

PROGRAM

***Times indicated in the program are speaking times. Additional time in the session is allocated for questions.*

SUNDAY, 10th FEBRUARY 2019

Registration

2:00 pm – 6:30 pm

Auditorium Foyer

Welcome Address

3:40 pm - 4:00 pm

Auditorium

Jacqui Matthews | *President of the LCPSF*

Session 1: In the cellular milieu

4:00 pm - 6:00 pm

Auditorium

Chairs: Danny Hatters & Charlie Bond

- 30 min* **Michael Rosen** | *UT Southwestern Medical Center* *abs# 1*
Composition-Dependent Functions of Biomolecular Condensates
- 30 min* **Maria Barna** | *Stanford University, USA* *abs# 2*
Ribosome Heterogeneity in Translating the Genetic Code:
from genes to organisms
- 30 min* **Mikhail Savitski** | *EMBL Heidelberg, Germany* *abs# 3*
Protein stability in drug discovery and molecular biology

Break

6:00 pm - 6:30 pm

Session 2: Leach Lecture

6:30 pm - 7:30 pm

Auditorium

Chair: Jacqui Matthews

- 50 min* **Eleanor Dodson** | *University of York, UK* *abs# 4*
The Joy of Seeing – in Honour of Dorothy Hodgkin
****Georgina Sweet awardee*

Festival of Food

7:30 pm – 9:30 pm

Unisango, Jashn & Lorne Central

9:00 pm – 10:00 pm

Exhibition Hall

Dessert & Drinks

MONDAY, 11TH FEBRUARY 2019

Joint Session 3: Drug Design and Therapeutics/ Drug Discovery and Development

Session A

8:30 am - 10:30 am

Auditorium

Chairs: Sheena McGowan and Martin Scanlon

30 min **Margaret Brimble** | *University of Auckland, NZ* abs# 5

Development of Peptide and Peptidomimetic Therapeutic Agents from a New Zealand Perspective

15 min **Brendon Lee** | *Australian National University* abs# 6

The evolution of nitroimidazole antibiotic resistance in Mycobacterium Tuberculosis



15 min **Amy McGrath** | *University of Wollongong* abs# 7

The β_2 -clamp as a novel antimicrobial target

30 min **Wayne Fairbrother** | *Genetech USA* abs# 8

Regulation of CARD9-mediated BCL-10 nucleation

FB RICE

Sponsored by:  

Morning Tea/Coffee Break

10:30 am - 11:00 am

Exhibition Hall

Session 4:

Lightning Talks

11:00 am - 1:00 pm

Auditorium

Chairs: Jane Allison & Gokhan Tolun

Drug Discovery and Development

Session B: Methods and Applications

Horizons Room

Chairs: Karyn Wilde & Matthew Belousof

10 min **Michael Kuiper** abs# 9

Data61/CSIRO

Molecular visualization with Unity and Vuforia

15 min **Joel Mackay** abs# 17

University of Sydney

RaPID peptide library screening for the discovery of selective and high affinity bromodomain inhibitors

- 10 min **Richard Berry** *abs# 10*
Monash University
The cryo-EM structure of the endocytic receptor DEC205 reveals a conformational control-mechanism for antigen detection by dendritic cells
- 10 min **Subir Sarker** *abs# 11*
La Trobe University
World's smallest viral capsid structure: A robust and targeted delivery platform for the biomedically important cargo
- 10 min **Amanda Buyan** *abs# 12*
Australian National University
Treating protein conformation diseases with small molecules
- 10 min **Christopher Stubenrauch** *abs# 13*
Monash University
Membrane protein insertion through the lateral gate of TamA
- 10 min **Geqing Wang** *abs# 14*
La Trobe University
"Open sesame": fragments crack open a cryptic pocket on a challenging protein-protein interaction target
- 10 min **Nicholas Liau** *abs# 15*
WEHI
The molecular basis of JAK/STAT inhibition by SOCS1
- 15 min **Michael Roy** *abs# 18*
University of Dundee, UK
Measuring the kinetics of PROTAC ternary complexes
- 15 min **Richard Birkinshaw** *abs# 19*
WEHI
Acquired BCL2 mutations that confer resistance to Venetoclax treatment
- 15 min **Raymond Norton** *abs# 20*
Monash University
Peptide Inhibitors of the Kv1.3 Potassium Channel for the Treatment of Autoimmune and Other Inflammatory Diseases
- 15 min **Olga Ilyichova** *abs# 21*
Monash University
Soaking it all in: accelerating hit-to-lead generation through screening of unpurified reaction mixtures using X-Ray crystallography
- 15 min **Sebastian Furness** *abs# 22*
Monash Institute of Pharmaceutical Sciences
Refining the model for ligand-dependent differential receptor: effector coupling through single molecule studies

10 min **Kaavya Krishna Kumar** *abs# 16*
Stanford University, USA
Structure of a Signalling
Cannabinoid Receptor 1-G
Protein Complex

Lunch

1:00 pm - 2:00 pm

Exhibition Hall

Drug Discovery and Development Session C: Antimicrobials

2:00 pm-4:00 pm

Horizons Room

Chairs: Peter Czabotar & Louise Sternicki

- 15 min **Nicole Van Der Weerden** | *La Trobe University* *abs# 23*
Development of the plant defensin, HXP124, as a safe and effective
treatment for fungal nail infections
- 12 min **Lorna Wilkinson-White** | *University of Sydney* *abs# 24*
Rational targeting of the Signal Recognition Particle Receptor
- 12 min **Belinda Abbott** | *La Trobe University* *abs# 25*
The importance of being assayed: design, synthesis and biological
evaluation of isoquinolines as antimalarial agents
- 12 min **Tatiana Soares da Costa** | *La Trobe University* *abs# 26*
Finding the Achilles' Heel in Multi-Drug Resistant Gram-Negative
Bacteria
- 15 min **Luke Guddat** | *University of Queensland* *abs# 27*
Targeting branched chain amino acid biosynthesis for the development
of new antifungals to treat human pathogenic infections

POSTER PREVIEW TALKS

- 8 min **Lea Sanford** | *Weill Cornell Medicine, USA* *abs# 28*
Membranes Matter: Predicting Drug Toxicity
- 3 min **Nishank Shah** | *The Australian National University* *abs# 29*
Can humanised bacterial LeuT be used to study the pharmacology
of human B0AT1 (SLC6A19)?

- 3 min **Rebecca Frkic** | *University of Adelaide* *abs# 30*
 Elucidating the structural basis of PPAR γ antagonism to inform design of improved drugs to treat T2DM
- 3 min **Tasneem Vaid** | *The University of Melbourne* *abs# 31*
 Determination of Ligand Binding Conformations at α 1-Adrenergic Receptor Subtypes Based on NMR
- 3 min **Alan John** | *WEHI* *abs# 32*
 An engineered microbial system for deciphering the molecular functions of tryptophan C-mannosylation

Session 5:
Poster Session A including refreshments (Note Odd/Even Rule)

Drug Discovery and Development
Session D: Poster/Coffee

4:00 pm - 6:00 pm

Exhibition Hall

See poster listing for all abstracts being presented in this session.

Dinner (Own Arrangements)

6:00 pm - 7:45 pm

Session 6: Special Evening Lecture

7:45 pm - 9:00 pm

Auditorium

Chair: Colin Jackson

- 50 min **Frances Arnold** | *Caltech, USA* *abs#33*
 Innovation by Evolution: Bringing New Chemistry to Life

Sponsored by:



International Journal of
Molecular Sciences
 an Open Access Journal by MDPI

Session 7: Poster Session B - Including Happy Hour & Trade Display

9:00 pm – 10:00 pm

Exhibition Hall

See poster listing for all abstracts being presented in this session.

TUESDAY, 12TH FEBRUARY 2019**Session 8: Pathogens and Disease**

8:30 am - 10:30 am

Auditorium

Chairs: James Whisstock & Mirosław Cygler

- 30 min **Leo James** | *Laboratory of Molecular Biology, UK* *abs# 34*
Trim-Away: Targeted degradation of pathogens and proteins by the cytosolic antibody receptor TRIM21
- 15 min **Christopher McDevitt** | *University of Melbourne* *abs# 35*
The structural basis of selective metal ion transport in pathogenic bacteria
- 15 min **Emma Petrie** | *WEHI* *abs# 36*
The conformational state of the MLKL protein tightly regulates necroptotic cell death
- 15 min **Isabelle Rouiller** | *University of Melbourne* *abs# 37*
Single particle cryo-EM analysis of the multidrug efflux pump TriABC from *Pseudomonas aeruginosa*.
- 15 min **Roger Truscott** | *Wollongong University* *abs# 38*
Old proteins - a field in its infancy

Morning Tea

10:30 am - 11:00 am

Exhibition Hall

Session 9: Macromolecular Complexes

11:00 am - 1:00 pm

Auditorium

Chairs: Melissa Call & Chandrika Deshpande

- 30 min **Tamir Gonen** | *Howard Hughes Medical Institute, USA* *abs# 39*
MicroED: conception, practice and future opportunities.
- 15 min **Christopher Draper-Joyce** | *Monash University* *abs# 40*
Structural insights into the activation of the adenosine A1 receptor
- 15 min **Lisanne Spenkeliink** | *University of Wollongong* *abs# 41*
Single-molecule visualisation of protein dynamics in the eukaryotic replisome.
- 30 min **Nenad Ban** | *ETH Zürich, Switzerland* *abs# 42*

The EMBO Keynote Lecture. Protein synthesis: from ribosome assembly to targeting of membrane proteins

*** *EMBO keynote speaker*

Lunch

1:00 pm – 4:00 pm

Exhibition Hall

Synchrotron Users Group Meeting

1:10 pm - 2:10 pm

Auditorium

Sponsored by:



Student & Invited Speaker Lunch

1:10 pm - 2:10 pm

Horizons Room

Session 10: Poster Session C including refreshments (Note Odd / Even Rules)

4:00 pm - 6:00 pm

Exhibition Hall

See poster listing for all abstracts being presented in this session.

Dinner (Own Arrangements)

6:00 pm - 7:45 pm

Session 11: Robin Anders Young Investigators Award session

7:45 pm - 9:00 pm

Auditorium

Chairs: Bostjan Kobe & Urmi Dhagat

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|--------|---|---------|
| 12 min | Gavin Knott <i>University of California, USA</i>
Three distinct modes of CRISPR-Cas12a inactivation | abs# 43 |
| 12 min | Jessica Bridgford <i>WEHI</i>
Proteostasis pathways in the mechanism of action of artemisinin, a Nobel Prize-winning antimalarial | abs# 44 |
| 12 min | Yu Heng Lau <i>The University of Sydney</i>
Constructing synthetic organelles from self-assembling protein nanocompartments | abs# 45 |
| 12 min | Luke Formosa <i>Monash University</i>
Structural and functional analysis of COA7, an essential component of the mitochondrial complex IV assembly machinery | abs# 46 |
| 12 min | Yilin Kang <i>The University of Melbourne</i> | abs# 47 |

The translocase of the inner membrane 22: a modern view of a mitochondrial insertase

Session 12: Poster Session D - Including Happy Hour & Trade Display

9:00 pm – 10:00 pm

Exhibition Hall

See poster listing for all abstracts being presented in this session.

WEDNESDAY, 13TH FEBRUARY 2019

Session 13: Engineering and design

8:30 am - 10:30 am

Auditorium

Chairs: Craig Morton and Nicole De Weerd

- 30 min **Tanja Kortemme** | *University of California San Francisco, USA* *abs# 48*
Cellular consequences of systematic perturbations of a highly conserved biological switch protein
****Protein Society Speaker*
- 15 min **Robert Thompson** | *Princeton University, USA* *abs# 49*
Protein engineering through tandem transamidation
- 15 min **Dina Grohmann** | *Regensburg University, Germany* *abs# 50*
SLAM-FRET provides insights into the conformational landscape of human Argonaute 2
- 15 min **Daniel Scott** | *The Florey Institute* *abs# 51*
Coupling directed evolution with NMR to probe ligand induced changes in α 1A-adrenoceptor conformational equilibria and characterize fragment screening hits
- 15 min **Martin Stone** | *Monash University* *abs# 52*
Evaluation and extension of the two-site, two-step model for binding and activation of chemokine receptor CCR1

Morning Tea

10:30 am - 11:00 am

Exhibition Hall

Session 14: Regulation

11:00 am - 1:00 pm

Auditorium

Chairs: Michael Parker & Leann Tilley

- 30 min **Eva Nogales** | *University of California Berkeley, USA* *abs# 53*
Structure and dynamics of large protein complexes involved in

human transcription initiation
****Grimwade Medal awardee*

- 15 min **Remco Sprangers** | *Regensburg University, Germany* abs# 54
The structure and activity of the mRNA decapping complex inside and outside of cytoplasmic processing bodies.
- 15 min **Vanessa Morris** | *University of Canterbury, NZ* abs# 55
A new role for the neuronal cytokine S100B: Suppression of amyloid-beta aggregation
- 30 min **Patrick Cramer** | *Max Planck Institute for Biophysical Chemistry, Germany* abs# 56
Towards the mechanisms of chromatin transcription

Lunch

1:00 pm - 2:00 pm

Exhibition Hall

ThermoFisher Workshop

1:15 pm – 2:15 pm

Auditorium

Presented by **ThermoFisher**
S C I E N T I F I C

Session 15: Degradation

4:00 pm - 6:00 pm

Auditorium

Chairs: Jon Oakhill & Isabelle Lucet

- 30 min **Helen Walden** | *University of Glasgow, UK* abs# 57
Allosteric regulation of RING E3 ligases
- 15 min **David Stroud** | *University of Melbourne* abs# 58
Functional proteomics for understanding the assembly and breakdown of mitochondrial machines in health and disease
- 15 min **Laura Edgington-Mitchell** | *University of Melbourne* abs# 59
Design and application of novel chemical probes to detect cathepsin X activation in oral cancer
- 30 min **David Komander** | *Walter and Eliza Hall Institute, Australia* abs# 60
Ubiquitin signals in mitophagy

Poster Prizes and Closing

6:00 pm - 7:30 pm

Auditorium

Jacqui Matthews & Danny Hatters

Conference Dinner

7:30 pm - 9:00 pm

View by Lorne Hotel

This is a ticketed function.*After Dinner Supper Party**

9:00 pm - 11:00 pm

Horizons Room

THURSDAY, 14TH FEBRUARY 2019**Bus Departures**

9:00 am

Cumberland Reception