

CRYSTAL 30 - PROGRAM

Tuesday, 29th March 2016

Hobart Function & Conference Centre

13:00

Registration opens

14:00-14:10

Welcome and Opening Remarks - Stuart Batten, Monash University, SCANZ President

Session 1: Keynote 1

Chair: Jack Clegg

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14:10-14:40

Richard Cooper

Routine problems and non-routine solutions in single crystal structure analyses

14:40 - 15:10 Coffee/Tea and Exhibitor/Posters

Session 2: Combined Session 1

Marina Room

Chair: Mitchell Guss

15:10-15:30 Invited:

Asaph Widmer-Cooper

Nanoparticle superlattices, quasicrystals and dynamics

15:30-15:50 Invited:

Natalie Borg

The Anopheles-midgut APN1 structure reveals a new malaria transmission-blocking vaccine epitope

15:50-16:10 Invited:

Josie Auckett

In situ neutron scattering combined with density functional theory for atomic-scale understanding of porous framework materials

16:10-16:30 Invited:

Bostjan Kobe

Structural basis of thiol-based regulation of formaldehyde detoxification in *H. influenzae* by a MerR regulator with no sensor domain

16:45 - 17:30

Synchrotron Update

17:30-19:30

Welcome Reception at Henry Jones Art Hotel

19:30-21:00

Bids for staging IUCr at Hobart Function Centre

Wednesday, 30th March 2016

Session 3: Mathieson Medal Lecture Marina Room

Chair: Alice Vrielink

08:45-09:30 Medal Presentation and Lecture Chris Sumby Developing a structural understanding of porous molecular materials

Session 4: Keynote 2

Chair: Peter Czabotar

09:30-10:00 James Whisstock Crystallography and Cryo-Electron Microscopy studies reveal how soluble monomers of Membrane Attack Complex / Perforin-like proteins assemble into pores

10.00-10.30 Coffee/Tea and Exhibitor

Session 5: Concurrent Session 1 Marina Room

(Structural Biology)

Chair: Megan Maher

10:30 - 10:50 Invited:	Charlie Bond	Asymmetric metallation of a homodimeric enzyme links half-of-sites activity to bifunctionality
10:50 - 11:05	Shane Horsefield	Structural and biochemical characterisation of SARM in axon degeneration, cell-death and TLR signaling
11:05 - 11:20	Jennie Sjöhamn	Using Bimolecular fluorescence complementation for the purification and crystallization of membrane protein complexes
11:20 - 11:35	Adam Bentham	It takes two to signal: the dual interfaces of RPP1 TIR domains highlight the need for self-association in defense signalling
11:35 - 11:50	Adam Shahine	A Structural Investigation into CD1b-autoreactive $\alpha\beta$ T-cell Receptors
11:50 - 12:10 Invited:	Michael Parker	Structural insights into the assembly and signalling of the human Interleukin-3 receptor

Session 6: Concurrent Session 2 Gretel Room

Crystal Engineering

Chair: Josie Auckett

10:30 - 10:50 Invited:	Suzanne Neville	Multistep spin crossover transitions in polymeric materials
10:50 - 11:05	Julia Polt	Exotic oxide species and octahedral tilting in the double perovskites $\text{Sr}_{3-x}\text{Y}_x\text{MO}_{5.5+1/2x}$ (M=Nb,Ta)
11:05 - 11:20	Arnaud Grosjean	Flexible crystals: determining the mechanism of flexibility using micro X-ray diffraction
11:20 - 11:35	David Turner	Controlling interpenetration topologies by Pi interactions
11:35 - 11:50	Mingwen Shi	Understanding the host-guest binding nature in crown ether and calixarene derivatives
11:50 - 12:10 Invited:	Christopher Richardson	Thermally-promoted post-synthetic modification of coordination networks

12.10-13.30 Lunch Break and Exhibitor/Posters

Session 7: Combined Session 2 Marina Room

Chair: Suzanne Neville

13:30-13:50	Richard Welberry	Diffuse scattering in the high T_c superconductor, $\text{HgBa}_2\text{CuO}_{4+\delta}$
13:50:14:05	Paula Kayser	Tuning the symmetry of the 6L-trigonal perovskite structure with chemical pressure
14:05-14:20	Jack Clegg	Bringing halogen bonding frameworks kicking and screaming into the third dimension
14:20-14:35	Alison Edwards	Crystal structure determination - beyond least-squares refinement
14:35 - 14:55 Invited:	Ray Withers	Direct mapping of spatially modulated octahedral tilting and coupled in-plane strain in the (3+2)-D modulated, $\text{Li}_{1/2-3x}\text{Nd}_{1/2+x}\text{TiO}_3$, system

15.00-15.30 Coffee/Tea and Exhibitor/Posters

Session 8: Combined Session 3 Marina Room

Chair: David Aragao

15:30-15:50 Invited 11:	Marc Kvansakul	Defensin recognition of phosphatidic acid triggers the formation of a protein-lipid oligomeric filament
15:50-16:05	Jo Etheridge	Symmetry breaking and shape control in metal nanocrystal growth
16:05-16:25 Invited 12:	Megan Maher	The structural biology of intracellular copper trafficking pathways
16:25-16:40 Selected 12:	Pierre Naeyaert	Synthetic, structural, and electrochemical study of monoclinic $\text{Na}_4\text{Ti}_5\text{O}_{12}$ as a sodium-ion battery anode material
16:40-17:00 Invited 13:	Hans Elmlund	Graphene liquid cell electron microscopy applied to study the 3D structure and dynamics of individual nanoparticles in solution
17.00-18.30	Poster Session	
18.30-20:00	SCANZ Council Meeting (part I) - SCANZ Exec	

Thursday, 31st March 2016

07:30-08:30 SCANZ Council Meeting (part II) - If required

Session 9: Bragg Medal Lecture Marina Room

Chair: Stuart Batten

08:45-09:30 Medal Presentation and Lecture Ted Baker Discovering the natural world through crystallography

Session 10: Keynote 3

Chair: Jo Etheridge

09:30- 10:00 Jagadese J Vittal

10.00-10.30 Coffee/Tea and Exhibitor/Posters

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Solid state photo-reactivity of metal complexes, coordination polymers and metal-organic frameworks under UV light

Session 11: Concurrent Session 3 Marina Room

Drug Targets and Inhibitor Development

Chair: Marc Kvensakul

10:30 Invited:	Max Cryle	Characterising the molecular assembly line that builds the glycopeptide antibiotic teicoplanin
10:50 - 11:05	Roxanne Smith	Using the structural characterization of DsbD to develop anti-neisserial therapeutics
11:05 - 11:20	Gabrielle Watson	Developing potent and specific inhibitors of the Grb7 breast cancer target using phosphotyrosine mimetics and bicyclic peptides
11:20 - 11:35	Joel Tyndall	Structures of full-length fungal CYP51s reveal details of human and plant pathogen ligand binding and mechanisms of resistance to azole antifungals
11:35 - 11:50	Tom Peat	Structure-function analysis of functionally diverse members of the cyclic amide hydrolase family of Toblerone fold enzymes
11:50-12:10 Invited:	John Bruning	Structural mechanism of partial agonists of PPAR γ for use as antidiabetics

Session 12: Concurrent Session 4 Gretel Room

Chemical Crystallography

Chair: David Turner

10:30 Invited:	Mark Spackman	Intermolecular interactions in molecular crystals: what's in a name?
10:50 - 11:05	Katrina Zenere	Spin crossover in triazole-based two-dimensional framework materials
11:05 - 11:20	Afsaneh Khansari	Syntheses, structures and thermal studies of three novel strontium metal-organic frameworks
11:20 - 11:35	Lawrence Wong	Aryltartramides – a family of chiral diols for resolution
11:35 - 11:50	Chee Wah Loy	Thermal-induced phase evolution of pseudoboehmite and dawsonite synthesised from disposable aluminium cans
11:50-12:10 Invited:	Jonathan White	A structural approach to gauging the strength of donor substituents in organic molecules by their interactions with oxygen acceptor substituents of varying electron demand

12.10-13.15 Lunch Break and Exhibitor/Posters

Session 13: Combined Session 4 Marina Room

Chair: David Gell

13:15 - 13:40 Invited:	James Holton	Disorder or dynamics? What to do when molecules won't sit still
13:40-13:55	Peter Berntsen	Lipidic cubic phase injector - sample delivery of protein crystals in a native-like environment
13:55-14:10	Jane Allison	Towards simulation of proteins in realistic environments
14:10-14:25	Damia Garriga	A pipeline for structure determination of <i>in vivo</i> -grown crystals using <i>in cellulosa</i> diffraction
14:25-14:40	Janet Newman	CINDER – a crowdsourcing app for crystallisation
14:40-15:00 Invited:	Tristan Croll	iMDFF: a physically realistic environment for rapid and high-fidelity model building

15.00-15.30 Coffee/Tea and Exhibitor/

Session 14: Combined Session 5 Marina Room

Chair: Michelle Dunstone

15:30-15:50 Invited:	Amelia Liu	Diffraction-based structure determination in glasses: progress and challenges
15:50-16:10 Invited:	Dominika Elmlund	Challenging problems in single-particle cryo-electron microscopy
16:10-16:25	Andrew Ellisdon	The P-Rex1:Rac1 structure reveals the basis of Rac1 activation in breast cancer cells
16:25-16:40	Dauoda Troare	SPR-assisted preparation of protein-DNA complexes for crystallographic studies. Application to the pCW3 relaxosome
16:40-17:00 Invited:	Michael Landsberg	The structure of a novel bacterial toxin machinery revealed at near atomic resolution by single particle cryo-EM
17.00 - 18.30	SCANZ General Meeting	
19.00 - 22:00	CONFERENCE DINNER at Hadley's Orient Hotel	

Friday, 1st April 2016

Session 15: SCANZ 1987 Fund Plenary Lecture

Chair: Brendan Kennedy

09:00 - 09.50

Branton Campbell

Crystallographic representation analysis

09:50-10.20 Coffee/Tea and Exhibitors

Session 16: Rising Star Plenary Session

Chair: Chris Ling

10.20-10:40

Richard Birkinshaw

The T cell receptor can detect multiple self-lipid antigens presented by CD1a using a novel indirect sensing mechanism

10.40-11:00

Jamie Hicks

Rational design of porous coordination polymers for catalysis

11:00-11.20

Crystall Swarbrick

Structural insights into the regulation and aggregation of acyl-CoA thioesterases

11.20-11.40

Michael Pfrunder

Mimicking Enzymes: Catalytically Active Metallosupramolecular Tetrahedra

11.40-12:00

Jason Brouwer

Structural transitions during cell death: bak activation and oligomerisation

Session 17: Keynote 4 Structural Biology

Chair: Bostjan Kobe

12:00-12:30

Kristina Djinovic-Carugo Towards the atomic structure of the muscle muscle Z-disk: by lego building blocks

12:30-12:40

Closing Remarks and Handover to New President