

AGCC 2018 PROGRAM



AGCC Australian Geoscience Council **Convention**

BIG ISSUES AND IDEAS IN GEOSCIENCE

14–18 OCTOBER 2018 | Earth Science Week

Adelaide Convention Centre

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Time	Monday 15 October
8:00	Exhibition Open – Hall H
Room	Hall C
8:30	Opening Ceremony <ul style="list-style-type: none"> Welcome to Country (Major Sumner) Welcome to Delegates (Dr Bill Shaw, President, Australian Geoscience Council) Official Opening (Hon Dan van Holst Pellekaan MP, Minister for Energy and Mining, South Australia) Plenary address – <i>Applying Geoscience to Australia's most important challenges</i> (Dr James Johnson, CEO, Geoscience Australia)
9:30	Plenary: Earth Climate - Past and Future <i>The Miocene is the Future: What Past Climates Tell Us Now</i> Dr Matthew Huber (Purdue University)
10:30	Morning Tea
	Technical Session 1
Room	Hall C
	1.1.1 Decoding Earth's supercycles: from the core to the crust
11:00	KEYNOTE: <i>Proxies of the supercontinent cycle and the case for Pannotia</i> Prof Richard Damian Nance (Ohio University)
11:30	KEYNOTE: <i>Evolution of the structure of the lower mantle over the last billion years</i> Dr Nicolas Flament (University of Wollongong)
12:00	<i>Decoding Earth's rhythms: Modulation of supercontinent cycles by longer superocean cycles</i> Prof Zheng-Xiang Li (Curtin University)
12:15	<i>Sulfur isotope cycles in deep time; relationships to ocean chemistry and large igneous provinces</i> Prof Ross Large (University of Tasmania)
12:30	<i>Fingerprinting mantle plume activities in the oceanic realm through time</i> Dr Luc S Doucet (Earth Dynamics Research Group, Curtin University)
12:45	<i>Whole Earth harmonics</i> Dr Ross Mitchell (Curtin University)
	Technical Session 1
Room	Hall A
	1.2.1 Understanding basin formation and evolution from a plate-tectonic perspective
11:00	KEYNOTE: <i>Inversion in fold and thrust belts and in passive margins – Basement controls on structural styles</i> Prof Ken McClay (Department of Earth Sciences, Royal Holloway University of London)
11:30	<i>Marginal fault systems of the Northern Carnarvon Basin: Seismic evidence for multiple Palaeozoic extension events and insights from numerical models</i> Amy I'Anson (EarthByte Group, University of Sydney)
11:45	<i>Interactions between tectonics and surface processes during rifting and passive margin development: The structural evolution of the North West Shelf</i> Dr Romain Beucher (The University of Melbourne)
12:00	<i>Numerical modelling of multiphase rifts – Applications to the Bight Margin?</i> Dr Rebecca Farrington (The University of Melbourne)
12:15	<i>Understanding the Continental Crust and Tectonics of the Norwegian Barents Sea through Regional Deep Seismic Profiles</i> Dr Stuart Clark (UNSW Sydney)
12:30	<i>Plate to anticline modelling of the Papua New Guinea margin – Predicting gasfield structure</i> Dr Kevin Hill (University of Melbourne)
12:45	<i>Approach to detrital zircons geochemistry to unravel episodes of crustal growth; A study from the Capricorn Orogen, Western Australia</i> Sonia Armandola (Curtin University)
	<div>  Theme 1. Understanding the Earth  Theme 2. Life on Earth – origins and diversity  Theme 3. Resources – discovery, development, use and sustainability  Theme 4. Applied Geosciences in the 21st Century – innovation, technology and the future  Theme 5. Beyond the rocks – Geoscience in our society: current application and future trends </div>

Time	Monday 15 October
	Technical Session 1
Room	Hall E1
	1.1.5 Imaging Australia in 3D, 21 Years of ANSIR and beyond
11:00	KEYNOTE: ANSIR portable seismic facility – 21 years of seismic data acquisition and discovery Dr Michelle Salmon (Australian National University, Research School of Earth Sciences)
11:30	<i>Lithospheric discontinuities in Central Australia</i> Prof Brian Kennett (Research School of Earth Sciences, Australian National University)
11:45	<i>Imaging Moho variations across Australia from Bayesian inversion of autocorrelograms</i> Dr Mehdi Tork Qashqai (CSIRO)
12:00	<i>Retrieval of Interstation Local Body Waves from the Teleseismic Coda Correlations – Australia</i> Dr Erdinc Saygin (CSIRO)
12:15	<i>Improved Earth imaging beneath the ice cover of Antarctica using passive seismology: Circumventing the problem of strong reverberations</i> Thanh-Son Pham (Research School of Earth Sciences, The Australian National University)
12:30	<i>Resolving the source parameters of shallow crustal earthquakes in Australia: Examples from three earthquakes in the Musgrave Province</i> Dr Babak Hejrani (The Australian National University)
12:45	<i>The Past, Present and Future of Earth Imaging in Australia</i> Prof Anya Reading (University of Tasmania)
	Technical Session 1
Room	Hall E2
	3.1.1 Effective exploration and discovery under cover
11:00	KEYNOTE: Why the Mineral Exploration Industry needs to change and a vision for successful 21st Century under-cover exploration Dr Jon Hronsky (Western Mining Services)
11:30	<i>Exploration undercover – What can we learn from the Canadian experience?</i> Dr Stephen Rowins (Centre for Exploration Targeting, University of Western Australia)
11:45	<i>Promising patterns - Expression of basement structures through cover and their role as potential pathways through South Australia's critical zone</i> Dr Carmen Krapf (Geological Survey of South Australia)
12:00	<i>Airborne electromagnetic inversion for regolith structure</i> Dr Andrew King (CSIRO)
12:15	<i>Automation of cover sequence geochemistry within a modern mineral exploration environment</i> Dr Caroline Tiddy (MinEx CRC, FII, University of South Australia)
12:30	<i>Pb isotope geochemistry in exploration under cover – New opportunities from new technologies</i> Dr Graham Carr (CSIRO)
12:45	<i>Towards an isotopic atlas of northern Australia</i> Chris Lewis (Geoscience Australia)
	Technical Session 1
Room	Room R1
	2.3 Mass Extinctions
11:00	KEYNOTE: The Chicxulub Impact: The End of an Era Prof Joanna Morgan (Imperial College London)
11:30	<i>Record of the First Day of the Cenozoic in the Chicxulub Impact Structure</i> Prof Sean Gulick (University of Texas at Austin)
11:45	<i>The significance of Photic Zone Euxinia at the Chicxulub Impact Crater</i> Bettina Schaefer (Curtin University)
12:00	<i>Triassic Arctic Ice and the Origin and Ecological Ascent of the Dinosaurs</i> Dr Paul Olsen (Columbia University)
12:15	<i>Evidence of Microbial Mats and Prolonged Persistent Photic Zone Euxinia during the end – Triassic Mass Extinction and Recovery in the UK</i> Calum Fox (WA-OIGC)
12:30	<i>Late Permian volcanism in the Sydney Basin and New England Orogen: Cumulative massive volcanism without mass extinction</i> Dr Robert Nicoll
12:45	<i>A potential 370 ka disparity between the initiation of the Terrestrial and Marine end Permian Mass Extinction events</i> Dr Robert Nicoll

Time	Monday 15 October
	Technical Session 1
Room	Room R2
	3.2.3 Petroleum and its co-products
11:00	KEYNOTE: <i>Good Geoscience means more gas; more gas means more clean, reliable and affordable energy</i> Bill Ovenden (Santos Ltd)
11:30	<i>Finding Fractures in the Cooper Basin Deep Coal Play: An Integrated Approach to Predictive Modelling</i> Emma Hissey (Santos)
11:45	<i>Integrated Earth Data Interpretation – A Recipe for Success in Onshore Frontier Hydrocarbon Exploration</i> Lance Holmes (Santos Ltd)
12:00	<i>Mafic intrusive complexes in sedimentary basins: A guide for hydrocarbon explorers</i> Assoc Prof Simon Holford (University of Adelaide)
12:15	<i>Proterozoic petroleum geochemistry of northern Australia</i> Dr Amber Jarrett (Geoscience Australia)
12:30	<i>An interdisciplinary approach to assessing the prospectivity and potential impacts of unconventional hydrocarbon development in the Isa Superbasin of Queensland</i> Dr Meredith Orr (Geoscience Australia)
12:45	
	Technical Session 1
Room	Room R5
	3.3.1 Groundwater challenges and opportunities & 3.3.3 Pre-competitive geoscience data and information to understand groundwater systems & 3.3.4 Evaluating the potential impacts to groundwater from resource development
11:00	KEYNOTE: <i>The Groundwater Grand Challenge</i> Prof Craig Simmons (Flinders University / NCGRT)
11:30	<i>Groundwater resource development opportunities in northern Australia: Investigations of the Grant Group and Poole Sandstone – Fitzroy catchment, Western Australia</i> Andrew Taylor (CSIRO)
11:45	<i>Emerging groundwater quality concerns in the Australian context</i> Dr Ilka Wallis (Flinders University)
12:00	<i>Hydro-illogical cycle, socio-hydrogeology and collective action; lessons learnt from groundwater management in the Angas-Bremer irrigation district (South Australia)</i> James Hopkinson (Flinders University)
12:15	<i>Use of Industry seismic reflection data for groundwater investigations in the Kimberley region as part of the Exploring for the Future Program</i> Dr Donna Cathro (Geoscience Australia)
12:30	<i>Mapping and characterising springs for understanding groundwater-surface water interactions in the Upper Burdekin Region, north Queensland</i> Dr Prachi Dixon-Jain (Geoscience Australia)
12:45	<i>Using a risk framework to guide groundwater modelling and data collection to analyze future environmental impacts from extractive industries</i> Dr Glen Walker (Grounded In Water)
	Technical Session 1
Room	Room R6
	4.7 The National Virtual Core Library
11:00	<i>The Australian National Virtual Core Library – Accessing geological information from the upper 1–2 km of our Earth's crust</i> Dr Carsten Laukamp (CSIRO)
11:15	KEYNOTE: <i>The NVCL in 2030: Development and benefits of building and using the world's largest public national geological material properties knowledgebase</i> Dr Jon Huntington (HHGeoscience)
11:45	<i>Reducing the Complexity of Dense Drillcore Spectral Datasets with Spectral Feature Extraction and Clustering</i> Dr Andrew Rodger (CSIRO)
12:00	<i>Unleashing thermal infrared spectroscopy on the carbonate mineralogy of drill holes</i> Dr David Green (Mineral Resources Tasmania)
12:15	<i>Spectral logging in skarn systems – Making a difficult task easy</i> Adrian Fabris (Geological Survey of South Australia)
12:30	<i>Calibrating HyLogger-3 reflectance spectra using Minalyze XRF data</i> Dr Neil Pendock (Corelog Analytics)
12:45	<i>NVCL Analytics</i> Peter Warren (CSIRO)

Time	Monday 15 October
	Technical Session 1
Room	Room R7
	4.4.1 The Geoscience of Where
11:00	KEYNOTE: Everything happens somewhere Andrew Barnicoat (Geoscience Australia)
11:30	<i>Combined usage of GNSS and InSAR to implement and maintain a dynamic Australian datum</i> Dr Thomas Fuhrmann (Geoscience Australia)
11:45	<i>The infrastructure that lets us ask where? The impact of AuScope on Australian geoscience research</i> Dr Tim Rawling (AuScope)
12:00	<i>Accurate and precise 'where' determinations: The real challenge of integrating multiple scientific phenomena observed/measured at similar locations.</i> Dr Lesley Wyborn (Australian National University)
12:15	<i>Utilizing Data Frameworks for Spatial Data</i> Andrew Whiting (Geoscience Australia)
12:30	<i>Pixels to Answers</i> Nathan Eaton (NGIS Australia Pty Ltd)
12:45	<i>Mapping in a connected world</i> Mr Jason Beltran (SRK Consulting)
	Technical Session 1
Room	Room R8
	5.5 Planning the Future of Geoscience
11:00	<i>Launch of Decadal Plan</i> Prof Sue O'Reilly (Macquarie University)
11:15	KEYNOTE: Decadal Plan for Geoscience: Our planet, Australia's future – A decade of transition in Geoscience Prof Sue O'Reilly (Macquarie University)
11:30	<i>Australian space and planetary capabilities: Implications for Earth Sciences</i> Assoc Prof Craig O'Neill (Macquarie University)
11:45	<i>Geophysics in Australia Enters a Decade of Transformation</i> Prof Anya Reading (University of Tasmania)
12:00	<i>Moving from geosystem to mineral system to discovery–research challenges</i> Dr Graham Begg (Minerals Targeting International PL)
12:15	<i>The fundamental new science we need to support future discovery success</i> Dr Jon Hronsky (Western Mining Services)
12:30	<i>AuScope and the decade of predictive geoscience: Research infrastructure to support tackling the next generation of Australian geoscience questions</i> Dr Tim Rawling (AuScope)
12:45	<i>UNCOVER Australia: A trillion dollar prize</i> Dr Phil McFadden (Australian Academy of Science)
1:00	Lunch
Room	Hall C
2:00	Plenary: Life Origins and Evolution <i>Mass Extinction System Science: a fully integrated field of study or just a MESS?</i> Prof Richard Twitchett (Natural History Museum, London)
3:00	Afternoon Tea

Time	Monday 15 October
	Technical Session 2
Room	Hall C
	1.1.1 Decoding Earth's supercycles: from the core to the crust
3:30	<i>Detrital zircons and the distribution of S-type granites through time</i> Ziyi Zhu (Australian National University)
3:45	<i>Geochemical evidence for a fossil mantle wedge beneath the Gakkel Ridge, Arctic Ocean</i> Marianne Richter (Monash University)
4:00	<i>Development of the Global Paleomagnetic Database and new global paleogeographic animation for 2000-1600 Ma</i> Dr Sergei Pisarevsky (Curtin University)
4:15	<i>Long-lived supercontinent Nuna revised – Updated paleomagnetic constraints from Australia</i> Dr Uwe Kirscher (Curtin University)
4:30	<i>First Precambrian palaeomagnetic data from the Mawson Craton (East Antarctica) and tectonic implications</i> Yebo Liu (Curtin University)
4:45	<i>Long-lived connection between the North China and North Australia cratons (NCC-NAC) in the supercontinent Nuna: New palaeomagnetic constraints</i> Chong Wang (Curtin University)
5:00	<i>A global full-plate reconstruction model for the last 2.0 Ga</i> Dr Lei Wu (Curtin University)
5:15	<i>Recognising base level shifts in the Upper Jurassic Walloon Coal Measures of the Surat Basin, Australia</i> Dr Carmine Wainman (University of Adelaide)
	Technical Session 2
Room	Hall A
	1.2.1 Understanding basin formation and evolution from a plate-tectonic perspective
3:30	<i>How big was that ocean? - Combining new and traditional techniques to inform understanding of ancient ocean basin evolution</i> Prof Jonathan Aitchison (University of Queensland)
3:45	<i>Tectonic reactivation of basement and its control on basin evolution</i> Dr Lynn Pryer (Frogtech Geoscience)
4:00	<i>Initiation of the Canning Basin: Extensional magmatism in the middle Cambrian?</i> Dr Peter Haines (Geological Survey of Western Australia)
4:15	<i>Mantle influence on vertical crustal movements of Australian Paleozoic intracratonic basins</i> Alexander Young (The University of Wollongong)
4:30	<i>The Amadeus Basin fold-and-thrust belt, central Australia: Stages of intraplate deformation</i> Dr Anett Weisheit (Northern Territory Geological Survey)
4:45	<i>Triassic Tectonics and Sedimentation on the North West Shelf</i> Prof Chris Elders (Curtin University)
5:00	<i>Nucleation of rift basins and initiation of the East African Rift System in NW Kenya: The 'Turkana First' model</i> Prof Andrew Gleadow (School of Earth Sciences, University of Melbourne)
5:15	<i>Tectonic control on the Ordovician Sandstones and Permo-Carboniferous Dwyka Glaciation of Gondwana</i> Dr Geoffrey Grantham (University of Johannesburg)
	Technical Session 2
Room	Hall E1
	1.1.5 Imaging Australia in 3D, 21 Years of ANSIR and beyond
3:30	KEYNOTE: <i>Tectonic and metallogenic evolution of South Australia: Insights from 5 years of AusLAMP</i> Dr Kate Robertson (Geological Survey of South Australia)
4:00	<i>Shallow crustal structure of southeast Australia constrained by Rayleigh wave phase velocity and Z/H ratio</i> Guoliang Li (Macquarie University)
4:15	<i>Palaeomagnetic rotations in the Tasmanides</i> Dr Robert Musgrave (Geological Survey of NSW)
4:30	<i>Multi-scale geoelectric structure of the Tasmanian Lithosphere</i> Thomas Ostensen (University of Tasmania)
4:45	<i>Magnetotelluric imaging of intracontinental deformation zones: Example of the Musgraves Province in Central Australia</i> Dr Stephan Thiel (Geological Survey of South Australia)
5:00	<i>Investigation of the large-scale conductivity structure of the Mount Isa Province from broadband magnetotelluric data</i> Janelle Simpson (Geological Survey of Queensland)
5:15	<i>Exploring for the Future: South Nicholson Seismic Interpretation</i> Lidena Carr (Geoscience Australia)

Time	Monday 15 October
	Technical Session 2
Room	Hall E2
	3.1.3 Understanding mineral systems for exploration – from craton to micron scale
3:30	KEYNOTE: <i>The porphyry mineral system – Key targeting criteria for exploration across all scales</i> Prof David Cooke (University of Tasmania, CODES)
4:00	<i>New indicators of and methods to assess magmatic fertility in the Northparkes district</i> Tristan Wells (University of Tasmania, CODES)
4:15	<i>The Ernest Henry Inter-lens. Geology, apatite geochronology and trace element analysis; Implications for a reviewed deposit model</i> Bradley Cave (University of Adelaide)
4:30	<i>Geochronology of Proterozoic metallogenic events in the Mount Isa Province</i> Courteney Dhnaram (Geological Survey of Queensland)
4:45	<i>Is Mount Isa a zoned carbonate replacement system?</i> Dr Richard Lilly (University of Adelaide - Mount Isa Mines)
5:00	<i>Micron-scale thallium mapping of drill-core provides evidence for an epigenetic origin for mineralization in the McArthur River (HYC) Zn-Pb Deposit</i> Dr Samuel Spinks (CSIRO)
5:15	<i>Examining geochemical links between mineralizing fluids in the southern Irish Cu deposits and the Irish Midlands Zn-Pb field</i> Dr Sean Johnson (iCRAG)
	Technical Session 2
Room	Room R1
	2.4 Ancient and Historical Record of Life in Australia
3:30	KEYNOTE: <i>Riversleigh research: An impossibly condensed overview of the last 43 years</i> Prof Michael Archer (University of New South Wales)
4:00	<i>Integrating stratigraphic analysis and biostratigraphy to reconstruct Late Paleozoic carbonate platform architecture</i> Assoc Prof Annette George (University of Western Australia)
4:15	<i>Micro-CT investigations of two well-preserved Middle Cambrian radiolarians from the Georgina Basin, Australia</i> Jiani Sheng (The University of Queensland)
4:30	<i>Reduction Spheroids from the Tumblagooda Sandstone as Potential Biomarkers for the Terrestrialisation of Arthropods</i> David Fox (CSIRO & Curtin University)
4:45	<i>How did the Great Barrier Reef develop during the Last Interglacial? New evidence from One Tree Reef</i> Madhavi Anne Patterson (The University of Sydney)
5:00	<i>Can systematic palaeontology survive modern metrics?</i> Prof Gregory Webb (The University of Queensland)
5:15	
	Technical Session 2
Room	Room R2
	3.2.3 Petroleum and its co-products & 3.2.5 Geoscience aspects of the storage of energy related waste
3:30	KEYNOTE: <i>Helium and Australia</i> Dr Michael C Clarke (M.E.T.T.S. Pty Ltd)
4:00	<i>Identifying new exploration opportunities in a mature basin</i> Sarah Trend (Esso Australia Pty Ltd)
4:15	<i>The Helium and Hydrogen potential of the Amadeus Basin</i> Eilidh Cassidy (The University of Adelaide)
4:30	KEYNOTE: <i>CO2CRC Otway Project – Assurance monitoring and verification of a CO₂ storage site</i> Dr Ulrike Schacht (CO2CRC, University of Adelaide)
4:45	<i>Demonstrating long-term safety of nuclear waste disposal: Geosciences leads the way</i> Dr Dirk Mallants (CSIRO)
5:00	<i>Lessons learned from microbial mats and carbonate microbialites important to carbon sequestration in mine environments</i> Prof Gordon Southam (The University of Queensland)
5:15	<i>CO₂ storage in the Central Surat Basin: New core data and predicted CO₂-water-rock reactions</i> Dr Julie Pearce (University of Queensland)

Time	Monday 15 October
	Technical Session 2
Room	Room R4
	Santos Education Workshop
3:00	The program for this event, which is specifically designed for teachers, includes: <ul style="list-style-type: none"> • an education discussion led by Prof Iain Stewart • geoscience-related hands-on and practical activities ready for your classroom • access to the AGCC poster & trade displays after the workshop • meeting with the Geoscience community over evening nibbles and drinks
	Technical Session 2
Room	Room R5
	3.3.3 Pre-competitive geoscience data and information to understand groundwater systems & 3.3.4 Evaluating the potential impacts to groundwater from resource development
3:30	KEYNOTE: Exploring for the Future – New innovative groundwater data and information for Northern Australia Dr Narelle Neumann (Geoscience Australia)
4:00	KEYNOTE: Using surface and groundwater models to conduct cumulative impact assessments: The Bioregional Assessment Programme Dr David Post (CSIRO)
4:30	<i>Multiple environmental tracers elucidate anthropogenic and climate change effects since the last glaciation on groundwater in the Peel Area, WA</i> Dr Christoph Gerber (CSIRO)
4:45	<i>Dolerite Dykes Characterisation in the Hamersley Basin and Significance for Groundwater Compartmentalisation</i> Anne-Audrey Latscha (Rio Tinto)
5:00	<i>Environmental tracers and geology to investigate groundwater recharge and conceptual model uncertainties in the Pilliga area (Surat Basin, NSW)</i> Dr Matthias Raiber (CSIRO)
5:15	<i>A multi-environmental tracer study quantifying deep recharge to the Hutton and Precipice Sandstone and detecting cross-formational flow, Surat Basin, Queensland</i> Dr Axel Suckow (CSIRO)
	Technical Session 2
Room	Room R6
	4.7 The National Virtual Core Library
3:30	<i>Unusual or unfamiliar minerals revealed by the NVCL, their significance and procedures for their recognition and validation</i> Dr Jon Huntington (HHGeoscience)
3:45	<i>Applications of hyperspectral mineralogy for geoenvironmental characterisation</i> Dr Anita Parbhakar-Fox (UTAS)
4:00	KEYNOTE: Spectral mineralogy from hand held spectrometers: Third generation technologies driving a revival Dr Sasha Pontual (AusSpec International)
4:30	<i>Evidence of multiple fluid events at Angularli uranium prospect, Alligator Rivers Uranium Field, Northern Territory from mapping HyLogger mineralogy</i> Belinda Smith (Northern Territory Geological Survey)
4:45	<i>Spectral studies from the Kanmantoo Copper Mine, South Australia</i> Dr Alan Mauger (Geological Survey of South Australia)
5:00	<i>Characterisation of New Caledonian nickel laterite using hyperspectral imaging</i> Dr Erick Ramanaidou (CSIRO)
5:15	<i>High-resolution hyperspectral imagery from the Canadian Malartic gold deposit, Quebec, Canada: Characterizing mineralogy and mineral chemistry</i> Philip Lypaczewski (University of Alberta)

Time	Monday 15 October
	Technical Session 2
Room	Room R7
	4.4.3 Geoscience data delivery & 4.4.2 Understanding the Surface
3:30	<i>Seamless Geology of NSW: A new paradigm for geological mapping</i> Dr John Greenfield (Geological Survey of NSW)
3:45	<i>GSWA geoscience data delivery: Where to from here?</i> Dr Angela Riganti (Geological Survey of Western Australia)
4:00	<i>Access to hazard and risk information to underpin decision-making</i> Dr Jane Sexton (Geoscience Australia)
4:15	KEYNOTE: SA Land Cover 1987 - 2015 Matthew Miles (SA Department for Environment and Water)
4:45	<i>Monitoring surface motion from space using Interferometric Synthetic Aperture Radar</i> Sarah Lawrie (Geoscience Australia)
5:00	<i>Digital Earth Australia – Analysis of the remote sensing time series to understand the land surface</i> Adam Lewis (Geoscience Australia)
5:15	<i>Land Cover Mapping using Digital Earth Australia</i> Cate Kooymans (Geoscience Australia)
	Technical Session 2
Room	Room R8
	5.5 Planning the Future of Geoscience
3:30	<i>Geoscience at the frontiers</i> Dr Robert Hough (CSIRO)
3:45	<i>A fifteen-year longitudinal AGC survey of Australian earth science departments: Results and predictions</i> Assoc Prof David Cohen (University of New South Wales)
4:00	<i>AuScope's Earth Composition and Evolution Program: Trends, challenges and opportunities facing geochemistry in Australia</i> Prof Brent McInnes (Curtin University)
4:30	<i>A new era of biogeoscience – Life at the limits</i> Prof Kliti Grice FAA (Curtin University)
4:45	KEYNOTE: From Rocks to Robots: Life beyond Geosciences Dr Sue Keay (Queensland University of Technology)
5:00	<i>CSIRO's Deep Earth Imaging Future Science Platform</i> Prof Michael McWilliams (CSIRO)
5:15	<i>Geoscience and Our Future – A Broad Vision</i> Dr Bill Shaw (Ore Control)
5:30	<i>Decadal Plan Q&A</i> Prof Sue O'Reilly (Macquarie University)
5:30	Posters/Drinks Exhibition
6:30	Invited Functions/Meetings

Time	Tuesday 16 October
8:00	GeoEXPO - Hall H
Room	Hall C
8:30	Big Issues and Ideas in Geosciences Day Introduction
9:00	Smoothing the impact of boom and bust commodity cycles <i>Introduction</i> Dr Allan Trench Professor and MBA Director at University of Western Australia Business School; Adjunct Professor Centre for Exploration Targeting, UWA <i>Success case study: Building an Australian Gold Company via counter-cyclical investments</i> Patrick Walta MD, New Century Zinc <i>Industry track record and big picture: How do we grow above the boom and bust cycle mentality?</i> Prabhav Sharma Partner, McKinsey & Company <i>Innovation management as a means to combat boom/bust cycles</i> Miriam Stanborough Group Manager – Productivity & Innovation, Monadelphous Group Ltd Audience discussion Q&A
10:30	Morning Tea - GeoEXPO - Hall H
11:00	Our energy trilemma options - security, accessibility and sustainability <i>Introduction</i> Dr Bruce Godfrey Chair of Energy Forum, Academy of Technology and Engineering <i>The transition to clean energy is irreversible</i> Associate Professor Paul Ebert Specialist Advisor - New Energy at Advisian and Global Technology Leader at Advisian/Worley Parsons <i>Engineering the Subsurface: The future of shale gas, enhanced geothermal and remote mining in the context of a global energy revolution</i> Doug Hollett Senior Advisor Energy, Nova Systems <i>CCS for Australia – Why and how</i> Dr Noel Simento MD, ANLEC R&D <i>Social licence to operate in a post scientific truth world</i> Professor Peta Ashworth Chair Sustainable Energy Futures, School of Chemical Engineering; Affiliate Professor Centre for Coal Seam Gas, and Faculty of Humanities and Social Sciences, University of Queensland Audience discussion Q&A
12:30	Lunch - GeoEXPO - Hall H

Time	Tuesday 16 October
1:30	<p>Resource driven development of Northern and Regional Australia</p> <p><i>Introduction</i> Dr Richard Blewett General Manager Mineral Systems Branch, Geoscience Australia</p> <p><i>The future of Mount Isa and the North West – What it means for Australia</i> Madam Mayor Joyce McCulloch Mayor, Mt Isa</p> <p><i>Revitalising Regional Australia through mining and mineral exploration</i> Warren Pearce CEO, Association of Mining and Exploration Companies Inc.</p> <p><i>The role of government in supporting resource-driven development</i> Dr James Johnson CEO, Geoscience Australia</p> <p>Audience discussion Q&A</p>
3:00	Afternoon Tea - GeoEXPO - Hall H
3:30	<p>Geoscience education and new modes of communication</p> <p><i>Introduction</i> Professor Iain Stewart Professor of Geoscience Communication, University of Plymouth</p> <p><i>Selling popular science via broadcast media: Challenges with new digital and on-line media landscapes</i> Aidan Lavery Manager Science & EP Catalyst, ABC</p> <p><i>The revolution and future of communicating geoscience</i> Dr Paul Willis CEO, Media Engagement Services</p> <p><i>Communicating with the Public – Where did we go wrong?</i> Emeritus Professor Susan Stocklmayer AO Australian National Centre for the Public Awareness of Science, Australian National University</p> <p><i>Geotourism – Interpreting geology for non-specialists</i> Professor Ross Dowling Foundation Professor of Tourism, Edith Cowan University</p> <p>Audience discussion Q&A</p>
5:00	<p>Big Issues and Ideas in Geosciences Day</p> <p>Synthesis</p>
5:30	<p>Posters/Drinks</p> <p>GeoEXPO – Hall H</p>
6:30	Invited Functions/Meetings

Time	Wednesday 17 October
8:00	GeoEXPO - Hall H
Room	Hall C
8:30	Plenary: Resource Security into the Future <i>Modern seafloor hydrothermal systems associated with submarine arcs: How prospective are they for Cu-Au mineralization?</i> Dr Cornel de Ronde
	Technical Session 3
Room	Hall C
	1.1.1 Decoding Earth's supercycles: from the core to the crust
9:30	<i>Fully-dynamic global models to explore the processes behind continental reorganisations</i> Dr Claire Mallard (The University of Sydney)
9:45	<i>The effects of supercontinent size on the global mantle structures</i> Dr Nan Zhang (Curtin University)
10:00	<i>Evolution of the plate-mantle system since the late Paleozoic Period</i> Alexander Young (The University of Wollongong)
10:15	<i>How the interaction between global mantle flow and lithospheric structure shapes Earth's dynamic topography and volcanic expressions</i> Dr Rhodri Davies (The Australian National University)
10:30	<i>New insights into the centre of the Earth from the detection of inner core shear waves</i> Assoc Prof Hrvoje Tkalčić (The Australian National University)
10:45	<i>On the depth of melting of enriched components in the Tasmanid mantle plume</i> Saskia Ruttor (Monash University)
	Technical Session 3
Room	Hall A
	1.1.4 Crustal evolution of Archean Cratons
9:30	KEYNOTE: <i>Constraints on Archean tectonic processes from seismic reflection surveys in the Canadian Superior and Australian Yilgarn cratons</i> Dr Andrew Calvert (Simon Fraser University)
10:00	<i>Subduction-related magmatism of the western Yilgarn: Implications for damp komatiites</i> Dr Derek Wyman (School of Geosciences, University of Sydney)
10:15	<i>Earth's Adolescence: Isotopically tracking the global transition from the Hadean to the Modern Earth</i> Prof Vickie Bennett (Australian National University)
10:30	<i>Statistical re-assessment reveals new REE-compositional trends within TTG's</i> Amrei Ladwig (Monash University)
10:45	<i>Metamorphism and exhumation of basement gneiss domes in the Quadrilátero Ferrífero: Proterozoic reworking of an Archean dome-and-keel province</i> Dr Kathryn Cutts (Universidade Federal De Ouro Preto)
	Technical Session 3
Room	Hall E1
	1.4 Earth's Climate, Past, Present and Future
9:30	KEYNOTE: <i>A Proterozoic perspective on global climate change</i> Dr Galen Halverson (McGill University)
10:00	<i>The aftermath of the Cryogenian glaciations: Intense silicate weathering and large element fluxes to the oceans?</i> Holly Taylor (University of Wollongong)
10:15	<i>Linking the Neoproterozoic Oxygenation Event to the interplay between global glaciation and the radiation of eukaryotes</i> Dr Grant Cox (University of Adelaide)
10:30	<i>$\delta^{13}C$ of coals from the Moatize Basin, Mozambique: Evidence for global carbon isotope anomaly associated with the deglaciation of Gondwana</i> Nikola Van De Wetering (University of Queensland)
10:45	<i>Leaving a trail: Reconstructing past climates from clumped isotope analysis of snail shells</i> Georgy Falster (Geoscience Australia)

Time	Wednesday 17 October
	Technical Session 3
Room	Hall E2
	3.1.4 Tectonic and earth evolution controls on the spatial and temporal
9:30	KEYNOTE: From geosystem to mineral system: Contextualising ore deposits Dr Graham Begg (Minerals Targeting International PL & Western Mining Services PL)
10:00	<i>The Continent of Zealandia: Implications for the mineral exploration potential of New Zealand</i> Robert Smillie (GNS Science)
10:15	<i>Caught in the act: Incipient metal extraction during melting of metasomatically oxidised mantle</i> Dr Andy Tomkins (Monash University)
10:30	<i>Heterogeneity in the sub-continental lithospheric mantle: Multiple mantle source components identified from ca. 1590 Ma mafic intrusions, Gawler Craton</i> Claire Wade (Geological Survey of South Australia)
10:45	<i>Deep crustal to SCLM controls on Ni-PGE-Cr and Au mineralisation, northern Superior Province, Canada</i> Prof Lyal Harris (INRS-ETE)
	Technical Session 3
Room	Hall E3
9:30	CSIRO 3 - minute Rapid Fire Presentations
	Technical Session 3
Room	Room R1
	2.1 The Origins and Development of Life & 2.2 Ediacaran and Cambrian Symposium
9:30	<i>New dimensions to biostratigraphy</i> Sarah Kachovich (The University of Queensland)
9:45	<i>Exploring the evidence for Paleoproterozoic evaporites and their bearing on hypotheses for early microbial metabolisms</i> Prof Bruce Runnegar (University of California, Los Angeles)
10:00	<i>Origin of the Neoproterozoic Rim Dolomite as Lateral Carbonate Caprock, Patawarta Salt Sheet, Flinders Ranges, South Australia</i> Rachelle Kerns (University of Texas at El Paso)
10:15	<i>Preliminary analysis of Ediacaran facies-assemblage relationships from the Flinders Ranges</i> Lily Reid (University of South Australia)
10:30	<i>Arumberia banksii: How well can MISS tell time?</i> Heidi Allen (Geological Survey of Western Australia)
10:45	
	Technical Session 3
Room	Room R2
	3.4 Resources sustainability – responsible investment and management
9:30	KEYNOTE: JORC and CRIRSCO reporting codes, a common framework supporting mining investment Steve Hunt (JORC, Joint Ore Reserves Committee)
9:45	KEYNOTE: The Evolution of a Common Language for Petroleum Resource Classification and Management Barbara Pribyl (Santos)
10:00	KEYNOTE: How much? Commonalities and differences in resource calculations in the water, minerals and petroleum sectors Peter Baker (Office of Water Science – Technical Analysis Team, Department of Environment and Energy)
10:15	<i>The Future of Mineral Exploration in Australia – Addressing the Challenges</i> Christopher Cairns (Stavely Minerals Limited)
10:30	<i>Incremental evolution or radical transformation in mineral exploration - A case for change, Discovery 2.0</i> Robert Rowe (UNCOVER)
10:45	<i>Australia's mineral inventory – Identified resources, trends, distribution and resource life</i> Allison Britt (Geoscience Australia)

Time	Wednesday 17 October
	Technical Session 3
Room	Room R5
	3.2.4 Sustainable energy sources & 3.2.6 Using geoscience to address social licence concerns for energy projects
9:30	KEYNOTE: <i>Current and potential uses for geothermal energy in Australia</i> Dr Graeme Beardsmore (Australian Geothermal Association)
10:00	<i>Pumped hydro energy storage: A key enabler of 100% renewable electricity for Australia</i> Dr Matthew Stocks (ANU)
10:15	<i>Geothermal energy for heating and cooling projects: Hydrogeology determines viability and design</i> Miranda Taylor (Rockwater Pty Ltd)
10:30	KEYNOTE: <i>Bursting Bubbles: Can experiments and analogues help stakeholders and the public visualise risks?</i> Dr Linda Stalker (CSIRO)
	Technical Session 3
Room	Room R6
	4.6 Mathematics, modelling, AI, robotics and machine learning applied to the acquisition and interpretation of large or complex geoscience data sets
9:30	KEYNOTE: <i>Emerging machine learning approaches for mineral prospectivity mapping through space and time</i> Prof Dietmar Müller (The University of Sydney)
10:00	<i>Forecasting in Mineral Systems</i> Dr Alison Ord (Centre For Exploration Targeting, UWA)
10:15	<i>Inferring Formation Boundaries through Bayesian Geophysical Inversion</i> Dr Richard Scalzo (University of Sydney)
10:30	<i>Separating neighbouring geological units within iron ore deposits using measure while drilling data</i> Dr Katherine Silversides (The University of Sydney, Australian Centre for Field Robotics)
10:45	<i>Automating the geological interpretation of drill hole data</i> Dr June Hill (CSIRO)
	Technical Session 3
Room	Room R7
	4.1 Geohazards, risk and mitigation
9:30	<i>Slope stabilisation for regional roads in NSW – A case example</i> Dr Sudarshan (Sudar) Aryal (WSP Australia)
9:45	<i>Monitoring of unstable rock volumes for rockfall hazard assessment</i> Dr Anna Giacomini (The University of Newcastle)
10:00	<i>Space-based hazard monitoring for Australia and Melanesia using Interferometric Synthetic Aperture Radar</i> Dr Amy Parker (Curtin University)
10:15	
10:30	
10:45	
	Technical Session 3
Room	Room R8
	5.5 Planning the Future of Geoscience & 5.1 Geology in Society: geotourism and geoheritage
9:30	<i>Building thematic and integrated services for European solid Earth sciences: The EPOS integrated approach</i> Prof John Ludden (British Geological Survey)
9:45	<i>Future Exploration challenges – Unlocking new energy resources</i> Prof Chris Elders (Curtin University)
10:00	<i>Overview of Geo-science Development in Papua New Guinea – The Challenges and Way Forward</i> Dulcie Saroa (Mineral Resources Authority)
10:15	<i>Future of teaching and training in Geoscience</i> Dr Sandra McLaren (University of Melbourne)
10:30	<i>The Canadian Experience with Public Geoscience in Fostering Innovation in Mineral Exploration</i> Mike Villeneuve (Geological Survey of Canada, Natural Resources Canada)
10:45	<i>Bringing rocks to life – Outreach activities of the Geological Survey of NSW</i> Dr Chris Yeats (Geological Survey of NSW)
11:00	Morning Tea - GeoEXPO - Hall H

Time	Wednesday 17 October
	Technical Session 4
Room	Hall C
	1.1.1 Decoding Earth's supercycles: from the core to the crust
11:30	<i>Locating hidden terrane boundaries in East Antarctica with detrital feldspar Pb isotopes</i> Dr Jack Mulder (School of Earth, Atmosphere & Environment, Monash University)
11:45	<i>The Cambrian island arc basement of the Macquarie Arc, SE Australia</i> Assoc Prof Sebastien Meffre (University of Tasmania)
12:00	<i>Eastern Gondwana breakup as viewed from northern Zealandia</i> Dr Brian Boston (Japan Agency for Marine-Earth Science and Technology)
12:15	<i>Conservation of deep crustal heat production rates</i> Kiara Alessio (The University of Adelaide)
12:30	<i>Episodic extensional exhumation of the Tso Moriri core complex in an intra-oceanic setting prior to the India-Asia collision</i> Dr Marnie Forster (RSES, ANU)
12:45	<i>Slab decapitation and the formation of metamorphic core complexes</i> Prof Gordon Lister (RSES, ANU)
	Technical Session 4
Room	Hall A
	1.1.4 Crustal evolution of Archean Cratons
11:30	KEYNOTE: <i>A perspective on the formation and evolution of Earth's first stable continents</i> Dr Tim Johnson (Curtin University)
12:00	<i>Formation of cratonic lithosphere during the initiation of plate tectonics</i> Prof Louis Moresi (University of Melbourne)
12:15	<i>A new Hadean-Archean global regime: Proto-plates control early Earth's tectonics</i> Dr Fabio Capitanio (Monash University)
12:30	<i>Some like it hot: Proterozoic reworking of an Archaean 'craton' driven by high radiogenic heat-producing crust</i> Stacey Curtis (Geological Survey of South Australia)
12:45	
	Technical Session 4
Room	Hall E1
	1.4 Earth's Climate, Past, Present and Future
11:30	<i>A 30000 year sea surface temperature record for the Southern Coral Sea</i> Dr Bradley Opdyke (The Australian National University)
11:45	<i>Assessing the controls on global contourite distribution: Implications for reconstructing bottom water activity</i> Amanda Thrane (University of Sydney)
12:00	<i>Depositional history of the Condamine Palaeo-valley: A unique sediment record</i> Dr Valeria Bianchi (University of Queensland)
12:15	<i>Natural climate cycles of past centuries and millennia; are there implications for the next century and millennium?</i> Prof Michael Asten (Monash University)
12:30	<i>Millennial-scale variability in subtropical precipitation observed in Central Queensland speleothem</i> Dr Kevin Welsh (University of Queensland)
12:45	
	Technical Session 4
Room	Hall E2
	3.1.4 Tectonic and earth evolution controls on the spatial and temporal
11:30	<i>Decoding the Cobar orebodies of central NSW: paragenesis, geochronology and isotopic characteristics</i> Dr Joel Fitzherbert (Geological Survey of New South Wales)
11:45	<i>Cryptic crustal structures as key district-scale metallogenic controls – Examples from orogenic gold provinces in eastern Australia</i> Dr Vladimir Lisitsin (Geological Survey of Queensland)
12:00	<i>Devonian crustal stretching in the northern Tasmanides (Australia): implications for the origin of the orogenic curvature in the Delamerian-Thomson belt</i> Rashed Abdullah (School of Earth and Environmental Sciences)
12:15	<i>Quantitative Geodynamics of Mt Isa & McArthur Basins – Implications for Giant Sediment Hosted Mineral Systems</i> Dr Karol Czarnota (Geoscience Australia)
12:30	<i>Contrasting PCD and IOCG tectono-magmatic settings: Insights from the Gawler Craton and North America</i> Matthew Ferguson (Centre for Ore Deposit and Earth Sciences (UTAS))
12:45	<i>D1- and D3-related gold mineralisation in the Agnew district, Eastern Goldfields, Western Australia</i> Dr Sarah Jones (Gold Fields Ltd)

Time	Wednesday 17 October
	Technical Session 3
Room	Hall E3
11:30	CSIRO 3 - minute Rapid Fire Presentations
	Technical Session 4
Room	Room R1
	2.6 Geobiology
11:30	KEYNOTE: Molecules and Cells: A Remarkable Preservation of Life and an Evolutionary Adaptation Prof Kliti Grice FAA (Curtin University)
12:00	<i>Sequestration of trace metals into framboids: biotic or abiotic?</i> Dr Siyu Hu (CSIRO – Mineral Resources)
12:15	<i>Shark Bay microbial mat community responses to oil contamination: a lab-controlled time series experiment</i> Yalimay de Duarte (Curtin University WA-OIGC)
12:30	<i>The dependency of Proterozoic stromatolite abundance on trace elements and temperature</i> Dr Indrani Mukherjee (Center for Ore Deposits and Earth Sciences (CODES), University of Tasmania)
12:45	<i>Microbially mediated black sludge following a cyclonic event in Shark Bay, Western Australia and its link with cobble formation</i> Matthew Campbell (Western Australian Organic & Isotope Geochemistry Center/Curtin University)
	Technical Session 4
Room	Room R2
	3.1.5 Technology metals and minerals – the importance of non-traditional commodities in the evolving economy & 3.1.6 New frontiers in ore system research
11:30	KEYNOTE: Strategic & industrial minerals leading the next production revolution Dr Richard Flook (Mosman Resources)
12:00	<i>Genesis of the Nolans Bore REE deposit</i> Michael Anenburg (Australian National University)
12:15	<i>Measuring Lithium-Bearing Minerals with Infrared Reflectance Spectroscopy</i> Monica Legras (CSIRO)
12:30	<i>Diamonds and other kimberlitic minerals from the Webb Kimberlite Field, Western Australia</i> Dr Prokopy Vasilyev (John de Laeter Centre)
12:45	<i>Identification of basement density heterogeneities through using stratigraphic modelling</i> Dr Vincent Crombez (CSIRO)
	Technical Session 4
Room	Room R5
	3.2.1 Future energy mix & 3.2.6 Using geoscience to address social licence concerns for energy projects
11:30	KEYNOTE: The emerging energy revolution Prof Peter McCabe (Australian School of Petroleum, University of Adelaide)
12:00	<i>Trends for gas demand and supply in Australia and Asia</i> Nicholas White (Santos)
12:15	<i>Germany's geological subsurface can contribute to the energy transition with significant storage potential</i> Prof Michael Kuehn (GFZ German Research Centre for Geosciences)
12:30	<i>The Critical Role of Geoscience in delivering the Future Energy Mix</i> John O'Brien (Deloitte)
12:45	<i>Seismic Surveys and Marine Life: A Plea for Evidence-based debate, assessments and Regulation</i> John Hughes (The Norwood Resource)

Time	Wednesday 17 October
	Technical Session 4
Room	Room R6
	4.6 Mathematics, modelling, AI, robotics and machine learning applied to the acquisition and interpretation of large or complex geoscience data sets
11:30	<i>A Gaussian process regression model for 3D geochemical interpolation supported by geophysical inversion models</i> Tom Horrocks (University of Western Australia)
11:45	<i>Applications of machine learning to mineral exploration</i> Dr Antoine Caté (SRK Consulting)
12:00	<i>Reducing Mineral Exploration risk in the Yukon Plateau</i> Nick Parker (Geosoft)
12:15	<i>Using a Convolutional Neural Network to Classify Downhole Imagery</i> Dr Andrew Rodger (CSIRO)
12:30	<i>Petrophysical Modelling from 3D Seismic Volumes</i> Wesley Emery (iRPM Pty Ltd)
12:45	<i>Machine Reading of Geological Documents to Assist Mineral Explorers</i> Prof Eun-Jung Holden (The University of Western Australia)
	Technical Session 4
Room	Room R7
	4.1 Geohazards, risk and mitigation
11:30	<i>National Guidelines for Tsunami Hazard Modelling: A collaboration between scientists and end-users</i> Dr Jane Sexton (Geoscience Australia)
11:45	<i>Reassessing the potential threat of submarine landslide tsunamigenesis for Fiji's capital (Suva), from existing coastal boulder evidence</i> Dr Annie Lau (The University of Queensland)
12:00	<i>The Australian built environment: Are we ready for the next big shake?</i> Mark Edwards (Geoscience Australia)
12:15	<i>Forecasting earthquakes with hybrid physical / statistical models</i> Prof Sandy Steacy (University of Adelaide)
12:30	<i>Conservation as a way to reduce risks: Turrialba Volcano, Costa Rica</i> Prof Eliecer Duarte (OVSICORI-UNA)
12:45	<i>The impact of the Great Barrier Reef on tsunami propagation</i> Amanda Thran (University of Sydney)
	Technical Session 4
Room	Room R8
	5.1 Geology in Society: geotourism and geoheritage
11:30	KEYNOTE: <i>Development of Geopark and Geotourism: Experience from Malaysia and Asia Pacific Region</i> Prof Emeritus Dr Ibrahim Komoo (Langkawi Research Centre (ppl-ukm), Lestari Ukm)
12:00	<i>A New Geotrail to Showcase the Spectacular Coastal Geology of Port Macquarie, NSW</i> Dr Ron Boyd (University of Newcastle)
12:15	<i>Essential Elements of Geotourism Interpretation</i> Prof Ross Dowling OAM (Edith Cowan University)
12:30	<i>Geotourism – Opportunities for Future Development in Australia</i> Angus M Robinson (Leisure Solutions ®)
12:45	<i>Findings from a study of Aboriginal cultural association with Geosites and Geotourism in the Gunduwa Conservation Region of Western Australia</i> Alan Briggs (Murdoch University)
1:00	Lunch - GeoEXPO - Hall H
Room	Hall C
2:00	Plenary: Applied Geoscience - Geohazards, risks and Society <i>Improving the rockfall failure hazard assessment and consequences</i> Prof Michel Jaboyedoff
3:00	Afternoon Tea - GeoEXPO - Hall H

Time	Wednesday 17 October
	Technical Session 5
Room	Hall C
	1.1.2 Optimisation and uncertainties in Earth models
3:30	KEYNOTE: Machine learning: A route to better geoscience models? Dr Andrew Valentine (Research School of Earth Sciences, The Australian National University)
4:00	<i>Quantifying the fit of paleogeographically-constrained mantle flow models to present-day dynamic topography and lower mantle structure</i> Dr Nicolas Flament (University of Wollongong)
4:15	<i>Advancing the particle-in-cell scheme to an adaptive, unstructured computational framework</i> Christopher Mathews (Australian National University)
4:30	<i>The controlling variables in landscape evolution: numerical models of the erosion-deposition-subsidence patterns of the Great Artesian Basin</i> Carmen Braz (Earthbyte Group, The University of Sydney)
4:45	<i>BayesLands: Distributed parallel tempering for uncertainty quantification in basin and landscape evolution via Badlands</i> Dr Rohitash Chandra (University of Sydney)
5:00	<i>The Australian Newer Volcanics Province as an Example of the Interaction of a Mantle Plume and a Lithospheric Step</i> Thomas Duvernay (Australian National University)
5:15	<i>BayesReef: A Bayesian inference framework for modelling vertical reef growth and responses to environmental change</i> Jodie Pall (Centre for Translational Data Science)
	Technical Session 5
Room	Hall A
	1.1.6 Proterozoic Tectonics
3:30	KEYNOTE: Towards a Whole Earth System Reconstruction of the Neoproterozoic Prof Alan Collins (The University of Adelaide)
4:00	<i>Genesis of the Archean–Paleoproterozoic Tabletop Domain, Rudall Province, and its endemic relationship to the West Australian Craton</i> Dr Naomi Tucker (University of South Australia)
4:15	<i>Reassessing the amalgamation of Proterozoic Australia by redefining the Mesoproterozoic evolution of the Rudall Province</i> Dr Justin Payne (University of South Australia)
4:30	<i>A ~1600-1580 Ma metamorphic core complex in the northern Gawler Craton</i> Prof Peter Betts (Monash University)
4:45	<i>Tearing the Coompana Province: Was crustal-scale transtension focussed and triggered by transient shortening?</i> Dr Mark Pawley (Geological Survey of South Australia)
5:00	<i>Sampling the anatomy of a continental-oceanic arc system; geochemical evidence for subduction modified lithosphere in the Coompana Province</i> Dr Rian Dutch (Geological Survey of South Australia)
5:15	<i>Dropping the bottom LIP: Magmatic processes in an expanded Warakurna LIP</i> Tom Wise (Geological Survey of South Australia)
	Technical Session 5
Room	Hall E1
	1.4 Earth's Climate, Past, Present and Future
3:30	KEYNOTE: Recent and rapid ice unloading in Antarctica unveils the solid Earth's viscoelastic rheology (GSA Mawson Medal Lecture) Prof Matt King (University of Tasmania)
4:00	<i>Controls on the flux of sedimentary carbon to the mantle during the Cenozoic</i> Prof Peter Clift (Louisiana State University, Baton Rouge)
4:30	<i>Stable and radiogenic strontium isotope systematics in hypersaline coastal environments: constraints for paleo-hydrology in the Coorong, South Australia</i> Yuexiao Shao (University of Adelaide)
4:45	<i>What controls d18O of precipitation in subtropical settings? A 5-year, daily resolved rainfall record from Krabi, Thailand</i> Dr Ludvig Löwemark (National Taiwan University)
5:00	<i>The timing and drivers of the expansion of C4 vegetation in Australia</i> Jake Andrae (University of Adelaide)
5:15	<i>Global sea level fluctuations and uncertainties through a Wilson cycle based on ocean basin volume reconstructions</i> Dr Maria Seton (University of Sydney)

Time	Wednesday 17 October
	Technical Session 5
Room	Hall E2
	3.1.6 New frontiers in ore system research
3:30	KEYNOTE: New Tools for Mineral Systems Dr Bruce Hobbs (CSIRO & Centre for Exploration Targeting, UWA)
4:00	<i>Geomechanics: A new approach to targeting structurally controlled mineralisation</i> Dr John McLellan (GMEX)
4:15	<i>Geoscience Australia's contribution to the AusLAMP program: Results from NSW, Victoria and Northern Australia</i> Dr Alison Kirkby (Geoscience Australia)
4:30	<i>Detrital rutile: A new tool for gold exploration under cover</i> Prof Neal McNaughton (John De Laeter Centre for Isotope Research, Curtin University)
4:45	<i>Fluid flow drivers for sediment-hosted Pb-Zn-Ag mineralisation at McArthur River, Northern Territory, Australia</i> Dr Heather Sheldon (CSIRO)
5:00	<i>The MAIA Mapper: A powerful new tool for investigation of magmatic ores by microbeam XRF imaging of drill core</i> Dr Stephen Barnes (CSIRO Mineral Resources Flagship)
5:15	<i>The OSNACA Project: Updates to the map of Magmato-Hydrothermal space</i> Dr Carl Brauhart (CSA Global)
	Technical Session 5
Room	Room R1
	2.6 Geobiology & 2.8 Earth, Life and Ores
3:30	<i>Impact of hydrocarbon contamination on compound-specific carbon and hydrogen isotopic signatures of n-alkanes</i> Dr Richard Schinteie (CSIRO)
3:45	<i>Cambrian Series 3 and 4 faunas from Northern Victoria Land, Antarctica: A summary</i> Prof Jim Jago (University of South Australia)
4:00	KEYNOTE: Seeing Red: The myth of an arid Triassic Dr Jessica Whiteside (University of Southampton)
4:30	<i>Conditioning of the Precambrian ocean: competing influences of atmospheric composition, ocean ventilation and make-up of the land surface</i> Prof Balz Kamber (Trinity College Dublin and Queensland University)
4:45	<i>Organic matter-metal interactions in the Cambrian metalliferous shales from South China</i> Dr Anais Pages (CSIRO)
5:00	<i>Correlation of large igneous provinces and black shales during "the Boring Billion"</i> Prof Shuan-Hong Zhang (Institute of Geomechanics, Chinese Academy of Geological Sciences)
5:15	<i>What pyrite textures reveal about Proterozoic sedex deposits</i> Dr Peter McGoldrick (University of Tasmania)
	Technical Session 5
Room	Room R2
	3.4 Resources sustainability – responsible investment and management & 3.5 Technology integration
3:30	KEYNOTE: Mineral resources, mining & sustainability: Critical issues, critical metals and Australia's opportunities Dr Gavin Mudd (RMIT)
4:00	KEYNOTE: Innovative government geoscience to drive new discoveries: <i>An integrated approach to defining Australia's resource potential</i> Dr Andrew Heap (Geoscience Australia)
4:30	<i>Drilling and sampling with RoXplorer®: Coiled tubing drilling for mineral exploration</i> Prof David Giles (University of South Australia, MinEx CRC)
4:45	<i>Collaborative Research: How to drive your exploration dollar further?</i> Greg Hall (Golden Phoenix International Pty Ltd)
5:00	<i>Direct economic return to government of Public Geoscience Information investments in Chile:</i> <i>First evaluation of the National Mapping Program</i> Dr Felipe Espinoza (Servicio Nacional De Geología Y Minería – Chile)
5:15	<i>Revitalising Botswana's mineral exploration potential</i> Tiyapo Ngwisanyi (Botswana Geoscience Institute)

Time	Wednesday 17 October
	Technical Session 5
Room	Room R5
	3.3.2 New groundwater technologies and approaches & 3.3.5 Groundwater science for policy development and decision making
3:30	KEYNOTE: <i>Groundwater and Critical Zone Science: Innovation and Transformation</i> Dr Ken Lawrie (Geoscience Australia)
4:00	<i>You've got the water, but can you save the trees? Using innovative geophysical techniques to inform River Murray floodplain management</i> Chris Li (CSIRO)
4:15	<i>Airborne EM for Integrated 3D Mapping of Groundwater, Seawater Intrusion and Relationship with Sustainable Yield in Exmouth, WA</i> Karen Gilgallon (Southern Geoscience Consultants)
4:30	<i>Rapid assessment of groundwater levels in the Northern Adelaide Plains using seismic data</i> Dr Brady Flinchum (CSIRO)
4:45	<i>Supporting groundwater characterization and management using space geodesy</i> Dr Pascal Castellazzi (CSIRO)
5:00	<i>Uncovering an ancient landscape and helping the exploration for groundwater and minerals – The Musgrave province, South Australia</i> Dr Timothy Munday (CSIRO)
5:15	<i>Catchment salt balance and historical salinity flushing quantified in a high rainfall stream (Mount Lofty Ranges, South Australia)</i> Tom Anderson (Flinders University)
	Technical Session 5
Room	Room R6
	4.6 Mathematics, modelling, AI, robotics and machine learning applied to the acquisition and interpretation of large or complex geoscience data sets
3:30	<i>Impact of the neighbourhood selection strategy on autonomously generated 3D volumetric models</i> Dr Mehala Balamurali (University of Sydney)
3:45	<i>Efficient new approaches for optimal geological exploration and characterisation</i> Dr Ayham Zaitouny (CSIRO)
4:00	KEYNOTE: <i>Understanding uncertainty in predictive geosciences</i> Prof Peter Dowd (The University of Adelaide)
4:30	<i>Using Augmented Reality (AR) to improve communications and decision making with stakeholder at a former chemical manufacturing facility</i> Tom Fewless (GHD)
4:45	<i>Running for cover in the Capricorn Orogen: Mapping regolith thickness on a regional scale</i> Dr Aaron Davis (CSIRO)
5:00	<i>Assessment of interpretation and spatial uncertainty of spatial domains</i> Scott McManus (Charles Sturt University)
5:15	<i>Big data paradox and modelling strategies in geological modelling based on horizontal wells data</i> Dr Huang Wensong (Research Institute of Petroleum Exploration & Development, PetroChina Company Limited)
	Technical Session 5
Room	Room R7
	4.1 Geohazards, risk and mitigation
3:30	KEYNOTE: <i>Emerging technologies for characterisation of slope stability - managing misinterpretation, misuse and over-confidence</i> Dr Marc Elmouttie (CSIRO)
4:00	KEYNOTE: <i>Individual and regional risk assessments of landslides</i> Dr Jinsong Huang (The University of Newcastle)
4:30	<i>What should we do about naturally occurring fibrous amphiboles: Do they pose the same health risk as asbestiform varieties?</i> Marc Hendrickx (Marc Hendrickx and Associates)
4:45	<i>Mapping alluvial gully environments using regolith terrain mapping techniques</i> Dr Robin Thwaites (Griffith University)
5:00	
5:15	

Time	Wednesday 17 October
	Technical Session 5
Room	Room R8
	5.1 Geology in Society: geotourism and geoheritage & 5.6 Diversity in the Geosciences
3:30	<i>Developing Geotrails for a large continent</i> Ian D Lewis (GSA (SA Division))
3:45	<i>Virtual reality makes outback and armchair geotourism real in SA</i> Prof Patrick James (University of South Australia)
4:00	<i>Geotourism and the Digital Age</i> Ken Moule (Global GBM)
4:15	<i>Discovering geological stories in every postcode through online self-guided fieldtrips: An example of small geotourism</i> Lauren Swann (Kirkland Lake Gold)
4:30	<i>What do non-geologists think of geotourism?</i> Bronwyn Witham
4:45	<i>The development of a national rock garden in the Nation's capital</i> Michael Smith (Austpac Resources NI)
5:00	<i>Diversity in Deep Earth Imaging: A perspective from establishing a new collaborative geoscience hub</i> Richard Chopping (CSIRO)
5:15	<i>The Women in Earth and Environmental Sciences Australasia Network (WOMEESA)</i> Assoc Prof Heather Handley (Macquarie University)
5:30	Posters/Drinks GeoEXPO – Hall H
7:00	Convention Dinner – Hall F & Foyer F

Time	Thursday 18 October
8:00	GeoEXPO - Hall H
Room	Hall C
8:30	Plenary: Applied Geoscience - Geohazards, Risks and Society <i>Advances in Robotics and Computer Vision and what this means for the Australian Resources Sector</i> Dr Sue Keay
	Technical Session 6
Room	Hall C
	1.1.6 Proterozoic Tectonics
9:30	<i>Patterns of Proterozoic tectonism in central and South Australia from detrital zircon and rutile geochronology</i> Matthew Campbell (University of Queensland)
9:45	<i>Antipodean fugitive terranes in Laurentia and how Proterozoic Australia built the American west</i> Dr George Gibson (Australian National University)
10:00	<i>Detrital zircon age, oxygen and hafnium isotope systematics record rigid continents after 2.5 Ga</i> Dr Linda Iaccheri (University of Witwatersrand)
10:15	<i>New insights into the subglacial geology of the remote interior of Western Wilkes Land, East Antarctica</i> Alessandro Maritati (Institute for Marine and Antarctic Studies, University of Tasmania)
10:30	<i>Tectonic evolution of the Neoproterozoic Bemarivo Belt in northern Madagascar: From Rodinia to Gondwana</i> Sheree Armistead (The University of Adelaide)
10:45	<i>Detrital provenance of the greater McArthur Basin, with implications for Palaeoproterozoic to Tonian tectonic geography of northern Australia</i> Dr Morgan Blades (The University of Adelaide)
	Technical Session 6
Room	Hall A
	1.1.7 Advances in Volcanology and Igneous Geochemistry
9:30	KEYNOTE: <i>The role of the ocean in modulating the dynamics of the Havre 2012 silicic submarine eruption</i> Dr Rebecca Carey (University of Tasmania)
10:00	<i>New insights into volcanic eruption triggers from trace element zoning in clinopyroxene</i> Dr Teresa Ubide (The University of Queensland)
10:30	<i>Permian pumice to Miocene magmas: a new geological map of Warrumbungle National Park</i> Dr Kate Bull (GSNSW)
10:45	<i>The diverse origins of breccias within the Gawler Range Volcanics: lithological characteristics, formation processes and implications for mineral prospectivity</i> Dr Mario Werner (Geological Survey of South Australia)
	Technical Session 6
Room	Hall E1
	1.3 Marine Geoscience - the Evolving Oceans
9:30	<i>The Holocene initiation of the Great Barrier Reef: Where, when and how did the reef start to grow?</i> Kelsey Sanborn (University of Sydney)
9:45	<i>Modern Halimeda Algal Bioherms in the Great Barrier Reef</i> Dr Luke Nothdurft (Queensland University of Technology)
10:00	<i>Active tectonics and mass transport deposits on the North West Shelf of Australia</i> Dr Myra Keep (University of Western Australia)
10:15	<i>Geomorphic mapping of Perth submarine canyon, southwest Australia: Insights into canyon evolutionary processes</i> Dr Rachel Nanson (Geoscience Australia)
10:30	<i>Palaeoshorelines on the Australian continental shelf</i> Dr Brendan Brooke (Geoscience Australia)
10:45	<i>Displacement of mega boulders across coastal rock platforms south of Wollongong, Australia, by large storm waves or tsunamis?</i> Dr Glen Bann (Australian National University)

Time	Thursday 18 October
	Technical Session 6
Room	Hall E2
	3.1.2 Making better exploration decisions through an integrated geoscience approach
9:30	KEYNOTE: Managing risk with quantitative integrated 3D mineral system characterisation Warren Potma (CSA Global)
10:00	Mineral potential mapping for pre-competitive data delivery in NSW Zone 54 Dr Arianne Ford (Kenex Ltd)
10:15	Linking regolith-landform mapping with surface geochemistry in a regolith dominated terrain to inform mineral exploration Alicia Caruso (The University of Adelaide)
10:30	Applying GIS in regional sedimentary basin evaluation studies Ben Jupp (SRK Consulting)
10:45	Complex systems thinking and mineral systems Dr Bruce Hobbs (CSIRO & Centre for Exploration Targeting, UWA)
	Technical Session 6
Room	Room R1
9:30	1.3 Marine Geoscience - the Evolving Oceans/IODP
9:30	KEYNOTE: Preliminary insights of deep-sea coring of Australia's frontier Bight and Mentelle basins – IODP Expedition 369 Dr Lloyd White (University of Wollongong)
10:00	Tasman frontier subduction initiation and Paleogene climate: Preliminary results from IODP Expedition 371 Dr Saneatsu Saito (Japan Agency for Marine-Earth Science and Technology)
10:15	The response of the Great Barrier Reef to major environmental changes: lessons from geologic past Assoc Prof Jody Webster (University of Sydney)
10:30	KEYNOTE: Achievements of scientific ocean drilling in the Australasian region Prof Neville Exon (Australian National University)
	Technical Session 6
Room	Room R2
	3.2.2 Energy from coal
9:30	KEYNOTE: Back to basics – Deciphering rank, type and grade variation Prof Joan Esterle (University of Queensland)
10:00	Why are we still mining coal? David Green (Adamelia Global Pty Ltd)
10:15	Application of a "Best Practices" approach to the Leigh Creek Energy Insitu Gasification Demonstration Project Justin Haines (Leigh Creek Energy Limited)
10:30	CSG Exploration in Queensland Mel Wilkinson (Santos)
10:45	Is coal seam gas dead in SE Asia? Opportunities and impediments Dr Tim Moore (Cipher Consulting Pty Ltd)
	Technical Session 6
Room	Room R5
	3.3.2 New groundwater technologies and approaches
9:30	Hydrogeochemistry of Australia: Providing baselines for Lithology mapping, Mineral exploration, Health and Agriculture Dr Nathan Reid (CSIRO)
9:45	Offshore freshwater: A new freshwater resource or a poorly understood existing freshwater input? Andrew Knight (Flinders University)
10:00	The use of heat as a groundwater tracer Dr Dylan Irvine (Flinders University)
10:15	Addressing conceptual uncertainty through a multi-model approach using bold hypotheses Trine Enemark (CSIRO)
10:30	A stochastic approach to estimating mine dewatering requirements at an open pit mine Keith Brown (Rio Tinto Iron Ore)
10:45	The importance of measuring flows in long-screened or open wells David Poulsen (NCGRT, Flinders University)

Time	Thursday 18 October
	Technical Session 6
Room	Room R6
	4.3 Engineering geology – from underpinning our civil infrastructure to mine closure
9:30	KEYNOTE: Sustainable Geotechnical and Geological Data Management for Infrastructure in New South Wales Dr David Och (WSP)
10:00	<i>The legacy for engineering geology from the Snowy Mountains Hydro-electric Scheme, New South Wales</i> Robert Goldsmith (SMEC)
10:15	<i>Relevance of engineering geological models in modern tunnel design and construction</i> Tim Nash (Pells Sullivan Meynink)
10:30	<i>Exploring the structure of the Snowy Highlands, NSW</i> Dr Cara Jacques (SMEC Australia)
10:45	KEYNOTE: Geological assessment and landslide risk mitigation at Bulli Pass, Princes Highway, Illawarra Region, NSW Dr Phil Flentje (University of Wollongong)
	Technical Session 6
Room	Room R7
	4.5 Exploration technology: future trends and adoption challenges
9:30	KEYNOTE: Title TBC Andrew Scott
10:00	<i>Real time decision making in exploration - the technologies that enable it and its application to date</i> Dr Michelle Carey (Imdex Limited)
10:15	<i>Exploration on the edge</i> Mark Gabbitus (Micromine)
10:30	<i>Sampling from coiled tubing drilling in mineral exploration</i> Dr Ben van der Hoek (University of South Australia)
10:45	<i>Do we really want it? New technology adoption in the mineral exploration</i> Dr James Cleverley (Imdex Limited)
	Technical Session 6
Room	Room R8
	5.2 Prediction, Process, Place: Geomorphology
9:30	KEYNOTE: The role of geomorphic research in Great Barrier Reef Water Quality Management Assoc Prof Andrew Brooks (The Centre for Coastal Management, Griffith University)
10:00	<i>Preliminary archaeological investigations into the submerged continental shelf of South Australia: Geomorphology, context and significance</i> Adeena Fowke (Flinders University)
10:15	<i>A geomorphological maze: Martian valley networks and impact craters</i> Dr Graziella Caprarelli (Hypatia Scientifica Pty Ltd)
10:30	<i>Process geomorphology for rangeland management: Better outcomes by looking beyond outdated ideas</i> Dr Gresley Wakelin-King (Wakelin Associates)
10:45	<i>The filling and spilling of Lake George, New South Wales</i> Prof Brad Pillans (Australian National University)
11:00	Morning Tea - GeoEXPO - Hall H

Time	Thursday 18 October
	Technical Session 7
Room	Hall C
	1.1.6 Proterozoic Tectonics
11:30	<i>Insights into the structural architecture and tectonic evolution of the Batten Fault Zone (southern McArthur Basin) from geophysical modelling</i> Dr Teagan Blaikie (CSIRO)
11:45	<i>Insights on the geological evolution and mineral resources of the Mount Isa inlier from mafic geochronology and geochemistry and petrology</i> Dr Laurie Hutton (Geological Survey of Queensland)
12:00	<i>Northeast-Australian collisional tectonics during the assembly of Nuna unravelled by multi-method petrochronology</i> Dr Amaury Pourteau (Curtin University)
12:15	<i>Unravelling the structural and metamorphic evolution from MT–MP to LP–HT: A journey through the crust in the Georgetown Inlier (NE Australia)</i> Silvia Volante (Curtin University)
12:30	<i>Proterozoic tectonic evolution of North Queensland, Australia: new insights from thermal cooling history</i> Dr Jiangyu Li (Curtin University)
12:45	<i>150 Myr of episodic metamorphism, magmatism and intraplate deformation catalysed by rehydration and localised weakening of the deep crust</i> Assoc Prof Tom Raimondo (University of South Australia)
	Technical Session 7
Room	Hall A
	1.1.7 Advances in Volcanology and Igneous Geochemistry
11:30	<i>The highs and lows of Archean dolerites and the controls on gold mineralisation: examples from the Eastern Goldfields, Western Australia</i> Dr Patrick Hayman (Queensland University of Technology)
12:00	<i>A new emplacement origin for the world famous, highly Au-endowed, Archean Golden Mile Dolerite, Kalgoorlie, Western Australia</i> Prof Raymond Cas (Monash University)
12:15	<i>Interpretation of zircon U-Pb ages on volcanoclastic rocks: A case study on the Fairbridge Volcanics of the Macquarie Arc, southeastern Australia</i> Qing Zhang (University of Wollongong, Australia)
12:30	<i>Complex evolution of volcanic arcs and accreting plates: Case-study of the Cambrian Mount Stavelly Volcanic complex</i> Nathan Bowman (School of Earth, Atmosphere and Environment, Monash University)
12:45	
	Technical Session 7
Room	Hall E1
	1.2.2 Source-to-sink sedimentary Basin Processes
11:30	<i>The terminal deposits of rivers in drylands</i> Dr Kathryn Amos (University of Adelaide)
11:45	<i>Neoproterozoic stratigraphic revisions to key drillholes in the Amadeus Basin, NT; implications for basin paleogeography, and petroleum and mineral potential</i> Dr Verity Normington (Northern Territory Geological Survey)
12:00	<i>Signal or noise? Isolating grain size effects on Nd isotope variability in Indus delta sediment provenance</i> Dr Tara Jonell (The University of Queensland)
12:15	<i>Revised stratigraphy and facies architecture of Cycle 2 and 3 formations of the Drummond Basin and sediment transport implications</i> Kasia Sobczak (QUT)
12:30	<i>Architecture and trigger mechanisms of the Cretaceous gravity deposits in Lingshan Island, Eastern China</i> Dr Shunli Li (China University of Geosciences, Beijing)
12:45	<i>Provenance study and the first radiometric age constraints on the Indus molasse in the India-Eurasia collision zone</i> Dr Renjie Zhou (The University of Queensland)

Time	Thursday 18 October
	Technical Session 7
Room	Hall E2
	3.1.2 Making better exploration decisions through an integrated geoscience approach & 3.1.3 Understanding mineral systems for exploration – from craton to micron scale
11:30	<i>Intrusion-related geochemical and alteration mineral zonation associated with low sulphidation epithermal fields and exploration implications</i> Ned Howard (Evolution Mining Ltd)
11:45	<i>Uncertainty quantification for informed decision-making</i> Dr Ilnur Minnaikhmetov (BHP)
12:00	<i>Observation of basement proxies for mineral provinces in the Gawler Craton aided by satellite gravity data interpretation</i> João Motta (University of Campinas)
12:15	<i>SA3D – Multi-Scale 3D Mineral System Maps</i> Simon Van Der Wielen (Geoscience Australia)
12:30	<i>Basin–basement contacts as base metal exploration targets: Evidence for mineralising basin brines in central Australia</i> Dr Matthew McGloin (Northern Territory Geological Survey)
12:45	<i>The application of mineral potential mapping to the southern New England Orogen of NSW</i> Dr Phillip Blevin (Geological Survey of New South Wales)
	Technical Session 7
Room	Hall E3
	4.2 Mining geology and geometallurgy
11:30	KEYNOTE: Next generation applied geoscience for the complex orebodies of the future Prof Rick Valenta (WH Bryan Mining and Geology Research Centre – Sustainable Minerals Institute, UQ)
12:00	KEYNOTE: Geometallurgy at Olympic Dam: Mineralogical characterisation at the deposit scale, why it matters Dr Kathy Ehrig (BHP Olympic Dam)
12:30	KEYNOTE: Future Geoscience Jillian Terry (BHP)
	Technical Session 7
Room	Room R1
	1.3 Marine Geoscience - the Evolving Oceans/IODP
11:30	<i>Erosional response to monsoon intensity change and rock uplift in the Western Himalaya since the Late Miocene</i> Prof Peter Clift (Louisiana State University, Baton Rouge)
11:45	<i>Paleoceanography and monsoonal history of the Japan Sea over the last 460,000 years</i> Assoc Prof Stephen Gallagher (The University of Melbourne)
12:00	<i>From continental crust to ocean basin – Rapid rifting in the South China Sea – Site U1501, IODP EXP 367/368</i> Dr Kelsie Dadd (University of Sydney)
12:15	<i>Origin of Moho Reflections</i> Dr Yoshihiko Tamura (Jamstec)
12:30	KEYNOTE: ECORD mission-specific platform expeditions in the International Ocean Discovery Program: Flexible operations and technological developments Dr Carol Cotterill (European Consortium for Ocean Research Drilling)
	Technical Session 7
Room	Room R2
	3.1.1 Effective exploration and discovery under cover
11:30	<i>The Northern Australia geochemical survey – A potential method for discovering undercover mineralisation</i> Philip Main (Geoscience Australia)
11:45	<i>Biogeochemical mapping in mineral exploration</i> Assoc Prof David Cohen (University of New South Wales)
12:00	<i>Ultrafine soil fractions for improved near surface exploration through cover</i> Dr Ryan Noble (CSIRO)
12:15	<i>Establishing geochemically appropriate sampling media in the critical zone of South Australia – A 4D journey through datasets and geology</i> Dr Anna Petts (Geological Survey of South Australia)
12:30	<i>Significance of ferruginous pisoliths in exploring areas covered by sand dunes: An example from the Yamarna Terrane, Western Australia</i> Dr Walid Salama (CSIRO)
12:45	<i>Groundwater hydrogeochemistry of the Capricorn Orogen and mineral exploration through cover</i> Dr Robert Thorne (CSIRO)

Time	Thursday 18 October
	Technical Session 7
Room	Room R5
	3.3.5 Groundwater science for policy development and decision making
11:30	KEYNOTE: <i>Groundwater science contributions to water policy development and decision making in the 21st century</i> Jane Coram (CSIRO)
12:00	<i>Public perceptions of groundwater issues</i> Philip Commander (DP Commander Hydrogeology)
12:15	<i>Impediments in using science for decision making – Case studies from SA</i> Steve Barnett (Department for Environment and Water)
12:30	<i>Best practice for determining baseline methane conditions in aquifers – Practical application for tight shale developments</i> David Gornall (Santos)
12:45	<i>Sensitivity analysis and value of information in groundwater exploration: A case study from the APY lands, South Australia</i> Dr Luk Peeters (CSIRO)
	Technical Session 7
Room	Room R6
	4.3 Engineering geology – from underpinning our civil infrastructure to mine closure
11:30	<i>Case study – Desk study and ground investigation at the offshore area of Outer Harbour, Adelaide</i> Ming Chit Fergus Cheng (Arup)
11:45	<i>Shear strength of materials that cannot be tested in the laboratory due to their large particles size</i> Sandra Linero Molina (University of Newcastle – SRK Consulting Australasia)
12:00	<i>Ground movement changes due to climate effects on roads and infrastructure founded on shallow expansive clays</i> Dr Dominic Lopes (USL Group Pty Ltd)
12:15	<i>Developing an engineering geological ground model in a remote part of Papua New Guinea for a new tailings storage facility</i> Mark Rynhoud (Klohn Crippen Berger)
12:30	<i>NDRRA Gold Coast Springbrook Road slope remediation – Digital innovation in the Hinterland</i> Thomas Casey (Arup Pty Ltd)
12:45	<i>Correlation between inferred strength and apparent degree of weathering in felsic pyroclastic rocks</i> Prof Stephen Fityus (The University of Newcastle)
	Technical Session 7
Room	Room R7
	4.5 Exploration technology: future trends and adoption challenges
11:30	<i>2008-2018 – The portable XRF decade</i> Aaron Baensch (Olympus Scientific Solutions)
11:45	<i>Low level gold determinations using pXRF: Towards a new paradigm in gold exploration</i> Simon Bolster (Portable PPB Pty Ltd)
12:00	<i>Are we there yet? – Effectiveness of handheld IR spectrometers for exploration and mining</i> Dr Sasha Pontual (AusSpec International)
12:15	<i>New developments in analytical techniques for efficient characterization of geologic materials: Research outcomes of the Deep Exploration Technologies CRC</i> Dr Yulia Uvarova (CSIRO)
12:30	<i>Industry take-up on real-time geological data</i> Annelie Lundström (Minalyze)
12:45	<i>Adjustments for Airborne Induced Polarization Effects – A joint conductivity induced polarization inversion update for 2.5D</i> Dr Jovan Silic (Jovan Silic and Associates)

Time	Thursday 18 October
	Technical Session 7
Room	Room R8
	5.2 Prediction, Process, Place: Geomorphology & 5.3 Geoscience, Education and Professional Development (AUGEN Symposium)
11:30	<i>A technical classification for erosion gullies in Queensland</i> Dr Robin Thwaites (Griffith University)
11:45	<i>The Australian Earth and Environmental Science Olympiad: An Australian science innovations initiative inspiring students to think about Earth Systems Science</i> Greg McNamara (Australian Science Innovations)
12:00	<i>Planning for a strong, diverse and inclusive future geoscience workforce</i> Kylie Walker (Science & Technology Australia)
12:15	<i>Welcoming diverse groups to the classroom – How tiny changes can create big outcomes</i> Dr Penny King (Australian National University)
12:30	<i>The journey of curious minds to the Earth Science Olympiad</i> Dr Leslie Almberg (Earth and Environmental Science Olympiad)
12:45	<i>An alternative future for Applied Geoscience training? Micro-credentialing, universities, professionals and industry</i> Dale Sims (Dale Sims Consulting)
1:00	<i>All hands on deck! Voyage 1 for the Collaborative Australian Postgraduate Sea Training Alliance Network (CAPSTAN)</i> Dr Leah Moore (University of Canberra)
1:00	Lunch - GeoEXPO - Hall H
Room	Hall C
2:00	Plenary: The Future of Geoscience in our society <i>Selling Planet Earth: Communicating contested geoscience to the public</i> Prof Iain Stewart
	Technical Session 8
Room	Hall C
	1.5 The Solar System and Beyond
3:00	KEYNOTE: <i>The role of reactions between gases and solids on the surfaces of Earth and Mars</i> Dr Penny King (Australian National University)
3:30	<i>Formation and multiple impact events on the IIE iron parent body as recorded by the Miles meteorite</i> Rachel Kirby (The Australian National University)
3:45	<i>Could meteorite bombardment have kick-started the plate tectonic machine?</i> Assoc Prof Craig O'Neill (Macquarie University)
4:00	KEYNOTE: <i>GSA Ringwood Medal Lecture: Illuminating Mantle Metasomatism</i> Stephen Foley (Macquarie University)
	Technical Session 8
Room	Hall A
	1.1.7 Advances in Volcanology and Igneous Geochemistry
3:00	<i>The 1595Ma Gawler Range Volcanics: A template for petrogenesis of a Silicic Large Igneous Province (SLIP)</i> Emeritus Prof John Foden (University of Adelaide)
3:15	<i>The geology and geochemistry of intraplate volcanoes offshore of Australia's Southern Margin</i> Dr Joanna Parr (CSIRO)
3:30	<i>Heterogeneous mantle source of mid-ocean ridge basalts from the Macquarie Ridge Complex</i> Qiang Jiang (School of Earth and Planetary Sciences, Curtin University)
3:45	<i>A new pathway for chemical fractionation resulting from SO₂ – basaltic glass reactions</i> Andrew Palm (Australian National University)
4:00	<i>Reappraisal of MORB redox state using both Fe and S speciation</i> Dr Olivier Alard (Macquarie University)
4:15	<i>Towards an understanding of boninite genesis and their role in probing the sub-arc mantle, Cape Vogel, Papua New Guinea</i> Dr Oliver Nebel (School of Earth, Atmosphere And Environment, Monash University)

Time	Thursday 18 October
	Technical Session 8
Room	Hall E1
	1.2.2 Source-to-sink sedimentary basin processes
3:00	<i>The late Palaeoproterozoic Glyde package in the greater McArthur Basin, Northern Territory</i> Dr Tim Munson (Northern Territory Geological Survey)
3:15	<i>Long-lived supercontinental-scale source to sink system from Gondwana</i> Dr Sara Morón (The University of Melbourne)
3:30	<i>Basin redox and provenance analysis of the Upper Roper Group, Beetaloo Sub-basin, North Australia</i> Bo Yang (University of Adelaide)
3:45	<i>Towards improved stratigraphy of Proterozoic Basins: Telling the time from a single glauconite grain based on in-situ Rb/Sr dating</i> Dr Juraj Farkas (University of Adelaide)
4:00	<i>An investigation of deepwater sedimentation in submarine canyon and fan on a typical passive margin using stratigraphic forward modelling</i> Li Wan (University of Queensland)
4:15	<i>Zircon provenance of Late Palaeozoic glaciogenic sedimentary rocks in the Troubridge and Arkaringa basins, South Australia</i> Dr Verity Normington (Northern Territory Geological Survey)
	Technical Session 8
Room	Hall E2
	3.1.3 Understanding mineral systems for exploration – from craton to micron scale
3:00	<i>Trace element concentrations in ore minerals: Implications for ore genesis and mineral processing</i> Prof Nigel Cook (The University of Adelaide)
3:15	<i>Multiple sulfur isotopes as indelible tracers of ore-forming processes in magmatic and hydrothermal mineral systems</i> Stefano Caruso (University of Western Australia)
3:30	<i>Platinum group elements to identify sulphide saturation in evolving magmas: Application to the Rio Blanco Cu-Porphyry Deposit, central Chile</i> Yamila Cajal Contreras (The Australian National University)
3:45	<i>Archean sulphur identified in Mesoproterozoic skarn deposits associated with the Olympic Dam iron oxide–copper–gold (IOGC) event</i> Dr Laura Morrissey (University of South Australia)
4:00	<i>Trace element signatures in the Noril'sk-Talnakh deposits as possible indicators for magmatic sulphide prospectivity</i> Dr Louise Schoneveld (CSIRO)
4:15	<i>Zircon composition as a fertility indicator of Archean granites</i> Dr Yongjun Lu (Geological Survey of Western Australia)
	Technical Session 8
Room	Room R1
	1.6 Advances in structural, igneous metamorphic and sedimentary geology
3:00	<i>Technologies for change: How magnetotellurics, geochronology and drilling have revitalised our view of South Australian geology</i> Dr Anthony Reid (Geological Survey of South Australia)
3:15	<i>The misplaced Mesozoic history of eastern Australia is found in Papua New Guinea</i> Dr Robert Holm (Frogtech Geoscience)
3:30	<i>Revised geology of the Central Lachlan Orogen: New insights from the East Riverina Mapping Project</i> Phil Gilmore (Geological Survey Of NSW)
3:45	<i>Devonian twins? The age, stratigraphy and provenance of the Cocoparra and Mulga Downs groups, NSW</i> Steven Trigg (Geological Survey of New South Wales)
4:00	<i>Clues to Broken Hill structural history and geometry from mapped megastructures</i> Barney Stevens (Broken Hill Expertise)
4:15	

Time	Thursday 18 October
	Technical Session 8
Room	Room R2
	3.1.7 Studies on the Thomson Orogen
3:00	KEYNOTE: The Southern Thomson Project Dr Ian Roach (Geoscience Australia)
3:15	<i>New results from the southern Thomson Orogen: Implications for geodynamics and mineral systems in NSW</i> Dr Chris Folkes (Geological Survey of NSW)
3:30	<i>Results of stratigraphic drilling in the southern Thomson Orogen, Queensland</i> David Purdy (Geological Survey of Queensland)
3:45	<i>Geochronology and geochemistry of the Early Devonian Gumbardo Formation: Evidence for Silurian basement rocks beneath the Adavale Basin</i> Pascal Asmussen (Queensland University of Technology)
4:00	<i>Tectono-metamorphic evolution of the southern Thomson Orogen</i> Dr Michael Doublier (Geoscience Australia)
4:15	<i>SHRIMPing beneath the Eromanga Basin: Insights into the evolution of the Thomson Orogen from SHRIMP U–Pb geochronology of basement drillcore</i> Dr Andrew Cross (Geoscience Australia)
	Technical Session 8
Room	Room R5
	3.3.5 Groundwater science for policy development and decision making
3:00	<i>The water budget myth and a resource condition limit approach</i> Dr Roger H Cranswick (Department for Water and Environment)
3:15	<i>New technologies and supporting policies to counteract urban development impacts on groundwater recharge, stormwater discharge and evapotranspiration</i> Dr Peter Dillon (CSIRO Land and Water / Flinders University)
3:30	<i>Optimal multi-objective pumping/injection strategy to mitigate seawater intrusion</i> Dr Yun Yang (Hohai University / Flinders University)
3:45	<i>How to ensure your groundwater science is used in policy development and decision-making</i> Simone Stewart (Department for Environment and Water)
4:00	
4:15	
	Technical Session 8
Room	Room R6
	4.2 Mining geology and geometallurgy
3:00	<i>Is technology helping us?</i> Richard Buerger (Mining Plus Pty Ltd)
3:15	<i>Leveraging seismic acquisition in mining</i> Dr Heather Schijns (BHP)
3:30	<i>Lithogeochemical discrimination of a fractionated sill at Cowal Gold Mine, NSW, and implications for exploration and resource estimation</i> Zachary Murphy (Evolution Mining)
3:45	<i>What is your confidence in your simulated confidence interval?</i> Danny Kentwell (SRK Consulting)
4:00	KEYNOTE: Geostatistics for Mining Geology and Grade Control Dr Bill Shaw (Ore Control)
	Technical Session 8
Room	Room R7
	4.5 Exploration technology: future trends and adoption challenges
3:00	KEYNOTE: MinEx CRC: Addressing future trends and adoption challenges of exploration technology Andrew Bailey (MinEx CRC)
3:30	<i>The challenges associated with new ground-shaking technology: How seismic could be the technological game-changer for miners</i> Dr Greg Turner (HiSeis)
3:45	<i>Magnetic depths to volcanic sills using regional scale data</i> Dr Evren Pakyuz-Charrier (Intrepid Geophysics)
4:00	<i>Targeted inversions of airborne electromagnetic data for mineral exploration</i> Dr Juerg Hauser (CSIRO)
4:15	<i>Surface heat flow measurements: A new window on the subsurface</i> Dr Graeme Beardsmore (Australian Geothermal Association)

Time	Thursday 18 October
	Technical Session 8
Room	Room R8
	5.3 Geoscience, Education and Professional Development (AUGEN Symposium)
3:00	<i>The efficacy of virtual education in undergraduate geoscience units</i> Dr Michael Roach (University of Tasmania)
3:15	<i>Supporting geoscience educators and students – A responsibility of geological surveys?</i> Simone Meakin (Geological Survey of NSW)
3:30	<i>Giving a good grounding, earlier – Exploring methods for geoscience engagement in early childhood</i> Marianne Harvey (MEGMS)
3:45	<i>Engaging students and teachers with Earth Sciences Education – The Earth Science Western Australia Story</i> Jo Watkins (Earth Science Western Australia)
4:00	<i>Problem based learning: A real-world approach for secondary students to solve complex problems using geoscience knowledge and skills</i> Dr Bronte Nicholls (Adelaide Botanic High School)
4:15	<i>Why should Australian schools offer Earth & Environmental Science at senior secondary year levels?</i> Len Altman (Geoscience Pathways Project)
Room	Hall C
4:30	Closing Remarks
5:00	Closing Drinks – Riverbank Promenade

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We look forward to meeting up with you in Adelaide



AGCC Australian Geoscience
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