

## Tuesday Session 5

### 5A: PNG and NZ

#### **Gilles Brocard**

##### PLIO-PLEISTOCENE RIVER DRAINAGE EVOLUTION IN NEW GUINEA

Gilles Brocard is a researcher in geomorphology and tectonics. He has conducted research on river drainage development, river long profile changes, cosmogenic  $^{10}\text{Be}$  and  $^{26}\text{Al}$  dating, neotectonics, paleoseismicity and geodynamics in various settings (most notably Alps, Turkey, Puerto Rico, Guatemala), through various post doctoral positions in France, Switzerland, and the United States, successively at the universities of Grenoble, Rouen, Minnesota, Lausanne, and Pennsylvania. His current research at the University of Sydney aims at understanding landscape evolution along Australia's North West Shelf and in New Guinea.

#### **Kevin Hill**

##### COMPRESSSIONAL EVOLUTION OF THE PNG MARGIN ILLUSTRATED BY AN OROGENIC TRANSECT FROM JUHA TO THE SEPIK

Kevin is a structural geologist who has over 30 years' experience in industry and academia. He worked for BP in Canada and London in their structural specialists group and completed a PhD on the PNG fold belt. He has taught at La Trobe and Melbourne Universities and consulted with many companies in Australia and SE Asia. Kevin has worked for the last 10 years with Oil Search Ltd and now teaches courses throughout SE Asia, consults with 3D-Geo and carries out research with the Basin Genesis Hub at the University of Melbourne.

#### **Maria Seton**

Geophysical and geological characterisation of dredge locations from RV Southern Surveyor voyage ss2012\_v06 (ECOSATI): hotspot activity in northern Zealandia

Maria Seton is an ARC Future Fellow from the EarthByte Group, School of Geosciences, University of Sydney and is a member of the Basin Genesis Hub (BGH). She obtained her PhD in 2005, was awarded an Australian Postdoctoral Fellowship in 2009 and a Future Fellowship in 2013. She has a long-standing research interest in the tectonic evolution of the SW Pacific, including Zealandia and the surrounding ocean basins and in 2012 was Chief Scientist on a research voyage to the eastern Coral Sea. In 2014, Maria was awarded the Dorothy Hill Award from the Australian Academy of Sciences.

### 5B: West Australian Basins Symposium

#### **David Long**

##### THE UNGANI OIL FIELD, CANNING BASIN - EVALUATION OF A DOLOMITE RESERVOIR

David joined Buru in July 2013 and has 28 years of technical and managerial experience with Shell International, Premier Oil and PDO located in the UK, Eastern Europe, Pakistan, Netherlands, Indonesia, and Oman. On emigrating to Australia in 2004, He spent six years with Woodside working on international and Australian exploration opportunities, and two years with Apache on Asia new business. In addition to seismic interpretation and regional geological evaluations, David held roles in seismic acquisition, quantitative interpretation, field development and heavy oil steam injection tertiary recovery. He is Geophysicist with a masters degree from Imperial College, London.

## **June Then**

Depositional, diagenetic and mineralogical controls of porosity development in the Ungani field, Canning Basin

June Then is an Exploration Geoscientist who is still in the early days of her career. She graduated with a Bachelor of Science in Applied Geology from Curtin University in 2011. The first few years of her career was spent interpreting and integrating vast expanses of seismic and geological data from the Northwest Shelf, Gippsland and Offshore Taranaki Basin with Octanex NL. She subsequently joined Buru Energy Limited in mid-2015 and has since been involved in an eclectic range of projects on the Canning Basin.

## 5C: Non Conventional

### **Tim Dean**

#### A NEW SYSTEM FOR EFFICIENTLY ACQUIRING VERTICAL SEISMIC PROFILE SURVEYS

Tim has an Honours degree in Geophysics from Curtin University and a PhD in Physics from the University of New South Wales. He spent more than twelve years working for WesternGeco and Schlumberger in a variety of roles related to surface and borehole seismic acquisition including field operations, software development and research located in Saudi Arabia, England, Norway and Australia. After leaving Schlumberger he worked as a sports technology Project Advisor at Hawk-eye innovations (a division of Sony). He joined Curtin Universities Department of Exploration Geophysics as a Research Fellow in August 2016.

### **Raymond Johnson**

#### WHAT WE KNOW, WHAT WE DON'T KNOW, AND THINGS WE DO NOT KNOW WE DON'T KNOW ABOUT HYDRAULIC FRACTURING IN HIGH STRESS ENVIRONMENTS

Prof Ray Johnson, Jr. is presently Professor of Well Engineering and Production Technology at the University of Queensland, Principal at Unconventional Reservoir Solutions, and serves as Adjunct Associate Professor at the University of Adelaide. He has a PhD in mining engineering, a MSc in petroleum engineering, a Graduate Diploma in Information Technology, and a BA in Chemistry. Ray is an active member of the Society of Petroleum Engineers (SPE), SPWLA, PESA, AusIMM and AAPG. He has over 36 years of experience in reservoir geomechanics, hydraulic fracture design execution and evaluation, and unconventional resource development.

### **Gordon Stove**

#### NEW METHOD FOR MONITORING STEAM INJECTION FOR EOR & FINDINGS SOURCES OF GEOTHERMAL HEAT

Co-founder & Managing Director, Adrok Ltd. ([www.adrokgroup.com](http://www.adrokgroup.com))

Goal: To develop and implement innovative technologies to help find hydrocarbons and minerals vital to the world's health and welfare.

Gordon is a graduate from the University of Edinburgh (reading Geography) and has over 10 years' experience in developing and applying geoscience technologies. He is co-founder and shareholder of Adrok Ltd and since Adrok's inception Gordon has managed technology developments and the company's global services business.

LINKEDIN Profile: [uk.linkedin.com/pub/gordon-stove/12/7b4/69b/](https://uk.linkedin.com/pub/gordon-stove/12/7b4/69b/)

### **Raymond Johnson**

#### THE ROLE OF DIAGNOSTIC FRACTURE INJECTION TESTING TO IMPROVE RESERVOIR EVALUATION AND STRESS CHARACTERISATION IN COMPRESSIVE STRESS REGIMES

Prof Ray Johnson, Jr. is presently Professor of Well Engineering and Production Technology at the University of Queensland, Principal at Unconventional Reservoir Solutions, and serves as Adjunct Associate Professor at the University of Adelaide. He has a PhD in mining engineering, a MSc in petroleum engineering, a Graduate Diploma in Information Technology, and a BA in Chemistry. Ray is an active member of the Society of Petroleum Engineers (SPE), SPWLA, PESA, AusIMM and AAPG. He has over 36 years of experience in reservoir geomechanics, hydraulic fracture design execution and evaluation, and unconventional resource development.

#### 5D: General Geology

### **Thomas Poulet**

Episodic mineralising fluid injection through chemical shear zones

Thomas Poulet graduated in 2000 from the Ecole Polytechnique (France) and in 2002 from the French National School of Telecommunications. Since joining CSIRO in 2003 he has been working on various projects aiming at transforming mineral deposits' formation understanding from a qualitative to a quantitative and predictive science, leading to a PhD in geology on modeling multi-physics geological processes at the University of Western Australia in 2012. He has also been involved in geothermal research and petroleum engineering. His current research activities focus on multiphysics instabilities in porous media.

#### 5E: Strategic and Industrial

### **John Holmes**

The Pilgangoora Lithium-Tantalum Deposit - Geological overview and evolution of discovery

Mr Holmes is an accomplished Geologist with over 25 years experience in the mineral exploration industry ranging from early stage exploration through to resource definition, project acquisition, Exploration Management and Executive roles. He has a wealth of experience in precious metal, base metal, coal and technology metals projects throughout Australasia, Canada, and South America. Prior to joining Pilbara Minerals Limited, John spent 7 years as Founding and Managing Director of ASX listed junior explorer Jameson Resources Limited. As Exploration Manager for Pilbara Minerals Limited, he has responsibility for the day-to-day management of the Companies exploration and project evaluation activities

### **Ian Pringle**

#### MINERAL DEPOSITS IN THE ONTARIO COBALT BELT

Dr. Ian Pringle is a Sydney based consulting Minerals Exploration Geologist with several decades of experience in gold, silver and base metal exploration. During the last ten years his work has focussed on cobalt mineralisation and supply of cobalt to the growing lithium-ion battery market. Ian is Technical Director of Battery Mineral Resources Limited.

## **David Turvey**

Industrial Minerals - Evaluation and Profitability

David Turvey is an economic geologist with >30 years experience in evaluation and investment in precious metal, specialty metal and industrial mineral projects, especially in the Asia-Pacific region.

### 5F: EM Inversion Modelling

## **Wenping Jiang**

TRANS-DIMENSIONAL MONTE CARLO INVERSION OF SHORT PERIOD MAGNETOTELLURIC DATA FOR COVER THICKNESS ESTIMATION.

Dr Wenping Jiang is a Senior Geoscientist at Geoscience Australia. She has diverse experience in numerical modelling of hydrodynamics, groundwater systems and geophysical data inversion. Currently Wenping is working on magnetotelluric data processing and inversion including 1D, 2D and 3D modelling approaches. She has been involved in a number of MT projects since she joined the Mineral Systems Branch in Geoscience Australia.

## **Alan Ley-Cooper**

SPATIALLY AND CONDUCTIVITY LOG CONSTRAINED AEM INVERSION

Dr Alan Yusen Ley-Cooper is a senior airborne EM geophysicist at Geoscience Australia. Yusen has advised industry, government and foreign agencies on AEM survey design, data acquisition, processing, inversion products and uncertainty quantification. He has provided geophysical advice for several projects on the application of AEM. Yusen has extensive experience in the use AEM and dealt with surveys flown worldwide. He looks at new ways of integrating geophysical survey data with geology and other data sources. He uses inversion theory and its derivations as a tool to understand AEM instrumentation and measurements and, interpretations of data.

## **Timothy Munday**

1, 2.5 AND/OR 3D INVERSION OF AIRBORNE EM DATA - OPTIONS IN THE SEARCH FOR SEDIMENT-HOSTED BASE METAL MINERALISATION IN THE MCARTHUR BASIN, NORTHERN TERRITORY

Tim Munday is a Research Group Leader in CSIRO Mineral Resources. He leads a research grouping concerned with the development and application of geophysical technologies for exploration through cover. He has over 20 years' experience in the application of geophysical methods for the characterisation and exploration through and beneath cover, and in groundwater resource assessment. He firmly believes both are inextricably linked areas of study.

## **Wolfgang Soyer**

Comparative Analysis and Joint Inversion of MT and ZTEM Data

Graduation in physics in Gottingen, Germany (1998). PhD at the FU Berlin (2002) on EM induction studies in the Central and Southern Andes, with focus on MT array data analysis and anisotropy. Postdoc in Edmonton, Canada (2002-2005, Magnetotellurics in the Cascadia and on the US nuclear test site on Amchitka Island).

Since 2005: twelve years in industry with Geosystem, Schlumberger, Fugro and now CGG: Acquisition, processing, modeling and interpretation of land, marine and airborne EM (MT, TDEM, CSEM), gravity

and gradiometry data sets for the oil & gas, geothermal and mining industry worldwide, with integration of ancillary data.

#### 5G: Regional Mapping & Thomson Orogen

##### **James Goodwin**

Estimating Cover Thickness in the southern Thomson Orogen – A comparison of applied geophysics estimates with borehole results

James Goodwin graduated with a B.Sc. (Hons) from Monash University before joining Geoscience Australia as a Geophysicist. Recently he has led the acquisition, processing and interpretation of applied geophysical methods to assess cover thickness and inform stratigraphic drilling in the southern Thomson Orogen (outback NSW and QLD). James is also the President of the ACT Branch of the Australian Society of Exploration Geophysicists.

##### **Alan Yusen Ley-cooper**

AusAEM; ACQUISITION OF AEM AT AN UNPRECEDENTED SCALE

Dr Alan Yusen Ley-Cooper is a senior airborne EM geophysicist at Geoscience Australia. Yusen has advised industry, government and foreign agencies on AEM survey design, data acquisition, processing, inversion products and uncertainty quantification. He has provided geophysical advice for several projects on the application of AEM. Yusen has extensive experience in the use AEM and dealt with surveys flown worldwide. He looks at new ways of integrating geophysical survey data with geology and other data sources. He uses inversion theory and its derivations as an tool to understand AEM instrumentation and measurements and, interpretations of data.

##### **Ian Roach**

APPLICATION OF AEM FOR COVER THICKNESS MAPPING IN THE SOUTHERN THOMSON OROGEN

Ian Roach is the Southern Thomson Project activity leader at Geoscience Australia, coordinating the collaborative project work between GA, the GSNSW and the GSQ. Ian commenced his career in gold mining at Mount Magnet before joining the Bureau of Mineral Resources as a geophysics technical officer. Ian then gained his PhD at the University of Canberra. Ian held lecturing positions at the Australian National University and University of Canberra as part of CRC LEME, where he taught regolith mineral exploration techniques to university students and industry. Ian joined Geoscience Australia in 2008 to develop geology-from-geophysics products from airborne electromagnetic data.

#### 5H: Groundwater Case Studies

##### **Michael Carroll**

Geophysical investigation to support characterisation of structurally controlled groundwater flow into an open pit mine

Michael is a hydrogeologist with 10 years' experience. He graduated with a First Class Honour's Natural Resources Engineering degree from Canterbury University, and consulted to a number of industry and government institutions in Australia and abroad prior to completing his Master's degree in Hydrogeology from the University of Western Australia. Michael specialises in hydrogeological characterisation and mine water management; he has worked the past seven years at Fortescue Metals Group, managing projects relating to mine development, dewatering and water supply activities in the Pilbara Region of Western Australia.

**Katarina David**

A MULTIDISCIPLINARY STUDY OF GROUNDWATER CONDITIONS IN A STRUCTURED ROCK MASS, CASE STUDY THIRLMERE LAKES

Katarina is a hydrogeologist with over 20 years experience in industry, research, consulting and government organisations. She has worked across various projects such as water supply, mining, infrastructure and agriculture. Katarina is currently working as a groundwater researcher at UNSW.

**Aaron Davis**

Rate of success for a groundwater drilling program planned from AEM, Gascoyne River, WA

Aaron is a research scientist at CSIRO based in Perth, WA. He specialises in electromagnetic applications for groundwater exploration and detection.

**Camilla Soerensen**

UNCOVERING THE MUSGRAVE PROVINCE IN SOUTH AUSTRALIA USING AIRBORNE EM

Camilla Soerensen is a Senior Research Scientist in CSIRO Mineral Resources. Her main areas of interest lie with the application of geophysical methods for exploration through cover. It is particularly important to her to ensure that geophysical models are geological sensible, and she enjoys taking a multidisciplinary approach to addressing this challenge.