

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 l'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)										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 15px; background-color: #8B4513; margin-right: 5px;"></td> <td>Theme 1. Understanding the Earth</td> </tr> <tr> <td style="width: 20px; height: 15px; background-color: #DC143C; margin-right: 5px;"></td> <td>Theme 2. Life on Earth – origins and diversity</td> </tr> <tr> <td style="width: 20px; height: 15px; background-color: #FF8C00; margin-right: 5px;"></td> <td>Theme 3. Resources – discovery, development, use and sustainability</td> </tr> <tr> <td style="width: 20px; height: 15px; background-color: #008080; margin-right: 5px;"></td> <td>Theme 4. Applied Geosciences in the 21st Century – innovation, technology and the future</td> </tr> <tr> <td style="width: 20px; height: 15px; background-color: #00BFFF; margin-right: 5px;"></td> <td>Theme 5. Beyond the rocks – Geoscience in our society: current application and future trends</td> </tr> </table>			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
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	Theme 5. Beyond the rocks – Geoscience in our society: current application and future trends										

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: Good Geoscience means more gas; more gas means more clean, reliable and affordable energy 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: The Groundwater Grand Challenge 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: The NVCL in 2030: Development and benefits of building and using the world’s largest public national geological material properties knowledgebase 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> Courtney 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 <ul style="list-style-type: none"> • 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	<p align="center">Big Issues and Ideas in Geosciences Day Introduction</p>
9:00	<p align="center">Smoothing the impact of boom and bust commodity cycles</p> <p align="center"><i>Introduction</i> Dr Allan Trench Professor and MBA Director at University of Western Australia Business School; Adjunct Professor Centre for Exploration Targeting, UWA</p> <p align="center"><i>Success case study: Building an Australian Gold Company via counter-cyclical investments</i> Patrick Walta MD, New Century Zinc</p> <p align="center"><i>Industry track record and big picture: How do we grow above the boom and bust cycle mentality?</i> Prabhav Sharma Partner, McKinsey & Company</p> <p align="center"><i>Innovation management as a means to combat boom/bust cycles</i> Miriam Stanborough Group Manager – Productivity & Innovation, Monadelphous Group Ltd</p> <p align="center">Audience discussion Q&A</p>
10:30	Morning Tea - GeoEXPO - Hall H
11:00	<p align="center">Our energy trilemma options - security, accessibility and sustainability</p> <p align="center"><i>Introduction</i> Dr Bruce Godfrey Chair of Energy Forum, Academy of Technology and Engineering</p> <p align="center"><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</p> <p align="center"><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</p> <p align="center"><i>CCS for Australia – Why and how</i> Dr Noel Simento MD, ANLEC R&D</p> <p align="center"><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</p> <p align="center">Audience discussion Q&A</p>
12:30	Lunch - GeoEXPO - Hall H

Time	Tuesday 16 October
1:30	<p style="text-align: center;">Resource driven development of Northern and Regional Australia</p> <p style="text-align: center;"><i>Introduction</i> Dr Richard Blewett General Manager Mineral Systems Branch, Geoscience Australia</p> <p style="text-align: center;"><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 style="text-align: center;"><i>Revitalising Regional Australia through mining and mineral exploration</i> Warren Pearce CEO, Association of Mining and Exploration Companies Inc.</p> <p style="text-align: center;"><i>The role of government in supporting resource-driven development</i> Dr James Johnson CEO, Geoscience Australia</p> <p style="text-align: center;">Audience discussion Q&A</p>
3:00	Afternoon Tea - GeoEXPO - Hall H
3:30	<p style="text-align: center;">Geoscience education and new modes of communication</p> <p style="text-align: center;"><i>Introduction</i> Professor Iain Stewart Professor of Geoscience Communication, University of Plymouth</p> <p style="text-align: center;"><i>Selling popular science via broadcast media: Challenges with new digital and on-line media landscapes</i> Aidan Laverty Manager Science & EP Catalyst, ABC</p> <p style="text-align: center;"><i>The revolution and future of communicating geoscience</i> Dr Paul Willis CEO, Media Engagement Services</p> <p style="text-align: center;"><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 style="text-align: center;"><i>Geotourism – Interpreting geology for non-specialists</i> Professor Ross Dowling Foundation Professor of Tourism, Edith Cowan University</p> <p style="text-align: center;">Audience discussion Q&A</p>
5:00	<p style="text-align: center;">Big Issues and Ideas in Geosciences Day Synthesis</p>
5:30	<p style="text-align: center;">Posters/Drinks GeoEXPO – Hall H</p>
6:30	<p style="text-align: center;">Invited Functions/Meetings</p>

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 Tasmantid 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 Kernen (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: Current and potential uses for geothermal energy in Australia 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: Bursting Bubbles: Can experiments and analogues help stakeholders and the public visualise risks? 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: Emerging machine learning approaches for mineral prospectivity mapping through space and time 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 Archean '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 Thran (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: Development of Geopark and Geotourism: Experience from Malaysia and Asia Pacific Region 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 Cliff (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: An integrated approach to defining Australia's resource potential 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: 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: Groundwater and Critical Zone Science: Innovation and Transformation 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: Understanding uncertainty in predictive geosciences 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: Emerging technologies for characterisation of slope stability - managing misinterpretation, misuse and over-confidence Dr Marc Elmoultie (CSIRO)
4:00	KEYNOTE: Individual and regional risk assessments of landslides 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	<i>Mineral potential mapping for pre-competitive data delivery in NSW Zone 54</i> Dr Arianne Ford (Kenex Ltd)
10:15	<i>Linking regolith-landform mapping with surface geochemistry in a regolith dominated terrain to inform mineral exploration</i> Alicia Caruso (The University of Adelaide)
10:30	<i>Applying GIS in regional sedimentary basin evaluation studies</i> Ben Jupp (SRK Consulting)
10:45	<i>Complex systems thinking and mineral systems</i> 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	<i>Tasman frontier subduction initiation and Paleogene climate: Preliminary results from IODP Expedition 371</i> Dr Saneatsu Saito (Japan Agency for Marine-Earth Science and Technology)
10:15	<i>The response of the Great Barrier Reef to major environmental changes: lessons from geologic past</i> 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	<i>Why are we still mining coal?</i> David Green (Adamelia Global Pty Ltd)
10:15	<i>Application of a "Best Practices" approach to the Leigh Creek Energy Insitu Gasification Demonstration Project</i> Justin Haines (Leigh Creek Energy Limited)
10:30	<i>CSG Exploration in Queensland</i> Mel Wilkinson (Santos)
10:45	<i>Is coal seam gas dead in SE Asia? Opportunities and impediments</i> Dr Tim Moore (Cipher Consulting Pty Ltd)
	Technical Session 6
Room	Room R5
	3.3.2 New groundwater technologies and approaches
9:30	<i>Hydrogeochemistry of Australia: Providing baselines for Lithology mapping, Mineral exploration, Health and Agriculture</i> Dr Nathan Reid (CSIRO)
9:45	<i>Offshore freshwater: A new freshwater resource or a poorly understood existing freshwater input?</i> Andrew Knight (Flinders University)
10:00	<i>The use of heat as a groundwater tracer</i> Dr Dylan Irvine (Flinders University)
10:15	<i>Addressing conceptual uncertainty through a multi-model approach using bold hypotheses</i> Trine Enemark (CSIRO)
10:30	<i>A stochastic approach to estimating mine dewatering requirements at an open pit mine</i> Keith Brown (Rio Tinto Iron Ore)
10:45	<i>The importance of measuring flows in long-screened or open wells</i> 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 glaciogene sedimentary rocks in the Troubridge and Arckaringa 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



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