

## Tuesday Session 6

### **6A: PNG and NZ**

#### Edward Lewis

##### A METHOD FOR ASSESSING EARTH MODEL UNCERTAINTY IN THE TARANAKI BASIN, NEW ZEALAND

Honours Degree in Geological Sciences from the University of Leeds in 2006. Previously worked for PGS in the UK, and ION in Perth. Currently Geophysical Supervisor in the PGS Perth office, overseeing velocity, anisotropy, FWI and signal processing. Part of the ""Hart E&P Special Meritorious Award for Engineering Innovation"" winning team for PGS hyperBeam in 2010. A fellow of the Geological Society in London, a committee member of Professional Scientists Australia and a member of EAGE, SEG and PESA."

#### Dietmar Müller

Modelling and visualizing distributed lithospheric deformation of Australia and Zealandia using GPlates2.0

Dietmar Müller received his PhD in Earth Science from the Scripps Institution of Oceanography, La Jolla/California in 1993. After joining the University of Sydney he built the EarthByte e-research group, pursuing open innovation involving the development of open-source software as well as regional and global digital data sets. One of the fundamental aims of the EarthByte Group is geodata synthesis through space and time, assimilating the wealth of disparate geological and geophysical data into a four-dimensional Earth model, connecting solid Earth to surface processes. He directs the ARC Basin Genesis Hub as well as the Sydney Informatics Hub.

### 6B: International

#### **Andrew Fernie**

##### THE DISCOVERY AND DEVELOPMENT OF OIL RIM FIELDS IN THE BEIBU GULF, CHINA

Andrew Fernie holds a combined BSc in Petroleum Engineering and Geology from the University of Adelaide and an MSc from Heriot-Watt University. He has six years experience working for Horizon Oil, starting out as a Development Geologist in Papua New Guinea where he was involved in the drilling planning and field evaluation and appraisal. Since 2014 he has worked as a Reservoir Engineer where he is predominantly involved in monitoring, reserves reporting and development planning on Horizon's assets in China and New Zealand. Andrew is the Vice-President and Secretary of the local NSW/ACT SPE Chapter.

#### **Lisa Tannock**

##### On the Geothermal Potential of the Heyuan Fault, South China

Since completing her BSc in Geoscience at the University of Aberdeen, Lisa has worked for four years in the E&P industry. An aspiration to diversity into geothermal energy arose while studying her MSc in Volcanology and has grown into the fundamental research interest of this PhD; understanding fault structures and fracture mechanics to develop geothermal energy using an approach which utilises reservoir mechanisms to enhance permeability without compromising ground stability. Lisa joined the Unconventional Geomechanics Group at UNSW due to the interdisciplinary nature of the team, allowing her to work across the fields with support in geology, engineering and mechanics.

## 6C: Non Conventional

### **Ankita Singh**

#### NEW GENERATION RESERVOIR SIMULATORS: A HUNT FOR UNCONVENTIONAL GAS

Ankita Singh is a PhD student with the Unconventional Geomechanics Group at the School of Petroleum Engineering at UNSW, Sydney. She received her Bachelor's degree from the School of Petroleum Engineering in 2016. She has received the Australian Government Research Training Program Scholarship for her PhD. Her PhD will focus on developing a simulation code which can model multiphase flow coupled with geomechanics in Unconventional Reservoirs.

### **David Titheridge**

#### THE USE OF CORING INDUCED PETAL FRACTURES IN COAL TO SUPPLEMENT AND GROUND TRUTH THE INTERPRETATION OF ACOUSTIC AND RESISTIVITY IMAGE LOGS.

David Titheridge is a coal geologist with many years of experience in coal and CBM exploration, as well as underground coal mining. His background is in coal petrology and sedimentology. His current interests are fractures in coal and coal measure rocks.

## 6D: Geochemistry

### **Ryan Noble**

#### 21ST CENTURY EXPLORATION GEOCHEMISTRY – THE GOOD, THE BAD AND THE UGLY

Ryan is a Principal Research Scientist with CSIRO. He has a BSc and MSc in Soil Science from the University of Tennessee and a PhD in Applied Geology from Curtin University. Following his PhD, Ryan joined CSIRO 12 years ago and has worked on numerous regolith and groundwater geochemistry projects related to gold, base metal, Ni and U mineral exploration. Ryan is the President and a Fellow of the Association of Applied Geochemists, a member of the Geoconferences WA subcommittee and serves on the Board of Earth Science Western Australia.

## 6E: Sands and Industrial

### **Graham Lee**

#### HIGH-GRADE SILICA SANDS IN THE EASTERN MURRAY BASIN NSW

Graham Lee is a geologist working with Industrial Minerals and Construction Materials. He started as an under-graduate with ACI testing and evaluation glass raw materials, later moving to Peter H Stitt & Associates where Graham worked on mineral sands, cement raw materials, clay, and dense media magnetite projects to name a few. About 20 years back Graham established his own consultancy, he continued with industrial minerals, but has also had the opportunity to undertake some large construction material assignments.

### **Murray Lines**

#### Frac sand supply & demand Australia

Murray Lines is the Founding Director of Stratum Resources Consulting Group, an independent minerals consultancy providing information, supply / demand analysis to the mining industry. His background is as a geologist, involvement in exploration, mine planning & processing across a range of minerals such as coal, talc, carbonates, graphite, silica sands, high purity quartz for solar glass &

specialties such as polysilicon crucibles etc. technical / marketing presentations globally over a period of 25 years. He has worked on assignments for a wide range of companies on silica sand, quartz & lime projects around Asia for more than 20 years. "

#### 6F: EM Inversion Modelling

##### **Mike McMillan**

#### LARGE SCALE 3D AIRBORNE ELECTROMAGNETIC INVERSION – RECENT TECHNICAL IMPROVEMENTS

Dr McMillan received his PhD from UBC in 2017 on parametric and cooperate large-scale airborne electromagnetic inversion. He has worked with Computational Geosciences Inc. since 2013 and before that spent 5 years as a project geophysicist for Newmont Mining. When not geophysicating, Mike can be found running ultra-marathons and competing in triathlon."

##### **Xiuyan Ren**

#### 3D TIME-DOMAIN AIRBORNE EM INVERSION WITH FINITE-VOLUME METHOD

Xiuyan Ren, PHD student in Jilin University and joint-trained student in RMIT University. Her research focus is the time-domain electromagnetic forward modeling and inversion theory and applications, especially the numerical algorithms based on the finite volume simulation and different acceleration techniques. She has submitted and published 11 papers about the electromagnetic theory and applications.

#### 6G: Regional Cobar

##### **Vladimir David**

#### COBAR DEPOSITS – STRUCTURAL CONTROL

Vladimir has more than 27 years experience in mineral exploration and mining industry, as well as in research institutions and government offices. During his employment, he hold different responsibilities such as Unit Manager, Chief Geologist, Executive Director Exploration, Principal Geologist, Principal Consultant, Team Leader, Senior Geologist, Geophysicist and Mine Geologist.

My experience is in design and management of mineral exploration strategies and activities from project generation - grass roots to the advanced prospects stage and pre-feasibility studies. My skills include: ground selection; design and interpretation of geophysical and geochemical surveys; design and supervision of major drilling programs and pre-feasibility studies. "

##### **Joel Fitzherbert**

#### METAMORPHISM AND MINERALISATION IN THE COBAR BASIN: IMPLICATIONS FOR EXPLORATION

Joel Fitzherbert completed undergraduate studies in geology at La Trobe University followed by later post graduate studies at The University of Sydney. Joel's post graduate studies focused on field mapping and mineral equilibria studies on high-pressure blueschist-eclogite and granulite terranes in New Caledonia and New Zealand. Joel has worked for the Geological Survey of New South Wales for the past 10 years, initially as a regional mapper working on Silurian basin sequences in eastern New South Wales, and more recently metallogenic mapping through the Broken Hill and Cobar regions of western and central New South Wales.

## 6H: Innovation

### **Trent Bowman**

SOURCE ASSISTED MARINE REFRACTION MICRO-TREMOR (REMI) FOR MARINE MATERIAL STRENGTH ASSESSMENTS- NEW IRELAND PROVINCE, PAPUA NEW GUINEA

Since graduating from Macquarie University with a Bachelor of Science (Honours) in 2011 Trent has been working full time as a Geophysicist for GBG Australia based in Sydney Australia. This role has exposed him to a broad range of geophysical techniques and processes within the near surface and engineering sectors. In addition to his Bachelors degree Trent completed his Masters in Science in Geoscience in 2016.

### **Brian McPherson**

Bootstrapping reliable noise measure in time-gated nuclear magnetic resonance data

Trevor Irons is a research professor in the Department of Civil & Environmental Engineering at the University of Utah. His research interests include multiphysics modelling and inversion, high performance computing, and numerical methods. Applications in which he is engaged in include near surface hydrology, permafrost studies, and carbon capture and sequestration.