

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
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

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

**Steve Begg**Professor
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

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

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
 SPE Asia-Pacific Management & Information Award
 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 Petroleum Engineering (Zulia University)

MSc (Central de Venezuela University)

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

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

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.

**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



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



Peter Reynolds

Postdoctoral Researcher

BSc Hons (University of Glasgow)
PhD (Durham University)

Employment

- University of Adelaide 2015 – present
- Volcanic Basin Petroleum Research 2015
- DONG Energy 2013

Research

Peter is a postdoctoral researcher working alongside CSIRO to determine the origin and distribution of igneous activity in the Ceduna basin. Throughout his PhD he has worked alongside industry, using a combination of field and seismic data to determine the effects of basaltic volcanostratigraphy and the architecture of rifted margins

**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
Sandstone petrology and diagenesis
Siliciclastic reservoir quality

Teaching

Environmental monitoring
Generation and Migration of Hydrocarbons
Petroleum Chemistry
Sandstone Petrology and Diagenesis
Sedimentology for Petroleum Engineering

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

**Zahra Tooski**

Research Assistant

BSc Petroleum Engineering (Petroleum University of Technology)
MSc Petroleum Geoscience (French institute of Petroleum (IFP School))

Employment

- University of Adelaide 2014 -present
- National Iranian Oil Company (NIOCEXP) 2010-2013

Research

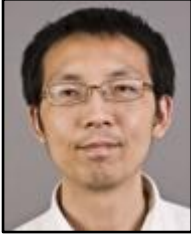
Coalbed Methane Reservoirs (reservoir modelling, production data analysis)
Petrophysics and Formation Evaluation
Reservoir Characterization
Reservoir Modelling

Teaching

Petrophysics and formation evaluation (laboratory instructor)
Drilling engineering laboratory instructor
Geolog Software Training

Other

Member of SPE and EAGE



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



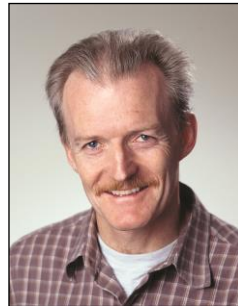
Dr Guillaume Backe
Structural Geologist
BP London



Professor Peter Behrenbruch
Managing Director
Bear and Brook Consulting Pty Ltd



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 Mofazzal Hossain
Department of Petroleum Engineering
Curtin University



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



Andy Mitchell
Senior Lecturer
University of Adelaide



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