

Wednesday Session 8

8A: New Technology – Seismic

Tim Dean

METHODS FOR REDUCING UNWANTED NOISE (AND INCREASING SIGNAL) IN PASSIVE SEISMIC 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.

Andrew Long

LEAST-SQUARES WAVE-EQUATION MIGRATION

After starting his career with a few years in land seismic acquisition and processing, Andrew Long completed a Ph.D. at UWA in Australia and worked as a Post-Doctoral Research Affiliate at Stanford University before joining PGS in 1997. He is now is Chief Scientist for Geoscience & Engineering, with interests in most areas of seismic technology and the interpretation of geophysical data.

James Shadlow

Quantitative Interpretation: Use of seismic inversion data to directly estimate hydrocarbon reserves and resources

James graduated from UNSW in 2006 with a Bachelor of Science (Honours), majoring in geology and physics. Whilst studying James joined AWE and continued there following graduation, working on assets and new ventures in Australia, New Zealand and SE Asia. James joined KUFPEC in 2013 and currently works on new ventures, exploration, development and production projects.

He is a member of the SEG, EAGE and PESA

8B: New Technology - CO2

Julia Correa

3D VERTICAL SEISMIC PROFILING ACQUIRED USING FIBRE-OPTIC SENSING DAS – RESULTS FROM THE CO2CRC OTWAY PROJECT

Julia Correa holds a BSc in Geophysics from Fluminense Federal University, Brazil, and is currently a Ph.D. candidate in Exploration Geophysics at Curtin University. Before starting her doctorate studies in 2015, she worked as a Field Geophysicist on seismic acquisition and processing projects offshore Africa. Julia is currently working on the applications of fibre-optics sensing DAS.

Anton Egorov

ROCK-PHYSICS BASED TIME-LAPSE INVERSION IN DELIVERY4D: SYNTHETIC FEASIBILITY STUDY FOR CO2CRC OTWAY PROJECT

Stanislav Glubokovskikh is a Research Fellow at Curtin University.

Anton Egorov

APPLICATION OF TIME-LAPSE FULL WAVEFORM INVERSION OF VERTICAL SEISMIC PROFILE DATA FOR THE IDENTIFICATION OF CHANGES INTRODUCED BY CO₂ SEQUESTRATION

Anton Egorov is a PhD student at Curtin University and Lomonosov Moscow State University.

Julie Pearce

GEOCHEMISTRY OF STORING CO₂ AND NO_x IN THE DEEP PRECIPICE SANDSTONE

Julie Pearce is working on integrating high resolution core characterization, experiments at reservoir conditions, and geochemical modelling to understand reactions occurring during geological carbon storage. She has most notably studied the impacts of impurities including SO_x, O₂, and NO_x in the CO₂ stream which may be present from coal combustion sources. Prior to this, Julie studied chemical reaction dynamics by spectroscopic methods in the UK, and subsequently was awarded a JSPS fellowship for field measurement of stable isotopes of CO₂ in the atmosphere in Japan.

8C: Central Australian Basins Symposium

Jordan McGlew

Reservoir Modelling, Structural History and Volumetrics of the Jerboa Area, Eyre Sub-Basin

Jordan McGlew is currently working on various exploration projects at Carnarvon Petroleum and previously has worked at Santos and ffa GeoTeric. Jordan obtained a B.Sc from Curtin University in 2015, majoring in Applied Geology and Environmental Biology, followed in 2016 by an Applied Geology Honours (First Class) degree in Petroleum Geology. During her Honours year she represented Curtin University as a member of the 2016 AAPG Imperial Barrel Award (IBA) team. She is an active member of AAPG and PESA. Jordan is currently the AAPG Young Professionals Lead for Australia and a member of the PESA Federal sub-committee for Education.

Johann Soares

Evolving Exploration Methods in the Hydrocarbon Play Within the Patchawarra Formation on the Western Flank, Cooper Basin

Johann Soares is a geologist with 15 years experience in the exploration side of the business. Graduated from Keele University (BSc); and Imperial College London (Petroleum Geoscience MSc) in 2001. Since then have worked on most of the Petroleum Basins in NW Europe and some of the East African and Asian Basins. Most recently, working on the Cooper Basin with Beach Energy in South Australia.

Bronwyn Teece

STROMATOLITE CONSTRUCTION, BIOFACIES AND BIOMARKERS IN THE LOWER CAMBRIAN HAWKER GROUP, ARROWIE BASIN, SOUTH AUSTRALIA

I'm currently a Masters of Reserach candidate at Macquarie University. My background is biology based, but I recently transferred into the department of Earth and Planetary Sciences. My Masters thesis examines the geochemistry, and palaeobiology, of microbialites in the Cambrian Era. My particular passion are; stromatolites, biogenicity requirements, bacterial interaction with sediment, ocean conservation, plastics, and early life.

Laurent Langhi

TERTIARY DEEP-WATER CORAL SUPPORTS COLD SEEPS IN THE CEDUNA SUB-BASIN

Laurent is Principal Researcher with CSIRO Energy. His work mostly focuses on structural geology, geological modelling, trap integrity, fluids migration, seismic interpretation, QI and geomechanics. He has been working on conventional and unconventional plays, CCS and water management.

8D: History

David Annetts

Ten years in the wild: The P223 experiment

David Annetts has been with CSIRO since 2007. A forward-modeller by inclination, he has researched the application of frequency and time-domain electromagnetic prospecting methods to marine CSEM, CO2 sequestration, uranium and groundwater exploration, and maintains interest in CSIRO's Bayesian Lithological Inversion initiative.

Ken Witherly

QUEST FOR THE HOLY GRAIL; BHP'S GEOPHYSICAL RESEARCH PROGRAM 1985-2005

Ken Witherly graduated from UBC (Vancouver Canada) with a BSc in geophysics and physics in 1971. He then spent 27 years with the Utah/BHP Minerals company during which time as Chief Geophysicist, he championed BHP's programs in airborne geophysics which resulted in the development of the MegaTEM and Falcon technologies. In 1999, Ken helped form a technology-focused service company that specializes in the application of innovative processing and data analysis to help drive the discovery of new mineral deposits

8E: Geophysical Case History

Jean Legault

Airborne geophysics over the Dolly Varden VMS and low sulphidation epithermal silver deposits, BC, Canada

Jean Legault is a 30 year professional mineral exploration geophysicist who has worked in the airborne and ground geophysics contracting and consulting sectors since 1985. He obtained a BASc in geological engineering (geophysics) in 1982 from Queen's University and his MScA in mineral engineering (geophysics) at Ecole Polytechnique in 2005. After 5 years with Sagax Geophysics (Montreal CAN) and 18 years with Quantech Geoscience (Toronto, CAN), he joined Geotech (Aurora, CAN) in 2008 where is chief geophysicist. He provides technical support to sales & marketing and his primary area of interest is airborne EM methods applied to geologic targeting.

Ben Patterson

CONSTRAINED 3D MODELLING AND GEOCHEMICAL ANALYSES OF THE HORSESHOE RANGE BIF: TOOLS FOR EVALUATING MAGNETIC SIGNATURES UNDER COVER

Ben graduated from Macquarie University with a BSc in geology & geophysics in 2013 and went on to complete an MSc in geophysics in 2014 focussing on mineral exploration projects and rock magnetism. After completing his studies, Ben worked as a field geophysicist and crew leader at Fender Geophysics undertaking EM, IP and magnetic surveys before joining CSIRO as a junior geophysicist in mid-2015 to

work on the Uncover Cloncurry project. Ben remains with the CSIRO carrying out palaeomagnetic and geophysical research projects as part of the Multiphysics team.

Andrea Viezzoli

COMPARING RESPONSES FROM DIFFERENT AEM SYSTEMS AND DERIVED MODELS AT THE SUNNYSIDE NICKEL PROJECT, BOTSWANA

Andrea Viezzoli earned his Bachelor in Physics at Bologna University (Italy). He moved to the field of Geophysics and earned a Ph.D. from Monash University. It wasn't till he joined as Post Doc the hydrogeophysics group at Aarhus University that we really sank his teeth into AEM. He then left academia to manage Aarhus Geophysics Aps, where he focuses on virtually all aspects of AEM. Beside consultancy, he still finds time for R&D. The last couple of years saw him joining his two main research interests, working on modelling AEM data affected by IP for different applications.

Chris Wijns

WHAT IS ZTEM SEEING OVER THIS TROPICAL PORPHYRY?

Chris Wijns has been the Group Geophysicist since 2008 for First Quantum Minerals Ltd, a global copper and nickel miner. After working in gold exploration in West Africa, he moved to Australia in 1999 and completed a PhD in 2004 at UWA. He has enjoyed working inside sizeable companies for the opportunity to have constant interaction with geologists, geochemists, and assorted engineers.

8F: Hardrock Seismic

Frank Bilki

The rise of 3D seismic in hardrock mineral exploration

Frank Bilki is a geologist and GIS/Remote Sensing analyst, and is currently Technical Product Manager for the Micromine exploration and mining application.

Andrej Bona

DISTRIBUTED ACOUSTIC SENSING FOR MINERAL EXPLORATION: CASE STUDY

Andrej Bona received his MSc in theoretical physics from Czech Technical University in Prague in 1997, and PhD in applied mathematics from University of Calgary in 2002. From 2002 to 2003 he was a post-doctoral fellow at Memorial University in Canada, where he subsequently worked as assistant professor till 2007. He is currently associate professor and Head of Department of Exploration Geophysics, Curtin University. His research interests include seismic anisotropy and imaging. He is an associate editor for Geophysical Prospecting and member of SEG, EAGE and ASEG.

Anton Egorov

POTENTIAL OF FULL WAVEFORM INVERSION OF VERTICAL SEISMIC PROFILE DATA IN HARD ROCK ENVIRONMENT

Anton Egorov is a PhD student at Curtin University and Lomonosov Moscow State University.

Greg Turner

FAST-TRACKING GOLD EXPLORATION BELOW 300M - 3D SEISMIC CASE HISTORY FROM DARLOT GOLD MINE

Greg Turner is currently a Principal Geophysicist at HiSeis. He graduated with a BSc(Hons) in Earth Science from Monash University in 1987 and received a PhD from Macquarie University in 1994. His previous roles have included being Geoscience Manager for WMC's Technology Group and a co-founder of the Geoforce geophysical service company .

8G: Groundwater

Jared Abraham

Impact of Airborne Electromagnetic (AEM) surveys in groundwater management in the Lower Platte South Natural Resources District, Nebraska, USAMr.

Jared D. Abraham is a Principal Geophysicist with Aqua Geo Frameworks, LLC in Mitchell, Nebraska. Over the past 25 years, his research has focused on the application of geophysical techniques for mapping water, energy, mineral resources, and engineering and environmental problems. His research interests include the use of airborne geophysical survey techniques to construct 3-D geological and hydrological framework models. Mr. Abraham received his Masters in Science in Geophysics from the Colorado School of Mines in 1999. He received his Baccalaureate in Science in Geology from Mesa State College in 1994.

Timothy Munday

RESOLVING CHANGES TO FRESHWATER LENS SYSTEMS IN A "SEA OF SALINITY" USING MULTI-DATE AIRBORNE EM

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

Andi Pfaffhuber

STRETCHING AEM NEAR-SURFACE RESOLUTION LIMITS RELATED TO LOW- AND VERY HIGH RESISTIVITY CONTRASTS

I'm formally trained as an applied geophysicist and over the years have grown enthusiastic about innovation in geoscience and the leadership of highly skilled individuals. I am building on 15+ years of experience with active and passive electromagnetic airborne, marine and terrestrial methods and their application and development for near-surface and unconventional targets. I spend most of my time doing business development, project and team leadership, scientific consulting, feasibility studies, method assessment, and survey planning-supervision-interpretation and really enjoy it.

8H: Groundwater

Donna Cathro

UTILIZATION OF AEM METHODS FOR COST-EFFECTIVE MAPPING OF SHALLOW NEOGENE INTRA-PLATE FAULT SYSTEMS IN EASTERN AUSTRALIAN COAL SEAM GAS BASINS

Donna recently joined the Groundwater Branch of Geoscience Australia as a Basin Analyst. Prior to this role she spent many years working with Frogtech Geoscience within the Basins and Geospatial teams and in the Petroleum and Marine Division of Geoscience Australia. Donna has experience that spans basins the globe including India, Africa, USA and Australia, with projects relevant to the

hydrocarbon, CCS, geothermal and water sectors. She received a PhD from the University of Texas, Institute of Geophysics (Austin).

Laura Gow

AN INTEGRATED HYDROGEOLOGICAL APPROACH TO EXPLORING FOR GROUNDWATER RESOURCES IN SOUTHERN NORTHERN TERRITORY

John Wischusen is a senior hydrogeologist with the NT Department of Environment and Natural Resources, based in Alice Springs. John has extensive experience and knowledge of Central Australia's paleovalley and basin groundwater systems.

Narelle Neumann

THE 'EXPLORING FOR THE FUTURE' GROUNDWATER PROGRAMME: A MULTI-PHYSICS, INTER-DISCIPLINARY SYSTEMS APPROACH FOR DE-RISKING INVESTMENT IN AGRICULTURE IN NORTHERN AUSTRALIA

Dr Narelle Neumann is the Branch Head for the Groundwater Branch in Geoscience Australia's Environmental Geoscience Division.

Kok Piang Tan

USING AEM AND GMR METHODS FOR NON-INVASIVE, RAPID RECONNAISSANCE MAPPING AND CHARACTERISATION OF GROUNDWATER SYSTEMS IN THE KIMBERLEY REGION, NORTHERN AUSTRALIA

Neil Symington is a geologist in the Groundwater Branch in Geoscience Australia's Environmental Geoscience Division.