

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 Professor of Geology, 2017-present; Professor, 2013–16; Associate Professor, 2006–13; Assistant Professor, 2000–06
Chair, Department of Geology, 2003–06; 2009–12; 2014–15; 2016-18
Chair, Environmental Studies Program, 2001 – present

External Appointments

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

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)

Published Manuscripts (Undergraduate Authors in Red)

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, ⁸⁷Sr/⁸⁶Sr 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.

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, 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, 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 Panamanian Seaway, 2004-06, PI

Editorial Assignments

Editorial Boards of *Geosphere*, *Geology*, and *Scientific Reports*