECTURE

Chair: Prof Angelo Azzi, Tufts University, HNRCA, USA

Location: Plenary Hall 3

09:50 PLE-THU-16

Structure and function of proteins relevant in drug discovery

Wang, A. (Taiwan)

Professor Andrew Wang



Professor Andrew Wang is a Distinguished Research Fellow at the Institute of Biological Chemistry at Academia Sinica. After receiving a Masters degree in chemistry from National Taiwan University in 1970, he gained a PhD in chemistry at the University of Illinois at Urbana-Champaign (UIUC) in 1974. He then held various research positions at Massachusetts Institute of Technology until 1988. From 1988 to 2000, he served as a faculty member of the Department of Cell and Structural Biology at the UIUC. In 2006, Andrew was appointed to his current position as a vice president of Academia Sinica. Andrew is widely-recognized for his use of interdisciplinary approaches to study complex biological systems such as structural enzymology. He became an Academician in 2000, and has been made a Fellow of several international institutions such as the Third World Academy of Sciences in 2005, the American Association for the Advancement of Science in 1988, the American Institute of Chemists in 1987, and the American Society for Biochemistry and Molecular Biology in 1987. Andrew was also the recipient of the Taiwanese-American Foundation's Science and Engineering Achievement Award in 2007. An active figure in advancing the development of sciences, Andrew serves as a council member of Human Proteomics Organization (HUPO) and has held presidency of three societies - the Taiwan Society of Biochemistry and Molecular Biology (2001 - 2004), the Biophysical Society of ROC (2001 - 2007) and the Taiwan Proteomics Society (2003 - 2006). He is president elect of the FAOBMB.

09:50 – 10:35

PLENARY LECTURE

Chair: David Vaux, La Trobe University, VIC, Australia

Location: Plenary Hall 2

09:50 PLE-THU-17

Lessons from death signaling

Dixit, V. (USA)

Professor Vishva Dixit



Vishva Dixit has conducted studies defining key components of the death pathway and answered fundamental questions about death receptor signaling. His laboratory published a series of groundbreaking papers in which they defined the molecular components of the death receptor pathway. It was previously thought that receptors signaled either by serving as ion channels or by altering phosphorylation-dephosphorylation events. Work in the Dixit laboratory conclusively showed that death domain-containing receptors signaled apoptosis by an entirely new mechanism, specifically, the adapter (FADD)-mediated recruitment and activation of a death protease (FLICE/caspase-8). Both papers reporting this seminal finding were designated as citation classics and contributed to Vishva being the second most highly cited scientist in all scientific disciplines in 1997. In recognition of these discoveries, he was awarded in 1996 the Warner-Lambert/Parke-Davis Award in Experimental Pathology. The Dixit laboratory also identified the first mammalian death protease equivalent to CED3, the death protein in worms. In subsequent studies, they identified the signaling and “decoy” receptors for TRAIL, a proapoptotic ligand related to TNF that specifically kills cancer cells. Significant efforts are presently focused in the pharmaceutical and biotechnology industry on developing TRAIL and agonist antibodies to the Death Receptors as therapeutic agents for the treatment of cancer.

10:35 – 11:15 MORNING TEA / EXHIBITION

Location: Exhibition Hall

11:15 – 12:45

SYMPOSIUM 39

DYNAMIC SUBCELLULAR COMPARTMENTS

Chairs: A/Prof Thomas Preiss, Victor Chang Cardiac Research Institute, NSW, Australia
Prof Elisa Izaurralde, Max Planck Institute for Developmental Biology, Germany
Location: Meeting Room 203/204

11:15 **SYM-39-01**

Paraspeckles: dynamic nuclear bodies formed by key long noncoding RNA-protein interactions

Fox, A.H., Lee, M., Passon, D., Loescher, M., Sadowska, A., Hennig, S., Whiting, R. and Bond C. (Australia)

11:45 **SYM-39-02**

Novel actions of insulin defined through proteomics

Larance, M., Rowland, A., Guilhaus, M. and **James, D.E.** (Australia)

12:05 **SYM-39-03** (*2010 ANZSCDB Young Investigator Award Lecture*)

Molecular mechanisms of T cell signal transduction

Gaus, K. (Australia)

12:25 **SYM-39-04**

Etoposide-induced protein (Ei24) is a novel negative regulator of nuclear import

Lieu, K.G., Shim, E.H., Wang, J., Zambetti, G.P. and Jans, D.A. (Australian and USA)

11:15 – 12:45

SYMPOSIUM 40

NEURAL SIGNALING & DEVELOPMENT

Chairs: Prof Linda Richards, Queensland Brain Institute, QLD, Australia
Prof Kozo Kaibuchi, Nagoya University, Japan

Location: Meeting Room 210

11:15 SYM-40-01

Disrupted-in-schizophrenia 1 (DISC1) regulates transport of neuronal mRNA

Kaibuchi, K. (Japan)

11:45 SYM-40-02

A role for MECP2 in experience-dependent synaptic development

Kang, E., Leu, B.H., Santos, J. and **Chen, C.** (USA and Portugal)

12:05 SYM-40-03

Transcriptional control of CNS myelination: identification of MRF as a major player

Emery, B., Agilliu, D., Watkins, T., Cahoy, J., Mulinyawe, S. and Barres, B.A. (Australia and USA)

12:25 SYM-40-04

A rheostat for the control of gene expression during nerve cell maturation

Heng, J., Qu, Z.D., Guillemot, F. and Tan, S.S. (Australia and UK)

11:15 – 12:45

SYMPOSIUM 41

PATTERNING & MORPHOGENESIS

Chairs: A/Prof Sally Dunwoodie, Victor Chang Cardiac Research Institute, NSW, Australia
Dr Lee Niswander, HHMI & University of Colorado, USA

Location: Plenary Hall 3

11:15 SYM-41-01

Lung branching morphogenesis visualized and coupled with functional genomics

Schnatwinkel, C., Chen, J. and **Niswander, L.** (USA)

11:45 SYM-41-02 (2009 ANZSCDB Young Investigator Award Lecture)

The zig genes: a family of transcription factors critical for patterning and morphogenesis of the mammalian embryo

Ali, R.G., Chappell, A., Ahmed, J.N., Bellchambers, H.M. and **Arkell, R.M.** (Australia)

12:05 SYM-41-03

The migratory behavior of neural crested-derived cells in the developing gut

Young, H.M., Bergner, A.J., Newgreen, D.F. and Enomoto, H. (Australia and Japan)

12:25 SYM-41-04

Regulation of male fetal germ cell differentiation

Western, P.S., Miles, D.C., Van Den Bergen, J.A., Wakeling, S.I. and Sinclair, A.H. (Australia)

11:15 – 12:45

SYMPOSIUM 42

PLANT-MICROBE INTERACTIONS

Chairs: Dr Peter Dodds, CSIRO Plant Industry, ACT, Australia
Prof Barbara Howlett, University of Melbourne, VIC,
Australia

Location: Plenary Hall 2

11:15 SYM-42-01

Plant immunity: a molecular trap for bacterial virulence effectors

Rathjen, J.P. (Australia)

11:45 SYM-42-02

Deciphering the role of TIR domain in flax rust resistance proteins

Bernoux, M., Ellis, J. and Dodds, P. (Australia)

12:05 SYM-42-03

CLE induction of soybean nodule regulation

Reid, D.E., Li, D., Hayashi, S., Ferguson, B. and Gresshoff, P. (Australia)

12:25 SYM-42-04

Is permeabilisation enough? Mechanism and relevance of membrane permeabilisation in the activity of antifungal peptides

Van der Weerden, N.L., Hancock, R.E.W. and Anderson, M.A. (Australia and Canada)

11:15 – 12:45

SYMPOSIUM 43

PROTEIN-NUCLEIC ACID INTERACTIONS

Chairs: A/Prof Matthew Wilce, Monash University, VIC, Australia
A/Prof Jacqui Matthews, University of Sydney, NSW,
Australia

Location: Meeting Room 211

11:15 SYM-43-01

Building software and hardware for genomes: polydactyl zinc
finger proteins and enzymes

Barbas III, C.F. (USA)

11:45 SYM-43-02

How to build a paraspeckle

Passon, D.M., Lee, M., Bythell-Douglas, R., Fox, A.H. and

Bond, C.S. (Australia)

12:05 SYM-43-03

Multiprotein Lsm rings assembled *in vitro* engage translation
factors and U-rich RNA

Moll, J.M., Sobti, M., Cubeddu, L., Haynes, P. and **Mabbutt,
B.C.** (Australia)

12:25 SYM-43-04

Designer RNA binding proteins from zinc fingers

O'Connell, M., Nguyen, C., Vandevenne, M., Segal, D. and

Mackay, J. (Australia and USA)

11:15 – 12:45

SYMPOSIUM 44

UBIQUITIN AND UBIQUITIN-LIKE MODIFICATIONS

Sponsored by Partners, WEHI and PeterMac

Chairs: Prof Sharad Kumar, Centre for Cancer Biology, SA, Australia
Prof Brenda Schulman, HHMI/St Jude Children's Research
Hospital, USA

Location: Meeting Room 212

11:15 **SYM-44-01**

Specificity in the ubiquitin system

Komander, D. (UK)

11:45 **SYM-44-02**

Structural and functional insights into the control of C-terminal
RING E3 ligases

Liew, C.W., Fetham, R., Mace, P.D., Vaux, D.L., Silke, J. and
Day, C.L. (New Zealand and Australia)

12:05 **SYM-44-03**

The SPRY domain-containing SOCS box protein SPSB2 targets
inducible nitric oxide synthase (iNOS) for ubiquitination and
proteasomal degradation

Kuang, K., Lewis, R.S., Curtis, J.M., Zhan, Y., Saunders, B.M.,
Babon, J.J., Kolesnik, T.B., Low, A., Masters, S.L., Willson,
T.A., Kedzierski, L., Yao, S., Handman, E., Norton, R.S. and
Nicholson, S.E. (Australia)

12:25 **SYM-44-04**

Mechanistic insights into protein mono-ubiquitination and poly-
ubiquitination

Sadowski, M., Suryadinata, R., Lai, X., Heierhorst, J. and
Sarcevic, B. (Australia)

12:50 – 13:30 **LUNCH / POSTERS / EXHIBITION** (*Boxed lunch provided*)

13:15 – 14:30

Research Funding Opportunities

Location: Meeting Room 212 for non-European Countries Under the
EU-Framework Programme-7 (FP-7)

13:30 – 14:30 **POSTER SESSION D** (*Presenting authors to be in attendance*)

Location: Exhibition Hall

14:30 – 15:15

PLENARY LECTURE

Chair: Prof Bostjan Kobe, University of Queensland, QLD,
Australia

Location: Plenary Hall 2

14:30 PLE-THU-18

Structural biology: challenges and prospects

Deisenhofer, J. (USA)

Professor Johann Deisenhofer



Johann Deisenhofer is Regental Professor and Professor in Biochemistry, and holds the Virginia and Edward Linthicum Distinguished Chair in Biomolecular Science at the University of Texas Southwestern Medical Center at Dallas. He is a member of several scientific organizations, including the National Academy of Sciences of the USA, the Academia Europaea, the German Academy of Natural Scientists Leopoldina, and the Academy of Medicine, Engineering & Science of Texas. Johann Deisenhofer was born in Germany in 1943. He studied physics at the Technical University Munich, and in 1974 received a doctoral degree in experimental physics. He worked in structural biology at the Max-Planck-Institute for Biochemistry in Martinsried, a small town near Munich, until he moved to Dallas in 1988. In the early 1980s he and his colleagues at the Max-Planck-Institute determined the three-dimensional structure of a photosynthetic reaction center, a complex of four proteins and fourteen co-factors that resides in a bacterial cell membrane. The structure of the reaction centre was the first high-resolution structure of an integral membrane protein; it helped explain the detailed mechanism of the conversion of light energy into chemical energy in photosynthesis. For this work he shared the 1986 Biological Physics Prize of the American Physical Society, and the 1988 Otto-Bayer-Prize with Hartmut Michel, and the 1988 Nobel Prize in Chemistry with Hartmut Michel and Robert USA Huber.

14:30 – 15:15

PLENARY LECTURE

Chair: Dr Helen Abud, Monash University, VIC, Australia

Location: Plenary Hall 3

14:30 PLE-THU-19

Seeking neural tube closure and peering into gene-environment interactions

Niswander, L., Marean, A., Pyrgaki, C., Massarwa, R. and Zhang, Y. (USA)

Professor Lee Niswander



Lee Niswander is Professor at the University of Colorado Denver, Section Head of Developmental Biology at The Children's Hospital, and Howard Hughes Medical Institute Investigator. She also is the co-director of the 6-week course in Embryology at the Marine Biological Labs in Wood Hole, MA. She has received a Pew Scholars award, the Presidential Early Career Award for Scientists and Engineers, and the Harland Winfield Mossman Developmental Biologist Award. Prof. Niswander's research is focused on the genetic and cellular mechanisms that control embryonic development, particularly the processes required for closure of the neural tube and for development of the vertebrate limb and lung. Her approaches include forward genetic screens in mice to identify mutations that affect embryonic development, live imaging of the developing neural tube and lung, and determination of gene-environment interactions in particular the mechanisms by which folic acid influences the incidence of neural tube defects.

15:15 – 16:00 AFTERNOON TEA / EXHIBITION

15:30 PASSPORT PRIZE DRAW

Location: Exhibition Hall

16:00 – 17:30

SYMPOSIUM 45

SYSTEMS APPROACHES TO HAEMATOPOIESIS

Sponsored by Partners, WEHI and PeterMac

Chairs: Dr Benjamin Kile, Walter & Eliza Hall Institute, VIC,
Australia
A/Prof Rob Ramsay, Peter MacCallum Cancer Centre, VIC,
Australia

Location: Plenary Hall 2

16:00 SYM-45-01

From hematopoietic stem cell to erythroblast: regulation of red cell production at multiple levels

Lodish, H.F. (USA)

16:30 SYM-45-02

Pathways regulating blood cell production

Hilton, D.J. (Australia)

16:50 SYM-45-03

Truncating, in-frame and null alleles of *Rc3h1/Roquin* in immunodeficiency, autoimmunity and longevity

Linterman, M., Ramiscal, R., Athanasopoulos, V., Yu, D., Barker, A., Srivastava, M., Leedman, P., Dixon, N., Goodnow, C.C. and **Vinuesa, C.G.** (Australia)

17:10 SYM-45-04

KLF1 regulatory networks in primary erythroid cells

Tallack, M.R., Whittington, T., Yuen, W.S., Wainwright, E.N., Keys, J.R., Gardiner, B.B., Cloonan, N., Grimmond, S.M., Bailey, T.L. and Perkins, A.C. (Australia)

16:00 – 17:30

SYMPOSIUM 46

FUNCTIONAL GENOMICS

Chair: Prof Frances Shannon, Australian National University, ACT,
Australia

Location: Meeting Room 210

16:00 SYM-46-01

Development of high-throughput, high-content, functional
screening: ARVEC+

Gonda, T.J., Skalamera, D., Wilson, B., Ranall, M., Purdon,
A., Zhang, P., Barry, S., Grimmond, S., Leo, P. and Gabrielli,
B. (Australia)

16:30 SYM-46-02

Organelle development and signalling in Arabidopsis

Pogson, B.J. (Australia)

16:50 SYM-46-03

Alternate splicing as a mechanism to diversify innate immune
responses

Wells, C.A. (Australia)

17:10 SYM-46-04

High-throughput non-destructive imaging using the plant
accelerator to study plant growth and function

Tester, M. and Berger, B. (Australia)

16:00 – 17:30

SYMPOSIUM 47

PLANT DEVELOPMENT

Chairs: Prof John Bowman, Monash University, VIC, Australia
A/Prof Ed Newbigin, University of Melbourne, VIC, Australia

Location: Meeting Room 211

16:00 SYM-47-01

Floral design - genetic control of perianth development in
Arabidopsis thaliana

Smyth, D.R., Kilinc, A., Lampugnani, E.R., O'Brien, M. and
Quon, T. (Australia)

16:30 SYM-47-02

Shoot branching and the new plant hormone, strigolactone
Beveridge, C.A., Brewer, P.B., **Dun, E.A.**, Mason, M., Meyers,
E.L. and Hanan, J. (Australia)

16:50 SYM-47-03

Unravelling apomixis: asexual seed formation
Okada, T., Johnson, S.D. and **Koltunow, A.M.** (Australia)

17:10 SYM-47-04

Candidate genes for root system architecture in *Arabidopsis*
thaliana

Ly, P.K.C., Smith, P.M.C. and Saleeba, J.A. (Australia)

16:00 – 17:30

SYMPOSIUM 48

PROTEINS: LIFE & DEATH

Chairs: A/Prof Bridget Mabbutt, Macquarie University, NSW, Australia
Dr Mark Hinds, Walter & Eliza Hall Institute, VIC, Australia
Location: Meeting Room 212

16:00 SYM-48-01

Discovery and characterisation of the cell death machinery in platyhelminths: new strategies for the treatment of schistosomiasis

Lee, E.F., Tchoubrieva, E., Kalinna, B., Colman, P.M. and **Fairlie, W.D.** (Australia)

16:30 SYM-48-02

The importance of protein glycosylation for the function of human corticosteroid binding globulin

Thaysen-Andersen, M., Bayraktar, Z.S., Mizzi-Callcott, E., Ali, S. and Packer, N.H. (Australia)

16:50 SYM-48-03

Metamorphic response of the CLIC1 chloride intracellular ion channel protein

Goodchild, S.G., Littler, D.R., Breit, S.N., Curmi, P.M. and **Brown, L.J.** (Australia)

17:10 SYM-48-04

Regulated protein degradation in bacteria: AAA+ proteases and the adaptor proteins that control them

Micevski, D., Spall, S.K., Ninnis, R.L., Kralik, S.M., Schuememann, V., Zeth, K., Truscott, K.N. and **Dougan, D.A.** (Australia and Germany)

16:00 – 17:30

SYMPOSIUM 49

REPRODUCTION & EARLY EMBRYONIC DEVELOPMENT

Chairs: Prof David Gardner, University of Melbourne, VIC, Australia
Dr Joy Rathjen, University of Melbourne, VIC, Australia

Location: Plenary Hall 3

16:00 SYM-49-01

Insights into mouse pre-implantation development through transcriptomic analysis

Robson, P. (Singapore)

16:30 SYM-49-02

Lab on a chip: microfluidics to quantitate single embryo physiology

Gardner, D.K. and Potter, D. (Australia)

16:50 SYM-49-03

RNA binding protein msi1 and 2: cell cycle regulators in spermatogenesis

McLaughlin, E.A., Fraser, B.A., Pye, V., Bigland, M., Siddall, N.A. and Hime, G.R. (Australia)

17:10 SYM-49-04

Setting the pace of development: Smad3 in the testicular activin/androgen axis

Itman, C., Wong, D., Hunyadi, B., Ernst, M., Jans, D.A. and Loveland, K.L. (Australia)

16:00 – 17:30

SYMPOSIUM 50

SUBCELLULAR TARGETING

Chairs: Prof David Jans, Monash University, VIC, Australia
Dr Naoko Imamoto, RIKEN Advanced Science Institute,
Japan

Location: Meeting Room 203/204

16:00 SYM-50-01

Nucleocytoplasmic transport and cell differentiation

Yoneda, Y. (Japan)

16:30 SYM-50-02

Structural flexibility of importin β facilitates its fast and selective transport through the nuclear pore complex

Yoshimura, S.H., Iwasaka, S. and Takeyasu, K. (Japan)

16:50 SYM-50-03

Regulated trafficking of the APC tumour suppressor to mitochondria, nucleus, centrosomes and beyond

Henderson, B.R., Brocardo, M.G. and Medina-Palazon, C. (Australia)

17:10 SYM-50-04

Mitochondrial STAT3 mediates NGF and GDNF induced neuritogenesis

Zhou, L.H. and Too, H.P. (Singapore)

17:45 ASBMB Annual General Meeting – Meeting Room 210

ASPS Annual General Meeting – Meeting Room 211

ANZSCDB Annual General meeting – Meeting Room 212

19:30 GALA CONFERENCE DINNER

Location: The Banquet Room, Level 2, Melbourne Convention & Exhibition Centre

09:15 – 10:00

PLENARY LECTURE

Sponsored by La Trobe Institute for Molecular Science

Chair: Prof Nicholas Hoogenraad, La Trobe University, VIC,
Australia

Location: Plenary Hall 2

09:15 PLE-FRI-20

Chaperone-assisted protein folding in health and disease

Hartl, F.U. (Germany)

Professor Ulrich Hartl



Ulrich Hartl received his doctoral degree in Biochemistry from the University of Heidelberg. In 1985 he moved to the laboratory of Walter Neupert in Munich where he worked on the mechanism of protein transport into mitochondria, first as a post-doctoral fellow and then as a research group leader. In 1988 he initiated work that resulted in the demonstration of the basic role of molecular chaperones in protein folding. The period in Walter Neupert's department was interrupted by a stay in William Wickner's laboratory at UCLA, where Hartl worked on the mechanism of bacterial protein export. After returning to Munich he received his Habilitation in Biochemistry and soon after accepted an offer to join the faculty of Sloan-Kettering Cancer Center in New York. Between 1991 and 1997 he investigated the mechanisms of protein folding in the bacterial and eukaryotic cytosol. He reconstituted the pathway of chaperone-assisted folding in which the Hsp70 and the GroEL chaperone systems cooperate and discovered that GroEL and its co-factor GroES provide a nano-cage for single protein molecules to fold unimpaired by aggregation. In 1993 Hartl was promoted to Full Professor with tenure, and in 1994 became an Investigator of the Howard Hughes Medical Institute. In 1997 he returned to Munich to head the Department of Cellular Biochemistry at the Max Planck Institute of Biochemistry (MPIB). Hartl has received several national and international awards for his work on chaperone-assisted protein folding, including the Gairdner Award in 2004, the Wiley Prize in 2007, the Rosenstiel Award and Horwitz Prize in 2008, the Otto Warburg Medal of the German Society for Biochemistry and Molecular Biology (GBM) in 2009 and the Dr H.P. Heineken Prize for Biochemistry and Biophysics in 2010.

09:15 – 10:00

PLENARY LECTURE

Chair: Prof Marilyn Anderson, La Trobe University, VIC, Australia

Location: Plenary Hall 3

09:15 **PLE-FRI-21**

Small RNAs, viral counter defence and mobile silencing signals

Waterhouse, P.M. (Australia)

Professor Peter Waterhouse



Professor Peter Waterhouse has made pioneering contributions towards understanding the biology of gene silencing and the role of small RNAs in viral defence. He is internationally recognised for his ground-breaking research on plant viruses, and he led the way in uncovering the mechanism, roles and applications of post-transcriptional gene silencing in plants, also termed RNA interference (RNAi). Prof. Waterhouse completed his PhD in plant virology at the University of Dundee and the Scottish Crop Research Institute. He has been working in Australia for the past 25 years. He was Chief Research Scientist and leader of the Gene Silencing Laboratory at CSIRO Plant Industry before taking up a position as Federation Fellow at the University of Sydney in 2008. Prof. Waterhouse is a member of the editorial board/advisory committee of the journals *Silence*, *Molecular Plant Pathology*, and *Plant Methods*. He has received several awards, including the International Multimedia Telecommunications Consortium Thomson ISI Award as the CSIRO researcher with the most highly cited papers between 1998 and 2003. He was awarded the Victor Chang Medal (2002), the CSIRO Chairman's Medal (2005), was equal first in *The Bulletin's* 'Top Ten Smartest Scientists in Australia' (2006), and in 2007 won the Prime Minister's prize for Science. He was elected a Fellow of the Australian Academy of Science in 2009. He has numerous patents covering the applications of his discoveries.

10:00 – 10:30 MORNING TEA

Location: Main Foyer

10:30 – 12:00

SYMPOSIUM 51

BIOMARKERS

Chairs: Prof Nicholas Hoogenraad, La Trobe University, VIC,
Australia
Prof Ben Cocks, DPI Victoria & La Trobe University, VIC,
Australia

Location: Meeting Room 210

10:30 SYM-51-01

Secretome/ Exosome- based strategy for uncovering novel
biomarkers for colorectal cancer

Mathivanan, S., Ji, H., Tauro, B., Greening, D., Chen, Y.-S.,
Lim, J. and **Simpson, R.J.** (Australia)

11:00 SYM-51-02

Translational Science: hype or reality?

Green, T.P. (Australia)

11:20 SYM-51-03

Dual function nanoparticles as a new tool for biomarker
discovery

Stephens, A.N., Meehan, K.L. and Rainczuk, A. (Australia)

11:40 SYM-51-04

Two dimensional, LC-MS/MS based characterisation of
sphingolipids within biological extracts, based on mass and
hydrophobicity

Hejazi, L., Wong, J. and **Don, A.S.** (Australia)

10:30 – 12:00

SYMPOSIUM 52

CELL ARCHITECTURE & POLARITY

Chairs: A/Prof Sarah Russell, Peter MacCallum Cancer Centre, VIC, Australia
A/Prof Nigel Waterhouse, Mater Medical Research Institute, QLD, Australia

Location: Meeting Room 211

10:30 SYM-52-01 (*Sponsored by Olympus Australia Pty Ltd*)

A novel chemical genomic approach identifies the target of the theonellamides, a large marine bicyclic peptide that activates Rho1 in fission yeast

Yoshida, M. (Japan)

11:00 SYM-52-02

Visualising immune responses during skin infection and inflammation

Weninger, W. (Australia)

11:20 SYM-52-03

Endocytic proteins are involved in the final stage of mitosis

Chircop, M. (Australia)

11:40 SYM-52-04

To stick or not to stick: host cell remodeling and virulence determinants in asexual and sexual blood stages of plasmodium falciparum

Dixon, M.W.A., Dearnley, M.K., Yeoman, J., McMillan, P., Hanssen, E., Kenny, S., Deed, S., Trenholme, K.R., Gardiner, D.L. and Tilley, L. (Australia)

10:30 – 12:00

SYMPOSIUM 53

PEPTIDES & NEURAL FUNCTION

Chairs: Prof Margaret Morris, University of New South Wales, NSW,
Australia
A/Prof Andrew Gundlach, University of Melbourne, VIC,
Australia

Location: Meeting Room 212

10:30 SYM-53-01

Dissecting the central stress response using site-specific genetic manipulation - focus on CRF/Urocortin systems

Chen, A. (Israel)

11:00 SYM-53-02

Hypothalamic neuropeptides promoting and inhibiting drug seeking - focus on cart and orexin

McNally, G.P. (Australia)

11:20 SYM-53-03

Peptide control of motivated behaviour - focus on feeding, body weight and obesity

Morris, M.J. (Australia)

11:40 SYM-53-04

Amyloid- β peptide ($A\beta$) neurotoxicity is modulated by the rate of peptide aggregation: $A\beta$ dimers and trimers correlated with neurotoxicity

Hung, L.W., Ciccotosto, G.D., Giannakis, E., Tew, D.J., Perez, K.A., Master, C.L., Cappai, R.C, Wade, J.D. and Barnham, K.J. (Australia)

10:30 – 12:00

SYMPOSIUM 54

**SHEDDING LIGHT ON BIOLOGY
AT THE AUSTRALIAN SYNCHROTRON**

Chair: A/Prof Matthew Wilce, Monash University, VIC, Australia

Location: Plenary Hall 3

10:30 SYM-54-01

SH2 ligand-mediated self-association of SRC-family kinases
Gunn, N.J., Qiu, T.W., Irtegun, S. and **Mulhern, T.D.**
(Australia)

11:00 SYM-54-02

Micro crystallography at the Australian Synchrotron
Caradoc-Davies, T.T., Cowieson, N., Riboldi-Tunnicliffe, A.,
Gee, C., Williamson, R.M. and Plathe, R.A. (Australia)

11:20 SYM-54-03

Cryo transmission X-ray imaging of the malaria parasite, *P.
falciparum*
Hanssen, E., Knoechel, C., Deed, S., Abu-Bakar, T., Legros,
M., Larabell, C. and Tilley, L. (Australia and USA)

11:40 SYM-54-04

The formation of amyloid fibrils by the five chaplin peptides
from *Streptomyces coelicolor*
Sawyer, E.B., Claessen, D. and **Gras, S.L.** (Australia and The
Netherlands)

10:30 – 12:00

SYMPOSIUM 55

STONE WALL SYMPOSIUM

Chairs: Prof Geoff Fincher, University of Adelaide, SA, Australia
Dr Filomena Pettolino, University of Melbourne, VIC,
Australia

Location: Plenary Hall 2

10:30 SYM-55-01

Manipulation of plant cell walls for agricultural and industrial applications

Bacic, A., Burton, R.A., **Fincher, G.B.** and Gidley, M.J.
(Australia)

11:00 SYM-55-02

Biochemistry of cellulose biosynthesis in higher plants

Fugelstad, J., Sundqvist, G., Malm, E., Leijon, F., Guerriero, G.
and **Bulone, V.** (Sweden)

11:20 SYM-55-03

In vitro and *in vivo* digestive tract effects of cereal non-starch polysaccharides related to potential health benefits

Gidley, M.J., Gunness, P., Shelat, K., Williams, B.A., Zhang, D., Mikkelsen, D., Bryden, W.L., Belobrajdic, D.P., Conlon, M.A., Kang, S., McSweeney, C.S., Bird, A.R., Topping, D.L. and Gilbert, R.G. (Australia)

11:40 SYM-55-04

Fasciclin-like arabinogalactan proteins affect biomechanical properties of plant stems

MacMillan, C.P., Mansfield, S.D., Stachurski, Z.H., Evans, R. and Southerton, S.G. (Canada and Australia)

10:30 – 12:00

SYMPOSIUM 56

YEAST BIOLOGY

Sponsored by Bioplatforms Australia

Chairs: Dr Alan Munn, Griffiths University, QLD, Australia
Prof Ian Dawes, University of New South Wales, NSW,
Australia

Location: Meeting Room 203

10:30 SYM-56-01

The genetic landscape of a cell

Boone, C. (Canada)

11:00 SYM-56-02

The regulation of protein interaction networks

Pang, I., Couttas, T., Wong, J., Li, S., Goel, A., Erce, M.,
Widjaja, Y., Lambert, T. and **Wilkins, M.** (Australia)

11:20 SYM-56-03

Cortex organization in fission yeast: interplay between the
actomyosin cytoskeleton and the endoplasmic reticulum

Zhang, D., Vjestica, A. and **Oliferenko, S.** (Singapore)

11:40 SYM-56-04

The posttranscriptional regulator Ccr4-Pop2 links mitochondrial
function to cell wall biogenesis in the human fungal pathogen
Candida albicans

Dadley, M., Pettolino, F., Djordjevic, J., Tull, D., Nantel, A.,
Mitchell, A.P. and **Traven, A.** (Australia, Canada and USA)

12:05 – 12:50

IUBMB ED WOOD LECTURE

Chair: Prof Susan Hamilton, University of Queensland, QLD,
Australia

Location: Plenary Hall 2

12:05 PLE-FRI-22

Education of undergraduate and graduate students in the
biomedical sciences - education for what?

Lodish, H.F. (USA)

Professor Harvey Lodish



Harvey Lodish obtained his Ph.D. degree with Dr. Norton Zinder from the Rockefeller University in 1966. Following postdoctoral research with Drs. Sydney Brenner and Francis Crick, he joined the faculty of the MIT Department of Biology. In 1983 he was appointed Founding Member of the new Whitehead Institute for Biomedical Research. In 1999 he also became Professor of Bioengineering in the new MIT Department of Bioengineering. A leader in the field of membrane biology, Dr Lodish has isolated and cloned numerous proteins that reside on the surface of cells and play a role in cell growth, glucose transport, and fatty acid transport. His results have important implications for the treatment of cancer, diabetes, heart disease, and obesity. Dr. Lodish is a Member of the National Academy of Sciences, and served as Chair of the National Academy Section on Cellular and Developmental Biology. He is also a Fellow of the American Association for the Advancement of Science, a Fellow of the American Academy of Arts and Sciences, a Fellow of the American Academy of Microbiology, and an Associate (Foreign) Member of EMBO. Dr. Lodish received a MERIT award from the National Institute of Diabetes and Digestive and Kidney Diseases. He is also a recipient of a Guggenheim Fellowship, an honorary D.Sc. from Kenyon, and the Stadie Award from the American Diabetes Association. Dr. Lodish was on the Editorial Board of the Proceedings of the National Academy of Sciences from 1995 to 1999 and on the Board of Reviewing Editors of Science from 1991 through 1999. He was Editor of Molecular and Cellular Biology from 1981 to 1987 and he has been on the editorial boards of a number of journals, including the Journal of Cell Biology, the Journal of Biological Chemistry, and Nucleic Acids Research. In 2004 Dr. Lodish served as President of the American Society for Cell Biology. Dr. Lodish is the lead author of the textbook Molecular Cell Biology. The sixth edition was published in 2007 and the book has been translated into seven languages.

IUBMB Ed Wood Lecture

Program Note

This lecture is named in honour of Prof Ed Wood to celebrate his contribution and commitment to the philosophy and practice of biochemical education- both in the UK and internationally. Ed Wood was chair of the Education Committee of the Biochemical Society for many years, which permitted him to contribute effectively to the progress of biochemical education in the UK.

Ed was a key figure on the international platform in giving direction to biochemical education. He accomplished this largely through the Editorship, for more than twenty years, of the Journal "Biochemical Education". He was dedicated to reviewing - manuscripts, books, and submitted project proposals for numerous journals and/or institutions. He was also a key participant in various activities of IUBMB. Starting with the year 2001, he served as a member of FEBS(Federation of European Biochemical Societies) Working Group on Teaching Biochemistry and since 2007, served as Chair of FEBS Education Committee. He was the Chair, Co-chair, or invited speaker in a great number of FEBS and IUBMB Education activities.

Prof. Ed Wood will always be remembered by his family, friends, and the biochemists all over the world by his deep knowledge and expertise in biochemistry, his creativity, his ever-lasting productivity, sharing, modesty, warm and sincere personality, honest character and human values.

Prof. Dr. Gül Güner-Akdoğan
Chair, FEBS Education Committee

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12:05 – 12:50

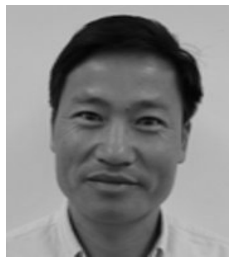
PLENARY LECTURE
Sponsored by Hexima Limited

Chair: Dr Rana Munns, CSIRO Plant Industry, ACT, Australia
Location: Plenary Hall 3

12:05 PLE-FRI-23

ABA biosynthesis and signaling
Zhu, J.-K. (USA)

Professor Jian-Kang Zhu



Jian-Kang Zhu is the Jane S. Johnson Professor of Plant Biology at the University of California, Riverside. He earned a bachelor's in Soil Science and Agricultural Chemistry from Beijing Agricultural University in 1987, a master's in Botany from the University of California, Riverside, in 1990, followed by a doctorate in Plant Physiology from Purdue University in 1993. From 2004 to 2006, he served as director of the Institute for Integrative Genome Biology at UC Riverside. He has previously worked at other academic institutions such as the University of Arizona, Auburn University and Rockefeller University. As reported by Thomson Reuters, Dr. Zhu is the most cited plant scientist in the USA during 1997-2007. He is also a fellow of the American Association for the Advancement of Science and a recipient of the Charles Albert Shull Award from the American Society of Plant Biologists for his outstanding contributions to plant biology. He was recognized as the Researcher of the Year in the College of Agriculture and Life Sciences at the University of Arizona in 2002, and received the Distinguished Agricultural Alumni Award from Purdue University in 2005.

12:50 – 12:55 INVITROGEN EDUCATION AWARD

To: Dr Janet Macaulay, Monash University, VIC, Australia
Chair: Prof Ian Dawes, University of New South Wales, NSW, Australia
Location: Plenary Hall 2

12:55 – 13:10 STUDENT AWARDS AND ANNOUNCEMENT OF
FUTURE MEETINGS

Chair: Prof Phillip Nagley, Monash University, VIC, Australia
Co-Chair, OzBio2010
Location: Plenary Hall 2

FRIDAY 1 OCTOBER 2010

13:10 – 13:45 LUNCH BREAK (*Lunch may be purchased from nearby cafés*)

13:45 – 18:00

SPECIAL INTEREST FORUMS:

The special interest forums are free to conference registrants.
Details can be downloaded from the website at:
<http://www.asbmb.org.au/ozbio2010/sif.html>