

MONDAY 2 OCTOBER 2017

13:00 – 18:00

REGISTRATION

Location: Halls F & G Foyer

14:00 – 16:30

CAREER DEVELOPMENT FORUM

Chairs: A/Prof Geraint Rogers, South Australian Health and Medical Research Institute & Flinders University, SA
A/Prof Tara Pukala, University of Adelaide, SA

Location: Auditorium – Ground Floor
Medical School
University of Adelaide

The full program will be available on the ComBio2017 website:
<http://www.combio.org.au/combio2017/career.html>
in mid September.

TUESDAY 3 OCTOBER 2017

08:00 onwards

REGISTRATION

Location: Halls F & G Foyer

08:30 - 08:45

**CONFERENCE OPENING
AND ACKNOWLEDGEMENT OF COUNTRY**

Chair: Dr Michael Michael
Flinders University of South Australia, SA
Chair, ComBio2017 Local Organizing Committee

Location: Hall L

**Dr Leanna Read
Chief Scientist of South Australia**

Professor Leann Tilley, University of Melbourne, VIC
ASBMB President

Professor Sergey Shabala, University of Tasmania, TAS
ASPS President

Professor Sally Dunwoodie, Victor Chang Cardiac Research Institute,
NSW
ANZSCDB President

08:45 - 09:30

PLENARY 1

ASBMB GRIMWADE KEYNOTE PLENARY LECTURE

Chair: A/Prof Briony Forbes, Flinders University of SA, SA

Location: Hall L

PLE-TUE-01

mTOR signaling in growth and metabolism

Hall, M.N. (Switzerland)

Professor Michael N. Hall



Michael N. Hall received his PhD from Harvard University and was a postdoctoral fellow at the Pasteur Institute and the University of California, San Francisco. He joined the Biozentrum of the University of Basel in 1987, where he is currently Professor and former Chair of Biochemistry. Hall is a pioneer in the fields of TOR signalling and cell growth control. In 1991, Hall and colleagues discovered TOR (target of rapamycin) and subsequently elucidated its role as a central controller of cell growth and metabolism. TOR is a highly conserved, nutrient- and insulin-activated protein kinase. The discovery of TOR led to a fundamental change in how one thinks of cell growth. It is not a spontaneous process that just happens when nutrients are available, but rather a highly regulated, plastic process controlled by TOR-dependent signalling pathways. As a central controller of cell growth and metabolism, TOR plays a key role in development and aging, and is implicated in disorders such as cancer, cardiovascular disease, diabetes and obesity. Hall is a member of the US National Academy of Sciences, has received numerous awards, including the Louis-Jeantet Prize for Medicine (2009), the Marcel Benoist Prize for Sciences or Humanities (2012), the Breakthrough Prize in Life Sciences (2014) and the Canada Gairdner International Award (2015).

09:35 – 11:05

SYMPOSIUM 1

ABIOTIC STRESS TOLERANCE

Chairs: Dr Caitlin Byrt, University of Adelaide, SA
A/Prof Kathy Soole, Flinders University of SA, SA

Location: Riverbank Rooms 7/8

09:35 SYM-01-01

Making epidermal bladder cells bigger: the role of endopolyploidy in salinity tolerance of a model halophyte plant
Barkla, B.J. and Rhodes, T. (Australia)

09:55 SYM-01-02

A molecular mechanism for how plants maintain their cellulose producing capacity during salt stress
Kesten, C., Wallmann, A., Ford, K., Heazlewood, J., Oschkinat, H. and **Persson, S.** (Switzerland and Australia)

10:15 SYM-01-03

Revealing the roles of calcium transporters in response to hypoxia and combined hypoxia and salinity stress in *Arabidopsis*
Wang, F., Chen, Z., Shabala, L., Colmer, T. and Shabala, S. (Australia)

10:35 SYM-01-04

Co-expression modules link aquaporin gene expression to physiological parameters during drought-rehydration in *Arabidopsis thaliana*
Scharwies, J.D.S., Ramesh, S.R. and Tyerman, S.D.T. (Australia)

10:50 SYM-01-05

An -omics approach to identify the regulators of vegetative desiccation tolerance in resurrection plants
Ingle, R.A., Lyall, R., Proctor, J., Schlebusch, S. and Illing, N. (South Africa)

09:35 – 11:05

SYMPOSIUM 2

FUNCTIONAL FOODS AND HEALTH

Chairs: Dr Beverly Muhlhausler, University of Adelaide, SA
A/Prof Alex Johnson, University of Melbourne, VIC

Location: Riverbank Room 4

09:35 SYM-02-01

Commercialising omega-3 eggs: production and bioavailability

Carragher, J.F., Hughes, R.J., Geier, M.S., Muhlhausler, B.S.,
Phang, M., Kartikasari, L.R., Kanakri, K. and Gibson, R.A.
(Australia)

09:55 SYM-02-02

Is there a route to market for a genetically-modified but health-protecting product?

Martin, C. and Jones, J. (United Kingdom)

10:15 SYM-02-03

Development and use of an ultra-low gluten barley

Larkin, P.J., Tanner, G.J., Blundell, M.J., Colgrave, M.L. and
Howitt, C.A. (Australia)

10:35 SYM-02-04

The use of association mapping to identify genes controlling pre- and post-fertilisation reproductive traits in barley

Aubert, M.K., Wilkinson, L.G., Shirley, N.J., Burton, R.A.,
Houston, K. and **Tucker, M.R.** (Australia and UK)

10:50 SYM-02-05

Grain nitrogen filling in two contrasting Australian wheat cultivars

Dechornat, J. and Kaiser, B.N. (Australia)

09:35 – 11:05

SYMPOSIUM 3

STEM CELLS AND REPROGRAMMING

Chairs: A/Prof Jose Polo, Monash University, VIC
Dr Samir Taoudi, Walter & Eliza Hall Institute, VIC
Location: Riverbank Room 5

09:35 SYM-03-01

Molecular mechanisms regulating germline stem cell regenerative potential and function

Chan, A.L., La, H.M., Legrand, J.M.D., Makela, J.A., Eichenlaub, M., De Seram, M., Ramialison, M. and **Hobbs, R.M.** (Australia)

09:55 SYM-03-02

Wt1 is required for proepicardial development

Biben, C., Borobokas, B., Menon, M.K., Hartley, L., Harvey, R.P., Taoudi, S. and Prall, O.W. (Australia)

10:15 SYM-03-03

Promoting myelin addition to the mature brain

Cullen, C.L., Tang, A., Senesi, M., O'Rourke, M., Clutterbuck, M., Auderset, L., Rodger, J. and **Young, K.M.** (Australia)

10:35 SYM-03-04

Yap regulates anabolic glucose metabolism to enable optimal organ growth

Cox, A.G., Tsomides, A., Yimlamai, D., Hwang, K.L., Asara, J., Houvras, Y., Link, B., Vander Heiden, M., Camargo, F.D. and Goessling, W. (USA and Australia)

10:50 SYM-03-05

Defining the mechanisms by which GATA2 programs lymphatic vessel valve development

Kazenwadel, J.S., Betterman, K.L., Piltz, S., Secker, G.A., Sutton, D.L., Lawrence, D.M., Hahn, C.N., Thomas, P.Q., Scott, H.S. and Harvey, N.L. (Australia)

09:35 – 11:05

SYMPOSIUM 4

MEMBRANE TRANSPORTERS

Chairs: Dr Rietie Venter, University of South Australia, SA
A/Prof Richard Callaghan, Australian National University,
ACT

Location: Hall L

09:35 SYM-04-01

Styrene maleic acid: an amphipathic polymer to solubilise and stabilise membrane proteins

Pollock, N.L., Knowles, T.J., Lee, S.C. Sridher, P., Hall, S., Strough, Z., Simon, K.S., Hurlbut, G., Rothnie, A. and Dafforn, T.R. (UK and USA)

09:55 SYM-04-02

Stonefish toxin defines an ancient branch of the perforin-like superfamily

Ellisdon, A.M., Reboul, C.F., Panjkar, S., Winter, K.L., Dunstone, M.A., Seymour, J., Dearden, P.K., Tweten, R.K., Whisstock, J.C. and McGowan, S. (Australia, New Zealand and USA)

10:15 SYM-04-03

The evolution of MACPF/ CDC toxins: plasticity in the pore assembly pathway

Spicer, B.A., Pang, S., Bayly-Jones, C., Law, R.H.P., Whisstock, J.C. and **Dunstone, M.A.** (Australia)

10:35 SYM-04-04 *Eppendorf Edman Award Lecture*

Understanding artemisinin action in *Plasmodium falciparum*

Spillman, N.J., Bridgford, J.L., Crisafulli, E.M., Xie, S.C. and Tilley, L. (Australia)

TUESDAY 3 OCTOBER 2017

10:50 SYM-04-05 ASBMB Sydney Protein Group Lecture

Understanding the mechanisms of hERG channel gating and drug inhibition using Cryo-EM

Lau, C., Hunter, M., Clarke, M., Perozo, E. and Vandenberg, J.
(Australia)

09:35 – 11:05

SYMPOSIUM 5

POPULATION GENOMICS

Chairs: Dr Mark Corbett, University of Adelaide, SA
Dr Tina Bianco-Miotto, University of Adelaide, SA
Location: Riverbank Room 2

09:35 SYM-05-01

The medical genome reference bank - deep genomics of a disease-depleted, elderly Australian population

Pinese, M., Lacaze, P., Rath, E., Kaplan, W., Andrews, D., The Asprey Investigator Group, The 45 And Up Study Collaborators, Barr, M., Thomas, D.M. and Dinger, M. (Australia)

09:55 SYM-05-02

Integrating human epidemiology and molecular biology in the era of big data

Makinen, V.P. (Australia)

10:15 SYM-05-03

RNA-sequencing to detect oncogenic fusion genes in paediatric cancer

Ekert, P.G. (Australia)

10:35 SYM-05-04

Identification of modifier genes of tauopathies

Przybyla, M., Stevens, C.H., Mian, B., Morahan, G., Ram, R., Van Der Hoven, J., Van Hummel, A., Ke, Y.D., Ittner, L.M. and Van Eersel, J. (Australia)

10:50 SYM-05-05

Integrated *in silico* and experimental assessment of disease-relevance of protocadherin 19 missense variants

Pham, D., Schulz, R., Kolc, K., Corbett, M., Epi4k Consortium, Epilepsy Phenome Genome Project, Pitson, S., Petrovski, S., Pitman, M. and Gecz, J. (Australia)

09:35 – 11:05

SYMPOSIUM 6

CELL DEATH

Chairs: Dr Loretta Dorstyn, University of South Australia, SA
Professor John Silke, Walter & Eliza Hall Institute, VIC

Location: Riverbank Room 6

09:35 SYM-06-01

Apoptosis signal regulating kinases-linking redox stress to MAPK signalling

Mace, P.D., Weijman, J.F., Kumar, A., Jamieson, S.A., Trevelyan, S.J., King, C.M., Caradoc-Davies, T.T., Ledgerwood, E.C. and Murphy, J.M. (New Zealand and Australia)

09:55 SYM-06-02

Caspases suppress damp signaling triggered by apoptotic mitochondria

McArthur, K., Whitehead, L.W., Heddleston, J.M., Oorschot, V., Padman, B.S., Lessene, G., Ryan, M.T., Rogers, K.L., Van Delft, M.F. and Kile, B.T. (Australia and USA)

10:15 SYM-06-03

Pumping-up cell death mediated by Smac-mimetics

Brumatti, G., Morrish, E., Copeland, A., Silke, N., Moujalled, D., Sandow, J., Jarman, K., Webb, A., Wei, A. and Silke, J. (Australia)

10:35 SYM-06-04

Targeting sphingosine kinase 1 induces MCL-1 dependent cell death in acute myeloid leukaemia

Powell, J.A., Lewis, A.C., D'Andrea, R.J., Lewis, I.D. and Pitson, S.M. (Australia)

10:50 SYM-06-05

Sphingosine kinases as therapeutic targets in glioblastoma multiforme

Tea, M.N., Stefanidis, C., Neubauer, H.A., Day, B., Powell, J.A. and Pitson, S.M. (Australia)

11:05 – 11:30 MORNING TEA

Location: Halls F & G Foyer

11:30 - 12:15

PLENARY 2

PLENARY LECTURE

Chair: Professor Leann Tilley, University of Melbourne, VIC

Location: Hall L

PLE-TUE-02

Structural basis of mitochondrial receptor binding and GTP-driven constriction by Dynamin-Related Protein 1

Kalia, R., Wang, R., Yusuf, A., Thomas, P., Shaw, J. and **Frost, A.** (USA)

Dr Adam Frost



Adam Frost is an Assistant Professor of Biochemistry and Biophysics at the University of California (UCSF). He obtained his MD and PhD at Yale University and then worked as a postdoctoral fellow at the UCSF, where he developed a unique synergy between systematic genetics, biochemistry and structural biology. In 2011, he started his independent lab at the University of Utah, before returning to the UCSF in 2014. The Frost lab is animated by the idea that structural biology should be discovery biology, that efforts to see the cell's machinery directly will teach us how living matter works. His lab studies molecular machines that are too fragile to purify, too large or too flexible to crystallise, or that depend on lipids for their form and function. The Frost lab integrates atomic structure determination by cryo-EM with genetics, biochemistry and diverse imaging techniques in collaboration with labs around the world. Recent examples include their discovery of the ribosome-associated quality control complex and the unexpected process of CAT tail elongation that is fundamental to protein quality control. The Frost lab has discovered new structures and functions for ESCRT pathway components that maintain nuclear envelope integrity and endosomal recycling, respectively.

11:30 - 12:15

PLENARY 3

PLENARY LECTURE

Chair: A/Prof Natasha Harvey, University of South Australia, SA

Location: Riverbank Rooms 7/8

PLE-TUE-03

Mechanisms regulating hematopoietic stem cell fate during human development

Mikkola, H.K.A. (USA)

Professor Hanna Mikkola



Hanna received MD and PhD degrees in 1997 from University of Helsinki where she defined genetic defects in a congenital bleeding disorder with Aarno Palotie and Leena Peltonen-Palotie. Hanna started her postdoctoral training in Stefan Karlsson's laboratory in Lund University, where she developed lentiviral gene transfer tools for hematopoietic stem cells. In 2000, Hanna joined Stuart Orkin's group at Harvard Medical School to study hematopoietic transcription factors and HSC development. Hanna became faculty at Department of Molecular, Cell and Developmental Biology at UCLA in 2005. Her lab aims to understand how stem cells in the hematopoietic and cardiovascular system are specified during embryogenesis, and how these processes could be recapitulated in culture. In addition to mentoring her team, Hanna teaches stem cell biology for undergraduate students

12:20 – 13:05

PLENARY 4

ASPS J.G. WOOD LECTURE
(Including Presentation of Award)

Chair: Professor Sergey Shabala, University of Tasmania, TAS
ASPS President

Location: Riverbank Rooms 7/8

PLE-TUE-04

Photosynthesis and internal aeration of submerged rice

Colmer, T.D. (Australia)

Professor Tim Colmer



Professor Tim Colmer (BSc. Agric. 1A Hons, UWA; PhD, UC Davis) is a plant physiologist in the School of Agriculture and Environment, Faculty of Science, UWA. His research focus is flooding and salinity tolerance in crops, forages and halophytes. Cellular to eco-physiological processes are studied to achieve an understanding of whole plant adaptation. Flooding research includes anoxia tolerance, internal aeration (aerenchyma and root radial oxygen loss) and underwater photosynthesis. Salinity research is on organic solutes and tissue ion (Na, K, Cl) regulation. Collaborative, multi-disciplinary research involves PhD students and Local, National and International partners. He has supervised 6 postdocs, 32 PhD, 2 MSc and 34 Honours project students. He has served as Faculty Associate Dean for Teaching & Learning (2005-2007), Head of School (2013-15), President of the Australian Society of Plant Scientists (2013-14), Australasian Editor for *Annals of Botany* (2001-present), and Handling Editor for *Journal of Experimental Botany* (2011-present).

TUESDAY 3 OCTOBER 2017

12:20 – 13:05

PLENARY 5

ASBMB MERCK MEDAL LECTURE

(Including Presentation of Award)

Chair: Professor Leann Tilley, University of Melbourne, VIC
ASBMB President

Location: Hall L

PLE-TUE-05

Post-synaptic functions of Alzheimer's tau protein

Ittner, L.M. (Australia)

Professor Lars Ittner



Professor Lars Ittner is a group leader in the Department of Anatomy of the Faculty of Medicine at the University of New South Wales (UNSW) and Senior Principal Research Fellow at Neuroscience Research Australia (NeuRA) in Sydney. He is a neuroscientist and heads the research laboratories of the Dementia Research Unit and the Transgenic Animal Unit of the Mark Wainright Analytical Centre at UNSW. In 2005, Lars moved to Australia to work as a Postdoctoral Fellow with Professor Jürgen Götz at the University of Sydney, where his research focus became neurodegenerative diseases. He made fundamental discoveries about the synaptic functions of one of the hallmark proteins in Alzheimer's disease, the tau protein. Furthermore, he developed a range of novel transgenic mouse models of neurodegenerative diseases that continue to be used for understanding pathomechanisms and testing of novel treatments. Lars moved to UNSW in 2013, where he was appointed as Professor in the School of Medical Sciences. His current work aims to understand the earliest changes at the synapse of neurons during the onset of Alzheimer's disease. Lars works together with industry partners to translate his findings into therapeutic avenues of the future. He is also part of a large chief investigator team, dedicated to understanding and treating rarer forms of dementia and motor neuron disease.

13:05 – 14:00 LUNCH BREAK

(Lunch may be purchased at nearby cafés)

14:00 – 15:30

SYMPOSIUM 7

BIOTIC STRESS TOLERANCE

Chairs: Dr Alan Little, University of Adelaide, SA
Dr Diane Mather, University of Adelaide, SA

Location: Riverbank Rooms 7/8

14:00 SYM-07-01

Genome-wide association studies identified candidate genes for disease resistance using whole genome re-sequencing data in chickpea

Li, Y., Ruperao, P., Amalraj, A., Taylor, J., Batley, J., Edwards, D., Bithell, S., Hobson, K., Davidson, J. and Sutton, T. (Australia)

14:20 SYM-07-02

Phospholipid-mediated oligomerization of defensins induces fungal and tumour cell lysis

Jarva, M., Lay, F., Poon, I., Baxter, A., Phan, K.T., Hulett, M. and **Kvansakul, M.** (Australia)

14:40 SYM-07-03

Functional characterisation and strategies for deployment of resistance genes against the major biotrophic pathogens of cultivated winegrapes

Dry, I.B., Feechan, A., Jermakow, A., Cadle-Davidson, L. and Thomas, M.R. (Australia, Ireland and USA)

15:00 SYM-07-04

The genetic basis of resistance in barley to diverse *Puccinia striiformis* isolates

Haghdoust, R., Singh, D., Garnica, D.P., Park, R.F. and Dracatos, P.M. (Australia)

15:15 SYM-07-05

Salinity-induced alteration of root-omics in barley (*Hordeum vulgare L.*)

Ho, W.W.H., Hill, C.B., Jayasinghe, N.S., Rupasinghe, T., Doblin, M.S., Shelden, M. Bacic, A. and Roessner, U. (Australia)

14:00 – 15:30

SYMPOSIUM 8

COMPUTATIONAL AND STRUCTURAL BIOLOGY

Chairs: A/Prof Jackie Wilce, Monash University, VIC
Dr Ian Dodd, University of Adelaide, SA

Location: Hall L

14:00 SYM-08-01

Interfacing biomolecules with nanomaterials: structure and function at the atomic-scale

Walsh, T.R. (Australia)

14:20 SYM-08-02

Mechanistic studies of carbohydrate-active enzymes and implication for inhibitor design

Yu, H. (Australia)

14:40 SYM-08-03

The Temperature-dependent conformational dynamics of the cysteine-rich spider peptide Gomesin

Deplazes, E. and Mancera, R.L. (Australia)

15:00 SYM-08-04 *ASBMB Melbourne Protein Group Lecture*

MHC-I peptides get out of the groove and enable a novel mechanism of HIV-1 escape

Pymm, P., Illing, P.T., Ramarathinam, S.H., O'Connor, G.M., Price, D.A., McVicar, D.W., Brooks, A.G., Purcell, A.W., Rossjohn, J. and Vivian J.P. (Australia, United Kingdom and USA)

15:15 SYM-08-05

3D protein structure determination using lanthanide probes

Pilla, K.B., Otting, G. and **Huber, T.** (Australia)

14:00 – 15:30

SYMPOSIUM 9

CLINICAL GENOMICS

Chairs: A/Prof Cheryl Shoubridge, University of Adelaide, SA
A/Prof Paul Ekert, Murdoch Children's Research Institute,
VIC

Location: Riverbank Room 2

14:00 SYM-09-01

Ageing disgracefully: refining the mutagenic influence of 5mC
Majewski, I.J. (Australia)

14:20 SYM-09-02

Gattaca 20 years on: just how close are we?
Ewans, L.J. (Australia)

14:40 SYM-09-03

Genomics at the coal face: a clinician's perspective of the
genomic revolution
Palmer, E.E. (Australia)

15:00 SYM-09-04

Integrated 'omics discovers clinically relevant copy number and
sequence variants in cerebral palsy
Corbett, M.A., Van Eyk, C.L., Bent, S.J., Harper, K., Berry, J.,
Gardner, A., MacLennan, A.H. and Gecz, J. (Australia)

15:15 SYM-09-05

Identification and analysis of three novel enhancers of human
SOX9: implications for disorders of sex development
Croft, B., Ohnesorg, T., Bowles, J., Pelosi, E., Harley, V.,
Koopman, P. and Sinclair, A. (Australia)

14:00 – 15:30

SYMPOSIUM 10

MECHANOSENSATION AND MECHANOTRANSDUCTION

Chairs: Dr Annemiek Beverdam, University of New South Wales, NSW
Dr Jasreen Kular, University of South Australia, SA

Location: Riverbank Room 6

14:00 SYM-10-01

A sting in the tail: focal adhesion targeting and mechanosensing
Bradbury, P.M., Turner, K., Mitchell, C., Griffin, K.R.,
Middlemass, S., Lau, L., Dagg, R., Cooper-White, J., Fabry, B.
and **O'Neill, G.M.** (Australia and Germany)

14:20 SYM-10-02

Stem cell migration and mechanotransduction on linear stiffness
gradient hydrogels
Hadden, W.J., Young, J.L., Holle, A.W., McFetridge, M.L.,
Wijesinghe, P., Kennedy, B.F., Sampson, D.D., Spatz, J.P.,
Engler, A.J. and **Choi, Y.S.** (Australia, Germany and USA)

14:40 SYM-10-03

Mechanosensing in chondrocytes via mechanically gated ion
channels
Poole, K. (Australia)

15:00 SYM-10-04

P2X4 controls mechano-transduction of blood flow in human
monocytes
Baratchi, S., Wallert, M., Zaldiva, K. and Peter, K. (Australia)

15:15 SYM-10-05

The mechanosensor YAP drives cutaneous type 2 inflammation
and eczema development
Mendoza-Reinoso, V., Corley, S., Wilkins, M., Roediger, B.
and **Beverdam, A.** (Australia)

14:00 – 15:30

SYMPOSIUM 11

LIPID METABOLISM AND SIGNALLING

Chairs: Dr Melissa Pitman, Centre for Cancer Biology, SA
Pathology, SA
Professor Andrew Brown, University of New South Wales,
NSW

Location: Riverbank Room 3

14:00 SYM-11-01

The inositol polyphosphate 5-phosphatase SKIP (INPP5K) is essential for skeletal muscle integrity and function
Eramo, M.J., Gurung, R., Gehrig, S., Lynch, G., McLean, C.A., McGrath, M.J. and **Mitchell, C.A.** (Australia)

14:20 SYM-11-02

Identification of a novel regulator of cholesterol metabolism using an integrative systems approach
Drew, B.G., Zerenturk, E.J., De Aguiar Vallim, T.Q., Parker, B.P., Tarling, E.J., Curran, J.E., Lusic, A.J., Meikle, P.J., James, D.E. and **Calkin, A.C.** (Australia and USA)

14:40 SYM-11-03

Lipidic pathway required for plant pollen development
Zhang, D.B. (Australia)

15:00 SYM-11-04

Coordinating TBN/endosomal lipid metabolism with cellular quiescence
Mousley, C.J. (Australia)

15:15 SYM-11-05

A conserved degron regulates the cholesterol-mediated turnover of human squalene monooxygenase, a rate-limiting enzyme in cholesterol synthesis
Chua, N.K., Howe, V. and Brown, A.J. (Australia)

15:30 – 16:00 AFTERNOON TEA

Location: *Halls F & G Foyer*

16:00 – 16:45

PLENARY 6

PLENARY LECTURE

Chair: Professor Melissa Brown, Flinders University of SA, SA
Location: Hall L

PLE-TUE-06

Alternatives to antibiotics for treating multidrug resistant infections

Hancock, R.E.W. (Canada)

Dr Bob Hancock



R.E.W. (Bob) Hancock OC, OBC, FRSC. He is a UBC Killam Professor of Microbiology & Immunology, an Associate Faculty Member of the Wellcome Trust Sanger Institute and a Canada Research Chair in Health and Genomics. His research interests include small cationic peptides as novel antimicrobials and modulators of innate immunity, the development of novel treatments for antibiotic resistant infections, the systems biology of innate immunity, inflammatory diseases and *Pseudomonas aeruginosa*, and antibiotic uptake and resistance. He has published more than 695 papers and reviews, has 64 patents awarded, and is an ISI highly cited author in Microbiology with more than 74,000 citations and an h-index of 141. He has won several awards including the ICAAC Aventis Antimicrobial Research Award, the leading award for research on antimicrobials, and Canada's three top prizes for Health Research, and is an Officer of the Order of Canada. He was a co-founder of Migenix, Inimex Pharmaceuticals, ABT Innovations, Sepset Biotherapeutics, and the Centre for Drug Research and Development.

16:50 – 18:20

SYMPOSIUM 12

BENEFICIAL SOIL-MICROBE-PLANT INTERACTIONS

Chairs: A/Prof Tim Cavagnaro, University of Adelaide, SA
Dr Stephanie Watts-Williams, University of Adelaide, SA
Location: Riverbank Rooms 7/8

16:50 SYM-12-01

Determining the site of action of strigolactones during nodulation

Foo, E., McAdam, E.L., Hugill, C., Fort, S., Samian, E., Cottaz, S., Davies, N.W. and Reid, J.B. (Australia and France)

17:10 SYM-12-02

Untangling the factors driving nutrient exchange in ectomycorrhizal symbioses

Plett, K.L., Hortal, S., Carrillo, Y., Martin, F., Plett, J.M. and Anderson, I.C. (Australia)

17:30 SYM-12-03

Mycorrhizal communities and phenotypes in relation to root morphology and growth strategies of *Brachypodium distachyon*
Riley, R.C., Donn, S., Delroy, B. and **Powell, J.R.** (Australia)

17:50 SYM-12-04

Rhizoremediation of residual sulfonyl urea herbicides in agricultural soils using lens culinaris and a commercial supplement

Rainbird, B.M., Bentham, R.H. and **Soole, K.L.** (Australia)

18:05 SYM-12-05

An image analysis suite for root phenotyping

Chopin, J., Kumar, P., Cai, J., Laga, H. and Miklavcic, S.J. (Australia)

16:50 – 18:20

SYMPOSIUM 13

PLANT BIOTECHNOLOGY AND FOOD SECURITY

Chairs: A/Prof James Stangoulis, Flinders University of SA, SA
Professor Ros Gleadow, Monash University, VIC

Location: Riverbank Room 4

16:50 SYM-13-01

Improving food security with iron-enriched cereal crops
Bonneau, J., Beasley, J., Sanchez-Palacios, T., Moreno-
Moyano, L.T. and **Johnson, A.A.T.** (Australia)

17:10 SYM-13-02

Modification of polysaccharides benefitting human health in
cereal grains
Burton, R.A. (Australia)

17:30 SYM-13-03

Development of abiotic stress tolerant canola (*Brassica napus*)
through genetic engineering approach
Tabasum, A., Singh, M.B. and **Bhalla, P.L.** (Australia)

17:50 SYM-13-04

Crop wild relatives as a source of novel germplasm
Gleadow, R.M., Cowan, M.F. and Blomstedt, C.K. (Australia)

18:05 SYM-13-05

High resolution association mapping implicates NAS3 in rice
endosperm Zn phenotype
Warnock, N.I. and Stangoulis, J.C.R. (Australia)

16:50 – 18:20

SYMPOSIUM 14

TRANSCRIPTION IN DEVELOPMENT

Chairs: A/Prof Ruth Arkell, Australian National University, ACT
Professor John Pimanda, University of New South Wales,
NSW

Location: Riverbank Room 5

16:50 SYM-14-01 ANZSCDB Emerging Leader Award Lecture

New insights into NEAT1 long noncoding RNA and paraspeckles

Li, R., Naveed, A., Bond, C.S., Fletcher, S., Wilton, S., Cooper, J. and **Fox, A.H.** (Australia)

17:10 SYM-14-02

Novel chromatin state changes in neural development

Marshall, O.J. and Brand, A.H. (United Kingdom and Australia)

17:30 SYM-14-03

bHLH-PAS transcription factors: target gene selection, satiety and the homeodomain connection

Bersten, D.C. (Australia)

17:50 SYM-14-04

Efficient levels of minor class splicing are required during vertebrate development and for multiple forms of cancer

Doggett, K., Morgan, K., Williams, B., Markmiller, S., Lieschke, G.J., Stainier, D.Y.R. and **Heath, J.K.** (Australia and Germany)

18:05 SYM-14-05

Novel co-option of the cardiac transcription factor *NKX2.5* during development of the emu wing

Smith, C.A., Davidson, N., Baker, N., Raabus, M., Hirst, C., Major, A., Roeszler, K.N., Mariette, M., Oshlack, A. and Farlie, P.J. (Australia)

16:50 – 18:20

SYMPOSIUM 15

METALLOPROTEINS AND METALLOPROTEOMICS

Chairs: Dr Stephanie Begg, University of Adelaide, SA
Dr Blaine Roberts, University of Melbourne, VIC

Location: Hall L

16:50 SYM-15-01

You are what you do not eat: bacterial adaptation to nutritional immunity

Kehl-Fie, T.E. (USA)

17:10 SYM-15-02

The structural biology of complex IV assembly

Maher, M.J., Maghool, S., Cooray, N.D., Aragao, D., Stroud, D.A. and Ryan, M.T. (Australia)

17:30 SYM-15-03

Targeting zinc: a pathway to improve cognition in health and disease?

Adlard, P.A. (Australia)

17:50 SYM-15-04

Zinc homeostasis in *Streptococcus pneumoniae* during disease

Eijkelkamp, B.A., Morey, J.R., Pederick, V.G., Cole, N., Singh, P.P., Hughes, C., Plumptre, C.D., Begg, S.L., Ong, C.-L.Y., Paton, J.C., McEwan, A., Doble, P. and McDevitt, C.A. (Australia)

18:05 SYM-15-05

Continuous mass spectrometry assay for toxic phospholipase from Australian snake venoms

Harrison, J.A., Kelso, C. and Beck, J.L. (Australia)

16:50 – 18:20

SYMPOSIUM 16

BIG DATA ANALYTICS

Chairs: A/Prof Marcel Dinger, Garvan Institute of Medical Research, NSW
Dr Mark Pinese, Garvan Institute of Medical Research, NSW

Location: Riverbank Room 2

16:50 SYM-16-01

The use of big data for the study of somatic mutation accumulation and repair within cis-regulatory regions of cancer genomes

Poulos, R.C. and Wong, J.W.H. (Australia)

17:10 SYM-16-02

Challenges of single-cell RNA-seq data analysis

Ho, J.W.K. (Australia)

17:30 SYM-16-03

HLA and KIR Typing in Large Cohorts: Insights for studies of disease

Leslie, S. (Australia)

17:50 SYM-16-04

Detection and quantification of inbreeding depression for complex traits from SNP data

Yengo, L., Zhu, Z., Wray, N.R., Yang, J., Robinson, M.R. and Visscher, P.M. (Australia)

18:05 SYM-16-05

Wild wine: metagenomic analysis of microbial communities during wine fermentation

Cuijvers, K., Sternes, P. and **Borneman, A.R.** (Australia)

16:50 – 18:20

SYMPOSIUM 17

NEW TECHNOLOGIES IN CELL BIOLOGY

Chairs: A/Prof Kaylene Simpson, Peter MacCallum Cancer Centre,
VIC

Professor Paul Thomas, University of Adelaide, SA

Location: Riverbank Room 6

16:50 SYM-17-01

Genome-wide CRISPR screens to identify mechanisms of cancer therapy resistance

Vervoort, S.J., Kearney, C., Hogg, S.J., Oliaro, J. and Johnstone, R.W. (Australia)

17:10 SYM-17-02

Targeting metabolic adaptation in BRAFV600E melanoma

Smith, L., Parmenter, T., Kusnadi, E., Kleinschmidt, M., Ward, T., Kang, J., Simpson, K., Tiganis, T., Pearson, R. and McArthur, G. (Australia)

17:30 SYM-17-03

ROCK-education of mammary tumour fibroblasts enhances their malignant phenotype and creates a tumour-permissive microenvironment

Boyle, S.T., Pyne, N.T., Kular, J., Kochetkova, M. and Samuel, M.S. (Australia)

17:50 SYM-17-04

Systems approaches to understanding the assembly of mitochondrial machines

Stroud, D.A., Formosa, L.E., Lake, N.J., Dibley, M.G., Compton, A.G., Thornburn, D.R. and Ryan, M.T. (Australia)

18:05 SYM-17-05

The functional investigation of Dock1 circular RNA

Liu, D., Bert, A.G., Dredge, B.K., Conn, S.J., Gregory, P.A. and Goodall, G.J. (Australia)

16:50 – 18:20

SYMPOSIUM 18

GROWTH FACTOR SIGNALLING

Chairs: Professor Tony Tiganis, Monash University, VIC
Dr David Croucher, Garvan Institute of Medical Research,
NSW

Location: Riverbank Room 3

16:50 SYM-18-01

Evolution of the TOR field

Hall, M.N. (Switzerland)

17:10 SYM-18-02

Targeting the ribosome to treat P13K/MYC-dependent cancer

Devlin, J.R., Sanij, E., Rebello, R.J., Hannan, K.M., Cullinane, C., Furic, L., Sheppard, K.E., Hannan, R.D. and **Pearson, R.B.**
(Australia)

17:30 SYM-18-03

Detailed functional studies of two different FGFR2 mutations and analyses of acquired resistance models reveal novel insights into FGFR signaling

Packer, L., Stehbens, S., Hu, R., Mahon, C., Geng, X. and **Pollock, P.** (Australia)

17:50 SYM-18-04

Testis determination requires a specific FGFR2 isoform to repress FOXL2

Bird, A.D., Bagheri-Fam, S., Zhao, L., Ryan, J., Yong, M., Wilhelm, D., Koopman, P., Eswarakumar, J. and Harley, V.
(Australia and USA)

18:05 SYM-18-05

Elevated canonical Wnt signalling disrupts development of the embryonic midline and may underlie cases of ZIC3-associated heterotaxy

Diamand, K., Barratt, K., Alzahrani, A. and **Arkell, R.**
(Australia)

18:20 – 20:00 WELCOME MIXER / EXHIBITION

Location: *Halls F & G*

08:30 – 09:15

PLENARY 7

ANNALS OF BOTANY LECTURE

Chair: Professor Rachel Burton, University of Adelaide, SA

Location: Hall L

PLE-WED-07

What can plant metabolic engineering do for human health?

Martin, C. (United Kingdom)

Professor Cathie Martin



Cathie is a group leader at the John Innes Centre and Professor at the University of East Anglia. Her interests span from fundamental to applied plant science. She researches into the relationship between diet and health and how crops can be fortified to improve diets and address the global challenge of escalating chronic disease. This work has involved linking leading clinical and epidemiological researchers with plant breeders and metabolic engineers to develop scientific understanding of how diet can help to maintain health, promote healthy ageing and reduce the risk of chronic disease. Cathie is also involved in genetic screens to identify crops which lack toxins that cause nutritional diseases, and has recently initiated a collaborative project with China to research on Chinese medicinal plants.

09:20 – 10:05

PLENARY 8

PLENARY LECTURE

Chair: Dr Michael Michael, Flinders University of SA, SA

Location: Hall L

PLE-WED-08

Epigenetics in health and disease: From knowledge to applications

Esteller, M. (Spain)

Professor Manel Esteller



Manel Esteller graduated in Medicine (1992) and obtained his PhD (1996) from the Universidad de Barcelona. He was an Invited Researcher at the University of St Andrews, Scotland, where he focused on the molecular genetics of inherited breast cancer. From 1997 to 2001, Dr Esteller was a Postdoctoral Fellow and a Research Associate at the Johns Hopkins University, USA, where he studied DNA methylation and cancer. His work was decisive in establishing promoter hypermethylation of tumour suppressor genes as a common hallmark of human tumours. From 2001 to 2008, Dr Esteller was the Leader of the CNIO Cancer Epigenetics Laboratory in Madrid, where he researched alterations in DNA methylation, histone modifications and chromatin in human cancer. Since October 2008, Dr Esteller has been the Director of the Cancer Epigenetics and Biology Program of the Bellvitge Institute for Biomedical Research (IDIBELL) in Barcelona, Professor of Genetics in the School of Medicine of the University of Barcelona, and an ICREA Research Professor. His research is devoted to the establishment of the epigenome maps of normal and transformed cells, the study of the interactions between epigenetic modifications and non-coding RNAs, and the development of new epigenetic drugs for cancer therapy.

09:20 – 10:05

PLENARY 9

ASPS PETER GOLDACRE AWARD LECTURE

(Including Presentation of Award)

Chair: Professor Sergey Shabala, University of Tasmania, TAS
ASPS President

Location: Riverbank Rooms 7/8

PLE-WED-09

Tuning in to rhizosphere radio: decoding the conversations between plants and microbes to breed more sustainable crops

Plett, J.M., Plett, K.L., Wong, J.W.-H., Bithell, S. and Anderson, I.C. (Australia)

Dr Jonathan Plett



Dr Plett, a Lecturer at Western Sydney University, is a pioneer in decoding the genetic basis enabling plants to form symbiotic relationships with beneficial rather than pathogenic microbes. Mycorrhizal fungi are among the most important microbes that form beneficial symbiotic interactions and are essential for sustainability and productivity of plant life in natural and managed ecosystems world-wide. Outcomes of this research are important for screening new tree and crop lines to find the ‘sweet spot’ in immune defence that enables plants to maximise benefits from mycorrhizal fungi without compromising disease resistance. These results will result in more productive tree plantations and better food security in crops.

10:05 – 10:10

ASPS-FPB BEST PAPER AWARD PRESENTATION

To: Dr Lu Wang, University of Tasmania, TAS

Chair: Professor Sergey Shabala, University of Tasmania, TAS
ASPS President

Location: Riverbank Rooms 7/8

10:10 – 10:55

PLENARY 10

ASBMB LEMBERG MEDAL LECTURE

(Including Presentation of Award)

Chair: Professor Leann Tilley, University of Melbourne, VIC
ASBMB President

Location: Hall L

PLE-WED-10

RNA at the epicentre of human development and cognition

Mattick, J.S. (Australia)

Professor John Mattick



John Mattick is the Executive Director of the Garvan Institute of Medical Research. He has made several seminal contributions to molecular biology, including delineation of the architecture and function of the fatty acid synthase complex, development of one of the first recombinant DNA-based vaccines, and genetic characterisation of bacterial surface filaments called type IV pili involved in host colonisation. Over the past 20 years, he has pioneered a new view of the genetic programming of humans and other complex organisms by showing that the majority of the genome, previously considered junk, actually specifies a dynamic network of regulatory RNAs that guide differentiation and development. He has showed the extensive transcription of intronic, intergenic and antisense RNAs, their highly dynamic and specific cellular and subcellular expression, their association with chromatin-modifying complexes and their involvement in development and disease. He also discovered ultraconserved elements in the human genome and several classes of small RNAs, and, in conjunction with colleagues, developed new methods for high-resolution transcriptome analysis. John has established the Garvan Institute as one of the world's leading centres for human genome sequencing and oversaw the launch of GenomeOne, a wholly owned subsidiary of the Garvan and one of the world's first clinically accredited whole genome sequencing companies. John was recently named by the NHMRC as the one of the all-time high achievers in Australian health and medical research.

10:10 – 10:55

PLENARY 11

ANZSCDB PRESIDENT'S MEDAL LECTURE

(Including the Presentation of the Medal and the Presentation of the ANZSCDB Emerging Leader Award to Dr Archa Fox, University of Western Australia)

Chair: Professor Sally Dunwoodie, Victor Chang Cardiac Research Institute, NSW / ANZSCDB President

Location: Riverbank Room 5

PLE-WED-11

The role of distinct populations of muscle stem cells during regeneration and organ growth

Currie, P.D. (Australia)

Professor Peter Currie



Peter Currie received his PhD in *Drosophila* genetics from Syracuse University, New York, USA. He undertook postdoctoral training in zebrafish development at the Imperial Cancer Research Fund (now Cancer Research UK) in London, UK. He has worked as an independent laboratory head at the UK Medical Research Council Human Genetics Unit in Edinburgh, UK and the Victor Chang Cardiac Research Institute in Sydney, Australia where he headed a research programme focused on skeletal muscle development and regeneration. His work is centered on understanding how the small freshwater zebrafish is able to build and regenerate skeletal muscle. In 2016 he was appointed Director of the Australian Regenerative Medicine Institute at Monash University in Melbourne, Australia. He is a recipient of a European Molecular Biology Organization Young Investigators Award and a Wellcome Trust International Research Fellowship and currently is a Principal Research Fellow with the National Health and Medical Research Council in Australia. Prof Currie, along with Dr Georgina Hollway, from the Garvan Institute of Medical Research, and Dr Phong Nguyen of the Australian Regenerative Medicine Institute at Monash University, won the UNSW 2015 Eureka Prize for Scientific Research. They were awarded the prize in recognition of their groundbreaking research into stem cell generation.

WEDNESDAY 4 OCTOBER 2017

10:55 – 11:15

ASBMB AWARD PRESENTATIONS

Chair: Professor Leann Tilley, University of Melbourne, VIC
ASBMB President

Location: Hall L

BECKMAN COULTER DISCOVERY SCIENCE AWARD

To: A/Prof Michael Lawrence, Walter & Eliza Hall Institute,
VIC

EPPENDORF EDMAN AWARD

To: Dr Natalie Spillman, University of Melbourne, VIC

SHIMADZU EDUCATION AWARD

To: Dr Heather Verkade, University of Melbourne, VIC

BOOMERANG AWARD

To: Dr Yan Yip, Kings College, London, UK

FRED COLLINS AWARD & FELLOWSHIP AWARDS

To: Dr Sam Robinson, University of Utah, USA (Fred Collins)
Ms Georgia Atkin-Smith, La Trobe University, VIC
Dr Stephanie Begg, University of Adelaide, SA
Miss Yi Lin Kang, University of Melbourne, VIC

50 YEAR MEMBER AWARD

To: Professor Greg Barritt, Flinders University of SA, SA

11:15 – 12:00 *MORNING TEA / EXHIBITION / POSTERS*

11:20 – 12:00 **POSTER TEASERS**

Selected poster presenters will deliver "Poster Teasers" in the Exhibition Hall Meeting Room prior to the poster session commencing at 14:00.

Location: Halls F & G

12:00 – 13:30

SYMPOSIUM 19

EDUCATION I

Chairs: Dr Amber Willems-Jones, University of Melbourne, VIC
Dr Maurizio Costabile, University of South Australia SA

Location: Riverbank Room 4

12:00 SYM-19-01 *Shimadzu Education Award Lecture*

Passive knowledge transfer is not a thing: getting active learning into large classes

Verkade, H. (Australia)

12:20 SYM-19-02

Interdisciplinary approach to promote lifelong learning of scientific communication skills

Russell, J. (Australia)

12:40 SYM-19-03

Fostering employability skill development of undergraduate biochemistry students through incorporation of e-Notebooks in teaching

Kuit, T., Barrett, J., Scifleet, J., Curtis, S., Beck, L. and Paton, W. (Australia)

13:00 SYM-19-04

First year authentic research: A pathway to graduate attributes and employability?

Young Kirby, J. and Burke da Silva, K. (Australia)

13:15 SYM-19-05

Creative engagement and learning science in the 21C

Poronnik, P. (Australia)

12:00 – 13:30

SYMPOSIUM 20

PLANT ENERGY USE EFFICIENCY

Chairs: Professor Min Chen, University of Sydney, NSW
Dr Stefanie Wege, University of Adelaide, SA

Location: Riverbank Rooms 7/8

12:00 SYM-20-01

Modelling crop scale implications of photosynthetic manipulation

Wu, A., Doherty, A. and Hammer, G. (Australia)

12:20 SYM-20-02

Acclimation of C4 photosynthesis to low light

Sonawane, B.V., Sagun, J.V., Foster, C., Chow, W.S., Hernandez-Prieto, M., Chen, M. and **Ghannoum, O.** (Australia and USA)

12:40 SYM-20-03

Identifying the regulators of mitochondrial biogenesis

Murcha, M., Ivanova, A., Xianwen, D., Berkowitz, O. and Whelan, J. (Australia)

13:00 SYM-20-04 ASPS-FPB Best Paper Award Lecture

Shoot-root carbon allocation and sugar signaling

Wang, L. and Ruan, Y. (Australia)

13:15 SYM-20-05

The role of the chloroplast signal 3'phosphoadenosine 5'phosphate, in stomatal closure

Tee, E.E., Chan, K.X., Crisp, P., Chen, Z. and Pogson, B.J. (Australia)

12:00 – 13:30

SYMPOSIUM 21

ORGANOGENESIS

Chairs: A/Prof Joan Heath, Walter & Eliza Hall Institute, VIC
Dr Andrew Cox, Peter MacCallum Cancer Centre, VIC

Location: Riverbank Room 5

12:00 SYM-21-01

Dissecting the regulation of nephron progenitor identity, self-renewal and commitment

Combes, A.N., Lawlor, K., Phipson, B., Zappia, L., Oshlack, A. and Little, M. (Australia)

12:20 SYM-21-02

From servant to master: the ribosomes instructive role in cell fate determination

Chahal, A.J., Mitchel, N.C., Zaytseva, O., Schittenhelm, R.B., Purcell, T.W., Evers, M., Hannan, K., George, A., Hannan, R.D. and **Quinn, L.M.** (Australia)

12:40 SYM-21-03

NAD deficiency, congenital malformations and niacin supplementation

Shi, H., Enriquez, A., Rapadas, M., Martin, E., Moreau, J., Giannoulatou, E., Chapman, G., Sparrow, D. and Dunwoodie, S. (Australia)

13:00 SYM-21-04

Peripheral and central nervous system defects in a mouse model of Goldberg-Shprintzen megacolon syndrome

McKeown, S.J., Stamp, L.A., Hirst, C.S., Bergner, A. and Young, H.M. (Australia)

13:15 SYM-21-05

Grainyhead proteins regulate intestinal stem cell function

Dominado, N., Casagrande, F., Giudice, C.L., Horvay, K., Abud, H.E. and **Hime, G.R.** (Australia)

12:00 – 13:30

SYMPOSIUM 22

PROTEIN ENGINEERING

Chairs: A/Prof Ashley Buckle, Monash University, VIC
A/Prof Keith Shearwin, University of Adelaide, SA
Location: Hall L

12:00 SYM-22-01

The evolution of dual active sites in a designed enzyme
Jackson, C.J. (Australia)

12:20 SYM-22-02

Stability engineering of the human antibody repertoire
Christ, D. (Australia)

12:40 SYM-22-03

Cyclic cell penetrating peptides as scaffolds to target intracellular protein-protein interactions
Henriques, S.T., Huang, Y.H. and Craik, D.J. (Australia)

13:00 SYM-22-04

Dissecting and engineering proteins through phage-displayed evolution
Weiss, G.A., Meneghini, L., Smith, J., Majumdar, S., Woodworth, M.A., Edgar, J., Briggs, J.S. and Patterson, S.S. (USA)

13:15 SYM-22-05

A mechanistic insight into insulin A6-A11 disulfide bond in regulating hormone activity and structural stability
Ong, S.C., Van Lierop, B.E., Belgi, A., Menting, J.G., Lawrence, M.C., Andrikopoulos, S., Forbes, B.E. and Robinson, A.J. (Australia)

12:00 – 13:30

SYMPOSIUM 23

GENOMIC TECHNOLOGIES

Chairs: Dr Helen Speirs, University of New South Wales, NSW
Ms Vivien Vasic, Monash Health Translation Precinct,
VIC

Location: Riverbank Room 2

12:00 SYM-23-01

Novel applications of high-throughput capture sequencing:
hunting for viruses that trigger type 1 diabetes

Kim, K.W., Horton, J.L., Allen, D.W., Pang, C.N., Jain, K.,
Leung, P., Isaacs, S.R., Wilkins, M.R., Couper, J.J., Penno,
M.A.S., Harrison, L.C., Morahan, G., Harris, M., Cotterill,
A.M., Morbey, C., Soldatos, G., Barry, S.C., Haynes, A., Davis,
E., Colman, P., Giles, L., Dodd, J., Wentworth, J., Sinnott, R.,
Vuillermin, P., Thomson, R.L., Catteau, J., Spooner, K.,
Bezuidenhout, D., Rice, B., Gibson, E., Bull, R.A., Luciani, F.,
Lipkin, W.I., Rawlinson, W.D., Briese, T. and Craig, M.E. :
ENDIA Study Group (Australia & USA)

12:20 SYM-23-02

Big data from a small device: real time genomics with nanopore
sequencing

Smith, M.A., Ferguson, J., Bunadi, D., Singh, M., AlEyrani,
G., Mattick, J.S. and Dinger, M.E. (Australia)

12:40 SYM-23-03

The Oz Mammals Genomics (OMG) initiative: developing
genomic resources for Australian mammals

Deakin, J. (Australia)

13:00 SYM-23-04

Tissue-specific delivery of CRISPR-Cas endonucleases for
genome editing

Rouet, R., Fellmann, C., Thuma, B., Spiros, L., Mascitti, V.
and Doudna, J.A. (USA)

13:15 SYM-23-05

CRISPR variants for mouse genome editing - do they make the cut?

Robertson, L., Adikusuma, F., Piltz, S., White, M., Pederick, D., Ahladas, M. and Thomas, P. (Australia)

12:00 – 13:30

SYMPOSIUM 24

PROTEOSTASIS AND UNFOLDED PROTEIN RESPONSE

Chairs: A/Prof Danny Hatters, University of Melbourne, VIC
Professor Chris Proud, South Australian Health and
Medical Research Institute, SA

Location: Riverbank Room 6

12:00 SYM-24-01

Molecular reporters for measuring unfolded protein load in cells
Chen, M., Hatters, D. and **Hong, Y.** (Australia)

12:20 SYM-24-02

Therapeutic targeting of autophagy in ALS
Perera, N.D., Lau, C.L., Amin, A., Shabanpoor, F., Beart, P.M.
and **Turner, B.J.** (Australia)

12:40 SYM-24-03

Parkinson-associated Vps35 mutations alter retromer cellular
functions
Follett, J., Bugarcic, A., Yang, Z., Collins, B. and **Teasdale,
R.D.** (Australia)

13:00 SYM-24-04

The unique proteostasis challenges of pregnancy
Cater, J.H., Wilson, M.R., Kumita, J.R., Dobson, C.M. and
Wyatt, A.R. (Australia and UK)

13:15 SYM-24-05

In vivo function of the chaperonin TRiC
Berger, J., Berger, S., Li, M., Jacoby, A.S., Anders, A.,
Stewart, A.G. and Currie, P.D. (Australia and Sweden)

12:00 – 13:30

SYMPOSIUM 25

CANCER METABOLISM

Chairs: A/Prof Jeff Holst, Centenary Institute, NSW

A/Prof Kyle Hoehn, University of New South Wales, NSW

Location: Riverbank Room 3

12:00 SYM-25-01

Suppressing fatty acid uptake as a treatment for prostate cancer

Taylor, R.A., Clark, A.K., Selth, L., Rebello, R., Porter, L.A., Furic, L., Risbridger, G.P., Frydenberg, M., Nomura, D.K. and Watt, M.J. (Australia and USA)

12:20 SYM-25-02

Amino acid homeostasis in cancer cells

Broer, S., Gauthier-Coles, G. and Broer, A. (Australia)

12:40 SYM-25-03

The use of stable isotope-resolved metabolomics to assess cancer metabolism

Bruce, C.R. (Australia)

13:00 SYM-25-04

Adaptive reprogramming of *de novo* pyrimidine synthesis is a metabolic vulnerability in triple-negative breast cancer

Brown, K. and Toker, A. (Australia and USA)

13:15 SYM-25-05

Inhibition of glucosylceramide synthase causes multiple myeloma cell death alone and in synergy with bortezomib via enhanced endoplasmic reticulum stress

Bennett, M.K., Pitman, M., Davies, L., Wallington-Beddoe, C. and Pitson, S. (Australia)

13:30 – 14:30 LUNCH / EXHIBITION / POSTERS

Location: Halls F & G

14:00 – 15:00 POSTER SESSION A – Presenting authors to be in attendance

Location: Hall F & G

15:00 – 16:30

SYMPOSIUM 26

EDUCATION II

Chairs: Professor Phillip Poronnik, University of Sydney, NSW
Dr Tracey Kuit, University of Wollongong, NSW

Location: Riverbank Room 4

15:00 SYM-26-01

Engaging students with animation: an alternative assessment task

Abud, H.E., Rhodes, D. and Johanesen, P. (Australia)

15:20 SYM-26-02

Engaging students with online interactive pre-practical class activities

Rhodes, D., Abud, H. and **Johanesen, P.** (Australia)

15:40 SYM-26-03

Is technology enhancing or transforming assessment?

Macaulay, J., Groessler, A., Haynie, A., Higgs, B., Mercer-Mapstone, L., Sweeney, T., West, D. and Yeo, M. (Australia, Ireland and Canada)

16:00 SYM-26-04

An inquiry based-learning module to foster critical thinking in a second-year biochemistry prac class

Willems-Jones, A.J., Szambelanczyk Orval, I. and Hu, W. (Australia)

16:15 SYM-26-05

Enhancing fundamental biochemistry laboratory skills through the use of simulations and an app

Costabile, M. (Australia)

15:00 - 16:30

SYMPOSIUM 27

PLANT REPRODUCTIVE AND SEED BIOLOGY

Chairs: A/Prof Matthew Tucker, University of Adelaide, SA
Dr Helen Collins, University of Adelaide, SA

Location: Riverbank Rooms 7/8

15:00 SYM-27-01

The patterning of plant development - a story of self-organising boundaries and polarity

Bhatia, N., Caggiano, M.-P., Yu, X., Larsson, A., Ram, H., Ohno, C., Sappl, P., Meyerowitz, E.M., Jonsson, H. and **Heisler, M.G.** (Australia, Germany, UK and USA)

15:20 SYM-27-02

Rice with multilayer aleurone and enhanced micronutrients

Larkin, P.J., Wu, X.B., Yu, C.W., Howitt, C.A., Bird, A.R., Pogson, B.J. and Liu, C.M. (Australia and China)

15:40 SYM-27-03

Role of LEUNIG and LEUNIG_HOMOLOG in regulating early embryonic patterning in Arabidopsis

Kaptur, J., Sampathkumar, A. and **Golz, J.F.** (Australia and Germany)

16:00 SYM-27-04

LOFSEP MADS-box genes determine panicle architecture and spikelet identity in rice

Wu, D., Liang, W., Zhu, W., Chen, M., Ferrandiz, C., Burton, R.A., **Dreni, L.** and Zhang, D. (China, Spain and Australia)

16:15 SYM-27-05

Comparative transcriptomics of developing rice grains to elucidate candidates for grain zinc biofortification

de Courcy-Ireland, E., Warnock, N., Rey, J., Swamy, B.P.M., Reinke, R. and Stangoulis, J. (Australia and Philippines)

15:00 - 16:30

SYMPOSIUM 28

GENE EDITING

Chairs: Professor Michael Ryan, Monash University, VIC
Professor Peter Waterhouse, Queensland University of
Technology, QLD

Location: Hall L

15:00 SYM-28-01

Gene editing technologies for functional genomics research and
precision molecular breeding in plants

Zhu, J.-K. (China and USA)

15:20 SYM-28-02

Gene editing in cereals

Luo, M., Wu, X., Morbitzer, R., LaHaye, T. and Ayliffe, M.
(Australia and Germany)

15:40 SYM-28-03

Generation and utilisation of CRISPR/Cas9 gene-edited human
pluripotent stem cells

Howden, S.E. (Australia)

16:00 SYM-28-04

Harnessing novel RNA-targeting CRISPR systems for
diagnostics and transcriptome engineering

Gootenberg, J. (USA)

15:00 - 16:30

SYMPOSIUM 29

PROTEIN-OLIGONUCLEOTIDE INTERACTIONS

Chairs: Dr Archa Fox, University of Western Australia, WA
Dr Raman Sharma, University of Adelaide, SA

Location: Riverbank Room 5

15:00 SYM-29-01

The journey towards the mechanism by which the nurd complex remodels chromatin

Mackay, J.P., Torrado, M., Zhong, J., Bedward, M., Patel, K., Low, J.K., Silva, A.P.G., Paudel, B., Van Oijen, A. and Ryan, D.P. (Australia)

15:20 SYM-29-02

Coiled and ready: conformational states of designer pentatricopeptide repeat proteins

Schmidberger, J.W., Johnston, B., Small, I.D. and **Bond, C.S.** (Australia)

15:40 SYM-29-03

Potency of RNA binding proteins as regulators of gene expression

Anko, M.L. (Australia)

16:00 SYM-29-04

Tracking oligomeric transcription factor dynamics by pair correlation of molecular brightness (pCOMB)

Hinde, E., Pandzic, E., Yang, Z., Ng, I.H.W., Jans, D.A., Bogoyevitch, M.A., Gratton, E. and Gaus, K. (Australia, Singapore and USA)

16:15 SYM-29-05

Crystal structures of an unusual transcriptional activator from bacteriophage 186

Truong, J.Q., Shearwin, K.E., Bruning, J.B., Pukala, T. and Panjikar, S. (Australia)

15:00 - 16:30

SYMPOSIUM 30

CANCER GENOMICS

Chairs: A/Prof Lisa M. Butler, University of Adelaide, SA
Dr Katia Nones, QIMR Berghofer Medical Research
Institute, QLD

Location: Riverbank Room 2

15:00 SYM-30-01

Translating cancer genomics to the clinic, for advanced
childhood and rare adult cancers

Cowley, M., Grady, J., Wong, M., Hajdu, E., Barahona, P.,
Pinese, M., Gayevskiy, V., Hess, D., Mould, E., Kumar, A.,
Thavaneswaran, S., Eckert, P., Quang, D.-A., Qui, M.R., Doig,
K., McEvoy, C., Lukeis, R., Prendergast, K., Pan, G.,
Collignon, E., Sebastien, L., Sjoquist, K., Lee, C., Fellowes, A.,
Joshua, A., Ballinger, M., Tyrrell, V., Collins, J., Dziadek, M.,
Fox, S., Dinger, M., Mattick, J., Marshall, G., Haber, M.,
Simes, J. and Thomas, D. (Australia)

15:20 SYM-30-02

Identifying heterogeneity in cancer samples using whole
genome sequencing

Patch, A.-M., Nones, K., Akgul, S., Kawamata, F., Creaney, J.,
Robinson, B.W., Pearson, J.V., Whitehall, V.L., Day, B.W. and
Waddell, N. (Australia and Japan)

15:40 SYM-30-03

Integrative genomics at diagnosis of chronic myeloid leukaemia
reveals molecular heterogeneity that may underlie diverse
treatment outcomes

Branford, S. (Australia)

16:00 SYM-30-04

From mammalian development to cancer- the encompassing
role of a tumour suppressive phosphatase

Panicker, N., Roselli, S., Kahl, R.G.S., Watt, L.F. and Verrills,
N.M. (Australia)

16:15 SYM-30-05

MicroRNA-200/375 regulated quaking controls epithelial cell plasticity through widespread alternative RNA splicing

Phillips, C., Pillman, K., Toubia, J., Roslan, S., Dredge, B.,

Bert, A., Neumann, D., Lumb, R., Goodall, G. and **Gregory, P.**

(Australia)

15:00 - 16:30

SYMPOSIUM 31

ADVANCED IMAGING APPROACHES IN CELL
AND TISSUE BIOLOGY

Chairs: Dr Paul Timpson, Garvan Institute of Medical Research,
NSW

Dr Guillermo Gomez, University of South Australia, SA

Location: Riverbank Room 6

15:00 SYM-31-01

Tracking immune cell fate decisions, autoimmunity, bone remodeling and blood cancers with long-term intravital imaging

Hawkins, E.D. (Australia)

15:20 SYM-31-02

Nppa and *Nppb* function redundantly in the zebrafish embryo to restrict the AVC and synthesis of cardiac jelly

Grassini, D., Bower, N., Legendijk, A.K., Hogan, B.M. and **Smith, K.A.** (Australia)

15:40 SYM-31-03

Improving diagnostic and therapeutic imaging in chronic inflammatory diseases

Hamzah, J. (Australia)

16:00 SYM-31-04

Fast moving nephron progenitors escape commitment and re-enter the niche

Lawlor, K.T., Lefevre, J.G., Hamilton, N.A., Little, M.H. and Combes, A.N. (Australia)

16:15 SYM-31-05

Structural characterisation of P-Rex1 activity in cancer cell signalling

Lucato, C.M., Halls, M.L., Mitchell, C.A., Whisstock, J.C. and Ellisdon, A.M. (Australia)

15:00 - 16:30

SYMPOSIUM 32

METABOLISM AND SYSTEMS BIOLOGY

Chairs: Dr Anna Calkin, Baker Heart & Diabetes Institute, VIC
Dr John O'Sullivan, University of Sydney, NSW

Location: Riverbank Room 3

15:00 SYM-32-01

Functional and molecular characterisation of insulin secretory granules

Yau, B. and **Kebede, M.** (Australia)

15:20 SYM-32-02

Identification of novel protein regulators of lipid metabolism using a multi-omics resource

De Aguiar Vallim, T.Q., Parker, B.P., Tarling, E.T., Blangero, J., Curran, J.E., Meikle, P.J., Lusis, A.J., James, D.E., Calkin, A.C. and **Drew, B.G.** (Australia and USA)

15:40 SYM-32-03

Integrative omics elucidates biological processes underlying the disease and mortality risks of the biomarker GlycA

Ritchie, S.C., Wurtz, P., Abraham, G., Kettunen, J. and Inouye, M. (Australia and Finland)

16:00 SYM-32-04

Nutrition regulates trafficking of amyloid precursor protein to the lysosome

Hein, L.K., Apaja, P.M., Hattersley, K., Grose, R.H., Xie, J., Proud, C.G. and **Sargeant, T.J.** (Australia)

16:15 SYM-32-05

Target of rapamycin (TOR) integrates environmental signals to control cell growth and division

Petersen, J. (Australia)

16:30 – 17:00 AFTERNOON TEA / POSTERS / EXHIBITION

Location: Hall F & G

17:00 – 18:30

SYMPOSIUM 33

PLANT VEGETATIVE DEVELOPMENT

Chairs: Dr Kim Johnson, University of Melbourne, VIC
Professor Michael Djordjevic, Australian National
University, ACT

Location: Riverbank Rooms 7/8

17:00 SYM-33-01

Control of shoot architecture by strigolactone and karrikin signalling

Smith, S.M. (Australia)

17:20 SYM-33-02

Sweet Timing: Roles for sugar signals in circadian time-keeping in Arabidopsis

Haydon, M.J. (Australia)

17:40 SYM-33-03

Regulation of vegetative-to-reproductive transition by sugar metabolism and signalling

Foster, R. and **Ruan, Y.-L.** (Australia)

18:00 SYM-33-04

Mass spectrometry analysis of *Medicago truncatula* secretome identifies several regulatory peptide hormone effecting root growth and development

Patel, N., Mohd-Radzman, N.A., Corcilius, L., Ivanovici, A., Taylor, K., Payne, R.J. and Djordjevic, M.A. (Australia)

18:15 SYM-33-05

Ion permeable water channels and turgor adjustment

Qiu, J., Bose, J., McGaughey, S., Tyerman, S. and **Byrt, C.** (Australia)

17:00 – 18:30

SYMPOSIUM 34

NEXT-GENERATION PHENOTYPING
*Sponsored by the Australian Phenomics Network &
The Australian Plant Phenomics Facility*

Chairs: Dr Bettina Berger, University of Adelaide, SA
Dr Michael Dobbie, Macquarie University, NSW

Location: Riverbank Room 4

17:00 SYM-34-01

Field phenotyping of sorghum breeding trials through proximal sensing technologies

Potgiester, A.B., Watson, J., Eldridge, M., Laws, K., George-Jaeggli, B., Chapman, S., Jordan, D. and Hammer, G.
(Australia)

17:20 SYM-34-02

Rapid Phenotyping on a micro scale: Complementing genomes with rapid compositional analysis and 3D structure visualisation

Martin, A.P., Flynn, J.R., Palmer, W.M., Seyoum, A., Pascoe, W., Tylee, P., Vance, R. and Hunter, A. (Australia)

17:40 SYM-34-03

Identification of genes playing a role in metabolism by high-throughput mouse phenotyping in the International Mouse Phenotyping Consortium (IMPC)

Rozman, J. (Germany)

18:00 SYM-34-04

Metal base imaging compounds for imaging organelles

Bader, C.A., Sorvina, A., Caporale, C., Massi, M., Brooks, D.R. and Plush, S.E. (Australia)

18:15 SYM-34-05

Visualising the nonsense

Domingo, D., Gecz, J., Bersten, D., Wilkinson, M. and Jolly, L.
(Australia and USA)

17:00 – 18:30

SYMPOSIUM 35

CARDIOVASCULAR DEVELOPMENT

Chairs: Dr Kelly Smith, University of Queensland, QLD
Dr Leigh Coultas, Walter & Eliza Hall Institute, VIC

Location: Riverbank Room 5

17:00 SYM-35-01

Transcriptional targets in heart development and off-targets in congenital heart disease

Harvey, R.P., Bouveret, R., Waardenberg, A.J., Schonrock, N., Hallab, J., Ramialison, M. and Fonoudi, H. (Australia)

17:20 SYM-35-02

Pluripotent stem cell models of heart development and disease

Anderson, D.J., Phelan, D.G., Kaplan, D.I., Bell, K.M., Lockhart, P., Stanley, E.G., Elefanty, A.G., Petrou, S., Mummery, C.L. and **Elliott, D.A.** (Australia and The Netherlands)

17:40 SYM-35-03

Live-imaging of intra-molecular tension across zebrafish VE-cadherin uncovers mechanical contributions in development and disease

Lagendijk, A.K., Gomez, G.A., Baek, S., Hesselson, D., Hughes, W.E., Paterson, S., Conway, D.E., Belting, H.G., Affolter, M., Smith, K.A., Schwartz, M.A., Yap, A.S. and Hogan, B.M. (Australia, USA and Switzerland)

18:00 SYM-35-04

The role of the Nedd4 ubiquitin ligase during lymphatic development

Secker, G., Sutton, D., Tea, M., Betterman, K., Kazenwadel, J., Boase, N., Schwartz, Q., Kumar, S. and Harvey, N. (Australia)

18:15 SYM-35-05

Notch signalling mediates neural crest cell and second heart field communication to orchestrate cardiac outflow tract development

Wiszniak, S.E. and Schwarz, Q.P. (Australia)

17:00 – 18:30

SYMPOSIUM 36

GLYCOMICS AND GLYCOPROTEINS

Chairs: Dr Ethan Goddard-Borger, Walter & Eliza Hall Institute, VIC
Professor Malcolm McConville, University of Melbourne, VIC

Location: Hall L

17:00 SYM-36-01

Unique neutrophil glyco-signatures in inflammation and infection

Loke, I., Tjondro, H.C., Chatterjee, S., Packer, N.H. and **Thaysen-Andersen, M.** (Australia)

17:20 SYM-36-02

Dissecting the subcellular secretory glycoproteome

Zacchi, L.F. and **Schulz B.L.** (Australia)

17:40 SYM-36-03

Cell wall carbohydrate structure and biosynthesis in pathogenic oomycetes

Bulone, V. (Australia and Sweden)

18:00 SYM-36-04

New insights into the regulation and inhibition of bacterial aggregation/biofilm formation

Paxman, J., Lo, A., Vo, J., Jones, M., Hou, J., Wang, T., Panjikar, S., Schembri, M. and Heras, B. (Australia)

18:15 SYM-36-05

Trehalose-t-phosphate phosphatase: an emerging target for parasitic disease therapies

Cross, M.O., Rajan, S., Kim, J.S., Gasser, R.B. and Hofmann, A. (Australia and Korea)

17:00 – 18:30

SYMPOSIUM 37

GENOME INFORMATICS AND VISUALISATION

Chairs: A/Prof Alicia Oshlack, Murdoch Children's Research Institute, VIC

Dr Cameron Bracken, Centre for Cancer Biology, SA

Location: Riverbank Room 2

17:00 SYM-37-01

Intergenic disease-associated regions are abundant in novel regulatory transcripts

Bartonicek, N., Clark, M.B., Quek, X.C., Torpy, J., Pritchard, A.L., Hayward, N.K., Montgomery, G.W., Mattick, J.S., Mercer, T.R. and Dinger, M.E. (Australia and United Kingdom)

17:20 SYM-37-02

Analysing and visualising single-cell RNA-seq data

Oshlack, A., Phipson, B. and Zappia, L. (Australia)

17:40 SYM-37-03

Glimma: getting greater graphics for your genes

Su, S., Law, C.W. and **Ritchie, M.E.** (Australia)

18:00 SYM-37-04

Self-generating auto-regulatory signals modify protein function in innate immunity

Freihat, L., Manallack, D., Wheeler, J. and **Irving, H.** (Australia)

18:15 SYM-37-05

Direct transcriptional regulation by microRNAs: the "dark matter" of microRNA function

Bracken, C.P., Saunders, K., Pillman, K.A., Toubia, J. and Goodall, G.J. (Australia)

17:00 – 18:30

SYMPOSIUM 38

MITOCHONDRIAL BIOLOGY

Chairs: Dr Diana Stojanovski, University of Melbourne, VIC
Dr Michael Lazarou, Monash University, VIC

Location: Riverbank Room 6

17:00 SYM-38-01

(Re)Defining the molecular control of apoptosis

Chin, H.S., Van Delft, M., Li, M.X., Huang, D.C.S. and

Dewson, G. (Australia)

17:20 SYM-38-02

Disease models of mitochondrial dysfunction

Filipovska, A. (Australia)

17:40 SYM-38-03

Structures of respiratory supercomplexes

Letts, J.A., Fiedorczuk, K., Degliesposti, G., Skehel, M. and

Sazanov, L.A. (Austria and United Kingdom)

18:00 SYM-38-04

Sengers syndrome associated mitochondrial acylglycerol kinase, is a subunit of the human TIM22 protein import complex

Kang, Y., Stroud, D.A., Baker, M.J., De Souza, D.P., Frazier,

A.E., Liem, M., Tull, D., Mathivanan, S., McConville, M.J.,

Thorburn, D.R., Ryan, M.T. and **Stojanovski, D.** (Australia)

18:15 SYM-38-05

Using an alternative pathway of respiration to combat the effects of abiotic stresses in plants

Sweetman, C., Waterman, C.D., Rainbird, B.M., Day, D.A.,

Jenkins, C.L.D. and Soole, K.L. (Australia)

17:00 – 18:30

SYMPOSIUM 39

AGEING

Chairs: Dr Lindsay Wu, University of New South Wales, NSW
Dr Matt Piper, Monash University, VIC

Location: Riverbank Room 3

17:00 SYM-39-01

Epigenetic and metabolic regulation of aging

Brunet, A. (USA)

17:20 SYM-39-02

Reversing vascular aging using NAD⁺-H₂S signaling network

Das, A., Huang, G., Bonkowski, M., Schultz, M., Hung, T.,
Wu, L.E., Turner, N., Arany, Z.P., Guarente, L.P. and Sinclair,
D.A. (Australia and USA)

17:40 SYM-39-03

Calories and macronutrients in later life health and ageing

Solon-Biet, S.M., Cogger, V.C., Pulpitel, T., Wahl, D., Le
Couteur, D.G. and Simpson, S.J. (Australia)

18:00 SYM-39-04

Wnt- β -catenin signalling regulates muscle regeneration
and fibrosis by divergent mechanisms

Cui, S., Makarenkova, H., Downes, M., Yu, R. and Meech, R.
(Australia and USA)

18:15 SYM-39-05

The Golgi ribbon: a new hub for the regulation of mTOR
signaling and autophagy

Gosavi, P., Houghton, F. and Gleeson, P.A. (Australia)

18:30 – 20:00 COCKTAIL PARTY / EXHIBITION / POSTERS

Location: Hall F & G

08.30 – 10:00

SYMPOSIUM 40

OMICS APPROACHES TO SOLVING PLANT CHALLENGES

Chairs: A/Prof Nicolas Taylor, University of Western Australia,
WA

Dr William Ho, University of Melbourne, VIC

Location: Riverbank Rooms 7/8

08:30 SYM-40-01

Applying omics to advance horticultural crop selection - Guava wilt resistance case study

Severn Ellis, A.A., Bayer, P., Batley, J., Edwards, D., Rees, D.J.G. and Hane, J.K. (Australia and South Africa)

08:50 SYM-40-02

Spatially resolved 'omics to identify novel salinity tolerance mechanisms in barley roots

Ho, W.H., Hill, C.B., Natera, S., Lopez, D.L.S., Yu, D., Boughton, B.A., Rupasinghe, T. and **Roessner, U.** (Australia)

09:10 SYM-40-03

Identification of the Golgi localized UDP-GlcNAc transporter and its role in endomembrane lipid and protein glycosylation

Heazlewood, J.L. (Australia)

09:30 SYM-40-04

Exploring and improving genome editing in model plant *Nicotiana benthamiana*

Naim, F., Shand, K.A. and Waterhouse, P.M. (Australia)

09:45 SYM-40-05

Transcriptomic changes in Arabidopsis leaves indicate causes for loss of stress tolerance with age

Kanojia, A., Gupta, S., Mueller-Roeber, B., Gechev, T. and Dijkwel, P. (New Zealand, Germany and Bulgaria)

08.30 – 10:00

SYMPOSIUM 41

ADVANCES IN WINE AND VITICULTURAL SCIENCES

Chairs: A/Prof Cassandra Collins, University of Adelaide, SA
Dr Paul Boss, CSIRO, SA

Location: Riverbank Room 4

08:30 SYM-41-01

Terroir or not terroir - this is a difficult question!

Schmidtke, L.M., Deloire, A., Meeks, C.B., Antalick, G., Suklje, K. and Blackman, J.W. (Australia, France and Solvenia)

08:50 SYM-41-02

Grapevine canopy management using the VitiCanopy App

De Bei, R., Fuentes, S., Gilliam, M., Tyerman, S. and Collins, C. (Australia)

09:10 SYM-41-03

Unravelling the genetics of sodium exclusion in North American vitis species to improve grapevine rootstock breeding strategies

Dunlevy, J., Henderson, S., Blackmore, D., Walker, R., Edwards, E., Gilliam, M. and Walker, A. (Australia)

09:30 SYM-41-04

Using heterologous expression to functionally characterise proteins involved in grapevine salt exclusion

Henderson, S.W., Dunlevy, J.D., Wu, Y., Blackmore, D.H., Walker, R.R., Walker, A.R. and Gilliam, M. (Australia)

09:45 SYM-41-05

Manipulating source-sink relations with low CO₂ slows ripening of shiraz grape berries but does not uncouple anthocyanin production from sugar import

Smith, J., Edwards, E., Gouot, J., Barril, C., Walker, A., Foster, D. and Holzappel, B. (Australia and Germany)

08.30 – 10:00

SYMPOSIUM 42

NEURAL DEVELOPMENT

Chairs: Dr Quenten Schwarz, Centre for Cancer Biology, SA Pathology, SA
A/Prof Roger Pocock, Monash University, VIC

Location: Riverbank Room 5

08:30 SYM-42-01

Phosphatidylserine 'save-me' signals drive functional recovery of severed axons in *Caenorhabditis elegans*

Abay, Z.C., Wong, M.Y.Y., Teoh, J.S., Hilliard, M.A. and **Neumann, B.** (Australia)

08:50 SYM-42-02

Revealing the Hox code in developing spinocerebellar neurons

Coughlan, E., Garside, V.C., Serralbo, O., Wong, S.F.L., Liang, H., Kraus, D., Karmakar, K., Rijli, R., Bourne, J. and **McGlinn, E.** (Australia and Switzerland)

09:10 SYM-42-03

Neurogenic differentiation by hippocampal neural stem and progenitor cells is biased by NFIX expression

Harris, L., Zalucki, O., Burne, T., Gronostajski, R. and **Piper, M.** (Australia and USA)

09:30 SYM-42-04 ASBMB Adelaide Protein Group Lecture

A novel role of 14-3-3 ξ in interneuron development

Greenberg, Z., Xu, X., Ramshaw, H. and Schwartz, Q. (Australia)

09:45 SYM-42-05

P2X7 receptor regulation of adult hippocampal neural progenitor cells

Leeson, H.C., Kasherman, M.A., Toppinen, K.M., Lovelace, M.D., Chan-Ling, T., Brownlie, J.C., Gu, B.J. and Weible M.W. (Australia)

08.30 – 10:00

SYMPOSIUM 43

TRANSCRIPTION AND TRANSLATION MACHINERY

Chairs: Professor Charlie Bond, University of Western Australia,
WA
Dr John Bruning, University of Adelaide, SA

Location: Hall L

08:30 SYM-43-01

Understanding how changes to the composition of chromatin control its structure

Ryan, D.P. and Tremethick, D.J. (Australia)

08:50 SYM-43-02

Structural mechanism of partial agonists and antagonists of PPARgamma for use as antidiabetics

Kamenecka, T., Griffin, P. and **Bruning, J.B.** (USA and Australia)

09:10 SYM-43-03

Mechanism for RNA-mediated regulation of the histone methyltransferase polycomb repressive complex 2 (PRC2)

Davidovich, C. (Australia)

09:30 SYM-43-04

Refinement of the subunit interaction network within the nucleosome remodelling and deacetylase (NuRD) complex

Torrado, M., Low, J.K.K., Silva, A.P.G., Sharifi Tabar, M., Isilak, M.E. Sana, M., Sperlazza, M.J., Williams Jr, D.C., Shepherd, N.E. and Mackay, J.P. (Australia and USA)

09:45 SYM-43-05

Regulating transcriptional activity by phosphorylation of the intellectual disability and seizure associated ARX homeodomain transcription factor

Mattiske, T., Tan, M.H., Dearsley, O., Hii, C.S., Gecz, J. and **Shoubridge, C.** (Australia)

08.30 – 10:00

SYMPOSIUM 44

EPIGENOMICS

Chairs: Dr Bastien Llamas, University of Adelaide, SA
A/Prof Jeff Craig, Murdoch Children's Research Institute,
VIC

Location: Riverbank Room 2

08:30 SYM-44-01

Advances in human epigenomics

Esteller, M. (Spain)

08:50 SYM-44-02

Frequent lack of repressive capacity of promoter DNA methylation identified through genome-wide epigenomic manipulation

Ford, E., Grimmer, M.R., Stolzenburg, S., Bogdanovic, O., de Mendoza, A., Farnham, P.J., Blancafort, P. and **Lister, R.** (Australia and USA)

09:10 SYM-44-03

Modulation of epithelial plasticity by targeted epigenetic editing in breast cancer

Blancafort, P., Waryah, C.B., Moses, C., Kretzmann, J., Cursons, J., Norret, M. and Swaminatha Iyer, K.L. (Australia)

09:30 SYM-44-04

Elucidating the regulatory role of miR196 in trunk-to-tail transition

Bildsoe, H., Garside, V., Wong, S.F.L., Firas, J., Nefzger, C.M., Chen, J., Polo, J.M. and McGlenn, E.M. (Australia)

09:45 SYM-44-05

Suz12 is essential for mammary gland development and regulates chromatin compaction

Michalak, E.M., Milevskiy, M.J.G., Joyce, R.M., Dekkers, J.F., Jamieson, P.R., Pal, B., Hu, Y., Smyth, G.K., Alexander, W.S. and Visvader, J.E. (Australia)

08.30 – 10:00

SYMPOSIUM 45

CELL BIOLOGY IN DISEASE

Chairs: Dr Susan Woods, University of Adelaide, SA
A/Prof Sof Andrikopoulos, University of Melbourne, VIC
Location: Riverbank Room 6

08:30 SYM-45-01

HDAC3 is a critical regulator of lipid oxidation the small intestinal epithelium

Davalos-Salas, M., Montgomery, M., Watt, M. and **Mariadason, J.M.** (Australia)

08:50 SYM-45-02

Heterogeneity of the lipidome in clinical prostate tumours, and its modulation by androgens, revealed by MALDI-mass spectrometry imaging

Butler, L.M. (Australia)

09:10 SYM-45-03

Gremlin 1-expressing intestinal reticular stem cells give rise to cancer-associated fibroblasts in a mouse model of colorectal cancer

Lannagan, T.R.M., Woods, S.L., Wang, T., Somashekar, R., Yang, M., Ng, J.Q., Gieniec, K., Lee, Y.K., Toh, L., Quek, A., Vrbanac, L., Suzuki, N., Ichinose, M., Tailor, Y., Hayakawa, Y., Asfaha, S., Leedham, S.J., Wang, T.C. and Worthley, D.L. (Australia, USA, Canada and United Kingdom)

09:30 SYM-45-04

Endosomal sorting of the membrane cargo β -secretase to the recycling endosomes in regulated by GGA1-dependent recognition of a phosphorylated DISLL motif

Toh, W., Chia, P.Z.C. and **Gleeson, P.A.** (Australia)

09:45 SYM-45-05

Lineage specific functions of a microcephaly gene (WDR62) and interactions with aurora a kinase promote neural stem cell proliferation and brain growth

Shohayeb, B., Lim, N.R., Yeap, Y.Y., Millard, S.S., Quinn, L.M. and **Ng, D.C.H.** (Australia and Singapore)

08.30 – 10:00

SYMPOSIUM 46

CANCER SIGNALLING

Chairs: A/Prof Yeesim Khew-Goodall, Centre for Cancer
Biology/SA Pathology/University of SA, SA
Professor Kum Kum Khanna, QIMR Berghofer Medical
Research Institute, QLD

Location: Riverbank Room 3

08:30 SYM-46-01

PTPs and STATs in obesity and cancer

Tiganis, A. (Australia)

08:50 SYM-46-02

Interplay between LSD1 eraser enzyme and the chromatin
tethered PKC theta mediated signalling platform is critical for
cancer stem cell biology

Rao, S., Wu, F., McCuaig, R., Boulding, T., Tan, A. and
Harding, K. (Australia)

09:10 SYM-46-03

Somatic hypermutation of the YAP oncogene in cutaneous
melanoma

Harvey, K.F., Zhang, X., Vergara, I., Tang, B., Papenfuss, A.
and Schackleton, M. (Australia)

09:30 SYM-46-04

p53 and Rb regulate ciliogenesis and hedgehog pathway
sensitisation in development and cancer

Cochrane, C.R., Szczepny, A., Jayasekara, S.W., Watkins,
D.N. and Cain, J.E. (Australia)

09:45 SYM-46-05

CIB2 is a negative regulator of oncogenic signalling by
sphingosine kinase 1 in ovarian cancer

Zhu, W., Jarman, K.E., Lokman, N.A., Neubauer, H.A., Davies,
L.T., Gliddon, B.L., Taing, H., Moretti, P.A.B., Oehler, M.K.,
Pitman, M.R. and Pitson, S.M. (Australia)

THURSDAY 5 OCTOBER 2017

10:00 – 11:00 *MORNING TEA / EXHIBITION / POSTERS*

Location: *Halls F & G*

10:10 – 11:00 **POSTER TEASERS**

Selected poster presenters will deliver “Poster Teasers” in the Exhibition Hall Meeting Room prior to the poster session commencing at 13:45

Location: Halls F & G

11:00 – 11:45

PLENARY 12

PLENARY LECTURE

Chair: Dr Suresh Mathivanan, La Trobe Institute for Molecular Sciences, VIC

Location: Hall L

PLE-MON-12

Exosomes and other extracellular vesicles: similar and different roles in immune responses

Tkach, M., Kowal, J. and **Théry, C.** (France)

Dr Clotilde Théry



Dr Clotilde Théry is an INSERM Director of Research (DR2) working at Institut Curie, where she heads the Exosomes and Tumor Growth team, created in 2007 within the Immunity and Cancer INSERM Unit U932. Since 1998, Théry's scientific interests have focused on the study of exosomes (and more recently extracellular vesicles in general), secreted by immune and tumor cells, and their roles in communications between tumors and the immune system. Her goals are to understand the physiological functions of EV secretion during an *in vivo* immune response, and during tumor growth. Théry has published more than 90 articles in international peer-reviewed journals, especially in immunology, cell biology and cancer, she has organised symposia and sessions dedicated to exosomes in international meetings. She has been instrumental in the creation of the International Society for Extracellular Vesicles (ISEV), for which she has been elected Secretary General in 2012 and 2014, and, since 2012, she has been co-Editor-in-Chief of the Society's journal, *Journal of Extracellular Vesicles*

11:00 – 11:45

PLENARY 13

PLENARY LECTURE

Chair: Professor Matthew Gilliam, University of Adelaide, SA

Location: Riverbank Rooms 7/8

PLE-MON-13

Decoding the epigenetic language of life

Zhu, J.-K. (China and USA)

Professor Jian-Kang Zhu



Jian-Kang Zhu is Director of the Shanghai Center for Plant Stress Biology, Chinese Academy of Sciences, and Distinguished Professor of Plant Biology, Departments of Horticulture and Landscape Architecture and Biochemistry, Purdue University, USA. His group is interested in understanding the genetic and epigenetic basis of plant resistance to environmental stresses and in identifying key genes for modifying the responses of crops to environmental stresses. Plant agriculture must change fundamentally by mid-century, when 9 billion people are expected to inhabit the planet, consuming 70–100% more food than is currently available. The looming gap between water supply and demand creates a need for major advances in crop adaptation to drought and salt stresses through increased water-use efficiency and tolerance to saline soil. His research is aimed at improving our understanding of drought, cold and heat, and salt stress signaling pathways and resistance mechanisms. He is interested in epigenetic mechanisms of gene regulation and their roles in abiotic stress resistance. His group is interested in developing and applying gene editing technologies for functional genomics research and crop improvement, using a combination of genetic, biochemical, genomic and proteomic approaches to analyse various levels of gene regulation and to understand stress signaling and resistance.

11:50 – 13:20

SYMPOSIUM 47

CROP PRODUCTIVITY

Chairs: Dr Delphine Fleury, University of Adelaide, SA
A/Prof Colin Jenkins, Flinders University of SA, SA

Location: Riverbank Rooms 7/8

11:50 SYM-47-01

Breeding for crop productivity: technology integration for improvements in genetic gain

Mullan, D.J. (Australia)

12:10 SYM-47-02

Adaptation of winter crops to high temperature: defining sensitivities, impact and targets

Dreccer, M.F., Garcia, G., Whish, J., Ogonnaya, F.C. and Sadras, V.O. (Australia and Argentina)

12:30 SYM-47-03

Understanding and resolving the molecular basis of GxE interactions for brassica crops

King, G. (Australia)

12:50 SYM-47-04

Positional cloning of a QTL, qDHY.3BL, on chromosome 3BL for drought and heat tolerance in bread wheat

Thomelin, P., Bonneau, J., Taylor, J., Suchecki, R., Baumann, R., Langridge, P., Tricker, P. and Fleury, D. (Australia)

13:05 SYM-47-05

Drought response in low-cyanogenic *Sorghum bicolor* mutants

Rosati, V.C., Blomstedt, C.K., Garnett, T.P. and Gleadow, R.M. (Australia)

11:50 – 13:20

SYMPOSIUM 48

YEAST BIOTECHNOLOGY

Chairs: Dr Michelle Walker, University of Adelaide, SA
Dr Anthony Borneman, Australian Wine Research
Institute, SA

Location: Riverbank Room 4

11:50 SYM-48-01

Generation of non-GM yeast that impart "rose" aromas in wine
Garcia Cordente, A., Solomon, M. and Curtin, C. (Australia)

12:10 SYM-48-02

All yeasts are equal, but some yeasts are more equal than others
Hranilovic, A., Warren, A., Bely, M., Masneuf-Pomarede, I.,
Boss, P., Grbin, P. and Jiranek, V. (Australia and France)

12:30 SYM-48-03

Yeast as a platform for terpenoid production
Peng, B., Nielsen, L. and Vickers, C. (Australia)

12:50 SYM-48-04

New insights into the process and function of tryptophan C-
mannosylation
John, A., Shah, S., Scott, N.E. and **Goddard-Borger, E.D.**
(Australia)

13:05 SYM-48-05

Uncovering the hidden secondary metabolite biosynthetic
potential in fungal genomes
Chooi, Y.H. (Australia)

11:50 – 13:20

SYMPOSIUM 49

REGENERATION

Chairs: Professor Peter Currie, Monash University, VIC
A/Prof Mikaël Martino, Monash University, VIC

Location: Riverbank Room 5

11:50 SYM-49-01

Generating multipotent stem cells from primary human adipocytes for tissue regeneration

Yeola, A., Kang, D., Oliver, R., Hung, T., Tursky, M., Artuz, C., Fortuna, P., Hardy, P., Power, C., Ma, D., Wolvetang, E., Walsh, W., Mobbs, R., Chandrakanthan, V. and **Pimanda, J.E.**

12:10 SYM-49-02

Zebrafish regulatory T cells mediate organ-specific regenerative programs

Subhra, S.H., Sheng, D.Z., Sugimoto, K., Gonzalez-Rajal, A., Nakagawa, S., Hesselson, D. and **Kikuchi, K.** (Australia)

12:30 SYM-49-03

Delivering morphogens and immunomodulators to promote tissue regeneration

Julier, Z., Park, A.J., Briquez, P.S., Maruyama, K., Muller, R., Hubbell, J.A., Akira, S. and **Martino, M.M.** (Australia)

12:50 SYM-49-04

Flightless I regulation of pericyte function in diabetic chronic wounds

Thomas, H.M., Mills, S.J. and Cowin, A.J. (Australia)

13:05 SYM-49-05

HSPGs as drivers of neural progenitors

Haupt, L.M., Okolicsanyi, R.K., Oikari, L.E., Yu, C. and Griffiths, L.R. (Australia)

11:50 – 13:20

SYMPOSIUM 50

MICROBIAL VIRULENCE FACTORS

Chairs: Dr Sheena McGowan, Monash University, VIC
Professor Melissa Brown, Flinders University of SA, SA

Location: Hall L

11:50 SYM-50-01

O-fucosylation of *Plasmodium falciparum* virulence proteins ensures efficient infection of mosquito and vertebrate hosts
Lopaticki, S., Yang, A.S.P., John, A., Scott, N.E., Lingford, J.P., O'Neill, M.O., Jennison, C., Kneteman, N.M., Goddard-Borger, E.D. and **Boddey, J.A.** (Australia and Canada)

12:10 SYM-50-02

Complex adaptive lifestyles *Pseudomonas aeruginosa* affecting virulence and antibiotic susceptibility
Hancock, R.E.W. (Canada)

12:30 SYM-50-03

Characterising novel antigens for gonococcal vaccine development
Semchenko, E.A. and **Seib, K.L.** (Australia)

12:50 SYM-50-04

Aspergillus fumigatus thioredoxin reductase: a potential antifungal drug target
Marshall, A.C., Coad, B.R. and Bruning, J.B. (Australia)

13:05 SYM-50-05

Structural studies to investigate the 'substrate verification' activity of class III biotin protein ligases
Sternicki, L.M., Pukala, T.L., Booker, G.W., Wegener, K.L. and Polyak, S.W. (Australia)

11:50 – 13:20

SYMPOSIUM 51

ENVIRONMENTAL EPIGENOMICS

Chairs: Dr Carlos Rodriguez Lopez, University of Adelaide, SA
Dr Alyson Ashe, University of Sydney, NSW

Location: Riverbank Room 2

11:50 SYM-51-01

Chromatin modifiers SET-32 and SET-25 establish a transgenerational silencing signal
Woodhouse, R. and **Ashe, A.** (Australia)

12:10 SYM-51-02

Epigenetic divergence contributes to tiger snake adaptation to island environments
Rodriguez Lopez, C.M., Konate, M., Sanders, K. and **Thomson, V.A.** (Australia)

12:30 SYM-51-03

Effect of geographic origin, plant age and propagation system on the DNA methylation of *Vitis vinifera*
Rodriguez Lopez, C.M., Grigg, D., De Bei, R., Breen, J., Rakesh, D., Searle, I., Dry, P. and Collins, C. (Australia)

12:50 SYM-51-04

A short period of repetitive mechanical stress trains a cellular memory to promote thigmomorphogenesis
Brenya, E., Tissue, D. and Cazzonelli, C. (Australia)

13:05 SYM-51-05

Programmable DNA looping using engineered bivalent Cas9 complexes
Hao, N., Shearwin, K.E. and Dodd, I.B. (Australia)

11:50 – 13:20

SYMPOSIUM 52

CELLULAR ARCHITECTURE AND TRAFFICKING

Chairs: Professor Edna Hardeman, University of New South Wales, NSW

Professor Damien Keating, Flinders University, SA

Location: Riverbank Room 6

11:50 SYM-52-01

Role of protein phosphatase Pez in regulating receptor tyrosine kinase trafficking

Lonic, A., Gehling, F., Belle, L. and Khew-Goodall, Y. (Australia)

12:10 SYM-52-02

Fluorescent intra-body localization microscopy (film): a novel method for tracking single intracellular endogenous and GFP-tagged proteins *in vitro* and *in vivo*

Gormal, R.S., Bademosi, A.D., Giacomotto, J., Coakley, S., Padmanabhan, P., Kasula, R., Lo, H.P., Budnar, S., Rae, J., Ferguson, C., Collins, B.M., Yap, A., Goodhill, G.J., Hilliard, M.A., Parton, R.G. and Meunier, F.A. (Australia)

12:30 SYM-52-03 ASBMB Boomerang Award Lecture

The molecular interplay between cargo recognition and activity of the microtubule motor protein, kinesin-1

Yip, Y.Y., Pernigo, S., Sanger, A., Xu, M., Parsons, M., Steiner, R.A. and Dodding, M.P. (United Kingdom)

12:50 SYM-52-04

Desmoglein-2 and its role in type 1 diabetes: revealing a critical cross-talk between the vasculature and insulin-producing beta islet cells

Myomin, K.K., Treloar, J., Denichilo, M., Penko, D., Rojas-Canales, D., Jessup, C., Coates, P.T. and **Bonder, C.S.** (Australia)

13:05 SYM-52-05

Intracellular and single molecule intravital microscopy to study actin cytoskeleton organisation and dynamics in live mice

Masedunskas, A., Heydecker, M., Appaduray, M., Gunning, P.W. and Hardeman, E.C. (Australia)

11:50 – 13:20

SYMPOSIUM 53

KINASES AND PHOSPHATASES

Chairs: A/Prof Estelle Sontag, University of Newcastle, NSW
Dr Jon Oakhill, St Vincent's Institute of Medical Research,
VIC

Location: Riverbank Room 3

11:50 SYM-53-01

Eukaryotic elongation factor 2 kinase promotes the survival, migration and invasion of cancer cells

Xie, J., Lenchine, R., Wang, X., Shen, K. and **Proud, C.G.**
(Australia and China)

12:10 SYM-53-02

The PTPN14-PKC δ -TK axis in health and disease

Lonic, A., Belle, L., Li, X., Gehling, F., Tea, M., Betterman, K.,
Harvey, N., Daly, R.J. and **Khew-Goodall, Y.** (Australia)

12:30 SYM-53-03

Quantitative N-terminomics and phosphoproteomics reveal distinct signalling networks governing regulated necrosis of neurons

Hoque, A., Ameen, S., Ciccotosto, G., Ng, D.C., Williamson, N.A., Ang, C.-S. and **Cheng, H.-C.** (Australia)

12:50 SYM-53-04

Protective function for site-specific phosphorylation of tau by MAP kinase p38 γ

Ittner, A., Chua, S.W., Bertz, J., Volkerling, A., Van Der Hoven, J., Bi, M., Przybyla, M., Delerue, F., Ke, Y.D. and Ittner, L.M. (Australia)

THURSDAY 5 OCTOBER 2017

13:05 SYM-53-05

The autophagy initiator ULK1 sensitizes AMPK to allosteric drugs

Dite, T.A., Ling, N.X.Y., Ovens, A., Scott, J.W., Hoque, A. and **Oakhill, J.S.** (Australia)

13:20 – 14:00 *LUNCH / EXHIBITION / POSTERS*

Location: *Halls F & G*

13:35 – 14:30

ANNUAL GENERAL MEETINGS

Locations:

ASBMB	Riverbank Room 2
ASPS	Riverbank Rooms 7/8
ANZSCDB	Riverbank Room 3

13:45 – 14:45 *POSTER SESSION B – Presenting authors to be in attendance*

Location: *Halls F & G*

14:45 – 15:00 *PASSPORT DRAW*

Location: *Halls F & G*

15:00 – 16:30

SYMPOSIUM 54

PLANT WALLS AND MEMBRANES

Chairs: Professor Matthew Gilliam, University of Adelaide, SA
Dr Berit Ebert, University of Melbourne, VIC

Location: Riverbank Rooms 7/8

15:00 SYM-54-01

Wall ingrowth deposition in phloem parenchyma transfer cells of Arabidopsis is a heteroblastic trait controlled by the miR156/SPL module

McCurdy, D.W. and Nguyen, S.T.T. (Australia and Vietnam)

15:20 SYM-54-02

Cell wall regulation at the trans-Golgi network

McFarlane, H.E., Geisler, D., Ivakov, A., Gookin, T.E., Assmann, S.M. and Persson, S. (Australia and USA)

15:40 SYM-54-03

Identification of novel nucleotide sugar transporters in Arabidopsis

Rautengarten, C.R. (Australia)

16:00 SYM-54-04

Arabidopsis CCC: a Golgi and TGN localized ion transporter with putative roles in osmoregulation and protein trafficking

Wege, S., Henderson, S.H., Mafakheri, A., Tyerman, S.D. and Gilliam, M. (Australia)

16:15 SYM-54-05

A Ca²⁺-dependent remodelled actin network directs vesicle trafficking to build wall ingrowth papillae in transfer cells

Zhang, H.M., Colyvas, K., Patrick, J.W. and Offler, C.E. (Australia)

15:00 – 16:30

SYMPOSIUM 55

ORGANOIDS

Chairs: Professor Melissa Little, Murdoch Children's Research Institute, VIC
A/Prof Helen Abud, Monash University, VIC

Location: Riverbank Room 5

15:00 SYM-55-01

Generating human kidney organoids from pluripotent stem cells
Little, M.H., Vanslambrouck, J., Howden, S., Hale, L., Kumar, S., Er, P.X., Takasato, M., Ghobrial, I., Forbes, T., Phipson, B. and Oshlack, A. (Australia)

15:20 SYM-55-02

Investigating environmental impacts on intestinal stem cell function using organoids
Jarde, T., Kerr, G., Engel, R., Akhtar, R., Mileto, S., Prasko, M., Hutton, M., Nefzger, C.M., Horvay, K., Flores, T., Wilkins, S., Hime, G.R., Lyra, D., Polo, J.M., McMurrick, P.J. and **Abud, H.E.** (Australia)

15:40 SYM-55-03

Cortical organoids to study neural biology and degeneration
Pébay, A., Crombie, D., Liang, H., Kearns, L., Vickers, J., Van Wijngaarden, P., Hewitt, A., Powell, J. and Hernandez, D. (Australia)

16:00 SYM-55-04

Rapid, complex models of colorectal cancer: using CRISPR/Cas9 genome editing to target frequently altered genes
Lannagan, T.L., Lee, Y.K., Wang, T., Roper, J., Yang, M., Somashekar, R., Gieniec, K., Vrbanac, L., Ng, J.Q., Suzuki, N., Ichinose, M., Wright, J.A., Bettington, M.L., Fennell, L., Putoczki, T.L., Tejpar, S., Leggett, B.A., Whitehall, V.L., Worthley, D.L. and **Woods, S.L.** (Australia, USA and Belgium)

16:15 SYM-55-05

Human induced pluripotent stem cell model of PCDH19-Girls
Clustering Epilepsy reveals roles for this protocadherin in
regulation of neuronal polarity and differentiation

Homan, C.C., Jolly, L.A., Tan, S., Thomas, P., Wolvetang, E.
and Gez, J. (Australia)

15:00 – 16:30

SYMPOSIUM 56

DRUG DESIGN AND DEVELOPMENT

Chairs: Dr Kate Wegener, University of Adelaide, SA
Dr Tatiana Soares da Costa, La Trobe University, VIC
Location: Hall L

15:00 SYM-56-01

Intracellular delivery of proteins with phylomers - a new class of cell penetrating peptides
Stirnweiss, A. (Australia)

15:20 SYM-56-02 *Beckman Coulter Discovery Science Award Lecture*

Structure-guided design of insulin analogues and mimetics
Lawrence, M.C. (Australia)

15:40 SYM-56-03

A fragment-based approach to targeting coenzyme a biosynthesis in bacteria
Spry, C. (Australia and UK)

16:00 SYM-56-04 *ASBMB Queensland Protein Group Lecture*

Bacteriocins: potential therapeutics to address antibiotic resistance
Gor, M.C., Golneshin, A., Van, T.T.H., Moore, R. and Smith, A. (Australia)

16:15 SYM-56-05

Transcriptomics for the discovery of new classes of venom peptide
Robinson, S.D., Safavi-Hemami, H. and Olivera, B.M. (USA and Australia)

15:00 – 16:30

SYMPOSIUM 57

EXTRACELLULAR VESICLES

Chairs: Dr Suresh Mathivanan, La Trobe Institute for Molecular Sciences, VIC
A/Prof Mary Bebawy, University of Technology Sydney, NSW

Location: Riverbank Room 2

15:00 SYM-57-01

Extracellular vesicle involvement in neurodegenerative diseases
Hill, A.F. (Australia)

15:20 SYM-57-02

Amnion epithelial cell derived exosomes for idiopathic lung fibrosis - regenerative medicine for a degenerative disease
Lim, R. (Australia)

15:40 SYM-57-03

The last dance of a dying cell
Atkin-Smith, G.K., Tixeira, R., Jiang, L., Caruso, S., Paone, S., Baxter, A.A., Smith, A., Parkes, M.A.F. and **Poon, I.K.H.**
(Australia)

16:00 SYM-57-04

Extracellular vesicles reveal the complexity of cancer multidrug resistance
Bebawy, M. (Australia)

16:15 SYM-57-05

Physical coherence and network analysis reveals NEDD4 as novel regulator of exosomal biogenesis
Anand, S., Chisanga, D., Keerthikumar, S., Foot, N., Kumar, S. and Mathivanan, S. (Australia)

15:00 – 16:30

SYMPOSIUM 58

“SIMPLE” *IN VIVO* MODELS OF NEURODEGENERATIVE DISEASES

Chairs: A/Prof Janni Petersen, Flinders University of SA, SA
Professor Paul Fisher, La Trobe University, VIC

Location: Riverbank Room 6

15:00 SYM-58-01

Does Parkinson's disease really involve cytopathological mitochondrial dysfunction? a tale told by two organisms - social amoebae and humans

Annesley, S.J., Loesch, D.Z. and **Fisher, P.R.** (Australia)

15:20 SYM-58-02

Using rapid ageing animals to explore dopaminergic cell degeneration

McCull, G. (Australia)

15:40 SYM-58-03

Make do and make new: how zebrafish rapidly regenerates CNS injury

Kaslin, J., Vandestadt, C., Khobooshan, M. and Castillo, H. (Australia)

16:00 SYM-58-04

Non-self mutation: double-stranded RNA elicits antiviral cell death response in a *Drosophila* model of expanded repeat neurodegenerative diseases

Van Eyk, C.L., Fornarino, D.L., Scott, A., Samaraweera, S.E., Harvey, D.P., O'Keefe, L.V., Cropley, J.E., Suter, C. and **Richards, R.I.** (Australia)

16:15 SYM-58-05

ALS-linked mutations in Ubiquilin-2 cause ER stress and impair autophagy function

Shahheydari, H., Halloran, M. and Atkin, J.D. (Australia)

15:00 – 16:30

SYMPOSIUM 59

OBESITY AND INSULIN RESISTANCE

Chairs: A/Prof Rebecca Robker, University of Adelaide, SA
Dr Daniel Fazakerley, University of Sydney, NSW

Location: Riverbank Room 3

15:00 SYM-59-01

Understanding sphingolipid mediators of insulin resistance

Turner, N. (Australia)

15:20 SYM-59-02

Developmental programming of obesity at conception

Lane, M. (Australia)

15:40 SYM-59-03

The metabolic consequences of fecal microbiota transplantation (FMT) in mice

Zoll, J., Heywood, S.E., Kammoun, H.L., Marshall, J., Estevez, E., Zivanovic, B., Allen, T.L., Febbraio, M.A. and **Henstridge, D.C.** (Australia)

16:00 SYM-59-04

Caspase-2, a regulator of oxidative stress, metabolism and ageing

Wilson, C.H., Nikolic, A., Kentish, S.J., Dorstyn, L.D., Page, A.J. and Kumar, S. (Australia)

16:15 SYM-59-05

Insulin receptor substrate-associated proteins: the keys to regulation of insulin-like actions

Fukushima, T., Yoshihara, H., Furuta, H., Kamei, H., Hakuno, F., Duan, C., Iemura, S.-I., Natsume, T., Asano, T. and **Takahashi, S.-I.** (Japan and USA)

16:40 - 17:25

PLENARY 14

PLENARY LECTURE

Chair: Professor Peter Currie, Monash University, VIC

Location: Hall L

PLE-MON-14

Understanding and modeling aging

Brunet, A. (USA)

Dr Anne Brunet



Anne Brunet is the Michele and Timothy Barakett Professor of Genetics at Stanford University. Dr Brunet obtained her BSc from the Ecole Normale Supérieure in Paris, France, and her PhD from the University of Nice, France. She did her postdoctoral training in Dr Michael Greenberg's lab at Harvard Medical School. Dr Brunet is interested in the mechanisms of aging and longevity, with a particular emphasis on the nervous system. Her lab studies the genetic and epigenetic regulation of aging. She is particularly interested in neural stem cells aging. Another goal of the Brunet lab is to discover new genes and processes that regulate longevity using short-lived systems, the nematode *C. elegans* and the naturally short-lived African killifish. Dr Brunet has received several grants from the National Institute on Aging. She has received a number of awards, including the Pfizer/AFAR Innovations in Aging Research Award, an Ellison Medical Foundation Senior Scholar Award, and the Vincent Cristofalo Rising Star Award in Aging Research. She was awarded a Pioneer Award from the NIH Director's fund, which supports scientists of exceptional creativity.

THURSDAY 5 OCTOBER 2017

17:25 – 17:45

**CLOSING CEREMONY
COMBIO2018 PRESENTATION
&
SOCIETY AWARD PRESENTATIONS**

Location: Hall L

Dr Michael Michael, Flinders University of South Australia, SA
ComBio2017 Chair

Professor Liz Harry, University of Technology Sydney, NSW
ComBio2018 Chair

Professor Leann Tilley, University of Melbourne, VIC
ASBMB President

Professor Sergey Shabala, University of Tasmania, TAS
ASPS President

Professor Sally Dunwoodie, Victor Chang Cardiac Research Institute,
NSW
ANZSCDB President

17:45 – 18:45 *CLOSING DRINKS*

Location: Halls F & G Foyer
