

TEACHING AND RESEARCH – STAFF PROFILES



Steve Begg
Head of School

BSc Hons (University of Reading)
PhD (University of Reading)

Employment

- University of Adelaide 2002-present
- Landmark Graphics (Halliburton) 1997-2002
- BP Exploration 1990-1997
- BP Research 1983-1990

Research

Leads the Centre for Improved Business Performance - industry "research club" focusing on decision-making under uncertainty

- eliciting expert opinion & uncertainty assessments
- project & asset valuation methods (economics, real options, value-of-information/flexibility)
- portfolio management and optimization

Authored over 60 papers & book chapters, 2 books; leadership roles in 20+ research conferences; over 50 invited presentations, keynotes, etc.

Consulting and Contract Research

Recent clients include: Woodside, ExxonMobil, Santos, Cooper Energy. Professional short courses in 'Decision Making under Uncertainty', 'Economic Evaluation', 'Value-of-Information', 'Portfolio Management', 'Monte Carlo Simulation'.

Teaching

Petroleum Business & Project Economics
Decision-making, Uncertainty and Risk Analysis
Reservoir Characterization

Other

SPE Distinguished Lecturer 2002-2003 & 2010-2011
Chaired SPE Forum Series Co-ordination Committee



Peter McCabe
South Australian State Government Chair of Petroleum Geology



Kathryn Amos
Lecturer

BSc Hons (University of East Anglia)
PhD (University of East Anglia)

Employment

- University of Adelaide 2007-present
- University of New South Wales @ADFA, Canberra 2005-2007
- University of Leeds 2004-2005

Research

Application of scale models and modern analogues for interpreting ancient successions
Dynamics and deposits of gravity and turbidity currents
Fluvial sedimentology and geomorphology, focusing on dryland (semi-arid and arid) environments
Clastic reservoir analogues of the Lake Eyre Basin, central Australia.

Consulting and Contract Research

Leader of the Lake Eyre Basin Analogues Research Group (LEBARG) Consortium. Professional short courses in sedimentology and stratigraphy, geology of clastic reservoirs.

Teaching

Clastic sedimentology
Sequence Stratigraphy
Sandstone Petrology and Diagenesis
Research Skills
Writing Skills

Other

Member of the SEPM Society for Sedimentary Research, International Association of Sedimentologists, American Association of Petroleum Geologists, Geological Society of Australia, Australasian Quaternary Association, Australian and New Zealand Geomorphology Group, British Sedimentological Research Group. National Correspondent for Australia for the International Association of Sedimentologists. Committee member for the sedimentology special interest group of the Geological Society of Australia.



Khalid Amrouch
Lecturer/Research

Master (University of Pierre & Marie Curie, Paris)
PhD (University of Pierre et Marie Curie, Paris)

Employment

- University of Adelaide 2013 - present
- IMG - Mining & Geological Research at BHP Billiton Escondida Ltda. 2011 - 2012
- Mines ParisTech. 2010-2011
- French Institute of Petroleum New Energies IFPEN. 2005-2010

Research

The main interest relates to the stress/strain patterns and the understanding of the kinematics and deformation mechanisms of folded and fractured sedimentary formations, timing of deformation and tectonic history. More recently, I have focused my interest on the fractures chronology and on the principal paleostress and strain quantification, and over-paleopressure estimation in an analogue of folded/fractured mixed sandstone/carbonates reservoir.

Teaching

Structural Geology
Geomechanics
Seismic reflection/Seismic refraction Sismology



Pavel Bedrikovetsky
Professor of Petroleum Engineering

BSc Applied Math (Moscow Gubkin Petroleum University)
MEng Hons Applied Math (Moscow Gubkin Petroleum Uni)
PhD Fluid Mechanics (Moscow Gubkin Petroleum University)
DSc Petroleum Engineering (Moscow Gubkin Petroleum Uni)

Employment

- University of Adelaide 2008-present
- North Fluminense State University of Rio de Janeiro 2000-2007
- Petrobras (National Brazilian Oil Co) 1994-2007
- Visiting Professor (Imperial College & Delft University of Technology) 1991-1994

Research

Mathematical modelling, laboratory studies & field projects on

- formation damage
- waterflooding
- EOR
- Unconventional energy resources (CBM, geothermal)

Also, suspension and colloidal flows in rocks with applications to soil contamination, drilling, injectivity, oilfield scaling, horizontal and fractured wells, fines migration and sand production. Authored 160 scientific papers in academic journals and SPE and three books.

Consulting and Contract Research

Consultant to Petrobras and Shell on formation damage, waterflooding, EOR and environmental issues. Professional short courses in 'Formation Damage', 'Water Management', 'Injectivity Issues', 'Oilfield Scaling', 'Waterflooding', 'Chemical/Polymer EOR' and 'Gas-based EOR'.

Teaching

Formation Damage
Reservoir Engineering
IOR and EOR
Reservoir Simulation
Environmental Fluid Mechanics
Applied Mathematics and Theoretical Physics for Geoscientists and Geo-engineers



Mary Gonzalez
Lecturer

BSc Petroleum Engineering (Zulia University)
MSc (Central de Venezuela University)

Employment

- University of Adelaide 2009-present
- Advanced Well Technologies (AWT), 2005-2009
- PDVSA Intevep (National Venezuelan Oil Co), 2001-2003
- Fundatec Consulting Services, 2000-2001
- PDVSA E&P (National Venezuelan Oil Co), 1999-2000

Research

Modelling, optimization studies & field implementation projects on

- reservoir engineering
- production technology

Consulting and Contract Research

Petroleum engineering services and solutions in the areas of subsurface and production engineering. Well productivity modelling and optimization for Underbalanced/ Overbalanced vertical/ deviated, and horizontal wells. Evaluation, simulation and optimization of distribution, gathering, and transferring gas/oil system networks. Well test transient interpretation and well testing design support. PVT analysis and reservoir fluids characterization, decline curve analysis, production forecast, and reserves review. Evaluating and optimizing FDP for conventional and unconventional resources.

Recent clients include: Santos Limited, Tag Oil, Chevron, Bow Energy, Hardman Resources, APT, 3D Oil, Nexus, Petronas, Beach Petroleum, Vermilion, Origin, Pdvsa E & P.

Teaching

Reservoir Engineering
Production Engineering & Optimisation
Well Testing & Pressure Transient Analysis
Oil & Gas Resources & Reserves

Other

Member, SPE-South Australia
Member, PESA
Member, Engineers Australia

**Manouchehr Haghighi**

Associate Professor
Australian School of Petroleum, University of Adelaide

PhD (University of Southern California)

Employment

- University of Adelaide, 2009-present
- University of Tehran 2006-2009
- University of Calgary 2007-2008
- University of Tehran 2000-2005
- National Iranian Oil Company 1995-2000
- Simulation Technology 2000-2009

Research

Production, Petrophysical Evaluation and Reserve Estimation of Unconventional Gas Reservoirs
Reservoir Characterisation and Forecasting Using History Matching
Modelling and Characterization of Naturally Fractured Reservoirs
Pore Level Visualization and CFD Simulation

Teaching

Well Testing and Pressure Transient Analysis
Formation Evaluation, Petrophysics and Rock Properties
Unconventional Resources and Reserves
Fractured Reservoir Engineering
Reservoir Simulation

**Simon Holford**

Senior Lecturer in Petroleum Geoscience
Deputy Director, Centre for Tectonics, Resources and Exploration (TRaX)

BSc Hons Geology and Geography (Keele University)
PhD Earth Sciences (University of Birmingham)

Employment

- University of Adelaide 2007-present
- University of Birmingham 2005-2006

Research

Deformation and uplift of rifted margins, sedimentary basins and continental interiors and their impact on hydrocarbon and geothermal exploration
Neotectonics and present-day stresses
Cenozoic tectonics and palaeogeography of Australia
Thermal histories of sedimentary basins
3D seismic analysis of igneous processes in sedimentary basins
Structural permeability of unconventional (geothermal, shale gas, tight gas) reservoirs
Geological characterisation of gas shales and oil shales
Authored over 35 scientific papers with over 50 conference presentations including five invited presentations

Teaching

Introduction to Petroleum Geoscience and the Oil Industry
Petroleum Systems and Basin Analysis
Unconventional Resources
Australian Basins
Reservoir Geoscience

Consulting and Contract Research

Recent consulting and contract research projects include evaluations of petroleum prospectivity in the Faroe Shetland Basin and evaporate potential in Australia.

Other

Member of GSL, GSA, AGU and PESA (SA committee member)

**John Kaldi**

Professor and Chair of Geosequestration
Chief Scientist, Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC)

BSc (Queens College, City University of New York)
MSc (Queens College, City University of New York)
PhD (Cambridge University)

Employment

- University of Adelaide 1998-present
- VICO Oil & Gas Co 1997-1998
- ARCO Indonesia 1992-1998
- ARCO Oil & Gas (Plano, TX), 1987-1992
- Shell Canada Ltd 1982-1987

Research

Geological sequestration of CO₂
Seal evaluation
Reservoir/development geology
Carbonate sedimentology and diagenesis
Authored over 80 publications

Consulting and Contract Research

Contracts with numerous Australian and International Petroleum companies.
Professional short courses in 'Seal Evaluation', 'Reservoirs, Seals and Pay' presented to AAPG, IPA, NZAPG, PESA, Anadarko, BHP, BP, ExxonMobil, JNOC, Marathon, ONGC, Petronas, PetroChina, PTTEP, Santos, Schlumberger

Teaching

Reservoir/development geology
Reservoirs, Resources & Reserves
Petroleum Geology for Engineers
Carbonate Sedimentology & Diagenesis
CV Preparation & Interview Skills
Presentation Skills

Other

Technical Program Chair, AAPG International Conference & Exhibition (Perth 2006; Singapore 2012); President AAPG Asia-Pacific Region; AAPG Special Commendation Award (1997); AAPG Distinguished Lecturer (2002-2003; 2009); AAPG Distinguished Service Award (2006); AAPG Honorary Member (2008). Member SPE, PESA, EAGE.



Andy Mitchell
Senior Lecturer

BSc Hons (University of Adelaide)

Employment

- University of Adelaide 1982-present
- Esso Australia Ltd 1975 -1982

Research

Seismic attributes
Seismic velocity
Seismic modelling and inversion

Consulting and Contract Research

Clients include: South Australian Government, Santos Ltd, Woodside Petroleum, Boral Energy, CRA/Pacific Oil & Gas, Cultus, Batavia Investment Management.
Industry short courses in 'Petroleum Geoscience' and 'Reflection Seismology' in Australia and SE for Australian Mineral Foundation, NExT, Santos Ltd, BHPBilliton, SPE (Indonesia), Petronas, Geoscience Australia, Illawarra Coal, PESA (NSW Branch).

Teaching

Petroleum Geoscience
Seismic Interpretation
Seismic Acquisition and Processing
Subsurface Mapping
Geostatistics



Alireza Salmachi
Lecturer

BSc (Petroleum University of Technology, 2002-2006)
Master of well engineering (Curtin University of Technology, 2007-2009)
PhD, submitted, (University of Adelaide, 2010-2013)

Employment

- Curtin University of Technology Perth 2007 (Research Assistant)
- University of Adelaide, Adelaide 2013-Present (Lecturer)

Research

Unconventional resources
Thermally enhanced gas recovery from coal seam gas reservoirs using geothermal resources
Infill drilling optimization in coal seam gas reservoirs using Genetic Algorithm
Well completion in coal seam gas reservoirs
Gas flow modeling in coal beds
Methane adsorption and diffusion in coal

Teaching

Drilling Engineering
Well completion and Stimulation
Unconventional resources (coal seam gas)

Other

Member of SPE, AAPG and EAGE



Mohammad Sayyafzadeh
Lecturer

Ph.D. in Petroleum Engineering (The University of Adelaide, 2010-2013)
M.Sc. in Petroleum Engineering (Tehran Polytechnic, 2007-2010)
B.Sc. in Chemical Engineering (Tehran Polytechnic, 2003-2007)

Employment

- Lecturer at the University of Adelaide, 2013-present
- Research fellow at the University of Tehran, 2008-2010

Research

Probabilistic inverse modelling in highly nonlinear problems, such as history matching
Infill drilling and well placement optimisation in unconventional resources
Application of surrogate-assisted algorithms in production optimisation and field development planning
Uncertainty quantification of reservoir model parameters
Dimensionality reduction (feature extraction) of vector model space by linear and nonlinear mapping transformers
Application of Evolutionary Computation methods, such as genetic algorithm, artificial bee colony and artificial neural network, in Petroleum Engineering
Bayesian interpretation in fitting problems

Teaching

Reservoir Simulation
Production Engineering
Geostatistics

Other

Serves as reviewer and technical editor of :

- Fuel Journal
- SPE Reservoir Evaluation and Engineering Journal
- Mathematical Geosciences Journal

Member of :

- Society of Petroleum Engineering
- European Association of Geoscientists and Engineers
- Petroleum Exploration Society of Australia
- American Association of Petroleum Geologists



Abbas Zeinijahromi

Lecturer

PhD (University of Adelaide)

MSc (Azad University)

BSc (Petroleum University of Technology, Iran)

Employment

- University of Adelaide beginning July 2012
- Petroleum Research Centre, Petroleum University of Technology, Iran 2004-2006
- National Iranian Oil Company (NIOC) 2007-2008
- GeoLog Co, Kuwait Base, 2009

Research

Fines migration and suspension flow in porous media

Formation damage

Drilling fluid design

Well fracturing and acidizing

IOR

Consulting and Contract Research

Involved in consulting and contract research with Shell, Santos, Chevron, Petrobras, Weatherford, Panax Geothermal and Strategic Chemistry.

Teaching

Formation Damage

Reservoir Simulation

Reservoir Engineering

Well Completion and Stimulation

Other

Member of SPE, AAPG, PESA

RESEARCH ONLY – STAFF PROFILES



Alexander Badalyan

ARC Senior Research Associate

PhD (Azerbaijan Petroleum and Chemistry Institute)
BEng (Grozny Petroleum Institute)

Employment

- University of Adelaide 2010 - present
- University of South Australia 1996-2010
- Grozny Petroleum Institute 1981-1993

Research

Suspension flow in rocks
Fines migration
Formation damage
Evaluation of uncertainties in laboratory studies
Development of real-time process monitoring systems
Gas adsorption on porous solids
Measurement of thermophysical properties of fluids
Authored 19 peer-reviewed journal publication, 12 peer-reviewed conference publications and one Australian Patent

Consulting and Contract Research

Clients include Panax Geothermal, Weatherford Laboratories (Australia) Pty Ltd, Alcoa World Alumina Australia

Teaching

Instrumentation and process control
Heat transfer
Environmental chemistry
Formation damage

Other

2002 UniSA Vice-Chancellor Award for Innovation in Product Improvement



Mark Bunch

CO2CRC Research Geoscientist
CO2CRC project leader in CO₂ storage

BSc Hons (Durham University)
MSc (University of Birmingham)
PhD (University of Birmingham)

Employment

- University of Adelaide 2008-present
- University of Birmingham 2003-2004, 2006-2007

Research

Geological storage of CO₂
Sequence stratigraphy, reservoir characterisation, 3D geological modelling
Hydrogeological modelling
Clastic sediment transport, sediment-rich flood hydrographs, clast packing
Geophysical detection of granulation seam material.

Other

Member of PESA (SA committee member nominee)



Themis Carageorgos

Research Fellow

PhD (Imperial College, University of London)
MEng (COPPE, Federal University of Rio de Janeiro – UFRJ)
Chemical Engineering, Fluminense Federal University - UFF

Employment

- University of Adelaide, 2008-present
- North Fluminense State University of Rio de Janeiro 1999-2007
- Mineral Technology Centre CETEM (Brazil) 1994-1999
- Pernambuco Federal University (Brazil) 1981-1993

Research

Oilfield scaling: laboratory studies; creating database for reaction kinetics and formation damage constants
Oilfield scaling in produced water re-injection
Laboratory study of well injectivity impairment
Propagation of oily particles, bacteria and viruses in aquifers – laboratory modeling
Suspension flow in rocks
Fines migration
Uncertainties in laboratorial studies
Authored over 18 scientific papers.

Consulting and Contract Research

Consultant for Rio Paracatu Mining RTZ Company. Research clients include: Petrobras Research Centre -Cenpes, Brazilian Research Project Foundation – FINEP, UNBC

Teaching

Experimental flow in porous media
Experimental petrophysics
Formation damage

**Dennis Cooke**

Program Manager Unconventional Resources

BA (University of Colorado)

PhD (Colorado School of Mines)

Employment

- University of Adelaide 2010-present
- Santos 2000-2010

Research

Unconventional reservoirs, stress, natural fractures and hydraulic fracture stimulation

Seismic reservoir characterization

Beam steering seismic imaging techniques

Authored publications in the areas of seismic inversion, reservoir characterization and seismic migration.

Other

Member of ASEG, SEG, PESA, AAPG and SPE.

**Richard (Ric) Daniel**

Senior Research Fellow

CO₂ and Hydrocarbon Cap Seal Research

BSc (Macquarie University)

PhD (University of Adelaide)

Employment

- University of Adelaide 1998-present (Senior Researcher for CRC for Greenhouse Technologies: CO₂CRC)
- Flinders University 1990-1998
- Baroid International 1975-1986

Research

Hydrocarbon and carbon dioxide capillary seals analysis based on mercury injection capillary pressure porosimetry, scanning electron microscopy with EDS analysis and XRD (qualitative) mineralogy with applications to CO₂ geosequestration risking and hydrocarbon exploration.

Sedimentology (modern and ancient carbonate and clastic).

Author of reference book - Hydrocarbon/CO₂ Seals Atlas for Aust & NZ; 220p, AAPG (Studies in Geology 60). Author/co-author of 15 peer reviewed publications, 17 reports, 19 confidential reports and >20 conference poster/ presentations with abstracts.

Consulting and Contract Research

Over 25 consulting reports for >6 petroleum companies. Recent clients include: Geoscience Australia, PIRSA, Shell Todd NZ, OMV NZ, Chevron, BHPBilliton, JRS, Strike Oil and Petrolab.

Teaching

Carbonate Sedimentology (Depositional Environments/ Diagenesis/ Petrology)

Mudlogging

Introductory Drilling Engineering

Sample Analysis (Petrophysics)

Other

Member of AAPG, PESA and AQUA.

**Rachel Nanson**

Research Fellow

BSc Hons (University of Wollongong)

PhD (University of New South Wales)

Employment

- University of Adelaide 2009-present
- Earth Tech Engineering 2008-2009
- Australian National University 2006-2007
- NSW Department of Land and Water Conservation 1999-2000

Research

Fluvial geomorphology - peatland channel dynamics

Peatland systems in Australia and Papua New Guinea – stability, carbon sequestration and extent

Coastal geomorphology – characterisation of modern analogues for petroleum research

Consulting and contract research

8 consulting reports for state government departments and industry sponsored research consortiums on peatlands, coastal reservoir analogues and River Styles.

Currently a PI for the WAVE Consortium Phase II.

Other

Vice president (Australia) – Australia and New Zealand

Geomorphology Group (ANZGG) 2011-2012, member since 2004

Member of Australasian Quaternary association (AQUA) since 2006

Member of AAPG since 2009



Frank Rarity
Research Fellow

PhD Geology (University of Manchester)
MSc Geodetic Surveying (University of Nottingham)
BSc Hons Geological Sciences (University of Plymouth)

Employment

- WAVE Consortium, University of Adelaide 2013-present
- The Rift Analogue Project (TRAP), University of Manchester 2005-2012

Research

Frank Rarity is a postdoctoral fellow working for the WAVE Consortium at the University of Adelaide. He has over five years of experience working in industry linked research through his PhD studies in syn-rift sedimentology and digital outcrop geology at the University of Manchester, UK. His research interests include shallow marine sedimentology, syn-rift tectono-stratigraphy, and the use of digital survey tools for studying modern and ancient reservoir analogues.

Other

Member of the British Sedimentary Research Group (BSRG),
American Association of Petroleum Geologists (AAPG),
International Association of Sedimentologists (IAS).



Ulrike Schacht
Research Fellow

BSc, Technical University of Berlin
MSc, Technical University of Berlin
PhD (Dr. rer. nat.), University of Kiel

Employment

- CO2CRC / University of Adelaide 2007-present
- Leibniz Universitaet Hannover 2006
- Leibniz Institute of Marine Sciences 2002-2005

Research

Core flood experiments to study the coupled chemical-mechanical effects of CO₂ storage
Geochemical monitoring for CO₂ geosequestration sites
Natural analogue studies for CO₂ geosequestration

Consulting and Contract Research

Analytical chemistry
Aqueous and gas geochemistry
Sandstone petrology and diagenesis
Siliciclastic reservoir quality

Teaching

Environmental monitoring
Introduction to the geological storage of CO₂

Other

CO2CRC Key Researcher for "CO₂-water-rock interactions"
"Geochemical Monitoring"



Matthew Welsh
Research Fellow

BA(Hons), Philosophy, University of Adelaide
BSc(Hons), Psychology, University of Adelaide
PhD, Psychology, University of Adelaide

Employment

- University of Adelaide 2003-present

Research

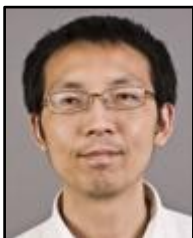
Psychology of decision making
Heuristics and biases
Real world decision making
Elicitation of uncertain judgements
Individual differences in decision making

Teaching

Decision Making Theory and Applications
Human Factors

Other

Member, Society of Petroleum Engineers
Member, Cognitive Science Society
Member, Association for Psychological Science



Zhenjiang You
Researcher

PhD (Zhejiang University)
BEng (Zhejiang University)

Employment

- University of Adelaide 2009-present
- Flinders University 2004-2009

Research

Suspension flow in porous media
Formation damage, Fines migration, EOR
Lab studies

Consulting and Contract Research

Clients include: Santos, Shell, Strategic Chemistry, Chevron,
Petrobras, Panax Geothermal

Teaching

Reservoir Simulation
Formation Damage

ADJUNCT – STAFF PROFILES



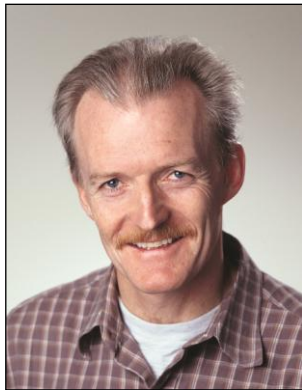
Professor Bruce Ainsworth
Senior Research Scientist
Chevron Energy & Technology Company



Dr Guillaume Backe
Structural Geologist
BP London



Professor Peter Behrenbruch
Managing Director
Bear and Brook Consulting Pty Ltd



Professor Reidar Bratvold
Department of Petroleum Engineering
University of Stavanger



Dr Mofazzal Hossain
Department of Petroleum Engineering
Curtin University



Dr Suzanne Hunt
Superintendent, Production Engineering
Santos Ltd



Professor Richard Hillis
CEO
CRC Deep Exploration Technology



Dr Steve Mackie
Principal Advisor - Geophysics
Santos Ltd



Dr Hemanta Sarma
Chairman, Petroleum Engineering Program
the Petroleum Institute, Abu Dhabi



Associate Professor Mark Tingay
Rock Mechanics Research Scientist
Chevron, Perth



Dr Peter Boulton
Vice President, Exploration
Bight Petroleum



Professor Steve Tyson
Director, Centre for Geoscience Computing
University of Queensland