

TEACHING AND RESEARCH – STAFF PROFILES



Peter McCabe

Head of School
South Australian State Government Chair of Petroleum Geology

BSc Hons (University of Hull)
PhD (University of Keele)

Employment

- University of Adelaide 2014-present
- Queensland University of Technology 2012-2014
- CSIRO 2007-2012
- US Geological Survey 1987-2007

Research

Petroleum systems of conventional and unconventional resources
Sequence stratigraphy of nonmarine, -shallow marine strata
Facies/reservoir architecture of siliciclastic strata
Coal and coal-bearing strata
Fossil energy resource assessment

Consulting and Contract Research

Recent clients include ANLEC, Geoscience Australia, CSIRO and Queensland State government.
Professional short courses on sedimentology, sequence stratigraphy and resource assessment.

Teaching

Sequence Stratigraphy
Unconventional Resources

Other

President of the American Geosciences Institute (2009);
President of SEPM Society for Sedimentary Geology (2002-3);
Michel Halbouty Distinguished Lecturer, ; Geological Society of America (2008); American Association of Petroleum Geologists Distinguished Lecturer, Asia Pacific Region (2007-8); Wallace Pratt Memorial Award of the American Association of Petroleum Geologists (1999)



Kathryn Amos

Senior 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

Consulting and Contract Research

Field-based workshops to the Flinders Ranges. Consulting related to technical expertise (eg core description, depositional environment interpretation, palaeogeographic reconstruction)
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

Associate Dean (Future Students), Faculty of Engineering, Computer and Mathematical Sciences
National Correspondent for Australia for the International Association of Sedimentologists.



Khalid Amrouch

Lecturer

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 Structural Geology, brittle deformation, 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 formations.

Teaching

Structural Geology
Geomechanics
Seismic reflection/Seismic refraction Sismology

Consulting and Contract Research

Consulting and contract research projects providing geomechanical and structural evaluations of underground fluids migration recent work in Mediterranean sea and north African Basins.

Other

Member of AAPG, EGU, AGU and PESA

**Pavel Bedrikovetsky**

Professor of Petroleum Engineering

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
- 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.

Exact and asymptotic solutions of nonlinear evolution equations, hyperbolic systems, shock waves

Authored over 220 scientific papers in academic journals and SPE, and three books.

Consulting and Contract Research

Consultant to Petrobras, Chevron, Wintershall and Shell on formation damage, waterflooding, EOR and environmental issues. *Professional training 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 Physics for Petroleum engineers and Geoscientists
 SPE Distinguished Lecturer 2009-2010 & 2016-2017

**Steve Begg**

Professor

BSc Hons Geological Geophysics (University of Reading)
 PhD Earthquake Seismology (University of Reading)

Employment

- University of Adelaide 2002-present
- ASP Head of School, 2010-2016
- 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 & portfolio valuation methods (economics, real options, value-of-information/flexibility)

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

Consulting and Industry Courses

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

Teaching

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

Other

Board Member, Society of Decision Professionals 2014-Chair, University College London (Adelaide) Academic Board
 SPE Distinguished Lecturer 2002-2003 & 2010-2011
 Chaired SPE Forum Series Co-ordination Committee
 SPE Management & Information Award 2016
 Currently on SPE Distinguished Lecturer Committee and Management & Information Committee.

**Mark Bunch**

Senior Lecturer

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)



Mary Gonzalez
Senior Lecturer

BSc Hons Petroleum Engineering (Zulia University)
Post Graduate Degree in Petroleum Engineering (Central de Venezuela University)
Grad. Cert Higher Education (The University of Adelaide)

Employment

- University of Adelaide 2009-present
- Advanced Well Technologies (AWT), 2005-2009
- PDVSA Intevp (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
- Hydraulic Fracturing

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, and reserves review. FDP for conventional and unconventional resources.

Current Research: Energised frac fluid alternatives for Unconventional Reservoirs, Experimental and Numerical Investigation of Foam Stability by Nano-based fracturing Fluids.

Mary serves as reviewer for several Elsevier Journals, and APPEA.

Teaching

Reservoir Engineering
Production Engineering & Optimisation
Well Completion and Stimulation

Other

Member, SPE-South Australia
Member, PESA
SPE Faculty Officer
SPE SA Community Education Chair



Manouchehr Haghghi
Associate Professor
Australian School of Petroleum, University of Adelaide

BSc Chemical Engineering, University of Tehran
MSc Petroleum Engineering, University of Southern California
PhD Petroleum Engineering, University of Southern California

Employment

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

Research

Reservoir Simulation
EOR
Naturally Fractured Reservoirs
Unconventional Reservoirs
Hydraulic Fracturing
Geomechanics,
Petrophysics and Reservoir Characterization

Teaching

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

Consulting and Contract Research

Recent clients: AGL, Buru Energy, Santos
Short courses: Singapore, Petrosym, Australian Mining Association, Santos

Other

Member of SPE



Simon Holford
Associate Professor in Petroleum Geoscience
Director of Research, Australian School of Petroleum

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 and subsurface fluid flow
Authored ~80 scientific papers with ~60 conference presentations including 10+ invited/keynote presentations

Teaching

Introduction to Petroleum Geoscience and the Oil Industry
Petroleum Systems and Basin Analysis
Advanced Petroleum 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)
Science Committee Member, Australian & New Zealand International Ocean Discovery Program Consortium (ANZIC)

**John Kaldi**

Professor

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
- Saskatchewan Geological Survey; 1980-1982
- Intercon Geological Consultants (UK) 1977-1980

Research

Carbon Capture and Storage (geological sequestration of CO₂)
 Seal evaluation; pore-level reservoir characterisation
 Reservoir/development geology
 Carbonate sedimentology and diagenesis
 Authored over 80 publications

Consulting and Contract Research

Contracts with numerous Australian and International Petroleum Companies, Banks and NGO's
 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

Reservoirs, Seals and Pay
 Reservoirs, Resources & Reserves
 Petroleum Geology for Engineers
 Carbonate Sedimentology & Diagenesis
 CV Preparation & Interview Skills
 Presentation Skills

Other

Member AAPG, SPE, PESA, EAGE, IPA, SEAPEX
 AAPG Honorary Member (2008)

**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

Computer-assisted algorithms for history matching
 Techniques for uncertainty quantification
 Robust optimisation algorithms for field development planning and reservoir flooding improvement under geological uncertainties
 Surrogate (proxy) modelling techniques for reducing computational costs
 Linear and nonlinear Algebraic transformation methods for dimensionality reduction
 Modelling of unconventional resources (such as CBM and tight-sand reservoirs) CO₂ sequestration and uncharacteristic phenomena in conventional reservoirs
 Data Analytics (DA) for fast decision making

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

Senior 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 45 peer-reviewed journal publications, 43 conference publications and one Australian Patent

Consulting and Contract Research

Clients include Santos, BG Group - QGC, Wintershall Holding GmbH, Heathgate Resources, 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
American Chemical Society – Regular Member
Institute of Instrumentation, Control & Automation Australia - Member



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



Ulrike Schacht

Senior Research Fellow

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

Employment

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

Research

Geochemical monitoring for CO₂ storage sites
Natural analogue studies for CO₂ storage

Consulting and Contract Research

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

Teaching

Generation and Migration of Hydrocarbons
Petroleum Chemistry
Sandstone Petrology and Diagenesis

Other

Member of PESA



Matthew Welsh

Senior 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



Carmine Wainman

Postdoctoral Fellow

MSci Geology (University of Southampton)
PhD (University of Adelaide)

Employment

- University of Adelaide (2017-present)
- Woodside Energy (2013)
- RSK Group (2012-2013)

Research

International Ocean Discovery Program Expedition 369 -
Sedimentary evolution of the Ceduna Sub-Basin and associated
palaeoceanographic changes during the Late Cretaceous

Sedimentology and stratigraphy of Middle to Upper Jurassic coal-
bearing strata in eastern Australia

Teaching

Clastic sedimentology
Sydney Basin field trip

Other

Fellow, Geological Society of London
Member, European Geoscience Union
Member, SEPM - Society for Sedimentary Geology
Member, Australian Society of Exploration Geophysicists
Member, American Association of Petroleum Geologists
Member, Petroleum Exploration Society of Australia

ADJUNCT – STAFF PROFILES



Professor Bruce Ainsworth
Senior Research Scientist
Chevron Energy & Technology Company



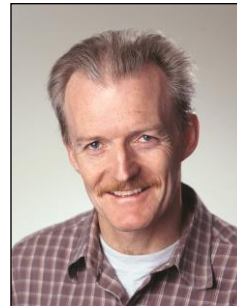
Dr Guillaume Backe
Structural Geologist
BP London



Professor Peter Behrenbruch
Managing Director
Bear and Brook Consulting Pty Ltd



Dr Peter Boulton
Vice President, Exploration
Bight Petroleum



Professor Reidar Bratvold
Department of Petroleum Engineering
University of Stavanger



Dennis Cooke
Adjunct Associate Professor
University of Adelaide



Professor Don Gautier
World Petroleum Project
US Geological Survey



Dr Richard (Ric) Daniel
Visiting Senior Research Fellow & Consultant



Dr Suzanne Hunt
Engineering and Development Manager
AWE Limited



Professor Richard Hillis
CEO
CRC Deep Exploration Technology



Dr Ray Johnson
Principal, Unconventional Reservoir Solutions



Dr Steve Mackie
Principal Advisor - Geophysics
Santos Ltd



Dr Rachel Nanson
Postdoctoral Researcher



Dr Frank Rarity
Postdoctoral Researcher



Associate Professor Mark Tingay
Rock Mechanics Research Scientist
Chevron, Perth



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