

CURRICULUM VITAE

Michael L. Griffiths

Department of Environmental Science
William Paterson University
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Education

- 2006-2010 The University of Newcastle, Australia.
Ph.D., Physical Geography. Specialty: Paleoclimatology, Geochemistry.
Thesis: *Post-glacial Evolution of the Sub-Equatorial Tropics from East Indonesian Speleothems*.
Advisors: Russell N. Drysdale, Michael K. Gagan.
- 2004-2006 University of Massachusetts, Amherst MA.
M.Sc., Geosciences. Specialty: Climatology, Statistics.
Thesis: *Data Homogenization and Analysis of Climatic Extremes in the Northeast United States During the Twentieth Century*.
Advisors: Raymond S. Bradley, Rob DeConto.
- 2000-2004 University of Wollongong, Australia.
B.Sc., Geosciences.

Appointments

- 2012-present Assistant Professor, Department of Environmental Science, William Paterson University, Wayne, NJ.
- 2010-2012 National Oceanic and Atmospheric Administration (NOAA)/University Corporation for Atmospheric Research (UCAR) Climate and Global Change Postdoctoral Fellow, University of California, Irvine, CA.

Teaching

William Paterson University

- Fall 2012 Instructor, ENV-1150: Introduction to Physical Geology
Instructor, ENV-4800: Senior Practicum

University of California, Irvine

- Spring 2011 Demonstrator: Advanced Methods in Laboratory Techniques

University of Newcastle, Australia

- Fall 2007-2010 Demonstrator, GEOS1040: Earth's Dynamic Systems
Spring 2007, 2008 Lecturer, GEOS2070: Climatology and Soils
Fall 2007-2010 Demonstrator, GEOS2050: River Basin Processes
Spring 2007-2010 Demonstrator, GEOS3280: Global Change

Academic Awards and Distinctions

- 2010-2012 NOAA/UCAR Climate and Global Change Postdoctoral Fellowship, University of California, Irvine, CA.
Postdoc Advisor: Prof. Kathleen R. Johnson.
- 2010-2012 Lamont-Doherty Earth Observatory Postdoctoral Fellowship, Columbia University, NY [declined].

- 2006-2010 Australian Government Postgraduate Award to undertake Ph.D. at University of Newcastle.
- 2009 University of Newcastle Faculty Award for Outstanding Postgraduate (Research) Student Achievement.
- 2009 Australian Synchrotron Travel Award to attend European Synchrotron Radiation Facility. Project Title: *Sulfur in tropical speleothems as a proxy for volcanic explosivity and a tool for refined geochronology: a micro-XRF and micro XANES investigation.*
- 2009 Australian Quaternary Association/Australian Research Council Network for Earth System Science Travel Award to attend PAGES 1st Young Scientists Meeting, Oregon State University, Oregon, USA.
- 2007-2009 University of Newcastle Research Higher Degree Travel Scholarships to attend various international conferences [received three].
- 2004-2006 Research Assistantship, M.Sc., University of Massachusetts, Amherst, MA.
- 2003 University of Wollongong International Student Exchange Travel Scholarship.

Research Interests

Isotope geochemistry; Palaeoclimatology; Karst hydrology; Soil-karst carbon cycling; Climate dynamics.

Peer Reviewed Publications

- [7] Reeves, J.M., Cohen, T.J., Ayliffe, L.K., Bostock, H.C., Devreindt, L., Dunbar, G.B., Drysdale, R.N., Fitzsimmons, K., **Griffiths, M.L.**, Haberle, S.G., Lewis, S., McGregor, H.V., Mooney, S.D., Moss, P., Climatic records from Tropical Australasia – A synthesis from the OZ-INTIMATE workgroup. *In press, Quaternary Science Reviews.*
- [6] **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Zhao, J.-x., Hellstrom, J.C., Ayliffe, L.K., Hantoro, W.S., Suwargadi, B.W., 2012. Abrupt increase in east Indonesian rainfall from flooding of the Sunda Shelf ~9,500 years ago. *In press, Quaternary Science Reviews.*
- [5] **Griffiths, M.L.**, Drysdale, R.N., Hua, Q., Fohlmeister, J., Johnson, K., Hellstrom, J.C., Gagan, M.K., Zhao, J.-x., 2012. Hydrological control of the dead carbon fraction in a tropical Holocene speleothem. *Quaternary Geochronology* 14, 81-93.
- [4] **Griffiths, M.L.**, Drysdale, R. N., Vonhof, H.B., Gagan, M.K., Zhao, J.-x., Ayliffe, L.K., Hantoro, W.S., Hellstrom, J.C., Cartwright, I., Frisia, S., Suwargadi, B.W., 2010. Younger Dryas-Holocene temperature and rainfall history of southern Indonesia from $\delta^{18}\text{O}$ in speleothem calcite and fluid inclusions. *Earth and Planetary Science Letters* 295, 30-36.
- [3] **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Ayliffe, L.K., Frisia, S., Zhao, J.-x., Hellstrom, J.C., Fischer, M.J., Hantoro, W.S., Feng, Y.-x., Suwargadi, B.W., 2010. Evidence for Holocene changes in Australian-Indonesian monsoon rainfall from stalagmite trace element and stable isotope ratios. *Earth and Planetary Science Letters* 292, 27-38.
- [2] **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Zhao, J.-x., Ayliffe, L.K., Hellstrom, J.C., Hantoro, W.S., Frisia, S., Feng, Y.-x., Cartwright, I., St. Pierre, E., Fischer, M.J., Suwargadi, B.W., 2009. Increasing Australian-Indonesian monsoon rainfall linked to early Holocene sea-level rise. *Nature Geoscience* 2, 636-639.
- [1] **Griffiths, M.L.**, and Bradley, R.S., 2007. Variations of Twentieth Century Temperature and Precipitation Extreme Indicators in the Northeast United States. *Journal of Climate* 20, 5401-5417.

Publications in review

Ayliffe, L.K., Gagan, M.K., Zhao, J.-x., Drysdale, R.N., Hellstrom, J.C., **Griffiths, M.L.**, Hantoro, W.S., Cowley, J., Scott-Gagan, H., Suwargadi, B.W. Millennial-scale changes in the Australasian monsoon during the last deglaciation. *In review, Nature Geoscience.*

Reeves, J.M., Cohen, T.J., and **OZ-INTIMATE members**. OZ-INTIMATE: toward a climate event stratigraphy for the Australian region, 0-35 ka. *In review*, *Quaternary Science Reviews*.

Griffiths, M.L., Drysdale, R.N., Gagan, M.K., Hellstrom, J.C., Couchoud, I., Vonhof, H.B., Ayliffe, L.K., Hantoro, W.S. Australasian monsoon response to Dansgaard-Oeschger event 21 and teleconnections to higher latitudes. *In review*, *Earth and Planetary Science Letters*.

Griffiths, M.L., Kimbrough, A.K., Gagan, M.K., Drysdale, R.N., Cole, J., Johnson, K., Zhao, J.-x., Hellstrom, J.C., Hantoro, W.S. An annually-resolved reconstruction of Indo-Pacific hydrology over the past 2,000 years. *In revision*.

Talks and Abstracts

- [18] **Griffiths, M.L.**, Gagan, M.K., Drysdale, R.N., Kimbrough, A., Johnson, K.R., Cole, J.E., Zhao, J.-x., Ayliffe, L.K., Hellstrom, J.H., Hantoro, W.S. Evidence for Shifts in Indo-Pacific Hydrology over the Last Two Millennia from Indonesian Speleothems. *American Geophysical Union (AGU) Fall Meeting*, San Francisco, USA. December 3–7, 2012. [Invited].
- [17] Yang, H., Johnson, K.R., **Griffiths, M.L.**, De Anda, J., Ersek, V., Henderson, G.H. Holocene Shifts in Southeast Asian Hydrology Recorded in Speleothems from Laos. *American Geophysical Union (AGU) Fall Meeting*, San Francisco, USA. December 3–7, 2012.
- [16] Gagan, M.K., Ayliffe, L.K., Scroxton, N.G., Krause, C.E., Kimbrough, A.K., Hantoro, W.S., Drysdale, R.N., Hellstrom, J.H., Cheng, H., Edwards, R.L., Zhao, J.-x., **Griffiths, M.L.** Orbital- and Millennial-Scale Changes in the Australasian Monsoon Through the Late Pleistocene. *American Geophysical Union (AGU) Fall Meeting*, San Francisco, USA. December 3–7, 2012.
- [15] **Griffiths, M.L.**, Ayliffe, L.K., Drysdale, R.N., Gagan, M.K., Johnson, K.R., Cole, J., Kimbrough, A., Hellstrom, J.C., Zhao, J.-x., Hantoro, W.S. From the LGM to the Modern Era: Tracking the Evolution of Indo-Pacific Hydrology from Indonesian Speleothems. *Synthesis of Transient Climate Evolution of the last 21-kyr (SynTraCE-21) workshop*, Providence, Rhode Island. November 4–7. [Invited].
- [14] **Griffiths, M.L.**, Fohlmeister, J., Drysdale, R.N., Hua, Q., Johnson, K.R., Hellstrom, J.C., Gagan, M.K., Zhao, J.X. Hydrological control on the dead-carbon content of a Holocene tropical speleothem. *21st International Radiocarbon Conference, Paris, France*. July 9–13, 2012.
- [13] **Griffiths, M.L.**, Kimbrough, A.K., Gagan, M.K., Drysdale, R.N., Cole, J., Johnson, K., Zhao, J., Hellstrom, J.C., Hantoro, W.S. Towards an annually-resolved reconstruction of Indo-Pacific hydrology over the past 2,000 years. *American Geophysical Union (AGU) Fall Meeting*, San Francisco, USA. December 5–9, 2011.
- [12] **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Hellstrom, J.C., Vonhof, H., Couchoud, I., Frisia, S., Hantoro, W.S. Speleothem geochemistry reveals an abrupt shift in Indo-Pacific hydrology through Dansgaard-Oeschger event 21. *XVIII INQUA CONGRESS*, Bern, Switzerland. July 20–27, 2011.
- [11] **Griffiths, M.L.**, Drysdale, R.N., Hua, Q., Hellstrom, J.C., Frisia, S., Gagan, M.K., Zhao, J., Fischer, M., Ayliffe, L.K., Hantoro, W.S. An Investigation of the climatic influences on the ^{14}C activity in a Holocene stalagmite from Flores, Indonesia. *XVIII INQUA CONGRESS*, Bern, Switzerland. July 20–27, 2011.
- [10] **Griffiths, M.L.**, Drysdale, R.N., Hellstrom, J.C., Frisia, S., Gagan, M.K., Vonhof, H., and Ayliffe, L.K. Apparent abrupt temperature increase in the southern equatorial tropics of the western Pacific during D-O 21. *3rd DAPHNE workshop*, Innsbruck, Austria. June 30 – July 2nd, 2010.
- [9] **Griffiths, M.L.**, Drysdale, R.N., Hua, Q., Hellstrom, J.C., Frisia, S., Gagan, M.K., Zhao, J.-x., and Ayliffe, L.K. Assessment of climatic influence on ^{14}C activity in a Holocene stalagmite from Flores, Indonesia. *3rd DAPHNE workshop*, Innsbruck, Austria. June 30th - July 2nd, 2010.

- [8] **Griffiths, M.L.**, Frisia, S., Drysdale, R.N., Borsato, A., Gagan, M.K., Hellstrom, J.C., Zhao, J.-x., Hantoro, W. Sub-annual trace element variability in a speleothem from Flores, Indonesia: A record of soil processes. *The 1st Australasian 2k (AUS2K) PAGES Regional Workshop: Towards Data Synthesis*, School of Earth Sciences, Melbourne University, Australia. May 31st - June 2nd, 2010.
- [7] **Griffiths, M.L.**, Drysdale, R.N., Frisia, S., Gagan, M.K., Zhao, J.-x., Fischer, M., Ayliffe, L., Feng, Y.-x., Hellstrom, J.N., St Pierre, E., Hantoro, W.S., Suwargadi, B. Post-Glacial Climate Evolution of the Southern Sub-equatorial Tropics From Speleothems in Flores, Indonesia. *Past Global Changes (PAGES) 1st Young Scientists Meeting and Open Science Meeting*, Oregon State University, Corvallis, Oregon, USA. July 6–11, 2009.
- [6] **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Zhao, J.-x., Ayliffe, L., Hellstrom, J., Hantoro, W.S., Frisia, S., Feng, Y.-x., Cartwright, I., St Pierre, E., Fischer, M., Suwargadi, B. Post-glacial coupling of the Australasian monsoon and teleconnections to the North Atlantic: New insights from Indonesian speleothems. *Past Climates Meeting*, Wellington, New Zealand. May 15–17, 2009.
- [5] **Griffiths, M.L.**, Drysdale, R.N., Frisia, S., Gagan, M.K., Zhao, J.-x., Fischer, M., Ayliffe, L., Feng, Y.-x., St Pierre, E., Hantoro, W.S., Suwargadi, B. Multi-proxy Evidence of Australian Summer Monsoon Variability During the Holocene: Links to the East-Asian Monsoon and the North Atlantic. *American Geophysical Union (AGU) Fall Meeting*, San Francisco, USA. December 15–19, 2008.
- [4] **Griffiths, M.L.**, Drysdale, R.N., Frisia, S., Gagan, M.K., Ayliffe, L., Zhao, J.-x., St Pierre, E., Feng, Y.-x., Hantoro, W.S., Suwargadi, B. Post-glacial evolution of tropical monsoon precipitation from east Indonesian speleothems. *European Geosciences Union (EGU) general assembly*, Vienna, Austria. April 13–18, 2008.
- [3] **Griffiths, M.L.**, Frisia, S., Drysdale, R.N., Gagan, M.K., Ayliffe, L., Zhao, J.-x., St Pierre, E., Feng, Y.-x., Hantoro, W.S., Suwargadi, B. Holocene Australasian monsoon intensity recorded in speleothems from Flores, Indonesia. *2nd DAPHNE workshop, Heidelberg*, Germany. February 26–28, 2008.
- [2] **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Ayliffe, L., Zhao, J.-x., St Pierre, E., Hantoro, W.S., Suwargadi, B. A Holocene record of monsoon intensity from speleothems in Flores, Indonesia. *American Geophysical Union (AGU) Fall Meeting*, San Francisco. USA. December 10–14, 2007.
- [1] **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Ayliffe, L., Zhao, J.-x., St Pierre, E., Hantoro, W.S., Suwargadi, B. A 12,800 year palaeomonsoon record from a stalagmite in Flores, Indonesia. *XVII INQUA CONGRESS*, Cairns, Australia. July 28th – August 3rd, 2007.

External Funding

- 2011 Australian Institute of Nuclear Science and Engineering Grant AINGRA11/004.
Project Title: *Radiocarbon variations during the Younger Dryas from a tropical speleothem*. Co-investigators (CI): Dr. M.L. Griffiths (CI), Dr. R.N. Drysdale (CI). \$21,000.
- 2010 Australian Institute of Nuclear Science and Engineering Grant AINGRA10/148.
Project Title: *Assessment of climatic influences on ¹⁴C activity in a Holocene stalagmite from Flores, Indonesia*. Co-investigators: Dr. M.L. Griffiths (CI), Dr. R.N. Drysdale (CI). \$14,000.
- 2008 Australian Institute of Nuclear Science and Engineering Grant AINGRA08/146.
Project Title: *¹⁴C variability in a Holocene stalagmite from Flores, Indonesia: a role of solar forcing on $\delta^{18}O$?* Co-investigators: Dr. M.L. Griffiths (CI), Dr. R.N. Drysdale (CI). \$7,300.

Academic Services

Invited Seminars/Lectures: University of California, Irvine February, 2012
NOAA Headquarters, Silver Spring, Washington D.C. April, 2011
University of Newcastle, Australia February, 2010
OZ-INTIMATE workshop, ANSTO, Australia December, 2009
University of Massachusetts, Amherst May, 2006

Conference Session Chair: XVIII INQUA Congress, Bern, Switzerland, 2011: *Tropical Palaeoclimate Records and Teleconnections to Higher Latitudes.*

Journal Reviewer: *Nature; Science; Central European Journal of Geosciences; Climate of the Past; Chemical Geology; Geochimica et cosmochimica acta; G-cubed; Geology; Geophysical Research Letters; Journal of Asian Earth Sciences; Journal of Climate; Quaternary Science Reviews.*

Proposal Reviewer: National Science Foundation: Ocean Drilling Program; Marine Geology and Geophysics.

Professional Memberships: Australian Quaternary Association; American Geophysical Union.

Selected Fieldwork

N. Australia — Collecting stalagmites, drilling flowstones, drip-water collection, cave surveying, 2012.

Laos — Collecting stalagmites from caves, pH/conductivity measurements, cave drip-water collection, cave surveying, 2010, 2011.

Flores, Indonesia — Collecting stalagmites, cave surveying, cave drip-water collection, 2007.