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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; **(2)** the second is primarily focused on 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 2020–present, **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 under review

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., Keophanhya, S., White, J.C. “High-resolution, multiproxy speleothem record of the 8.2 ka event from Mainland Southeast Asia.” In revision. *Paleoceanography and Paleoclimatology*.

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. “Enigmatic Carbonate Isotope Values in Shark Teeth: Evidence for Environmental and Dietary Controls.” Under review. *Palaeogeography, Palaeoclimatology, Palaeoecology*.

Johnson, K.R., **Griffiths, M.L.**, †**Yang, H.**, Henderson, G.M., Syed, S., Borsato, A., Frisia, S., Bhattacharya, Tierney, J.E., LeGrande, A. “Decreased Southeast Asian precipitation during summer insolation maxima.” In revision. *Nature Geoscience*.

Wu, J., Shen, C., **Griffiths, M.L.**, Naafs, B.D., Yang, H., Zhang, H., Dang, X., He, Y., Huang, X., Zhang, H., Xie, S. “An extreme El Nino-like state in the early Holocene inferred from d^2H and $\delta^{18}O$ of sediments.” Submitted. *Earth and Planetary Science Letters*.

Luo, G., Gordon, L., Chu, D., Cui, Y., Zhang, Y., Chen, Z-Q., **Griffiths, M.L.**, Zhou, W., Ruan, X., Xie, S. “Catastrophic precipitation and upper-ocean freshening during an early Triassic hothouse climate.” Under review.

Huang, M., Huan, Y., **Griffiths, M.L.**, Zhang, H., Zhao, S., Xiao, G., Zheng, Y., Xie, S. “Contrasting drought episodes across the mid-Brunhes event in northwest China.” Under review. *Earth and Planetary Science Letters*.

Published or in press

- 2023 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>.
- See associated Commentary: <https://doi.org/10.1073/pnas.2308015120>.
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 4icrophagous 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>.
-See associated Perspective: <https://www.science.org/doi/10.1126/science.aav5280>.
- 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 13. †**Zhang, H.-B., Griffiths, M.L.**, Xie, S.-C., Huang, J.-H., Cai, Y.-J., Wang, C.F., Zhang, F., Cheng, H., Ning, Y.-F., Hu, C.-H., 2016. “Antarctic link with East Asian Summer monsoon variability during the Heinrich Stadial-Bølling interstadial transition.” *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2016.08.008>.
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>.
- 2013 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>.
9. **Griffiths, M.L.**, Drysdale, R.N., Gagan, M.K., Hellstrom, J.C., Couchoud, I., Vonhof, H.B., Ayliffe, L.K., Hantoro, W.S., 2013. Australasian monsoon response to Dansgaard-Oeschger event 21 and teleconnections to higher latitudes. *Earth and Planetary Science Letters*, <https://doi.org/10.1016/j.epsl.2013.03.030>.
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: Investigating soil organic matter dynamics using novel geochemical proxies in tropical speleothems.” [PI: PI: Kathleen Johnson (UC Irvine); co-PIs: **M.L. Griffiths**, C.I. Czimczik (UC Irvine). National Science Foundation, Geobiology & Low-Temperature Geochemistry, EAR-2331574, \$845,203 (\$106,907 to Griffiths). 01/01/24 – 12/31/26, *pending*.
- “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 South East 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

- 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 2013-2020)

ENV1100: *Environmental Sustainability* (Summer/Winter 2022-2023)

ENV2170: *Oceanography* (Spring 2013-2023)

ENV3170: *Global Climate Change* (Fall 2013-2023)

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)
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. Elizabeth Patterson (Ph.D. dissertation defense in August 2023), anticipated start date October 2023, William Paterson University.

Dr. Annabel Wolf (Ph.D., 2021, Northumbria University), 2021 – present, Department of Earth System Science, University of California Irvine.

Dr. Alliya A. Akhtar (Ph.D., 2021, Princeton University), 2021 – present, Department of Environmental Science, William Paterson University.

Dr. Riovie D. Ramos (Ph.D., 2019, Nanyang Technological University, Singapore), 2020 – present, Department of Environmental Science, William Paterson University.

Graduate students

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

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 $d^{18}O$ and Ba/Ca in coral records*”.

Jessica Bonilla, Fall 2021 – present. Project title: “*Monsoon variability in Bangladesh during the Little Ice Age from $d^{18}O$ 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, Chelesia 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)

- 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.

MEDIA/PRESS (selection)

- 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](#)

SYNERGISTICS

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.*

*William Paterson University service and outreach: Department of Environmental Science **Chairperson**, July 2017-2019, January 2015– January 2016; WPUNJ University Core Curriculum (UCC), Diversity and Justice Program Committee, 2021 – present; WPUNJ Senate, 2022 – present; Learning Spaces Committee, 2016–present; Green Action Team and Climate Action Committee, 2012–present; Curriculum Control Committee, 2013–2017; Library Liaison Committee, 2012–present; served on search committee for Environmental Science Assistant Professor position, 2013, for the hiring of Nicole Davi; organized departmental “career night” and semester student picnics, 2015–present; established collaboration with*

the Great Falls National Park to facilitate the curriculum design and pilot testing of K-12 educational materials in Earth Science with WPU Earth Science/Education double majors.

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.

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

†**Tiwari, S.**, †**Ramos, R.D.P.**, Pausata, F.S.R., LeGrande, A.N., **Griffiths, M.L.**, Beltrami, H., de Vernal, A., Tabor, C.R., Litchmore, D., Chandon, D., and Peltier, W.R. Reduction in ENSO variability during the mid-Holocene: a multi-model perspective. *European Geophysical Union General Assembly. Vienna, Austria.* April 24-28, 2023.

Griffiths, M.L., †**Ramos, R.**, LeGrande, A.N., Elsaesser, G., Litchmore, D., Tierney, J., Pausata, F.S.R., and Nusbaumer, J.M. Using paleoclimate data to constrain clouds and convective parameterizations in the GISS E2.1 climate model. *American Geophysical Union Fall Meeting.* December 12-16, 2022.

Griffiths, M.L., Zhang, H., Tabor, C.R., Xue, S., Huang, J., Cheng, H., Ning, Y., and Xie, S. Orbital controls on East Asian hydroclimate during the Pleistocene. *American Geophysical Union Fall Meeting.* December 12-16, 2022.

†**Patterson, E.W.**, Johnson, K.R., **Griffiths, M.L.**, Kinsley, C.W., McGee, D., Pico, T., Du, X., Skiba, V., †**Wolf, A.**, Ersek, V., Yamoah, K.A., Xuan, M., and Bui, T. Glacial changes in sea level modulated millennial-scale variability of the Southeast Asian autumn monsoon. *American Geophysical Union Fall Meeting.* December 12-16, 2022.

†**Tiwari, S.**, †**Ramos, R.D.P.**, Pausata, F.S.R., LeGrande, A.N., **Griffiths, M.L.**, Beltrami, H., Wainer, I.C., Litchmore, A., de Vernal, A., Chandon, D., Peltier, W.R., and Tabor, C.R. Influence of the mid-Holocene Green Sahara on South American climate. *American Geophysical Union Fall Meeting.* December 12-16, 2022.

Mortlock, R.A., †**Bonilla, J.**, DaSilva, M., †**Ramos, R.**, †**McNally, E.**, Burton, P., Sherrell, R.M., Wright, J., **Griffiths, M.L.** Investigating Indian Monsoon Variability: Ground-Truthing High Resolution SST and Salinity Proxy Records Preserved in *Porites* Corals. *American Geophysical Union Fall Meeting.* December 12-16, 2022.

†**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. Drivers of Holocene Southeast Asian monsoon variability. *Climate Change: The Karst Record (IX).* Innsbruck, Austria, July 17-20, 2022.

Zhang, H., **Griffiths, M.**, Shuyu, X., Huang, J., Cheng, H., Ning, Y., Xie, S. A high-resolution stalagmite record of Asian monsoon variations during Marine Isotope Stage 11 from Central China. *Climate Change: The Karst Record (IX).* Innsbruck, Austria, July 17-20, 2022.

- Griffiths, M.L.**, Zhang, H., Tabor, C., Xue, S., Huang, J., Cheng, H., Xie, S. Orbital controls on East Asian hydroclimate during Marine Isotope Stage 6. *Climate Change: The Karst Record (IX)*. Innsbruck, Austria, July 17-20, 2022.
- †**Ramos, R.D.P.**, LeGrande, A.N., **Griffiths, M.L.**, Elsaesser, G., Litchmore, D., Tierney, J., Pausata, F., Nusbaumer, J. Can past climates constrain clouds and convective parameterizations in climate models? *Climate Change: The Karst Record (IX)*. Innsbruck, Austria, July 17-20, 2022.
- †**Patterson, E.W.**, Johnson, K.R., **Griffiths, M.L.**, Kinsley, C.W., McGee, D., Du, X., Pico, T., Ersek, V., Yamoah, K.A., Bui, T., Xuan, M.T. Glacial changes in sea level modulated millennia-scale variability of the Southeast Asian autumn monsoon. *Climate Change: The Karst Record (IX)*. Innsbruck, Austria, July 17-20, 2022.
- Wainer, I., Gorenstein, I., Prado, L.F., Bianchini, P.R., **Griffiths, M.L.**, Pausata, F.S.R., and Yokoyama, E. South American climate reconstruction during the mid-Holocene from an updated paleodata compilation. *European Geophysical Union General Assembly*. Vienna, Austria, May 23-27, 2022.
- †**Tiwari, S.**, Ramos, R., Pausata, F.S.R., LeGrande, A.N., **Griffiths, M.L.**, Beltrami, H., Chandon, D., de Vernal, A., Litchmore, D., Peltier, R., and Tabor, C. Model performance in simulating the mid-Holocene Green Sahara. *European Geophysical Union General Assembly*. Vienna, Austria, May 23-27, 2022.
- †**Akhtar, A.A.**, Santi, L.M., Kast, E.R., McCormack, J., Kim, S., Eagle, R., Becker, M., Rosenthal, Y., Kocsis, L., **Griffiths, M.L.**, Higgins, J.A. Reconstructing the Cenozoic $\delta^{44}/^{40}\text{Ca}$ of seawater: Insights from modern and ancient elasmobranch teeth. *American Geophysical Union Ocean Sciences Meeting*. Online. 24 February – 4 March, 2022.
- Griffiths, M.L.**, †**Flores, R.**, Kim, S., Kast, E., McCormack, J., †**Akhtar, A.**, Shimada, K., Becker, M.A., Maisch IV, H., Rao, Z., Sigman, D., Higgins, J., Neumann, A., Clarke, C., Tripathi, A., Chan, R., Karnes, M., Eagle, R. Cenozoic evolution and extinction of megatooth sharks through the lens of stable isotope ratios. *American Geophysical Union Ocean Sciences Meeting*. Online. 24 February – 4 March, 2022.
- †**Patterson, E.W.**, Johnson, K.R., **Griffiths, M.L.**, McGee, D., Kinsley, C.W., Yamoah, K.A., Ersek, V., Bui, T., Xuan, M. A stalagmite record (4-45 kyr BP) of fall/winter monsoon variability from central Vietnam. *American Geophysical Union Fall Meeting*. New Orleans, Louisiana. December 13-17, 2021.
- †**Wolf, A.**, Ersek, V., Bernasconi, S.M., Braun, T., Breitenbach, S.F.M., **Griffiths, M.L.**, Johnson, K.R., Limbert, D., Longman, J., McGee, D., Pausata, F.S.R., Roberts, W.H.G., Salzmann, U., Tabor, C.R., Trinh, D.A. Drivers of Holocene Southeast Asian Winter and Summer Monsoon Variability. *American Geophysical Union Fall Meeting*. New Orleans, Louisiana. December 13-17, 2021.
- †**Karnes, M.**, †**Chan, R.L.**, **Griffiths, M.L.**, Shimada, K., Becker, M.A., Eagle, R., Cliff, G., Maisch, H., Kim, S. Investigating enigmatic carbonate carbon isotopic values in shark teeth: evidence for temperature dependent partitioning. *Geological Society of America Connects*. Portland, Oregon. 10-13 October, 2021.
- †**Wolf, A.**, Roberts, W.H.G., Ersek, V., Johnson, K.R., **Griffiths, M.L.** Rainwater isotopes in central Vietnam controlled by two oceanic moisture sources and rainout effects. *European Geosciences Union General Assembly*. Online. Vienna, Austria. April 19-30, 2021.
- Drysdale, R., **Griffiths, M.**, Hellstrom, J., Corrick, E., Woodhead, J., Sniderman, K., Rasmussen, S., Mueschler, R. and Capron, E., 2021. Synchronous climate change between the Arctic and the Asian and Indo-Australian summer monsoon domains at the Younger Dryas termination. *European Geosciences Union General Assembly*. Online. Vienna, Austria. April 19-30, 2021.
- †**Ramos, R.**, LeGrande, A., **Griffiths, M.**, Tierney, J., Pausata, F.S.R., Elsaesser, G. Using paleoclimate data to constrain cloud parameterizations in GISS-E2.1. *European Geosciences Union General Assembly*. Online. Vienna, Austria. April 19-30, 2021.

- †**Ramos, R.**, LeGrande, A., **Griffiths, M.**, Tierney, J., Pausata, F.S.R., Elsaesser, G. Constraining cloud and convective parameterizations in GISS-E2.1 using paleoclimate data. *AGU Fall Meeting*, Online, December 14-18, 2020.
- †**Ramos, R.**, LeGrande, A., **Griffiths, M.**, Tierney, J., Pausata, F.S.R., Elsaesser, G. Using paleoclimate data to constrain cloud and convective parameterizations in GISS-E2.1 simulations. *Paleoclimate Modelling Intercomparison Project (PMIP) 2020 Conference*. Nanjing, China, October 26-30, 2020.
- Griffiths, M.L.**, Lu, J., Yang, H., Burls, N.J., Guoqiao, X., Yang, J., Xie, S. Asian monsoon evolution during the Pliocene linked to strengthening Pacific temperature gradients. *AGU Fall Meeting*, San Francisco, December 09-13, 2019.
- Griffiths, M.L.**, Becker, M.A., Maisch IV, H.A., Kast, E.R., Akhtar, A.A., Eagle, R.A., Kim, S.L., Sigman, D.M., Higgin, J.A., Shimada, K. The evolution and extinction of *Otodus Megalodon*: New insights from nitrogen, calcium, and ‘clumped’ isotope ratios. *Society of Vertebrate Paleontology 79th Annual Meeting*, Brisbane, Australia. October 09 – 12, 2019.
- Maisch IV, H.M., Becker, M.A., **Griffiths, M.L.**, Rao, C., Kast, E.R., Akhtar, A., Sigman, D.M., Higgins, J.A. Vertebrate lag deposits from a K/Pg boundary section near Malvern, Arkansas, USA: non-catastrophic accumulations in response to sea level cyclicity. *Society of Vertebrate Paleontology 79th Annual Meeting*, Brisbane, Australia. October 09 – 12, 2019.
- Johnson, K.R., Wood, C.T., **Griffiths, M.L.**, Borsato, A., Frisia, S., Henderson, G.M., Mason, A. Multi-proxy Speleothem Evidence for Southeast Asian Hydroclimate Variability since 38 ka. *Goldschmidt*. Barcelona, Spain, August 18-23, 2019.
- Bendle, J., Wang, C., Greene, S.E., **Griffiths, M.L.**, Huang, J., Moossen, H.M., Zhang, H., Newton, K., Xie, S. Speleothem Biomarker Evidence for Vegetation and Bacterial Responses to Holocene Climate Change. *European Geosciences Union General Assembly*. Vienna, Austria. April 7-12, 2019.
- Maisch IV, H.M., Becker, M., and **Griffiths, M.L.** Chondrichthyans from the Lower Clayton Limestone Unit of the Midway Group (Paleocene) near Malvern, Arkansas, USA. *Geologic Society of America Southeastern Section-68th Annual Meeting*, Charleston, South Carolina, March 28-29, 2019.
- †Degen, A., †Biskup, K.J., **Griffiths, M.L.**, DaSilva, M., Enache, M., Potapova, M., Desianti, N., Tunstead, R., and Steinmann, D. A 4000-year environmental evaluation of Mid-Atlantic coastal wetlands from paired geochemical and diatom analysis of surficial and down-core sediments. *Geologic Society of America Northeastern Section-54th Annual Meeting*, Portland, Maine, March 17-19, 2019.
- †**Knyfd, K.**, †**Degen, A.**, †**Nixon, T.**, †**Harris, J.**, Davi, N., **Griffiths, M.**, Jordan, R., and Forrester, J. Tracing storms and climate change through tree-ring growth patterns on coastal maritime forests in NY and NJ. *Geologic Society of America Northeastern Section-54th Annual Meeting*, Portland, Maine, March 17-19, 2019.
- †**Neumann, A.**, †**Clarke, C.**, **Griffiths, M.L.**, Becker, M., Eagle, R., Kim, S., Maisch, H., †**Nixon, T.**, †**Pederson, D.**, †**Mautz, C.**, Shimada, K. The Extinction of Iconic Megatoothed Shark *Otodus megalodon*: Preliminary Evidence from ‘Clumped’ Isotope Thermometry. *AGU Fall Meeting*, Washington D.C., December 10-14, 2018.
- †**Wang, J.K.**, Johnson, K.R., Borsato, A., Amaya, D.J., **Griffiths, M.L.**, Henderson, G., and Frisia, S. Hydroclimatic variability in Southeast Asia over the past two millennia. *AGU Fall Meeting*, Washington D.C., December 10-14, 2018.
- Griffiths, M.L.**, Johnson, K.R., Pausata, F.S.R., White, J., Yang, H., Henderson, G., Conrad, C. End of Green Sahara responsible for monsoon failure and societal shifts in mainland Southeast Asia. *AGU Fall Meeting*, Washington D.C., December 10-14, 2018.
- Bendle, J., Wang, C., Greene, S.E., **Griffiths, M.L.**, Huang, J., Moossen, H.M., Zhang, H., Newton, K., Xie, S. The first palaeoclimate time-series based on compound specific analyses of fatty acid biomarkers from a speleothem. *AGU Fall Meeting*, Washington D.C., December 10-14, 2018.

- †**Wood, C.T.**, Johnson, K.R., **Griffiths, M.L.**, Borsato, A., and Frisia, S., Deglacial and Holocene Hydrologic Shifts in Southeast Asia Inferred from Speleothem Trace Elements and ^{14}C . *AGU Fall Meeting*, Washington D.C., December 10-14, 2018.
- Griffiths, M.L.**, Johnson, K.R., Pausata, F.S.R., White, J., Yang, H., Henderson, G., Conrad, C. End of Green Sahara responsible for monsoon failure and societal shifts in mainland Southeast Asia. *Goldschmidt*. Boston, U.S.A., August 12-17, 2018.
- †**Wood, C.T.**, Johnson, K.R., Borsato, A., Frisia, S., **Griffiths, M.L.** Speleothem ^{14}C as a paleoclimate proxy in Northern Laos: comparisons with multiproxy data. *Goldschmidt*. Boston, U.S.A., August 12-17, 2018.
- Buckley, B., D'Arrigo, R., Ummenhofer, C., **Griffiths, M.**, Hansen, K. Climate Change (Global and SE Asia). *Society for American Archeology 83rd Annual Meeting*. Washington D.C., April 11-15, 2018.
- White, J., **Griffiths, M.**, Conrad, C., Johnson, K. Climate Change and the Middle Holocene “missing millennia” in the Southeast Asian Archaeological Record. *Society for American Archeology 83rd Annual Meeting*. Washington D.C., April 11-15, 2018.
- †**Biskup, K.**, †**Degen, A.**, **Griffiths, M.L.**, DaSilva, M., Potapova, M., Desianti, N., and Enache, M. Environmental evaluation of Mid-Atlantic coastal wetlands from paired geochemical and diatom analysis of sediments. *Geologic Society of America Northeastern Section-53rd Annual Meeting*. Burlington, Vermont, March 18-20, 2018.
- †**Zhang, H.**, **Griffiths, M.L.**, Shitou, W., Kong, W., Chiang, J., Cheng, H., Huang, J., Xie, X. Dry or wet in East Asia during North Atlantic cooling? New perspectives from multiproxy records and climate models. *AGU Fall Meeting*, New Orleans, Louisiana. December 11-15, 2017.
- Griffiths, M.L.**, Johnson, K.R., Pausata, F.S.R., White, J., Yang, H., Henderson, G.M., Conrad, C. Did the demise of Green Sahara play a role in the mid-to-late Holocene megadrought and ‘missing millennia’ in southeast Asian societies? *AGU Fall Meeting*, New Orleans, Louisiana. December 11-15, 2017.
- 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., †**Greendyk, 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 Paleooceanographic 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., †**Greendyke, 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.**, Balistriri, 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.**, Balistriri, 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., †**Greendyke, 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.**, Balistriri, 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.