

Monday Session 3

3A: Coal

Cameron Bowker

PREDICTING STRUCTURAL PERMEABILITY IN THE DEEP COAL PLAY, TIRRAWARRA-GOORANIE FIELDS, COOPER BASIN

Cameron Bowker has worked in the petroleum industry for 3 years, having joined Santos Ltd. as a graduate reservoir engineer in 2014. He earned a Bachelor of Engineering (Chemical) and a Bachelor of Science (Geology) from the University of Adelaide in 2013. Cameron has an interest in projects which combine engineering and geological principles to deliver new energy resources. This is his focus in his current role in Cooper Unconventional Growth where he has been helping to progress the Cooper Basin Deep Coal Unconventional Gas Play.

Bronwyn Camac

COOPER BASIN DEEP COAL – THE NEW UNCONVENTIONAL PARADIGM: DEEPEST PRODUCING COALS IN AUSTRALIA

Bronwyn has over 25 years' experience in the oil and gas industry as a geologist in both conventional and unconventional resources. Bronwyn has worked for Comalco Exploration Wiltshire Geological Services, Origin Energy, Beach Energy and now Santos Ltd.

Bronwyn gained her PhD in Engineering Science in 2010, which focussed on using numerical modelling methods to predict fractured rock, and maintains interest in this area supervising various post-graduate projects and application of these techniques in unconventional resources. Currently, Bronwyn is the Manager, Cooper Basin Unconventional Growth, responsible for the commercialisation of the Permian Source Rock (Deep Coal) Play.

Brooke Davis

UNDERSTANDING PHOSPHORUS DISTRIBUTION IN COAL: A CASE STUDY FROM THE BOWEN BASIN

Brooke graduated with a BSc. (Hons) from the University of Queensland in 2006. Since graduating, Brooke has worked extensively within the Australian coal mining industry extending more than 9 years in mine geology, exploration and resource modelling and estimation roles. In 2015 Brooke commenced her PhD at the University of Queensland focusing on determining the geological controls on the distribution of P- and F-bearing minerals within coal seams across the Bowen Basin.

3B: West Australian Basins Symposium

Christopher Hurren

Modelling reservoir deliverability within the Northern Beagle Sub-basin, Western Australia

Chris Hurren graduated from the University of Plymouth in 2005 with a BSc (Hons) in Geology. After that he gained an MSc in Petroleum Geoscience from Royal Holloway, University of London in 2007. He started work as a geologist for Star Energy LTD in London before joining BHP Billiton and moving to Perth in 2011. He worked on a variety of both exploration and production projects with in the Exmouth basin, and more recently in the Northern Beagle Sub-basin. He recently moved to Houston and now works in the Gulf of Mexico exploration team.

3B: West Australian Basins Symposium

Amy I'Anson

INFLUENCE OF PERMIAN AND CARBONIFEROUS EXTENSIONAL HISTORY ON THE NORTHERN CARNARVON BASIN AND ITS INFLUENCE ON MESOZOIC EXTENSION

Amy I'Anson and Sam McHarg are PhD students of Chris Elders.

Malcolm MacNeill

NEW INSIGHTS INTO EARLY TRIASSIC RIFTING IN THE NW SHELF HELP EXPLAIN REGIONAL STRUCTURAL STYLES AND ASSOCIATED DEPOSITION MODEL

Malcolm MacNeill currently works at Woodside as a Principal Regional Geoscientist focusing predominantly on the NW Shelf of Australia.

Christopher Paschke

INTERPRETATION OF A PERMIAN CONJUGATE BASIN MARGIN PRESERVED ON THE OUTER NORTHWEST SHELF OF AUSTRALIA

Chris Paschke is a Principal Geologist with BHP Billiton Petroleum. He holds a B.Sc from the University of Miami and a M.Sc. from the University of South Carolina. His started work with Mobil Exploration and Production U.S. in New Orleans, Louisiana. During his subsequent career with ExxonMobil, Chris participated in a variety of exploration and development projects. From 2009-2013, Chris worked with the ExxonMobil Asia/Pacific New Opportunitites Team in Melbourne. Chris joined BHP Billiton in 2014, and has worked NWS exploration for BHP Billiton in Perth from 2015. He is a member of AAPG, PESA, and the Houston Geological Society.

3C: East Australian Basins Symposium

Andrew Black

Borehole Gravity in Horizontal Wells

Potential fields geophysicist with extensive experience in borehole gravity

Andrew La Croix

Paralic Deposits Reveal Sequence Stratigraphic Architecture of the Precipice-Evergreen Succession in the Surat Basin, Queensland, Australia

Andrew completed his Ph.D. at Simon Fraser University in British Columbia, Canada in sedimentology and ichnology. He also completed an M.Sc. at the University of Alberta. In early 2017, Andrew moved to the University of Queensland to undertake a Postdoctoral Research Fellowship as part of the university's Energy Initiative. His work is examining the sedimentology and sequence stratigraphy of the Precipice-Evergreen succession in the Surat Basin with the goal of improving static reservoir modeling and prediction of heterogeneity for CO₂ sequestration.

Klaus Regenauer-lieb

Next Generation Reservoir Engineering

Prof. Regenauer-Lieb leads Petroleum Engineering at UNSW since 2014. He has a track record from world leading institutions comprising the University of Minnesota, the Swiss ETH Zurich, the University of Auckland, the Universities of Mainz and Kiel, the CSIRO and The University of Western Australia. He is well-known in the field of mathematical geophysics having pioneered new techniques for the modelling of shear zones based on fundamental physics, the link between Earth's heat, its chemistry and its mechanical behaviour. He has published >150 peer reviewed papers (>3550 Google Scholar citations, h-factor 33).

Alison Troup

PETROLEUM PLAYS OF THE BOWEN AND SURAT BASINS

Alison Troup graduated from the University of Queensland with a BSc (Hons) in Geology in 2009. She currently works as part of the Petroleum and Gas group in the Geological Survey of Queensland. Since joining the GSQ, she has participated in several regional-scale projects, including the North West Queensland Minerals and Energy Province report and the Coastal Geothermal Energy Initiative. She is currently involved in the regional assessment of Queensland's petroleum potential. She is a member of PESA and FESQ.

3D: Geology Case History

Rob Bills

The Discovery of the Edna Beryl Deposit - A journey with a destination!

Mr Rob Bills – Emmerson Resources Managing Director. Mr. Bills holds a Bachelor of Science degree (Monash University 1984) and a Master of Science (James Cook University 1989). He joined Emmerson Resources in September 2007 after a 25 year career in exploration and mining with Western Mining Corporation (WMC), then BHP Billiton.

Anthony Reed

IMPLICIT MODELLING OF THE LAS BAMBAS DEPOSITS, PERU

Lead technical specialist in 3D Geoscientific implicit modelling at MMG. Focus on the Leapfrog Geo software and develop deposit models that maintain the application of the scientific method in order to further ore-body knowledge. Beginning as a structural mapping geologist from Monash Uni, Joined MMG in 2006 and have progressively developed into the geological modelling role. Keeping abreast of new technologies and tending to be responsible for pushing innovative solutions from within the geology team. Other than implicit modelling, currently developing workflows for the use of drone based photogrammetry, virtual reality and augmented reality for geologists.

David Timms

CARGO PORPHYRY Cu-Au DEPOSIT – WHERE IS THE HIGH GRADE CORE?

David Peter Timms holds BSc (Hons), PEng, FAIG, FAusIMM. Formerly founder of GCR, 1994 – 2006; Manager, Amoco Minerals Australia from 1972 to 1985; Exploration Manager, Cyprus Gold from 1985 to 1990. With Cyprus Gold David Managed teams that discovered 30 mineable deposits including Red Dome, Selwyn- Starra, Moline, Mt McClure, Gold Ridge (Solomon Is) and Dinkidi (Philippines). David is still actively involved in SMEDG activities organising technical talks and networking events for geologists.

3E: Airborne Gravity

James Brewster

Gravity gradiometer design comparison by three different methods

James Brewster has 20 years experience working with gravity gradiometer instruments and their data. In his current role as Senior Scientist at Bell Geospace he is responsible for developing new processing, interpretation and quality control methods. This includes both algorithm and software development. He has a BSc degree in Physics from the University of Bristol, England and a PhD in Materials Science from the University of Tennessee, USA. During post-doctoral fellowships at Oak Ridge National Laboratory and the National Center for Physical Acoustics he published research on heat transfer in high energy acoustic systems.

David Hatch

Validating the Gedex HD-AGG™ Airborne Gravity Gradiometer

David Hatch obtained his M.Sc. from University of Toronto in 1987 and afterwards worked for Paterson, Grant & Watson for 10 years as a geophysical consultant. He moved to South Africa to work for De Beers Consolidated Mines Limited in 1997 as a Senior Geophysicist exploring for diamonds in Africa. David was promoted in 2004 to the position of Chief Geophysicist for De Beers with the main focus being the development of new technologies. In June 2008 David joined the management team at Gedex Inc as the Chief Operating Officer and Chief Geophysicist.

David Howard

AIRBORNE GRAVIMETRY TAKES OFF IN THE WESTERN AUSTRALIA 'GENERATION 2' RECONNAISSANCE GRAVITY MAPPING PROJECT

David Howard has worked in Australia, South America, Europe and Africa during a career that has spanned periods in academia, the mineral exploration sector and government agencies. He is presently Chief Geophysicist in the Geoscience Mapping Branch of the Geological Survey of Western Australia.

Matthew Zengerer

AN OVERVIEW OF TENSORS, GRADIENT AND INVARIANT PRODUCTS IN IMAGING AND QUALITATIVE INTERPRETATION

Matthew Zengerer is the Founder of Gondwana Geoscience, a petroleum and mineral services consultancy. Matthew has a Geoscience degrees from Flinders University and a postgraduate Geophysics degree from the University of Tasmania. He has worked in both field data acquisition and exploration and in processing, modelling and interpretation services since 1998. He has worked for government, mineral, geothermal and petroleum commercial entities and trained and promoted geophysical and geological software to industry across the globe. When he finds the time, he enjoys writing papers and presenting at international conferences.

3F: Electrical Methods

Circe Malo-Lalande

GETTING A BETTER CONTROL OF IP DATASETS WITH GDD'S NEW IP POST-PROCESSING SOFTWARE

Mrs. Circe Malo-Lalande graduated in Geological Engineering from Laval Université (Quebec, Canada) in 2001 and completed a Master degree in Geophysics at Ecole Polytechnique of Montreal in 2003. She joined Abitibi Geophysics acting as Lead TEM geophysicist for 8 years. She then worked for Anglo American Exploration looking after geophysics in Canada and Finland. Since 2015, Circe is General Manager and R&D Director at Instrumentation GDD.

Alan Oertel

NON-LINEAR CONDUCTION IN SULPHIDES

Alan Oertel is a Geophysicist currently in a Voluntary Fellowship position with CSIRO's Manufacturing division. Following graduating from Adelaide University with Honours in Geophysics in 2013, Alan has pursued opportunities in Electrical and EM Geophysics. Alan's Honours thesis consisted of original research using magnetotellurics in the Northern Territory to constrain the geometry of the prehistoric suture between northern and southern Australia. Alan now works on a variety of CSIRO projects, including the detection of nonlinear effects in mineralised rocks as a method of constraining mineralogy of a chargeable target with electrical methods.

Nikhil Prakash

THE EFFECTIVE USE OF FORWARD MODELLING AND PETROPHYSICAL ANALYSES IN THE APPLICATION OF INDUCED POLARISATION SURVEYS TO EXPLORE FOR DISSEMINATED SULPHIDE SYSTEMS IN THE PATERSON PROVINCE, WESTERN AUSTRALIA

Nikhil Prakash is an exploration geophysicist with 5 years of work experience in mineral exploration for Diamond, Iron Ore, Uranium and Copper. He is currently a project geophysicist with Rio Tinto in Australasia region based out of Perth. In his previous roles, he has also managed ground geophysical programmes in India and China.

Bob White

FIELD TRIALS OF THE BIASED HETERODYNE METHOD OF EXPLORATION FOR SULPHIDE MINERALS

Bob White has been practicing the art of geophysics since 1970 with varying degrees of success. For the last 30 odd years he has been consulting to various companies in Australia and overseas.

3G: Regional Gawler Isa Halls Creek

James Hall

Thermochronological history of the northern Olympic Domain of the Gawler Craton; correlations between cooling ages and mineralising systems. James completed his Bachelor and Honours degrees at the University of Adelaide. He is currently studying the thermochronological history of the northern Gawler Craton using apatite fission track, apatite U/Pb, $^{40}\text{Ar}/^{39}\text{Ar}$, and (U-Th-Sm)/He dating for his PhD at the University of Adelaide.

Fariba Kohanpour

MAGMA EVOLUTION IN THE HALLS CREEK OROGEN; INSIGHT FROM GEODYNAMIC NUMERICAL MODELLING AND GEOCHEMICAL ANALYSIS

Fariba received her MSc in Economic Geology from Shiraz University, Iran in the year 2000. She has joined the Centre for Exploration Targeting as a PhD student since January of 2015 to complete a "Multi-scale Mineral System Prospectivity Analysis of the east Kimberley; Insights from Geophysical

and Numerical Geodynamic Modelling". The main objective of the project is to understand the lithospheric architecture, geodynamic triggers through time, and delineate mineral system components and prospective sites of gold and nickel in the region by applying geodynamic numerical modeling, geophysical interpretation, and geochemistry in the context of mineral system analysis.

Janelle Simpson

TECTONIC FRAMEWORK OF THE SOUTHERN MOUNT ISA PROVINCE

Janelle has worked with the minerals team at the Geological Survey of Queensland for 7 years. She started a PhD at Adelaide University focused on inversion and interpretation of magnetotelluric data in 2014 and is nearing completion.

Tom Wise

GEOLOGY, GEOPHYSICS, GEOCHEMISTRY OF A HIDDEN PALAEOPROTEROZOIC OCEAN-CONTINENT TRANSITION IN THE NORTHERN GAWLER CRATON

Tom Wise is a geologist with the Geological Survey of South Australia, specializing in the geological interpretation and synthesis of major geophysical datasets

3H: Groundwater

Alan Aitken

USING MICROGRAVITY TO CHARACTERISE WATER STORAGE AND USAGE AT KINGS PARK, PERTH, WA

Dr Aitken has over 10 years of research experience in geophysics. Topics of research interest include solid earth geophysics, cryosphere geophysics and environmental geophysics. This project seeks to use high-precision gravity data to track environmental changes.

Philip Heath

Microgravity surveys on the Nullarbor

Philip Heath is the Senior Geophysicist (Data Processing) at the Geological Survey of South Australia. Prior to working with the SA Government he worked as processor and operator of the Canadian Micro Gravity CG-1A airborne gravimeter, and prior to that he completed his doctorate in Geophysics at the University of Adelaide.

Titus Murray

UNCERTANTY ANALYSIS OF FAULTING AND FOLDING ON NEAR SURFACE AQUIFERS

Titus is a research structural geologist with extensive experience in regional restoration and characterization of faulted/fractured reservoirs in over 30 countries. He provide technology for oil/gas and ground water industries. Developing algorithms to describe structures and fluidflow. In many cases these algorithms involve looking at outcrops to distill the key geometry and rheological characteristics. Following the development of a probabilistic hydrocarbon exploration software suit, he has started a Research and Development program to develop technology to characterize groundwater flow across and through faults. Much of this work is focused on aquifers impacted by Coal Mining and Coal Seam Gas developments.

Kok Piang Tan

APPLICATION OF MAGNETIC RESONANCE DATA FOR GROUNDWATER PROSPECTIVITY IN THE FITZROY BASIN, WESTERN AUSTRALIA

KP completed his PhD in regolith and Quaternary geology at ANU in 2001 and has since involved in projects interpreting AEM and borehole and surface geophysical information to map groundwater salinity and hydrogeological systems in sedimentary environments. Some of the groundwater investigations include the River Murray corridor, Ord River Irrigation, Northern Territory Coastal Plain and Broken Hill Managed Aquifer Recharged.