

Dr. Micheline Campbell

Scientist, QLD Dept. of Natural Resources, Mines, and Energy

Rockhampton, Australia

☎ +61 411 282 657

✉ michelineleecampbell@gmail.com

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Professional Summary

I have a PhD in palaeo-climatology and am currently working in hydrological sediment and nutrient transport. I have strong data science skills and have developed research skills applicable to a broad range of topics within the environmental sciences. My PhD research focused on stalagmite-based climate proxy records and associated karst geomorphology and groundwater hydrology, while my current position with the Queensland Department of Natural Resources, Mining, and Energy has a strong focus on field experiments and hypothesis testing of reducing nutrient and sediment runoff to Great Barrier Reef catchments. I am hoping to further my scientific career by securing a position where I can continue to use the skills I have developed, broaden my skillset, and continue teaching and engaging with undergraduate and postgraduate students.

Experience

Feb 2020 - **Scientist**, *Land and Water Science Unit*, Rockhampton, QLD, Australia.

- Jul 2020
 - Analysed cane trash trial data.
 - Found that there a significant proportion of the variation of sediment in cane paddock runoff can be described by soil type and cane trash cover.

Aug 2019 - **Research Assistant**, *School of Agriculture and Environment*, Perth, WA, Australia.

- Dec 2019
 - Miscellaneous data analysis tasks

Aug 2014 - **PhD Researcher**, *School of Agriculture and Environment*, Perth, WA, Australia.

- Oct 2018
 - Developed two new palaeo-climate proxy records for south east Australia
 - Showed that the climate of the LIG has similar significant periodicities, suggesting our long term climate patterns (e.g. PDO) will continue as temperatures increase with climate change.
 - Used social network analysis to advance our understanding of methodologies applied in the speleothem palaeo-climate proxy community and the development of the field over time.
 - Demonstrated that LA-ICP-MS and LA-ICP-AES of trace elements in speleothem calcite produce comparable results

Teaching

2019 **Course Co-Coordinator and Lecturer Catchment and River Processes**, The University of Western Australia.

- 2018 **Tutor Geographies of a Global City**, The University of Western Australia.
- 2014–2019 **Tutor Catchment and River Processes**, The University of Western Australia.

Education

- 2014–2019 **PhD (Geography)**, *The University of Western Australia*, Perth, Australia.
 o **Thesis: Speleothem-based palaeo-climate research: Methodology, applications, and insight from the Snowy Mountains, southeast Australia**
 o Supervisors: JN. Callow, H. McGowan, G. McGrath, H. Wong
- 2013–2014 **BA (Hons, 1st Class) (Geography)**, *The University of Queensland*, Brisbane, Australia.
 o **Thesis: The Drip Hydrology of a Speleothem from the Yarrangobilly Caves, NSW, Australia**
 o Supervisors: H. McGowan, JN. Callow
- 2010–2012 **BA (Geography and Spanish)**, *The University of Queensland*, Brisbane, Australia.

Publications

1. Campbell, M, J Callow, G McGrath, and H McGowan (May 2018). Co-authorship analysis of the speleothem proxy-climate community: working together to tackle the big problems. *International Journal of Speleology* **47**(2), 165–172.
2. McGowan, H, JN Callow, J Soderholm, G McGrath, M Campbell, and Jx Zhao (Dec. 2018). Global warming in the context of 2000 years of Australian alpine temperature and snow cover. *Scientific Reports* **8**(1), 4394.
3. Campbell, M, JN Callow, G McGrath, and H McGowan (Dec. 2017). A multimethod approach to inform epikarst drip discharge modelling: Implications for palaeo-climate reconstruction. *Hydrological Processes* **31**(26), 4734–4747.

Funding and Scholarships

- 2018 **Australian Institute of Nuclear Science and Engineering Travel grant**, \$1000.
- 2017 **Australian and New Zealand Geomorphological Group Travel grant**, \$300.
- 2016 **University of Western Australia Travel grant**, \$1850.
- 2015–2018 **Australian Institute of Nuclear Science and Engineering Postgraduate Research Award Stipend**, \$7500pa.

2015–2018 **Australian Institute of Nuclear Science and Engineering Postgraduate Research Award Analytical Budget**, \$1000pa.

2014–2018 **Australian Government Research Training Program Stipend**, \$26000pa.

2014–2015 **Snowy Hydro Ltd. Stipend**, \$5000pa.

2014 **University of Western Australia Stipend**, \$3000.

Conference Presentations

Skills

Service

Volunteer Positions

Presented Workshops

Professional Development

2020 **Advanced R Workshop**, *The University of Queensland, Australia.*

2020 **Intermediate R Workshop**, *The University of Queensland, Australia.*

2018 **Weathering Climate Change: How have humans coped with climate change-and how will we continue to do so?**, *The University of Western Australia.*

2018 **Masterclass in Creating Opportunities and Developing your Research Skills**, *The University of Western Australia.*

2016 **Synthesis II - From dynamics of structure to function of complex networks**, *TU Dresden, Germany.*

2016 **Water on Earth: origin, reservoirs, and its global cycle**, *The University of Western Australia.*

2016 **Research Bazaar**, *Murdoch University, Australia.*

2014 **Writing and publishing in scientific journals**, *The University of Western Australia*.

References

PhD **Dr. Nik Callow**, *School of Agriculture and Environment, The University of Western Australia*, nik.callow@uwa.edu.au; +61 8 6488 1924.

PhD **Professor Hamish McGowan**, *School of Earth and Environmental Sciences, The University of Western Australia*, h.mcgowan@uq.edu.au.

PhD **Dr. Gavan McGrath**, *Western Australia Dept. of Biodiversity, Conservation, and Attractions*, gavan.mcgrath@dbca.wa.gov.au.

Supervisor **Bronwyn Bosomworth**, *Queensland Dept. of Natural Resources, Mining and Energy*, bronwyn.bosomworth@dnrme.qld.gov.au.