

THE AUSTRALIAN NATIONAL UNIVERSITY

Curriculum vitae: Michael L. Roderick

Position: Professor

Research School of Earth Sciences – College of Science and the Environment

Date of Birth: 20 February 1962

Academic Qualifications:

1984	BAppSc (Surveying, with distinction)	QUT (Brisbane)
1990	PGDipGIS	UQ (Brisbane)
1994	PhD	Curtin University of Technology (Perth)

PhD Thesis:

Satellite Derived Vegetation Indices for Monitoring Seasonal Vegetation Conditions in Western Australia

Principal Research Interests:

Environmental Physics, Ecohydrology, Climate System Science, Earth System Science, Remote Sensing, Ecological Dynamics

Present Appointment with the ANU:

2017- Professor, Research School of Earth Sciences, ANU

Previous Appointments:

2013-2016	Professor Research School of Earth Sciences & Research School of Biology, ANU
2009-2012	Senior Fellow, Research School of Earth Sciences & Research School of Biology, ANU
2006-2009	Fellow, Research School of Earth Sciences & Research School of Biological Sciences, ANU
2001-2006	Fellow, Research School of Biological Sciences, ANU
1996-2001	Research Fellow, Research School of Biological Sciences, ANU
1993-1996	Lecturer, School of Spatial Sciences, Curtin University of Technology
1991-1993	Research Officer, Western Australian Department of Agriculture
1990	Tutor, Department of Geographical Sciences, University of Queensland
1985-1989	Licensed Surveyor and Manager, Brazier and Motti Pty Ltd, Townsville, Qld & Katherine, NT
1984-1985	Surveyor, Capricorn Survey Consultants, Biloela, Qld
1979-1984	Cadet Surveyor, various placements throughout Queensland

Other Responsibilities:

2017-	ARC Centre of Excellence for Climate Extremes ANU Node leader & Drought Research Program Leader
2015-	National Environmental Science Program, Earth System and Climate Change Hub, ANU Node Leader
2011-	ARC Centre of Excellence for Climate System Science ANU Node leader & Terrestrial Research Program Leader

2002-2006 Project Leader, CRC for Greenhouse Accounting
Project: Theoretical developments in carbon cycle science

Membership of Professional Societies:

Australian Meteorological and Oceanographic Society
Institution of Surveyors, Australia
Spatial Sciences Institute of Australia
American Geophysical Union
European Geosciences Union

Professional Qualifications:

Registered Surveyor, Surveyors Board of Queensland

Academic Awards and Distinctions:

- 2016 Editors' Citation for Excellence in Refereeing, AGU journal, JGR-Atmospheres
2015 Elected a Fellow of the American Geophysical Union
Award Citation: For seminal contributions to the science of evaporation and transpiration, including interpretation of changes in evapotranspiration under global environmental change.
- 2013 John Dalton Medal, European Geosciences Union
Award Citation: Michael Roderick is awarded the John Dalton Medal of the EGU for seminal contributions to the science of evaporation, including especially the role of vegetation and the interpretation of changes in evaporation in the context of global environmental change.
- 2011 Paper co-authored with Fubao Sun, Wee Ho Lim and Graham Farquhar on using climate models to make projections of water availability was given the editors choice award for 2011 by the leading journal, *Water Resources Research*.
- 2009 Australasian Science Prize for 2009
Award Citation: For overturning assumptions about the effects of climate change on evaporation rates and for research on changes in water availability.
[www.australasianscience.com.au/bi2009/310ASPrize.pdf]
- 2004 'Top 100' Award
Paper on trends in Australian Pan Evaporation with Graham Farquhar was judged as one of the top 100 worldwide scientific achievements (across all disciplines) for 2004 by Discover magazine, the world's largest popular science magazine.
(www.discover.com/issues/jan-05/features/top-100-stories/)
- 1999 J.B.S. Haldane Prize
Awarded by the British Ecological Society for the best paper published in the journal *Functional Ecology* in 1999.
Roderick, M.L., Berry, S.L., Saunders, A.R. and Noble, I.R. (1999) On the relationship between the composition, morphology and function of leaves. *Functional Ecology* **13**, 696-710.
- 1990 N.J. Nielson Prize, U Qld, Best post-graduate student
1984 Surveying Staff Prize, QUT, Best graduating student (B App Sc [Surv])

Grants and Consultancies:

- 2019-2021 ARC Discovery Grant (\$270,000), Roderick & Shakespeare (DP190100791)
Project: Limits to Ocean Surface Temperature in Future Climates
2017-2023 ARC Centre of Excellence for Climate Extremes (CE170100023)
Director: Prof. A. Pitman (UNSW), CIs including M. Roderick, \$30.05 M
M. Roderick is ANU Node Leader and Drought Research Program Leader

- 2015-2021 NESP Earth Systems and Climate Change Hub
Director: Dr H. Cleugh (CSIRO), CIs including M. Roderick, \$23.9 M
M. Roderick is ANU Node Leader
- 2011-2017 ARC Centre of Excellence for Climate System Science (CE1101028)
Director: Prof. A. Pitman (UNSW), CIs including M. Roderick, \$21.7 M
M. Roderick is ANU Node Leader and Terrestrial Research Program Leader
- 2011-2014 ARC Discovery Grant (\$350,000), Farquhar & Roderick (DP110105376)
Project: Tree water use, bushfires, and the implications for urban and rural water supplies
- 2009 Murray Darling Basin Authority (\$44,000)
Invited consultancy: Scientific review on evapotranspiration
- 2008-2010 ARC Discovery Grant (\$370,000), Roderick & Farquhar (DP0879763)
Project: Water availability, evaporative demand and climate change
- 2005-2010 ARC-NZ Research Network for Vegetation Function
Director: Prof. M. Westoby (Macquarie), CIs including M. Roderick, \$1.5 M
- 2005-2010 ARC Research Network for Earth System Science
Director: Prof. A Pitman (Macquarie), CIs including M. Roderick, \$1.2 M
- 2005 Land & Water Australia Research Grant (\$50,000)
Project: Agro-ecological implications of change to the terrestrial water balance
- 2002-2006 CRC for Greenhouse Accounting (\$800,000)
Project: Theoretical developments in carbon cycle science

Service to ANU:

- 2017- Member, RSES Education Committee
- 2017- Convenor, Water Science Major, Colleges of Science, ANU
- 2006-2013 Member, Enrolment Executive, College of Sciences, ANU
- 2006-2013 Convenor, Bachelor of Global and Ocean Sciences (Hons) Degree
Colleges of Science, ANU
- 2006-2012 Convenor, Global Change Science Major, Colleges of Science, ANU
- 2006-2010 Member, Geoscience Education Advisory Group, RSES, ANU

Service to Community:

- 2015-2017 Selection Committee, Robert Horton Medal, American Geophysical Union
- 2014-2017 Selection Committee, John Dalton Medal, European Geosciences Union
- 2012-2014 Associate Editor, Hydrology and Earth System Sciences (European Geosciences Union)
- 2009-2013 Associate Editor, Water Resources Research (American Geophysical Union)
- 2008- Expert Reviewer, NSF Grants (US)
- 2008- Expert Reviewer, Australian Research Council
- 2007-2012 Scientists in Schools Program: Resident Scientist at Radford College
- 2007-2012 Organiser and Convenor, Hydrology Sessions on Evaporation, American Geophysical Union, San Francisco
- 2002-2008 Ecological Society of Australia representative to FASTs
- 2005-2007 Expert Reviewer for the Australian Government
Intergovernmental Panel on Climate Change 4th Assessment Report
- 2005- Expert Reviewer, NERC Grants (UK)
- 2004 Co-convenor, Australian Academy of Science Symposium on Pan Evaporation trends

Outreach:

Public talks & briefings:

- Numerous invited talks (> 30) at local groups (landcare groups, schools, national science festival, etc.) about climate change and water availability
- Briefings of senior prime ministerial advisers about climate change and water availability

Media activities:

- Numerous interviews (radio, newspaper) (> 50) throughout Australia, US, Europe about global climate change and the surface water balance
- Appearance on BBC science documentary titled “Global Dimming”

Linking Science with the Arts

- In 2011 I was invited by a group of artists and musicians to exploring ideas on the use of art and music to communicate ideas to the broader public on “Weather, Water and Scale”
- See <http://gaugerresearch.org> for details of the project
- The project was funded by the Victorian Arts Board (2011) and an installation was constructed at the ArtsHouse Meat Market in Melbourne
 - see <http://vimeo.com/37091037> for a video of the installation

Teaching:

The Australian National University (1996-)

- Director, Bachelor of Global and Ocean Sciences (Hons) degree (2006-2013)
- Convenor, 2nd year course: Fundamentals of Climate System Science (2012-)
- Convenor, 3rd year course: Ocean and Atmosphere Modelling (2008-2010)
- Lecturer, 1st year Hydrology lectures in The Blue Planet (2007)
- Lecturer, 3rd year Hydrology lectures in Global Cycles & Paleoceanography (2007-2011)
- Lecturer, Earth Science in the Field (2008-2009)

Curtin University of Technology (1993-1996)

- Director, Surveying Undergraduate Program (1994-1996)
- Convenor, Applied Field Surveying (1993-1996)
- Convenor, Introduction to Computing (1993-1996)
- Convenor, Remote Sensing and Spatial Modelling (1994-1996)

Research Supervision and Mentoring:

Supervision of MSc and PhD students

- Deeboon Methakullachat (MSc, Curtin Univ., Primary Supervisor, 1995)
- Alec Holm (PhD, Univ. Western Australia, Panel Member, 1997-2001)
- Hugh Pringle (PhD, RSBS, Panel Member, 1997-2000)
- Endah Sulistyawati (PhD, RSBS, Panel Member, 1997-2001)
- Iain Hume (PhD, RSBS, Primary Supervisor, 1998-2002)
- Raywadee Roachanakanan (PhD, RSBS, Panel Member, 1999-2003)
- Sandra Berry (PhD, RSBS, Supervisor, 1999-2003)
- Stan Schymanski (PhD, Univ. Western Australia, Supervisor, 2004-2007)
- Randall Donohue (PhD, RSBS, Primary Supervisor, 2005-2010)

- Wee-Ho Lim (PhD, RSB, Primary Supervisor, 2008-2013)
- Jie Jiang (PhD, RSB, Supervisor, 2010-2014, withdrew)
- Tom Van Neil (PhD, RSB, Primary Supervisor, 2010-)
- Claire Krause (PhD, RSES, Panel member, 2011- 2015)
- Jason Bertram (PhD, RSB, Panel Member, 2012- 2015)
- Yaya Ulumuddin (PhD, Fenner School, Supervisor, 2015-2019)
- Emily Goodale (PhD, UWA, Panel Member, 2015-2016, withdrew)
- Yifei Zhou (PhD, RSES, Primary Supervisor, 2016- 2017, withdrew)
- Shangyu Hu (MSc, RSES, Primary Supervisor, 2017-)

Supervision of visiting PhD Students

- Yanfang Wang (PhD, Chinese Academy of Sciences, 2013-2014)
- Dongqin Yin (PhD, Tsinghua University, 2014)

Supervision/mentoring of post-doctoral fellows

- Dr Sandra Berry (RSBS, 2004-2006)
- Dr Belinda Barnes (RSBS, 2004-2006)
- Dr Michael Hobbins (RSBS, 2006-2009)
- Dr Fubao Sun (RSB, 2009-2014)
- Dr Mathew Brookhouse (RSB, 2012-2015)
- Dr Sophie Lewis (RSES, 2014-2015)
- Dr Yuting Yang (CSIRO, 2014-2018, ANU 2018)
- Dr Dongqin Yin (RSES, 2016-)
- Dr Anna Ukkola (RSES, 2018-)