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PERSONAL STATEMENT

I am a professor of earth and environmental science at William Paterson University. My research expertise are centered on: **(1)** the use of geochemical tracers (i.e., isotopes, trace metals, and biomarkers) in sedimentary archives (cave carbonates, terrestrial and marine fossil teeth, corals, sediments) to explore changes in Earth's biogeochemical cycles and by extension evolution of the earth's natural systems. I am particularly interested in building records of past environmental, climatic, and ecological change over various time scales ranging from the last few hundred years to the last ~100 million years; and **(2)** utilizing climate model simulations of the past to assess mechanisms, test hypotheses, and in turn help to answer fundamental questions in climate science. I have published my work in high-impact journals, including *Science*, *Science Advances*, *Nature Geoscience*, *Nature Communications*, and *Proceedings of the National Academy of Sciences*. My research has been featured in media outlets around the world, including *The New York Times*, *The Independent*, *National Geographic*, *CNN*, *BBC*, *New Scientist*, and *Scientific American*. I have received funding from the National Oceanic and Atmospheric Administration, National Science Foundation, and the American Chemical Society. I also strive to promote diversity, equity, and inclusion in the geosciences, primarily through active recruitment, retention, and mentoring of students from historically marginalized communities.

EMPLOYMENT HISTORY

WILLIAM PATERSON UNIVERSITY

September 2025–present, **Professor (Faculty Range Adjustment Promotion)**

September 2020–2025, **Professor**

September 2017–2020, **Associate Professor**

September 2012–2017, **Assistant Professor**

Department of Environmental Science

College of Science and Health

UNIVERSITY OF CALIFORNIA, IRVINE

2010–2012, **NOAA/UCAR Climate and Global Change**

Postdoctoral Fellow

EDUCATION

THE UNIVERSITY OF NEWCASTLE, AUSTRALIA

2010, Ph.D., Geochemistry/Physical Geography

Dissertation: *Post-glacial Evolution of the Sub-Equatorial Tropics from East Indonesian Speleothems*

Advisors: Russell N. Drysdale, Michael K. Gagan

THE UNIVERSITY OF MASSACHUSETTS, AMHERST
2006, M.S., Geosciences

Thesis: *Variations of Twentieth Century Temperature and
Precipitation Extreme Indicators in the Northeast United States*

Advisors: Raymond S. Bradley, Rob DeConto

THE UNIVERSITY OF WOLLONGONG, AUSTRALIA
2004, B.S., Geosciences

International Exchange Program at University of Massachusetts,
Amherst (2003-2004)

PUBLICATIONS [†student authors; *postdoc authors]

Submitted or In Review

57. Colose, C.M., LeGrande, A.N., Elsaesser, G.S., Tierney, J.E., **Griffiths, M.L.**, ***Patterson, E.W.** and Tessler, M. “On the Sensitivity of Climate Sensitivity in a coupled climate model.” In review in *Journal of Advances in Modeling Systems*.
56. †**Hou, C.**, **Griffiths, M.L.**, Hardman, A., Seki, O., Zhou, A., ***Patterson, E.**, †**Indriksons, R.**, †**Ryan, S.**, DaSilva, M., Allison, M., Chen, L., Li, M., Ling, Y. and Bendle, J., 2025. “3-OH-FA- and Branched GDGT-Based Temperature Calibrations from a transect of Lakes in the Eastern USA.” In review in *Organic Geochemistry*.
55. Luo, G., Gordon, L., Chu, D., Cui, Y., Zhang, Y., Chen, Z-Q., **Griffiths, M.L.**, Zhou, W., Ruan, X., Xie, S., 2025. “Catastrophic precipitation and upper-ocean freshening during an early Triassic hothouse climate.” In review in *Science Advances*.
54. Johnson, K.R., **Griffiths, M.L.**, †**Yang, H.**, Henderson, G.M., Syed, S., Borsato, A., Frisia, S., Bhattacharya, Tierney, J.E., LeGrande, A., 2025. “Decreased Southeast Asian precipitation during summer insolation maxima.” In revision for *Nature Geoscience*.
53. Huang, M., Huan, Y., **Griffiths, M.L.**, Zhang, H., Zhao, S., Xiao, G., Zheng, Y., Xie, S., 2025. “Contrasting drought episodes across the mid-Brunhes event in northwest China.” In review in *Earth and Planetary Science Letters*.

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- 2025 52. ***Patterson, E.W.**, ***Akhtar, A.A.**, **Griffiths, M.L.**, McGee, D., Đỗ-Trọng, Q., Wolff, A., Higgins, J.A., Gili, S., Trần, M.X., Nguyễn, H.Q., Đinh, T.H., Bùi, T.N. and Johnson, K.R., 2025. “Quantifying changes in central Vietnam rainfall amount since the Late Pleistocene.” *Earth and Planetary Science Letters*. In press.
51. Regattieri, E., Forti, L., Drysdale, R.N., Hu, H-M., Shen, C-C, Cornacchia, I., Agostini, S., Isola, I., Barbaro, C.C., Morandi-Bonacossi, D., Kolinski, R., **Griffiths, M.L.**, and Zerboni, A. “A speleothem record from the Kurdistan Region of Iraq records climatic and environmental changes during the transition from the Last Glacial Maximum to the Holocene.” *Proceedings of the National Academy of Sciences*. In press.

50. **Tiwari, S.**, Pausata, F. S. R., LeGrande, A. N., **Griffiths, M. L.**, Wainer, I., Beltrami, H., de Vernal, A., Tabor, C. R., Chandan, D., Peltier, W. R., 2025. “Mid-Holocene ENSO variability altered by northern African vegetation changes: a model intercomparison study.” *Nature Communications Earth and Environment*, In press.
49. Chen, R., Xue, S., Zhang, H., **Griffiths, M.**, Zhou, Y., Liu, X., Zhu, Z., Chen, L., Guo, W., Wu, S., Cheng, H., Huang, J., Zhu, Z., Xie, S. “Using speleothem $^{87}\text{Sr}/^{86}\text{Sr}$ variations tracking the controls on trace element (Sr-Mg) compositions”. *Global and Planetary Change*, **252**, no. 104872, <https://www.sciencedirect.com/science/article/abs/S092181812500181X?via%3Dihub>.
48. McCormack, J., Feichtinger, I., Fuller, B.T., Jaouen, K., **Griffiths, M.L.**, Bourgon, N., Maisch IV, H., Becker, M.A., Pollerspöck, J., Hampe, O., Rössner, G.E., Assemat, A., Müller, W., Shimada, K. “Miocene marine vertebrate trophic ecology reveals megatooth sharks as opportunistic super carnivores”. *Earth and Planetary Science Letters*, **664**, no. 119393, <https://www.sciencedirect.com/science/article/pii/S0012821X25001918?via%3Dihub>.
47. Wainer, I, LeGrande, A.N., **Griffiths, M.L.**, Prado, L.F., 2025 “Green Sahara Influence on South Atlantic Dynamics: Insights from NASA GISS Simulations”. *Journal of Southern Hemisphere Earth System Science*, **75(2)**, no. 24031, <https://www.publish.csiro.au/ES/ES24031>.
46. Shimada, K., Motani, R., Sternes, P.C., Tomita, T., Bazzi, M., Collareta, A., Gayford, J.H., Türtscher, J., Jambura, P.L., Kriwet, J., Vullo, R., Long, D.J., Summers, A.P., Maisey, J.G., Underwood, C., Ward, D.J., Maisch, H.M. IV, Perez, V.J., Feichtinger, I., Naylor, G.J.P., Moyer, J.K., Higham, T.E., da Silva, J.P.C.B., Bornatowski, H., González-Barba, G., **Griffiths, M.L.**, Becker, M.A. & Siversson, M., 2025. “Reassessment of the possible size, form, weight, cruising speed, and growth parameters of the extinct megatooth shark, *Otodus megalodon* (Lamniformes: Otodontidae), and new evolutionary insights into its gigantism, life history strategies, ecology, and extinction”. *Palaeontologia Electronica*, no. 28.1.a12, <https://palaeo-electronica.org/content/2025/5450-biology-of-otodus-megalodon>
45. Xue, S., Zhang, H., **Griffiths, M.L.**, He, C., Liu, Y., Huang, J., Cheng, H., Guo, W., Wu, S., Zhou, J. and Ning, Y., 2025. A high-resolution multiproxy speleothem record of Eastern China hydroclimate variation during last glacial maximum. *Quaternary Science Reviews*, **350**, p.109152, https://www.sciencedirect.com/science/article/pii/S0277379124006541?casa_token=ASLCZEFAMkAAAAA:PgbfTF6-BnsWJ9Z1b5Z6M5WUcuTWOnEHQJ00vjTOriHS1_QzLcSAocMLaqpWYjaO5Xl-cMHPOc.
- 2024 44. Qian, S., Xu, Q., **Griffiths, M.L.**, Yang, H. and Xie, S., 2024. Decoupled terrestrial temperature and hydroclimate during the Plio-Pleistocene in the East Asian monsoonal region. *Quaternary Science Reviews*, 344, p.108955, https://www.sciencedirect.com/science/article/pii/S0277379124004566?casa_token=HmqGotVYWBEEAAAAA:wnKN9qaxQusCiT07mXnYTVqBmlrMZCK7CEnDoOhMVX4k9H9hLs10cTjAofbiYK4iCTWshGCFT8.

43. ***Patterson, E. W.**, Skiba, V., ***Wolf, A.**, **Griffiths, M.L.**, McGee, D., Bui, T.N., Trần, M.X., Đinh, T.H., Đỗ-Trọng, Q., Goldsmith, G.R., Ersek, V., and Johnson, K.R., 2024. “Local hydroclimate alters interpretation of speleothem $\delta^{18}\text{O}$ records” *Nature Communications*, **15**, no. 9064, <https://www.nature.com/articles/s41467-024-53422-y>.
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40. **Karnes, M.E.**, **Chan, R.L.**, Kuntz, J.P., **Griffiths, M.L.**, Shimada, K., Becker, M.A., Maisch IV, H.M., Eagle, R.A., Brenner-Coltrain, J., Miller, S., Kim, S.L., 2024. “Enigmatic Carbonate Isotope Values in Shark Teeth: Evidence for Environmental and Dietary Controls.” *Palaeogeography, Palaeoclimatology, Palaeoecology*. <https://www.sciencedirect.com/science/article/pii/S0031018223005618>.
- 2023 39. Wood, C.T., Johnson, K.R., Lewis, L.E., Wright, K., Wang, J.K., Borsato, A., **Griffiths, M.L.**, Mason, A., Henderson, G., Setera, J.B., Frisia, S., Keopanhya, S., White, J.C., 2024. “High-resolution, multiproxy speleothem record of the 8.2 ka event from Mainland Southeast Asia.” *Paleoceanography and Paleoclimatology*, <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2023PA004675>.
38. ***Wolf, A.**, Ersek, V., Braun, T., French, A., McGee, D., Bernasconi, S.M. Skiba, V., **Griffiths, M.L.**, Johnson, K.R., Fohlmeister, J., Breitenbach, S.F.M., Pausata, F.S.R., Tabor, C.R., Longman, J., Roberts, W.H.G., Chandan, D., Peltier, W.R., Salzmann, U., Limbert, D., Trinh, D.A., 2023. “Deciphering local and regional hydroclimate resolves contradicting evidence on the Asian monsoon evolution.” *Nature Communications*, <https://www.nature.com/articles/s41467-023-41373-9>.
37. Chen, X., Zhang, H., **Griffiths, M.L.**, Peng, X., Yang, L., Yu, M., Huang, J., Xue, S., Cheng, H. and Chen, S., 2023. “Northern high-latitude sea ice variation linked with East Asian monsoon anomalies during the Younger Dryas.” *Palaeogeography, Palaeoclimatology, Palaeoecology*, <https://doi.org/10.1016/j.palaeo.2023.111702>.
36. **†Patterson, E.W.**, Johnson, K.R., **Griffiths, M.L.**, Kinsley, C.W., McGee, D., Du, X., Pico, T., ***Wolf, A.**, Ersek, V., Mortlock, R.A., Yamoah, K.A., Bui, T., Xuan, M.T. “Glacial changes in sea level modulated millennial-scale variability of the Southeast Asian autumn monsoon.” *Proceedings of the National Academy of Sciences*, <https://doi.org/10.1073/pnas.2219489120>.
35. **Griffiths, M.L.**, Eagle, R.A., Kim, S.L., **†Flores, R.**, Becker, M.A., Maisch IV, H.M., Trayler, R.B., **†Chan, R.**, McCormack, J., **†Akhtar, A.A.**, Tripathi, A.K., Shimada, K. “Endothermic physiology of extinct megatooth sharks.” *Proceedings of the National Academy of Sciences*, <https://doi.org/10.1073/pnas.2218153120>.

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34. Shimada, K., Yamaoka, Y., Kurihara, Y., Takakuwa, Y., Maisch IV, H.M., Becker, M.A., Eagle, R.A., **Griffiths, M.L.**, 2023. “Tessellated calcified cartilage and placoid scales of the Neogene megatooth shark, *Otodus megalodon* (Lamniformes: Otodontidae), offer new insights into its biology and the evolution of regional endothermy and gigantism in the otodontid clade.” *Historical Biology*, <https://doi.org/10.1080/08912963.2023.2211597>.
33. †**Tiwari, S.**, †**Ramos, R. D.**, Pausata, F. S. R., LeGrande, A. N., **Griffiths, M. L.**, Beltrami, H., Wainer, I., de Vernal, A., Litchmore, D. T., Chandan, D., Peltier, W. R., and Tabor, C. R., 2023. “On the Remote Impacts of Mid-Holocene Saharan Vegetation on South American Hydroclimate: A Modeling Intercomparison.” *Geophysical Research Letters*, <https://doi.org/10.1029/2022GL101974>.
32. Huang, X., Zhang, H., **Griffiths, M.L.**, Zhao, B., Pausata, F.S.R., Tabor, C., Shu, J., Zhao, H., 2023. “Holocene forcing of East Asian hydroclimate recorded in a subtropical peatland from southeastern China.” *Climate Dynamics*, <https://doi.org/10.1007/s00382-022-06333-x>.
31. Shimada, K., Maisch IV, H.M., Perez, V.J., Becker, M.A., **Griffiths, M.L.**, 2023. “Revisiting body size trends and nursery areas of the Neogene megatooth shark, *Otodus megalodon* (Lamniformes: Otodontidae) reveals Bergmann’s rule possibly enhanced its gigantism in cooler waters.” *Historical Biology*, <https://doi.org/10.1080/08912963.2022.2032024>.
- 2022
30. Gorenstein, I., Prado, L.F., Bianchini, P.R., Wainer, I., **Griffiths, M.L.**, Pausata, F.S.R., Yokoyama, E., 2022. “A fully calibrated and updated mid-Holocene climate reconstruction for Eastern South America.” *Quaternary Science Reviews*, <https://doi.org/10.1016/j.quascirev.2022.107646>.
29. †**Ramos, R.D.**, LeGrande, A.N., **Griffiths, M.L.**, Elsaesser, G., Litchmore, D.T., Tierney, J.E., Pausata, F.S.R., and Nusbaumer, J., 2022. “Constraining cloud and convective parameterizations in a climate model using paleoclimate data.” *Journal of Advances in Modeling Systems*, <https://doi.org/10.1029/2021MS002893>.
28. †**Kast, E.R.**, **Griffiths, M.L.**, Kim, S.L., Rao, Z.C., Shimada, K., Becker, M.A., Maisch, H.M., Eagle, R.A., †**Clarke, C.A.**, †**Neumann, A.N.**, Lüdecke, T., Leichliter, J.N., Martínez-García, A., †**Akhtar, A.A.**, Wang, X.T., Haug, G.H., Sigman, D.M. “Cenozoic megatooth sharks occupied extremely high trophic positions.” *Science Advances*, <https://www.science.org/doi/10.1126/sciadv.abl6529>.
- See associated Focus: <https://www.science.org/doi/10.1126/sciadv.add2674>.
27. McCormack, J., **Griffiths, M.L.**, Shimada, K., Kim, S., Karnes, M., Maisch IV, Becker, M., Pederzani, S., Bourgon, N., Klervia, J., Jöns, N., Sisma-Ventura, G., Straube, N., Pollerspöck, J., Hublin, J.J., and Tütken, T., 2022. “Zinc isotopes reveal the ecology of extinct megatooth sharks.” *Nature Communications*, <https://www.nature.com/articles/s41467-022-30528-9>.
- 2021
26. Lu, J., Yang, H., **Griffiths, M.L.**, Burls, N.J., Xiao, G., Yang, J., Wang, J., Johnson, K.R., Xie, S., 2021. “Asian monsoon evolution linked to Pacific temperature gradients since the late Miocene.” *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2021.116882>.

25. Shimada, K., Bonnan, M.F., Becker, M.A., **Griffiths, M.L.**, 2021. “Ontogenetic growth pattern of the extinct megatooth shark *Otodus megalodon*, and implications for its reproductive biology, development, and life expectancy.” *Historical Biology*, <https://doi.org/10.1080/08912963.2020.1861608>.
- 2020
24. Shimada, K., Becker, M.A., and **Griffiths, M.L.**, 2020. “Body, jaw, and dentition lengths of Cirophagous lamniform sharks, and body size evolution in Lamniformes with special reference to ‘off-the-scale’ gigantism of the megatooth shark, *Otodus megalodon*.” *Historical Biology*, <https://doi.org/10.1080/08912963.2020.1812598>.
23. †**Wolf, A.**, Roberts, W.H., Ersek, V., Johnson, K.R. and **Griffiths, M.L.**, 2020. “Rainwater isotopes in central Vietnam controlled by two oceanic moisture sources and rainout effects.” *Scientific Reports*, <https://www.nature.com/articles/s41598-020-73508-z>.
22. **Griffiths, M.L.**, Johnson, K.R., Pausata, F.S., White, J.C., Henderson, G.M., Wood, C.T., Yang, H., Ersek, V., Conrad, C. and Sekhon, N., 2020. “End of Green Sahara amplified mid-to late Holocene megadroughts in mainland Southeast Asia.” *Nature Communications*, <https://www.nature.com/articles/s41467-020-17927-6>.
21. Akhtar, A.A., Santi, L.M., **Griffiths, M.L.**, Becker, M., Eagle, R.A., Kim, S., Kocsis, L., Rosenthal, Y., and Higgins, J.A., 2020. A record of the $\delta^{44}/^{40}\text{Ca}$ and [Sr] of seawater over the last 100 million years from fossil elasmobranch tooth enamel. *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2020.116354>.
- 2019
20. Maisch IV, H.M., Becker, M.A., **Griffiths, M.L.**, 2019. “Chondrichthyans from the Lower Clayton Limestone Unit of the Midway Group (Paleocene) near Malvern, Arkansas, USA, with Comments on the K/Pg boundary.” *PalZ*, <https://link.springer.com/article/10.1007/s12542-019-00494-7>.
19. Wang, C., Bendle, J., Greene, S.E., **Griffiths, M.L.**, Huang, J., Moossen, H., Zhang, H., Ashley, K., Xie, S., 2019. “Cave lipid biomarkers reveal increased soil microbial respiration during Holocene warm periods.” *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2019.115754>.
18. Desianti, N., Potapova, M., Enache, M., **Griffiths, M.L.**, †**Biskup, K.**, †**Degen, A.**, DaSilva, M., Millemann, D., Lippincott, L., Watson, E., Gray, A., Nikitina, D., 2019. “The potential and limitations of diatoms as environmental indicators in Mid-Atlantic coastal wetlands.” *Estuaries and Coasts*, <https://link.springer.com/article/10.1007/s12237-019-00603-4>.
17. †**Wang, J.K.**, Johnson, K.R., Borsato, A., Amaya, D.J., **Griffiths, M.L.**, Henderson, G.M., Frisia, S., 2019. “Hydroclimatic variability in Southeast Asia over the past two millennia.” *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2019.115737>.
- 2018
16. †**Zhang, H.**, **Griffiths, M.L.**, Chiang, J.C.H., Kong, W., Wu, S., Atwood, A., Huang, J., Cheng, H., Ning, Y., Xie, S., 2018. “East Asian hydroclimate modulated by the position of the westerlies during Termination I.” *Science*, <https://www.science.org/doi/10.1126/science.aat9393>.
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2017

15. Tang, C., Yang, H., Pancost, R.D., **Griffiths, M.L.**, Xiao, G., Dang, X., Xie, S., 2017. “Tropical and high latitude forcing of enhanced megadroughts in Northern China during the last four terminations.” *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2017.09.012>.

14. Smerdon, J.E., Luterbacher, J., Phipps, S.J., Anchukaitis, K.J., Ault, T., Coats, S., Cobb, K.M., Cook, B.I., Colose, C., Felis, T., Gallant, A., Jungclaus, J.H., Konecky, B., LeGrande, A., Lewis, S., Lopatka, A.S., Man, W., Mankin, J.S., Maxwell, J.T., Otto-Bliesner, B.L., Partin, J.W., Singh, D., Steiger, N.J., Stevenson, S., Tierney, J.E., Zanchettin, D., Zhang, H., Atwood, A.R., Andreu-Hayles, L., Baek, S.H., Buckley, B., Cook, E.R., D'Arrigo, R., Dee, S.G., **Griffiths, M.**, Kulkarni, C., Kushnir, Y., Lehner, F., Leland, C., Linderholm, H.W., Okazaki, A., Palmer, J., Piovano, E., Raible, C.C., Rao, M.P., Scheff, J., Schmidt, G.A., Seager, R., Widmann, M., Williams, A.P., Xoplaki, E., 2017. “Comparing proxy and model estimates of hydroclimate variability and change over the Common Era.” *Climate of the Past*, <https://cp.copernicus.org/articles/13/1851/2017/>.

2016

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12. †**Yang, H.**, Johnson, K.R., **Griffiths, M.L.** and Yoshimura, K., 2016. Interannual controls on oxygen isotope variability in Asian monsoon precipitation and implications for paleoclimate reconstructions. *Journal of Geophysical Research: Atmospheres*, <https://doi.org/10.1002/2015JD024683>.

11. **Griffiths, M.L.**, Kimbrough, A.K., Gagan, M.K., Drysdale, R.N., Cole, J., Johnson, K., Zhao, J.-x., Cook, B., Hellstrom, J.C., Hantoro, W.S., 2016. “Western Pacific hydroclimate linked to global climate variability over the past two millennia.” *Nature Communications*, <https://www.nature.com/articles/ncomms11719>.

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10. Ayliffe, L.K., Gagan, M.K., Zhao, J.-x., Drysdale, R.N., Hellstrom, J.C., Hantoro, W.S., **Griffiths, M.L.**, Scott-Gagan, H., St. Pierre, E., Cowley, J.A., Suwargadi, B.W., 2013. “Rapid interhemispheric climate links via the Australasian monsoon during the last deglaciation.” *Nature Communications*, <https://www.nature.com/articles/ncomms3908>.

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8. Reeves, J.M., Barrows, T.T., Cohen, T.J., Kiem, A.S., Bostok, H.C., Fitzsimmons, K.E., Jansen, J.D., Kemp, Krause, C., Petherick, L., Phipps, S.J., **OZ-INTIMATE Members**, 2013. “Climate variability over the last 35,000 years recorded in marine and terrestrial archives in the Australian region: an OZ-INTIMATE compilation.” *Quaternary Science Reviews*, <https://doi.org/10.1016/j.quascirev.2013.01.001>.

7. Reeves, J.M., Bostock, H.C., Ayliffe, L.K., Barrows, T.T., De Decker, P., Devreindt, L., Dunbar, G.B., Drysdale, R.N., Fitzsimmons, K., Gagan, M.K., **Griffiths, M.L.**, Haberle, S.G., Jansen, J.D., Krause, C., Lewis, S., McGregor, H.V., Mooney, S.D., Moss, P., Nanson, G.C., Purcell, A., van der, K., 2013. "Palaeoenvironmental change in tropical Australasia over the last 30,000 years – a synthesis from the OZ-INTIMATE group." *Quaternary Science Reviews*, <https://doi.org/10.1016/j.quascirev.2012.11.027>.
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., 2013. "Abrupt increase in east Indonesian rainfall from flooding of the Sunda Shelf ~9,500 years ago." *Quaternary Science Reviews*, <https://doi.org/10.1016/j.quascirev.2012.07.006>.
- 2012 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*, <https://doi.org/10.1016/j.quageo.2012.04.001>.
- 2010 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*, <https://doi.org/10.1016/j.epsl.2010.03.018>.
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*, <https://doi.org/10.1016/j.epsl.2010.01.002>.
- 2009 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*, <https://www.nature.com/articles/ngeo605>.
- 2007 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*, <https://doi.org/10.1175/2007JCLI1594.1>.

GRANTS

External

- "Collaborative Research: Co-evolution of Environment, Thermophysiology, and Trophic Dynamics in Cenozoic Marine Ecosystems: Insights from the *Otodus* Megatooth Shark Lineage." [PI: **M.L. Griffiths**; co-PIs: Sora Kim (UC Merced), Robert Eagle (UCLA), and John Higgins (Princeton University)]. National Science Foundation, Life and Environments Through Time (LET), EAR-2537116, \$1,179,677 (376,198 to Griffiths). 01/01/26 – 12/31/28, *pending*.
- "Collaborative Research: Terrestrial Holocene Paleo-Environmental Reconstructions on Crete: A Framework for Archaeological Timescales." [PI: Elizabeth Niespolo (Princeton University); co-PI:

M.L. Griffiths]. National Science Foundation, Archaeology Program Senior Research Awards, BCS-2517247, \$301,808 (\$84,088 to Griffiths). 07/01/25 – 06/30/28, *pending*.

- “Collaborative Research: Speleothem constraints on decadal to orbital scale hydroclimate variations in Mainland Southeast Asia.” [PI: PI: Kathleen Johnson (UC Irvine); co-PIs: **M.L. Griffiths**, D. McGee (MIT)]. National Science Foundation, Paleo Perspectives on Present and Projected Climate (P4CLIMATE), AGS-GEO/ATM-2503868, \$987,484 (\$220,934 to Griffiths). 09/01/25 – 08/31/28.
- “Collaborative Research: Constraining cloud and convective parameterizations using paleoclimate data assimilation.” [PI: **M.L. Griffiths**; co-PIs: J. Tierney (U. Arizona), G. Elsaesser (Columbia/NASA GISS)]. National Science Foundation, Paleo Perspectives on Climate Change (P2C2), AGS-GEO/ATM-2202999, \$876,154 (\$359,865 to Griffiths). 07/01/22 – 06/30/25.
- “Collaborative Research: Speleothem Constraints on Seasonal Hydroclimate Variability in Mainland Southeast Asia since the Late Pleistocene.” [PI: Kathleen Johnson (UC Irvine); co-PIs: **M.L. Griffiths**, David McGee (MIT)]. National Science Foundation, Paleo Perspectives on Climate Change (P2C2), AGS-GEO/ATM-2103051, \$846,637 (74,606 to Griffiths). 07/01/21 – 06/30/24.
- “Drought or Deluge? How did Rainfall in the Tropical South Pacific Respond to Sudden Climate Change During the Glacial Period?” [PI: D.J. Sinclair; AIs: A. Borsato, J.R. Brown, S. Frisia, **M.L. Griffiths**, R.A. Mortlock, S.J. Phipps, R.M. Sherrell]. Marsden Fund, Awards: 19-VUW-112, NZ\$960,000. 01/20-01/23.
- “Dry or Wet in East Asia During Heinrich Events? New Perspectives from Multiproxy Cave Records and Coupled Model Simulations.” [PI: **M.L. Griffiths**]. National Science Foundation, Paleo Perspectives on Climate Change (P2C2), AGS-GEO/ATM-1805544, \$298,939. 02/01/19 – 01/31/22.
- “Collaborative Research: Biogeochemical fingerprinting of the megatoothed (‘megalodon’) shark: a dual study in thermophysiological evolution and seawater chemistry.” [PI: **M.L. Griffiths**; co-PIs: M. Becker (WPU), Sora Kim (UC Merced), R. Eagle (UCLA), K. Shimada (DePaul University)] National Science Foundation, Sedimentary Geology and Paleobiology (SGP) EAR-7858820, \$571,014 (\$257,959 to Griffiths). 09/01/18 – 08/31/22.
- “Collaborative Research: Calibrating Southeast Asian Proxies: Speleothems and Tree-Rings.” [PI: **M.L. Griffiths**; co-PIs: N. Davi (WPU), K. Johnson (UCI), B. Buckley (LDEO)]. NSF Paleoclimate Perspectives on Climate Change (P2C2), AGS-GEO/ATM-1602947, \$830,588 (\$233,684 to Griffiths). 09/01/17 – 08/31/22.
- “Late Phanerozoic Evolution of Seawater Temperature and Sr/Ca: New Insights from ‘Clumped Isotope’ Thermometry in Biogenic Apatite” [PI: **M.L. Griffiths**]. American Chemical Society Petroleum Research Fund Undergraduate New Investigator Grant, PRF-#54852-UNI2, \$55,000. 01/01/15 – 01/01/17.
- “Collaborative Research: Reconstructing deglacial and Holocene climate variability in South East Asia using speleothems and isotope-enabled model simulations” [PI: K.R. Johnson; co-PI: **M.L. Griffiths**]. NSF P2C2, AGS-GEO/ATM-1404932, \$504,413 (\$59,496 to Griffiths). Collaborative Research: Reconstructing deglacial and Holocene climate variability in Southeast Asia using speleothems and isotope-enabled model simulations. 07/01/14 – 06/30/17.
- Student-Led Development of Earth Science Interpretive and Curriculum Materials for The Paterson Great Falls National Historic Park and Great Swamp Park [PIs N. Davi (WPU), **M.L. Griffiths**]. Landsberger Foundation: ~\$12,000-22,000/year (2013-2019).

- “Radiocarbon variations during the Younger Dryas from a tropical speleothem” [PI: R.N. Drysdale; co-PI: **M.L. Griffiths**]. Australian Nuclear Science and Technology Organisation (ANSTO) Australian Institute of Nuclear Science and Engineering Grant (AINSE) Grant, AINGRA11/004, \$14,700. 2011.
- “Assessment of climatic influences on ^{14}C activity in a Holocene stalagmite from Flores, Indonesia” [PI: R.N. Drysdale; co-PI: **M.L. Griffiths**]. ANSTO AINSE Grant, AINGRA10/148, \$9,500. 2010.
- “ ^{14}C variability in a Holocene stalagmite from Flores, Indonesia: a role of solar forcing on $\delta^{18}\text{O}$?” [PI: R.N. Drysdale; co-PI: **M.L. Griffiths**]. ANSTO AINSE Grant, AINGRA08/146, \$7,300. 2008.

Internal

- “Caves of the Khammouane District, Central Laos: Archives of Past Tropical Climate Change” [PI: **M.L. Griffiths**]. William Paterson University Center for Research, \$4,960. 06/01/17 – 08/01/17.
- “Characterizing Australasian monsoon-ITCZ dynamics over the past two millennia using speleothems from Laos and Indonesia” [PI: **M.L. Griffiths**]. William Paterson University Center for Research, \$4,960. 06/01/16 – 08/01/16.
- “Clumped isotope thermometry in biogenic phosphate; can this tool be used to constrain past seawater chemistry?” [PI: **M.L. Griffiths**]. William Paterson University Center for Research, \$4,960. 06/01/15 – 08/01/15.
- “Reconstructing deglacial and Holocene climate variability in South East Asia using speleothems and isotope-enabled model simulations” [PI: **M.L. Griffiths**]. William Paterson University Center for Research, \$4,960. 06/01/14 – 08/01/14.
- “Windows to past climate change: reconstructing hydrologic variability in tropical Australasia over the last 2,000 years using speleothems and isotope-enabled model simulations” [PI: **M.L. Griffiths**]. William Paterson University Center for Research, \$4,490. 06/01/13 – 08/01/13.

HONORS/AWARDS

- Faculty Excellence Award in Research, Scholarship and Creative Expression, William Paterson University, 2025.
- NOAA/UCAR Climate and Global Change Postdoctoral Fellow, 2010-2012.
- Lamont-Doherty Earth Observatory (LDEO) Postdoctoral Fellowship, Columbia University, New York, 2010-2012 [*declined*].
- University of Newcastle Postgraduate Award, 2006-2009, University of Newcastle, Australia.
- University of Newcastle Faculty Award, Outstanding Postgraduate (Research) Student Achievement for *Nature Geoscience* publication, 2009.
- Australian Synchrotron Travel Award to attend European Synchrotron Radiation Facility (ESRF), 2009.
- Australian Quaternary Association/Australian Research Council Network for Earth System Science Travel Award, 2009. *PAGES 1st Young Scientists Meeting, Oregon State University, Oregon, USA.*
- University of Newcastle Research Higher Degree Travel Scholarships to attend various international conferences [received three].
- Research Assistantship, M.S., University of Massachusetts, Amherst, MA, 2004-2006.
- University of Wollongong, International Student Exchange Travel Scholarship, 2003.

TEACHING

WILLIAM PATERSON UNIVERSITY *Department of Environmental Science*

- ENV1150: *General Geology* (Fall 2012, Spring/Fall 2013-2016, Summer 2013-2024)
- ENV1100: *Environmental Sustainability* (Summer/Winter 2022-2024; Fall 2024, Spring 2025)
- ENV2170: *Introduction to Oceanography* (Spring 2013-2024)
- ENV3170: *Global Climate Change* (Fall 2013-2023, Spring 2025)
- ENV3010: *Field Experience* (Spring/Fall 2012-2019)
- ENV3500: *Energy and Sustainable Technology* (Fall 2021, 2023)
- ENV3800: *Junior Seminar* (Spring 2013-2016)
- ENV4700: *Hydrology and the Environment* (Fall 2022, 2024)
- ENV4800: *Senior Practicum* (Fall 2012-2016)
- ENV4990: *Independent Study* (Fall 2014, Spring 2018, Spring/Fall 2020)

UNIVERSITY OF CALIFORNIA, IRVINE

Earth System Science

ESS150/250: *Advanced Methods in Laboratory Techniques* (Spring 2012)

THE UNIVERSITY OF NEWCASTLE, AUSTRALIA

Earth Science

- GEOS1040: *Earth's Dynamic Systems* (Spring 2007-2010)
- GEOS2070: *Climatology and Soils* (Spring 2008)
- GEOS2050: *River Basin Processes* (Autumn 2008-2009)
- GEOS3280: *Global Change* (Autumn 2007-2009)

MENTORING

Postdoctoral Research Fellows

- Dr. Jarunetr “Nadia” Sae-Lim (Ph.D., U. St. Louis), 2024 – present, *The President's Postdoctoral Fellow*, University of California Irvine.
- Dr. Elizabeth Patterson (Ph.D., 2023, UC Irvine), 2023 – present, William Paterson University.
- Dr. Annabel Wolf (Ph.D., 2021, Northumbria University), 2021 – 2024, Department of Earth System Science, University of California Irvine.
- Dr. Alliya A. Akhtar (Ph.D., 2021, Princeton University), 2021 – present, William Paterson University and Princeton University.
- Dr. Riovie D. Ramos (Ph.D., 2019, Nanyang Technological University, Singapore), 2020 – 2022, Department of Environmental Science, William Paterson University.

Graduate students

- Miranda Elizarraras Botello, 2024 – present, Ph.D. candidate, Department of Earth System Science, University of California, Irvine, CA.

- Calen Rubin, 2023 – present, Ph.D. candidate, Department of Earth and Environmental Sciences, Boston College, Boston, MA.
- Changhai Hou, 2023 – present, Ph.D. candidate, School of Geography, Earth and Environmental Sciences, University of Birmingham, United Kingdom.
- Shivangi Tiwari, 2022 – present, Ph.D. candidate, Département des sciences de la Terre et de l'atmosphère, Université du Québec à Montréal, Canada.
- Jade Knighton, 2021 – present, Ph.D. candidate, Earth, Planetary, and Space Sciences, UCLA.
- Randy Flores, 2021- present, Ph.D. candidate, Earth, Planetary, and Space Sciences, UCLA.
- Rachel Chan, 2019 – 2022, M.S. student, Life and Environmental Science, UC Merced.
- Molly Karnes, 2019 – 2022, M.S. student, Life and Environmental Science, UC Merced.
- Elizabeth Patterson, 2019 – present, Ph.D. candidate, Earth System Science, UC Irvine.
- Crystal Rao, 2019 – present, Ph.D. candidate, Department of Geosciences, Princeton University.
- Emma Kast, 2018 – 2020, Ph.D., Department of Geosciences, Princeton University.
- Alliya A. Akhtar, 2018 – 2021, Ph.D., Department of Geosciences, Princeton University.
- Christopher Wood, 2013 – 2019, Ph.D., Earth System Science, UC Irvine.
- Jessica Wang, 2013 – 2019, Ph.D., Earth System Science, UC Irvine.
- Hongbin Zhang, 2015 – 2016, Ph.D., China University of Geosciences (Wuhan), student visitor to WPU (2015-2016).
- Hongying Yang, 2010 – 2015, Ph.D., Earth System Science, UC Irvine.

Undergraduate students

- Sabrina Ryan (Honors College) and Roland Indriksons. Project title: “*Refining Modern Temperature Calibrations of Organic Biomarkers in U.S. East Coast Lake Sediments for Paleoclimate Reconstructions.*”
- Erman Kurtay, Recep Toprak, Cory Maharaj, Thalia Perez. Project title: “*Future projections of regional hydroclimate in the NASA GISS ModelE 3*”.
- Erika McNally, Fall 2021 – present. Project title: “*Rainfall variability in the Maldives during the Little Ice Age from $\delta^{18}\text{O}$ and Ba/Ca in coral records*”.
- Jessica Bonilla, Fall 2021 – present. Project title: “*Monsoon variability in Bangladesh during the Little Ice Age from $\delta^{18}\text{O}$ and Ba/Ca in coral records*”.
- Adanny Camacho, Frank Obando. Fall 2020 – 2021. Project title: “*Geochemical investigation of fossil shark teeth from W. Europe*”.
- Allison Neumann, Chlesia Clarke, Drew Pederson, Troy Nixon, and Clint Mautz. Project title: “*The extinction of iconic megatoothed shark *Otodus megalodon*: preliminary evidence from ‘clumped’ isotope thermometry*”.
- Ksawery Biskup and Austin Degen, Fall 2017 – Spring 2019. Project title: “*Environmental evaluation of mid-Atlantic coastal wetlands from paired geochemical and diatom analysis of sediments*”.
- Richard V. Plattel and Chris Gocklin, Fall 2016 – present. Project title: “*Characterizing diagenesis in fossil shark teeth using FT-IR, SEM, and NMR*”.
- Christopher Brown, summer 2016 – present. Project title: “*Links between early human settlements in New Jersey and Holocene climate*”.

- Tara Ekiert, spring 2016 – present. *Project title*: “Clumped isotopes in Cretaceous shark teeth reveal ancient environments in North America”.
- Randall Sanders, 2015-2016, WPU Environmental Science and Education (co-mentor with N. Davi), Landsberger Foundation. *Project title*: “Connecting Grade 3-12 Students to Natural Geoscience Processes in Their Local Urban National Park”.
- Seth Getch and Kyle Hansen, 2014-present, WPU Environmental Science, The Garden State Louis Stokes Alliance for Minority Participation Award (collaboration with Prof. Stefanie Brachfeld, Montclair State University). *Project title*: “Deglacial climate variability in Northern New Jersey inferred from a lake sediment core”.
- Sanserei Pilapil and Fatima Popcakova, 2015-present, WPU Biology. *Project title*: “Characterizing diagenesis in fossil shark teeth using FT-IR, SEM, and NMR”.
- Bryan Gonzalez, 2013-2015, WPU Environmental Science, The Garden State Louis Stokes Alliance for Minority Participation Award and Research Internship for Ocean Sciences (RIOS) Award at Rutgers Institute for Marine and Coastal Sciences (Summer 2014) (co-mentor with Distinguished Professor Yair Rosenthal). *Project title*: “Reconstructing seawater Sr/Ca through the late Phanerozoic from fossil shark teeth”.
- Danielle Nichols, Evan Gerry, Mathew Heye, Christine Thompson, Ralph Scimeca, Chris Bush, and Daniel Pagano, 2013-2014, WPU Earth Science and Environmental Science (co-mentor with N. Davi), Landsberger Foundation. *Project title*: “Student-Led Development of Earth Science Interpretive and Curriculum Materials for The Paterson Great Falls National Historic Park”.

INVITED SEMINARS (SINCE 2011)

- Department of Atmospheric and Environmental Sciences (DAES) and the Atmospheric Sciences Research Center (ASRC) Joint Colloquium, University at Albany. April 7, 2025.
- *How can natural climate archives better inform future hydroclimate variability in Southeast Asia?* Island and Coastal Ecologies Workshop: A Sustainable Futures Initiative. January 17-20, 2024.
- The Doctoral Program in Environmental Science & Management, MSU Sustainability Seminar Series, Montclair State University. October 09, 2023.
- Indigenous Landscapes and Resource Management in Taiwan and Southeast Asia Workshop, National Chengchi University, Taipei, Taiwan. February 24 – 28, 2023.
- Program for Early Modern Southeast Asia. Panel 2: Southeast Asia Climate in the last Millennium. Virtual. August 9, 2021.
- TwoRains Conference 2021 (virtual)—Winter Rain, Summer Rain: Adaptation, Climate Change, Resilience and the Indus Civilization. Session 2: Weather, Climate, and Paleoclimate. Cambridge University, United Kingdom. May 25, 2021.
- Research School of Earth Sciences Seminar Series, The Australian National University, Canberra. May 6, 2021.
- Earth Sciences Seminar Series, University of Newcastle, Australia. April 19, 2021.
- Research Center on the Dynamics of the Earth System (GEOTOP) Seminar Series, Université du Québec à Montréal (UQAM). October 6, 2020.
- Department of Geosciences Department Lecture Series, Princeton University. October 16, 2018.

- Department of Atmospheric, Oceanic and Earth Sciences Geology Seminar Series, George Mason University. April 12, 2018.
- Department of Marine and Coastal Sciences Seminar Series, Rutgers University. January 29, 2018.
- Chemical Oceanography, Geology, Geochemistry, and Geobiology (COG³) Seminar Series, Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology. March 24, 2017.
- Montclair Sustainability Seminar Series, Department of Earth & Environmental Studies, Montclair State University. November 8, 2016.
- Department of Geosciences Guest Lecture Series, University of Massachusetts, Amherst. November 4, 2016.
- NOAA C&GC Summer Institute, Steamboat Springs, Colorado, July 13, 2014.
- Lamont-Doherty Earth Observatory Biology and Paleoenvironment Seminar, April 5, 2013.
- 20th Anniversary Celebration NOAA C&GC Postdoctoral Program, Washington D.C., April 14, 2011.

SERVICE

Professional service at William Paterson University

- *Chairperson*, Department of Environmental Science, July 2017-2020 and January 2015– January 2016.
- *Senate representative for the Department of Environmental Science*, 2022 – present.
- *University Core Curriculum*, Diversity and Justice Program Committee, 2021 – 2023.
- *University Core Curriculum*, Diversity and Justice Program Committee, 2021 – 2023.
- *College Curriculum Committee*, College of Science and Health, 2013–2017, 2023 – present.
- *Center for Research Committee*, College of Science and Health, 2023 – present.
- *Learning Spaces Committee*, 2016 – 2023.
- *Library Liaison Committee*, 2012 – 2020.
- *Green Action Team and Climate Action Committee*, 2012 – present.
- *Faculty Search Committee Chair*, Environmental Science Assistant Professorship position, 2013.
- Organizer of departmental “career night” and semester student picnics, 2015–present.

Professional service outside of William Paterson University

- *Workshop session convener*, “Climate Change in Southeast Asia: Insights from the Past to Inform the Future”, *Island and Coastal Ecologies Workshop: A Sustainable Future Initiative*. Iloilo, Philippines, January 16-22, 2024.
- *Member of the PAGES2k Core Working Group on Common Era Hydroclimatic Variability*. October 2022 – present.
- *Outstanding Student Presentation Award (OSPA) Coordinator*, American Geophysical Union Fall Meeting. 2021-2022.
- *Conference session convener*, “High resolution speleothem records: From seasonal to multi-decadal scale”, *Climate Change: The Karst Record (VIII)*. Austin, Texas, May 2017.
- *Conference session convener*, “Advanced understanding of tropical hydroclimate changes during the Last Pleistocene and Holocene”, *American Geophysical Union Fall Meeting*, San Francisco, U.S.A., December

2015.

- *Conference session convener*, “Tropical Palaeoclimate Records and Teleconnections to Higher Latitudes”, XVIII INQUA Congress, Bern, Switzerland, 2011.
- *Journal Reviewer*: Science; Science Advances; Nature; Nature Geoscience; Nature Communications; Earth and Planetary Science Letters; Central European Journal of Geosciences; Climate of the Past; Chemical Geology; Geochimica et cosmochimica acta; G-cubed; Geology; Geophysical Research Letters; International Journal of Climatology; Journal of Asian Earth Sciences; Journal of Climate; Palaeogeography, Palaeoclimatology, Palaeoecology; Quaternary Research; Quaternary Science Reviews, Scientific Reports.
- *Proposal Reviewer*: National Science Foundation (Ocean Drilling Program; Marine Geology and Geophysics; Paleo Perspectives on Climate Change; Postdoctoral Fellowships; Instrumentation and Facilities), National Geographic Society, Austrian Science Foundation, American Chemical Society.
- *Professional Affiliations* with the American Geophysical Union, Geological Society of America, the Geochemical Society, and PAGES.

Public outreach

- *Guest speaker*: Great Oaks Legacy Charter School, 2020; Bondi Private School, 2021; Newcastle Grammar School, 2022, 2024.
- Collaboration with the Great Falls National Park to facilitate the curriculum design and pilot testing of K-12 educational materials in Earth Science with William Paterson University Earth Science/Education double majors, 2012-2016.

Selected press features

- *The Record*, 2024: [Think NJ professors kick back in the summer? They're out researching tons of cool stuff](#)
- *CNN*, 2023: [Scientists find new clue in what led to megalodon's demise](#)
- *Reuters*, 2023: [Tooth analysis confirms the megalodon – a huge ancient shark – was warm-blooded](#)
- *Smithsonian Magazine*, 2023: [Megalodons Were Warm-Blooded—and It Was a Blessing and a Curse](#)
- *BBC*, 2023: [Megalodons were warm-blooded, and it may have led to their demise](#)
- *New Scientist*, 2023: [Megalodon may have been warm-blooded unlike most other sharks](#)
- *Discover Magazine*, 2023: [The Massive Megalodon Shark Was No Cold-Blood Killer](#)
- *The National*, 2023: [Megalodon body temperature 'was about 7C warmer than surrounding water'](#)
- *National Geographic*, 2023: [What made megalodon such a terrifying predator? New research holds clues.](#)
- *New Scientist*, 2022: [Megalodon may have been higher up the food chain than any modern shark.](#)
- *Nature Research Highlights*, 2022: [What did megalodon the mega-toothed shark eat? Anything it wanted.](#)
- *The Conversation*, 2022: [Megalodon sharks ruled the oceans millions of years ago – new analyses of giant fossilized teeth are helping scientists unravel the mystery of their extinction](#)
- *EurekaAlert!*, 2022: [Cooler waters created super-sized Megalodon, latest study shows.](#)
- *ScienceDaily*, 2022: [Cooler waters created super-sized Megalodon.](#)
- *Forbes*, 2022: [We Have Cooler Waters to Thank For Super-Sized Megalodon.](#)
- *Smithsonian Magazine*, 2022: [The Biggest Megalodons Likely Lived in Cold Waters.](#)
- *LiveScience*, 2021: [Megalodon shark mamas had human-size cannibal babies.](#)
- *The New York Times*, 2021: [Baby Megalodons Were 6-Foot-Long Womb Cannibals, Study Suggests.](#)

- *NewScientist*, 2021: [Megalodon sharks grew 2 metres long in the uterus by eating eggs.](#)
- *Scientific American*, 2020: [End of ‘Green Sahara’ May Have Spurred a Megadrought in Southeast Asia.](#)
- *EurekaAlert!*, 2020: [Research links Southeast Asia megadrought to drying in Africa.](#)
- *National Science Foundation*, 2020: [Research links ancient Southeast Asia megadrought to drying in Africa.](#)
- *Science Magazine*, 2020: [Ancient megadrought may explain civilization’s ‘missing millennia’ in Southeast Asia.](#)
- *National Science Foundation*, 2020: [Body size of the extinct megalodon shark is off the charts.](#)
- *The Science Times*, 2020: [Embryo Cannibalism May Be a Factor Behind the Megalodon’s Size.](#)
- *The Independent*, 2020: [Huge size of extinct megalodon shark was ‘off the charts’, new study finds.](#)
- *WPU News*, 2018: [Impact of the westerlies on the Asian monsoon published in the prestigious journal *Science*](#)
- *AGU EOS*, 2018: [Extinct Megatoothed Shark May Have Been Warm-Blooded](#)
- *WPU News*, 2018: [Environmental Science Professors Michael Griffiths and Martin Becker Awarded Three-Year, \\$250,000 Research Grant from the National Science Foundation](#)
- *WPU News*, 2017: [Professors Michael Griffiths and Nicole Davi Awarded \\$234,000 Research Grant from the National Science Foundation](#)
- *Office of the Secretary of Higher Education*, 2017: [William Paterson Professors Awarded \\$234,000 NSF Research Grant](#)
- *EurekaAlert!*, 2016: [How El Niño impacts global temperatures](#)
- *ScienceDaily*, 2016: [How El Niño impacts global temperatures](#)
- *WPU News*, 2016: [William Paterson University Students Win Best Student Paper Award from Geological Society of America](#)
- *WP Magazine*, 2016: [Undergraduate Research: Explorations in Experiential Learning](#)
- *WPU News*, 2016: [Intersection of Art and Science to Be Explored by Environmental Science Faculty in Panel Discussion at University Galleries](#)
- *WP Magazine*, 2016: [On the Forefront of Climate Change Research and Education](#)
- *WP Magazine*, 2015: [Making an Impact: Undergraduate Research in the Sciences Gives Students an Edge](#)

CONFERENCE PROCEEDINGS (Since 2014): [†Student/*postdoc author]

- Griffiths, M.L.**, Johnson, K.R., Patterson, E.W., McGee, D., Wolf, A., Ersek, V., Pausata, F.S.R., Tiwari, S., LeGrande, A.N., Mortlock, R.A., Bendle, J.A., Henderson, G.M., Bolger, T., White, J., Đỗ-Trọng, Q., Bui, T., Xuân, M., Đinh, T., Akhtar, A., Higgins, J.A., Haryono, E., Lape, P., Wattimena, L., & Ririmasse, M. (2025). 40,000 Years of Southeast Asian Hydroclimate Variability from Cave Archives. *American Geophysical Union Fall Meeting*, New Orleans, Louisiana, December 15–19, 2025 (Invited).
- Bialosuknia, T., Johnson, K.R., Patterson, E.W., Jost, A.B., Yaming, J.R., Sidahmed, S., Marsh, C., Elizarraras Botello, M., McGee, D., **Griffiths, M.L.**, Đỗ-Trọng, Q., Bui, T., & Xuân, M. (2025). A Last Interglacial Speleothem Record of Southeast Asian Autumn Monsoon Variability from Hoa Huong Cave, Vietnam. *American Geophysical Union Fall Meeting*, New Orleans, Louisiana, December 15–19, 2025.
- Basu, S., Patterson, E.W., **Griffiths, M.L.**, Martinez-Garcia, A., Johnson, K.R., Timmermann, A., Pausata, F.S.R., McGee, D., Wolf, A., Schmitt, M., Tiwari, S., Henderson, G.M., & Wassenburg, J.A. (2025). Hydroclimate–Vegetation Feedbacks Drive Holocene Temperature Variability in Southeast Asia. *American Geophysical Union Fall Meeting*, New Orleans, Louisiana, December 15–19, 2025.

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- Johnson, K.R., **Griffiths, M.L.**, Borsato, A., Frisia, S., Bhattacharya, T., Tierney, J.E., LeGrande, A., Henderson, G.M. Multi-proxy evidence for decoupled monsoon intensity and southeast Asian precipitation on orbital and millennial timescales. *AGU Fall Meeting*, New Orleans, Louisiana. December 11-15, 2017.
- †Wang, J.K., Johnson, K.R., **Griffiths, M.L.**, Henderson, G. Variations in Indo-China hydroclimate over the last two millennia. *Goldschmidt*. Paris, France, August 13-18, 2017.
- Johnson, K.R., Hu, C., Borsato, A., Henderson, G.M., Frisia, S., **Griffiths, M.L.**, Ruan, J., Wang, J.K., Yang, H., McCabe-Glynn, S. Reconstructing seasonal to decadal scale climate variability from speleothems: potential, strategies, and challenges. WiscSIMS workshop HiRes2017: High-Resolution Proxies of Paleoclimate, Madison, WI, June 18-21, 2017.

- Griffiths, M.L.**, Drysdale, R.N., Hua, Q., Hellstrom, J.C., Jeffery, M. Multidecadal variability of the Indian Ocean Dipole over the past six centuries. *Climate Change: The Karst Record (VIII)*. Austin, Texas, May 21-24, 2017.
- Johnson, K.R., **Griffiths, M.L.**, Henderson, G.M., Borsato, A., Frisia, S., Bhattacharya, T., Tierney, J.E., LeGrande, A. Multi-proxy evidence for decoupled monsoon intensity and southeast Asian precipitation on orbital and millennial timescales. *Climate Change: The Karst Record (VIII)*. Austin, Texas, May 21-24, 2017.
- †**Wang, J.K.**, Johnson, K.R., **Griffiths, M.L.**, Henderson, G. Variations in Indo-China hydroclimate over the last two millennia. *Climate Change: The Karst Record (VIII)*. Austin, Texas, May 21-24, 2017.
- †**Wood, C.T.**, Johnson, K.R., **Griffiths, M.L.**, Henderson, G.M. Speleothem trace element responses over the last deglaciation and Holocene in northern Laos. *Climate Change: The Karst Record (VIII)*. Austin, Texas, May 21-24, 2017.
- †**Brown, C.**, **Griffiths, M.L.**, †**Hansen, K.**, †**Getch, S.**, Gillikin, D., Brachfeld, S., DaSilva, M., Pardi, R., Sebetich, M. Prehistoric human cultural shifts in the Mid-Atlantic: evidence of climate influence on Archaic cultures in New Jersey Inferred from a 15,000-year lake sediment core. *Geologic Society of America Northeastern Section-52nd Annual Meeting*. Pittsburgh, Pennsylvania, March 18-21, 2017.
- Griffiths, M.L.**, Drysdale, R., Kimbrough, K., Hua, Q., Johnson, K.R., Gagan, M.K., Cole, J.E., Cook, B.I., Zhao, J.-x., Hellstrom, J.C., and Hantoro, W.S., Indo-Pacific hydroclimate over the past millennium and links with global climate variability. *AGU Fall Meeting*, San Francisco, California. December 12-16, 2016. **[Invited]**.
- Hua, Q., **Griffiths, M.L.**, Drysdale, R., Bajo, P., Jenkins, Daniella, Hellstrom, J., Johnson, K.R., Gagan, M., Zhao, J.-x. Rainfall variability and temporal changes in the dead carbon fraction in an Indonesian speleothem. *Australasian Quaternary Association Biennial Conference*, Auckland, New Zealand. December 5-9, 2016.
- Griffiths, M.L.** Australasian Monsoon Variability During the Common Era Inferred from Indo-Pacific Speleothem Records. *PAGES2k-PMIP3 workshop: Comparing data and model estimates of hydroclimate variability and change over the Common Era*. Lamont-Doherty Earth Observatory, June 1-3, 2016. **[Invited]**.
- Griffiths, M.L.**, Becker, M., ¹³C and ¹⁸O (“clumped”) isotope reordering in shark tooth bioapatite: can this be a tool to constrain past seawater chemistry? *William Paterson University Research and Scholarship Day*, William Paterson University, Wayne NJ, April 21, 2016. **[Invited]**.
- †**Getch, S.**, †**Hansen, K.G.**, **Griffiths, M.L.**, Brachfeld, S., †**Greendyk, T.**, DaSilva, M., Sebetich, M., Pardi, R. Deglacial Climate Variability in Northern New Jersey Inferred from a Lake Sediment Core. *William Paterson University Research and Scholarship Day*, William Paterson University, Wayne NJ, April 21, 2016.
- †**Getch, S.**, †**Hansen, K.G.**, **Griffiths, M.L.**, Brachfeld, S., †**Greendyk, T.**, DaSilva, M., Sebetich, M., Pardi, R. Deglacial Climate Variability in Northern New Jersey Inferred from a Lake Sediment Core. *William Paterson University Undergraduate Research Symposium*, William Paterson University, Wayne NJ, April 09, 2016.
- †**Popcakova, F.**, †**Pilapil, A.**, Johnson, Q., **Griffiths, M.**, Becker, M., and Chauhan, B. Chemical Comparison Between Modern and Fossil Lamniforms. *William Paterson University Undergraduate Research Symposium*, William Paterson University, Wayne NJ, April 09, 2016.
- †**Pilapil, A.**, †**Popcakova, F.**, Johnson, Q., **Griffiths, M.**, Becker, M., and Chauhan, B. Chemical Comparison Between Modern and Fossil Carcharhiniformes. *William Paterson University Undergraduate Research Symposium*, William Paterson University, Wayne NJ, April 09, 2016.

- Drysdale, R.N., **Griffiths, M.L.**, Corrick, E., Hellstrom, J., Bajo, P. Speleothem records of the Younger Dryas. European Geophysical Union General Assembly, Vienna, Austria. April 17-22, 2016.
- †**Zhang, H.**, **Griffiths, M.L.**, Huang, J., Yanjun, C., Cheng, H. Antarctic Link with East Asian Summer Monsoon Variability During the Heinrich Stadial-Bølling Interstadial Transition. *Geologic Society of America Northeastern Section-51st Annual Meeting*, Albany, New York, March 21-23, 2016.
- †**Getch, S.**, †**Hansen, K.G.**, **Griffiths, M.L.**, Brachfeld, S., †**Greenzyk, T.**, DaSilva, M., Sebetich, M., Pardi, R. Deglacial Climate Variability in Northern New Jersey Inferred from a Lake Sediment Core. *Geologic Society of America Northeastern Section-51st Annual Meeting*, Albany, New York, March 21-23, 2016.
- †**Pilapil, A.**, †**Popcakova, F.**, Johnson, Q., **Griffiths, M.**, Becker, M., and Chauhan, B. Chemical Characterization of Tooth Tissues in Modern and Fossil Sharks: Implications for Paleoceanographic Studies in the Atlantic and Gulf Coastal Plains During the Cenozoic. *Geologic Society of America Northeastern Section-51st Annual Meeting*, Albany, New York, March 21-23, 2016.
- Johnson, K., **Griffiths, M.L.**, Yang, Henderson, G. Orbital and Millennial Scale Variability of the Southeast Asian Monsoon Since 45 ka. *AGU Fall Meeting*, San Francisco, California. December 14-18, 2015.
- †**Yang, H.**, Johnson, K., **Griffiths, M.L.** Inter-annual controls on oxygen isotopes of precipitation in the Asian monsoon region. *AGU Fall Meeting*, San Francisco, California. December 14-18, 2015.
- Griffiths, M.L.**, Hua, Q., Drysdale, R.N., Bajo, P., Jenkins, D., Hellstrom, J., Gagan, M.K., Zhao, J.x. Hydrologic Influence on the Dead Carbon Fraction in a Tropical Speleothem During the Younger Dryas and Last Millennium. *AGU Fall Meeting*, San Francisco, California. December 14-18, 2015.
- Hua, Q., **Griffiths, M.L.**, Drysdale, R., Bajo, P., Jenkins, Daniella, Hellstrom, J., Johnson, K.R., Gagan, M., Zhao, J.-x. Hydrological influence on the dead carbon fraction in a tropical speleothem during the Younger Dryas and Last Millennium. *22nd International Radiocarbon Conference*. Dakar, Senegal. November 16-20, 2015.
- †**Getch, S.**, †**Hansen, K.**, **Griffiths, M.L.**, Brachfeld, S., †**Greenzyk, T.**, DaSilva, M., Sebitich, M., Pardi, R. Reconstructing past climate variability after the laurentide ice sheet retreat in northern New Jersey using a lake sediment core. *Geologic Society of America Annual Meeting*, Baltimore, Maryland. November 1-4, 2015.
- †**Sanders, R.**, Davi, N., Goldman, I., **Griffiths, M.**, Balistreri, B., Golden, B., and †**Aryasz, A.** 2015. Connecting Grade 3-12 Students to Natural Geoscience Processes in Their Local Urban National Park. *Geologic Society of America Annual Meeting*, Baltimore, Maryland. November 1-4, 2015.
- †**Sanders, R.**, Davi, N., Goldman, I., **Griffiths, M.**, Balistreri, B., Golden, B., and †**Aryasz, A.** 2015. Connecting Grade 3-12 Students to Natural Geoscience Processes in Their Local Urban National Park. *NJ Science Convention*, Princeton, New Jersey, Oct. 2015.
- Griffiths, M.L.**, Becker, M., Maisch, H.M., †**Gonzalez, B.G.**, Eagle, R.A., Rosenthal, Y. Reconstructing Transatlantic Migrations in Late Mesozoic and Middle Cenozoic Lamniform Sharks from New Jersey utilizing Seawater Sr/Ca and ‘Clumped’ Isotope Paleothermometry from Tooth Enameloid. *Society of Vertebrate Paleontology 75th Annual Meeting*, Dallas, Texas. October 14 – 17, 2015.
- †**Getch, S.**, †**Hansen, K.**, **Griffiths, M.L.**, Brachfeld, S., †**Greenzyk, T.**, DaSilva, M., Sebitich, M., Pardi, R. Reconstructing past climate variability after the laurentide ice sheet retreat in northern New Jersey using a lake sediment core. *GS-LSAMP annual meeting*, Rutgers University, New Brunswick, New Jersey. October 9th, 2015.
- Griffiths, M.L.** International Workshop to Explore Research Frontiers through US Engagement in the Lower Mekong Basin. United States Geological Survey’s Patuxent Wildlife Research Center, Laurel, Maryland. Sep 25 – 26, 2015. **[Invited]**.

- Drysdale, R., **Griffiths, M.L.**, Jenkins, D., Hellstrom, J., Bajo, P., Zanchetta, G., Cole, J., Regattieri, E., Corrick, E. A centennial-scale seesaw within the Younger Dryas? *XIX INQUA CONGRESS*, Nagoya, Japan. July 26 – August 02, 2015.
- †**Sanders, R.**, Davi, N., Goldman, I., **Griffiths, M.**, Balistreri, B., Golden, B., and †**Aryasz, A.** Connecting Grade 3-12 Students to Natural Geoscience Processes in Their Local Urban National Park, William Paterson University Research & Scholarship Day, April 1-2, 2015.
- Griffiths, M.L.**, Drysdale, R.N., Hua, Q., Bajo, P., Jenkins, D., Hellstrom, J., Gagan, M.K., Zhao, J.-x. Hydrologic influence on the radiocarbon variability in an Indonesian speleothem during the Younger Dryas. *Geologic Society of America Northeastern Section-50th Annual Meeting*, Mt. Washington, New Hampshire, USA. March 23-25, 2015.
- Griffiths, M.L.**, Drysdale, R.N., Hua, Q., Bajo, P., Jenkins, D., Hellstrom, J., Gagan, M.K., Zhao, J.-x. Hydrologic influence on the radiocarbon variability in an Indonesian speleothem during the Younger Dryas. *Climate Change: The Karst Record (VII)*, Melbourne, Australia. Sep 30 – Oct 02, 2014.
- Griffiths, M.L.**, Kimbrough, A.K., Gagan, M.K., Drysdale, R.N., Cole, J.E., Johnson, K.R., Zhao, J.-x., Cook, B., Hellstrom, J.C., Hantoro, W.S. Tropical Pacific modulation of global climate variability over the past millennium. *Climate Change: The Karst Record (VII)*, Melbourne, Australia. Sep 30 – Oct 02, 2014. **[Invited]**.
- †**Yang, H.**, Johnson, K., **Griffiths, M.**, Sekhon, N., LeGrande, A., Yoshimura, K., Ersek, V., Henderson, G. Tropical Indo-pacific modern and paleo-hydrology: comparison of paleoclimate modeling and speleothem data. *Climate Change: The Karst Record (VII)*, Melbourne, Australia. Sep 30 – Oct 02, 2014.
- †**Yang, H.**, Johnson, K., **Griffiths, M.**, Sekhon, N., LeGrande, A., Ersek, V., Henderson, G. Hydrologic variability during the Younger Dryas and Holocene based on speleothems from Laos. *Climate Change: The Karst Record (VII)*, Melbourne, Australia. Sep 30 – Oct 02, 2014.
- †**Yang, H.**, Johnson, K., **Griffiths, M.**, Sekhon, N., LeGrande, A., Yoshimura, K., Ersek, V., Henderson, G. Southeast Asian monsoon variability during the Holocene based on speleothems from Laos. *Goldschmidt*, Sacramento, USA. June 8-13, 2014.