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## Education

Ph.D., Geosciences, University of Iowa, 2000  
M.S., Earth & Planetary Science, University of New Mexico, 1995  
B.A., Geology, Hamilton College, 1991

## Professional Experience

### *Cornell College*

W.H. Norton Prof. of Geology, 2017-present; Prof., 213–16; Assoc. Prof., 2006–13; Assist. Prof., 2000–06  
Chair, Department of Geology, 2003–06; 2009–12; 2014–15; 2016-18  
Chair, Environmental Studies Program, 2001–present

### *External Appointments and Editorial Assignments*

Guest Investigator, Woods Hole Oceanographic Institution, November, 2021  
Executive Committee, Center for Global and Regional Environmental Research, 2016-present  
Affiliate Associate Professor, Geological & Atmospheric Science, Iowa State University, 2016–present  
Visiting Scientist, University of New Mexico, 2006-07  
Adjunct Assistant Professor, Earth & Environmental Science, University Iowa, 2001–present  
Associate Editor: *Geosphere* (2015-2021), *Scientific Reports* (2019-2021), *Geology* (2019-present)

## Fellowships & Awards

### *Fellowships*

Campbell McConnell Sabbatical Fellowship, Cornell College, 2006, 2015, 2021  
T. Anne Cleary Dissertation Research Fellowship, University of Iowa, 1999  
Associated Western Universities Fellowship, Los Alamos National Laboratory, 1993–1994

### *Awards*

Council on Undergraduate Research Undergraduate Mentoring Award, 2021  
Outstanding Teaching Assistant Award, University of Iowa, 1998  
Trowbridge Award for Outstanding Geology Doctoral Student, University of Iowa, 1997

## Course Offerings

Dynamic Earth (GEO 111)                      Climate Change (GEO 122)                      Adv. Paleoclimatology (GEO 322)  
Hydrogeology (GEO 320/ENV 301)                      Geology of New Zealand (or Utah) (GEO 329)

## Manuscripts (Undergraduate Authors in Red)

### *Published*

Thatcher, D.L., Wanamaker, A.D., Denniston, R.F., Ummenhofer, C.C. Asmerom, Y., Polyak, V.J. Cresswell-Clay, N., Hasiuk, F., Haws, J., and Gillikin, D.P. (in revision) Iberian hydroclimate variability and the Azores High during the last 1200 years: Evidence from proxy records and climate model simulations. *Climate Dynamics*.

Huth, T.E., Passey, B.H., Cole, J.E., Lachniet, M.S., McGee, D., Denniston, R.F., Truebe, S., and Levin, N.E. (in press) A Framework for Triple Oxygen Isotopes in Speleothem Paleoclimatology. *Geochimica et Cosmochimica Acta*.

Thatcher, D.L., Wanamaker, A.D., Denniston, R.F., Ummenhofer, C.C., Regala, F.T., Jorge, N., Haws, J., Chormann, A., Gillikin, D.P. (2020) Linking the karst record to atmospheric, precipitation, and vegetation dynamics in Portugal. *Chemical Geology*, 558, 119949.

- Lachniet, M.S., Asmerom, Y., Polyak, V.J., and Denniston, R.F. (2020) Great Basin paleoclimate and aridity linked to Arctic warming and tropical Pacific Sea surface temperatures. *Paleoceanography and Paleoclimatology*, 35, e2019PA003785.
- Haws, J., Benedetti, M.M., Funk, C.L., Bicho, N.F., Daniels, J.M., Forman, S.L., Minckley, T.A., and Denniston, R.F. (2020) Late Pleistocene landscape and settlement dynamics of Portuguese Estremadura. *Journal of Field Archaeology*: 10.1080/00934690.2020.1733780.
- Thatcher, D., Wanamaker, A.D., Denniston, R.F., Asmerom, Y., Polyak, V., Ummenhofer, C.C., Gillikin, D., and Haws, J. (2020) Hydroclimate variability from western Iberia (Portugal) during the Holocene – insights from a composite stalagmite isotope record. *The Holocene*, 30, 966-981.
- Argiriadis, E., Denniston, R.F., and Barbante, C. (2019) Improved polycyclic aromatic hydrocarbon and n-alkane determination in speleothems through cleanroom sample processing. *Analytical Chemistry*, 91, 7007.
- Denniston, R.F., Houts, A.N., Asmerom, Y., Wanamaker, Jr., A.D., Haws, J.A., Polyak, V.J., Thatcher, D.L., Altan-Ochir, S., Borowske, A.C., Breitenbach, S.F.M., Ummenhofer, C.C., Regala, F.T., Benedetti, M.M., and Bicho, N. (2018) A stalagmite test of North Atlantic SST and Iberian hydroclimate linkages over the last two glacial cycles, *Climate of the Past*, 14, 1-21.
- PAGES Flood Working Group Consortium: Wilhelm, B., Baker, V., Ballesteros, C.J.A., Barriendos, M., Benito, G., Brauer, A., Corella, J.P., Denniston, R., Glaser, R., Ionita, M, Kahle, M., Tao, L., Luetscher, M., Madonald, N., Macklin, M., Mudelsee, M., Manoz, Schulte, L., St. George, S., Markus, S., Toonen, W.H.J, and Oliver, W. (2018). Interpreting historical, botanical, and geological evidence to aid preparations for future floods. *WIREs Water*, 10.1002/wat2/1318.
- Denniston, R.F., Asmerom, Y., Polyak, V.J., Wanamaker, A.D., Ummenhofer, C.C., Humphreys, W.F., Cugley, J., Woods, D., and Lucker, S.L. (2017) Short Communication: Decoupling of monsoon activity across the northern and southern Indo-Pacific during the Late Glacial. *Quaternary Science Reviews*, 176, 101-105.
- Lachniet, M.L., Asmerom, Y., Polyak, V.J., and Denniston, R.F. (2017) Arctic cryosphere and Milankovitch forcing of Great Basin paleoclimate. *Scientific Reports*, 7:12955; doi: 10.1038/s41598-017-13279-2.
- Denniston, R.F. and Luetscher, M. (2017) Invited Review: Speleothems as high-resolution paleoflood archives. *Quaternary Science Reviews*, 170, 1-13.
- Weiss, T.L., Denniston, R.F., Wanamaker, A.D., Jr., Villarini, G., von der Heydt, A.S. (2017) ENSO-like variability at the Miocene/Pliocene transition recorded in a Caribbean coral. *Geology*; 45, 643-646.
- Denniston, R.F., Ummenhofer, C.C., Wanamaker, A.D., Jr., Lachniet, M.S., Villarini, G., Asmerom, Y., Polyak, V.J., Passaro, K.J., Cugley, J., Woods, D., Humphreys, W.F. (2016) Expansion and contraction of the Indo-Pacific tropical rain belt over the last three millennia. *Scientific Reports*, 6, 34485.
- Villarini, G. and Denniston, R.F. (2016) Contribution of tropical cyclones to extreme rainfall in Australia. *International Journal of Climatology*, 36, 1019-1025; doi: 10.1002/joc.4393.
- Denniston, R.F., Villarini, G., Gonzales, A.N., Wyrwoll, K-H, Polyak, V.J., Ummenhofer, C.C., Lachniet, M.S., Wanamaker, A.D., Jr., Humphreys, W.H., Woods, D., and Cugley, J. (2015) Reply to Nott: Assessing biases in speleothem records of flood events. *Proceedings of the National Academy of Sciences of the United States of America*, 112:34, E4637
- Denniston, R.F., Villarini, G., Gonzales, A.N., Wyrwoll, K-H, Polyak, V.J., Ummenhofer, C.C., Lachniet, M.S., Wanamaker, A.D., Jr., Humphreys, W.H., Woods, D., and Cugley, J. (2015) Extreme rainfall activity in the Australian tropics reflects changes in the El Niño/Southern Oscillation over the last two millennia. *Proceedings of the National Academy of Sciences of the United States of America*, 112:15, 4576-4581.
- Sedlacek, A.R.C., Saltzman, M.R., Algeo, T.J., Horacek, M., Brandner, R., Foland, K, and Denniston, R.F. (2014) Strontium isotope stratigraphy from the Early Triassic of Zal, Iran: linking temperature to weathering rates and prolonged recovery. *Geology* 42, 779-782. doi:10.1130/G35545.1
- Lachniet, M.L., Denniston, R.F., Asmerom, Y., and Polyak, V.J. (2014) Orbital control of southwestern North America atmospheric circulation and climate over two glacial periods. *Nature Communications*, 5:3805; doi: 10.1038/ncomms4805.

- Denniston, R.F., Wyrwoll, K.-H., Polyak, Brown, J. Asmerom, Y., Wanamaker, A. Jr., LaPointe Z., **Ellerbroek, R.**, **Barthelmes, M.**, **Cleary, D.**, Cugley, J., Woods, D., Humphreys, W. (2013) A Stalagmite Record of Holocene Indonesian-Australian Summer Monsoon Variability from the Australian Tropics. *Quaternary Science Reviews* 78, 155-168; 10.1016/j.quascirev.2013.08.004.
- Denniston, R.F., Asmerom, Y., Lachniet, M., Polyak, V., Hope, P., **An, N.**, **Rodzinyak, K.**, and Humphreys, W. (2013) A Last Glacial Maximum Through Middle Holocene Stalagmite Record of Coastal Western Australia Climate. *Quaternary Science Reviews* 77 101-112; 10.1016/j.quascirev.2013.07.002.
- Denniston, R.F., Wyrwoll, K.-H., Asmerom, Y., Polyak, V.J., Humphreys, W., Cugley, J., Woods, D., **Peota, J.** and **Greaves, E.** (2013) North Atlantic Forcing of Millennial-Scale Australian Monsoon Variability during the Late Glacial. *Quaternary Science Reviews* 72, 159-168.
- Polyak, V. and Denniston, R. (2011) Paleoclimate Records in Caves *In* Culver, D. and White, W. (Eds). *Encyclopedia of Caves*, 2nd edition, Elsevier.
- Denniston, R.F., Asmerom, Y., Polyak, V., McNeill, D.F., Klaus, J.S., **Cole, P.**, and Budd, A.F. (2008) Caribbean Chronostratigraphy Constrained by U-Pb, <sup>87</sup>Sr/<sup>86</sup>Sr Analysis of Miocene Coral. *Geology*, 36, 151.
- Denniston, R.F., Asmerom, Y., Polyak, V. Dorale, J.A., Carpenter, S.J., **Trodick, C.** **Hoye, B.**, and González, L.A. (2007) Synchronous millennial-scale climatic changes in the Great Basin and the North Atlantic during the last interglacial. *Geology*, 35, 619-622.
- Denniston, R.F., **DuPree, M.**, Asmerom, Y., Polyak, V. Dorale, J.A., and Carpenter, S.J. (2007) Episodes of Increased Aridity in the Late Holocene Recorded by Stalagmites from Devils Icebox Cave, Central Missouri, USA. *Quaternary Research*, 68, 45-52.
- Baker, R.G., Bettis, E.A., III, Denniston, R.F., and González, L.A. (2001) Plant remains, alluvial chronology, and cave speleothem isotopes indicate abrupt Holocene climatic change in Midwestern USA. *Global and Planetary Change*, 28, 285-291.
- Denniston, R.F., González, L.A., Asmerom, Y., Sharma, R.H., Reagan, M.K. (2000) Speleothem evidence for changes in Indian summer monsoon precipitation over last ~2300 years. *Quaternary Research*, 53, 196-202.
- Denniston, R.F., González, L.A., Baker, R.G., Asmerom, Y., Reagan, M.K., Edwards, R.L., and Alexander, C.E. (1999) Speleothem evidence for a sharp and long-term prairie-forest ecotone at the northeast border of the middle Holocene prairie peninsula. *The Holocene*, 9, 671-676.
- Denniston, R.F., González, L.A., Asmerom, Y., Baker, R.G., Reagan, M.K. and Bettis, E.A. III. (1999) Evidence for increased cool season moisture during the middle Holocene. *Geology*, 27, 815-818.

#### *In Preparation and Under Review*

- Cresswell-Clay, N., Ummenhofer, C.C., Thatcher, D.L., Wanamaker, A.D., Denniston, R.F., Asmerom, Y., and Polyak, V.J. (in review) Unprecedented Expansion of the Azores High due to Anthropogenic Climate Change. *Nature Geoscience*.
- Martin, C.N., Denniston, R.F., **Klug, P.P.**, Ummenhofer, C.C., Villarini, G., Zhang, W., **Stivland, M.**, **Zrinsky, C.**, Asmerom, Y., Polyak, V.J., Wanamaker, A.D., Cugley, J., Woods, D., Humphreys, W.F., and **Gonzales, A.N.** (in preparation) Changes in Cave Flooding Activity in the Central Australian Tropics over the Past 4,100 Years.
- Denniston, R.F., Ummenhofer, C.C., Oppo, D., Wanamaker, A.D., Asmerom, Y., Polyak, V.J., Cugley, J., Rule, S., Polson, D., Woods, D., and Humphreys, W.F. (in preparation) Indian and Pacific Ocean Modulation of the Late Holocene Australian Summer Monsoon.
- Argiriadis, E., Denniston, R.F., Baltieri, M., **Nguyen, H.Q.A.**, **Thompson, J.**, and Barbante, C. (in preparation) Coupling Polycyclic Aromatic Hydrocarbons and n-Alkanes in a Tropical Stalagmite as a Possible New Paleofire Proxy.
- Denniston, R.F., Ummenhofer, C.C., Emanuel, K., Ingrosso, R., Pausata, F.S.R., Wanamaker, A.D., Lachniet, M.S., Asmerom, Y., Polyak, V.J., Nott, J., Zhang, W., Villarini, G., Carr, K.T., Cugley, J., Brooks, D.,

Woods, D., and Humphreys, W.F. (in preparation) High Sensitivity of Australian Cyclone Activity to ITCZ Migrations over the Last Two Millennia.

Denniston, R.F., Asmerom, Y., Polyak, V.J., Ummenhofer, C.C., Wanamaker, A.D., **Amber, G.**, Thatcher, D.L., and **Wiggins, C.** (in preparation) The Climatic Expression of Millennial Climate Events in the Central United States during the Last Glacial Period.

## **External Grants**

### *Current*

National Science Foundation - Collaborative Research: Evaluating the Origins of Multidecadal Variability in Late Holocene Indian Summer Monsoon Rainfall in Nepal, 2021-2024, Lead PI (co-PI's C. Ummenhofer, WHOI; A. Wanamaker, ISU; Y. Asmerom, UNM)

National Science Foundation - Collaborative Research: Bridging the Gap from Northern Iberia to Northwest Africa to Reconstruct Atmospheric Dynamics and Hydroclimate for the Last 2,500 Years, 2018-21, co-PI (Lead PI A. Wanamaker, Iowa State University; co-PIs: C. Ummenhofer, WHOI; Y. Asmerom and V. Polyak, UNM; D. Gillikin, Union College)

National Science Foundation - Collaborative Research: Reconstructing Holocene Dynamics of the Indo-Pacific Tropical Rain Belt using Australian Stalagmites and Coupled Climate Models, 2016-19, Lead PI (co-PI's: C. Ummenhofer, WHOI; A. Wanamaker, ISU; Y. Asmerom, UNM)

### *Expired*

National Science Foundation - EAGER: Development of a High-Resolution, Multi-Century Paleofire Reconstruction from Tropical Australian Stalagmites, 2018-20, PI

Center for Global and Regional Environmental Research - The El Niño-Southern Oscillation in a Warming World: Developing Coral Records of Ocean Variability from Past Greenhouse Periods, 2017-18, PI

National Science Foundation - RUI: Assessing Influence of Extreme Rainfall on Australian Stalagmite Reconstructions of Tropical Cyclone Landfall and Indo-Australian Summer Monsoon, 2015-19, PI

National Science Foundation - EAGER: Assessing the Viability of Pristine Fossil Corals from the Dominican Republic as Indicators of ENSO at the Miocene/Pliocene Boundary, 2015-19, PI

Center for Global and Regional Environmental Research - Development of a Late Holocene Decadal-Scale Proxy Record of the North Atlantic Oscillation from Portuguese Stalagmites, 2013-14, PI

National Science Foundation - RUI: Reconstruction of Recent and Late Holocene Tropical Cyclone Landfalls in Northwestern Australia using Flood Deposits in Aragonite Stalagmites, 2011-14, PI

Center for Global and Regional Environmental Research - Speleothem Evidence for the Influences of ENSO and Solar Variability on the Holocene Australian Summer Monsoon, 2009-10, PI

Mellon Foundation - Enhancing the Integration of Humanities, Social Sciences, and Natural Sciences in Environmental Studies at Cornell College, 2009-12 (one of two primary authors)

Petroleum Research Fund – Dominican Republic Corals as High-Resolution Records of Shallow Marine Paleoenvironmental Conditions Prior To Closure of the Panamanian Seaway, 2004-06, PI

National Science Foundation - Acquisition of an Alpha Spectrometry System for Research and Undergraduate Training in Geology and Environmental Science, 2015-19, Lead PI (co-PI B. Greenstein)

National Science Foundation – SGER: Collaborative Research: Timing of Late Holocene Changes in Summer Indian Monsoon Intensity as Recorded in Mineralogical Changes in Speleothems, Pokhara Valley, Nepal, 2015-19 (Lead PI: Luis Gonzalez, U. Kansas)