

Matthew L. Allen, PhD

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Department of Earth and Environmental Sciences
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CURRENT POSITION	National Science Foundation Postdoctoral Fellow (EAR-PF)
EXPERTISE	Stable Isotope Geochemistry, Paleoclimatology, Paleontology, Stratigraphy
ACADEMIC BACKGROUND	<div><div><i>Ph.D. Geology</i></div><div>2024</div><div>University of Kansas, Lawrence, KS Proxy-based paleoclimate reconstruction, stable isotope paleoecology, quantitative paleobiology, high-resolution chronostratigraphy. Advisor: Marina B. Suarez. Dissertation title: Geochemical Approaches to Paleoecology and Paleoclimatology of the Cretaceous Cloverly Formation</div></div> <div><div><i>M.Sc. Geology</i></div><div>2016</div><div>University of Texas at San Antonio, San Antonio, TX Descriptive paleontology, morphometric analyses, biostratigraphy. Advisor: Lance L. Lambert. Thesis title: New Permian Ammonoid Localities at Sibley's Last Chance Ranch, Delaware Mountains, Culberson County, TX.</div></div> <div><div><i>B.S. Geology</i></div><div>2013</div><div>University of Alabama, Tuscaloosa, AL</div></div>
GRANTS AND FELLOWSHIPS	<div><div><i>NSF-EAR-PF</i></div><div>2024-2026</div><div>National Science Foundation Applying triple oxygen isotopes across the terrestrial Paleocene-Eocene Thermal Maximum interval in the Bighorn Basin of Wyoming to evaluate for changes in aridity.</div></div> <div><div><i>SEPM Student Research Grant</i></div><div>2024</div><div>SEPM Foundation Evaluation of a possible major unconformity in fluvial deposits of the Early Cretaceous Cloverly Formation in Wyoming.</div></div>
RESEARCH EXPERIENCE	<div><div><i>NSF-EAR Postdoctoral Fellowship</i></div><div>2024 - Present</div><div>University of Michigan, Ann Arbor, MI Maintain, troubleshoot, and operate mass spectrometers and peripherals, sample and chemically prepare fossil and geologic materials, mentor students.</div></div> <div><div><i>Graduate Research Assistant</i></div><div>2022 - 2024</div><div>University of Kansas, Lawrence, KS Prepare samples for geochemical analyses, perform petrography of carbonates, conduct field sampling, analyze and process data, mentor undergraduate research assistants.</div></div> <div><div><i>Undergraduate Research Assistant</i></div><div>2011-2012</div><div>University of Alabama, Tuscaloosa, AL Microsampling of bioapatite for geochemical analyses, preparation of thin sections</div></div>

TEACHING EXPERIENCE *Graduate Teaching Assistant* 2020 - 2021
University of Kansas Lawrence, KS
Prepared and administered materials for upper level paleontology laboratory section. Served as lead instructor for an introductory geology course, and administered an introductory geology laboratory section.

Graduate Teaching Assistant 2013-2015
University of Texas at San Antonio, San Antonio, TX
Helped prepare and administer materials for upper level sedimentology and stratigraphy laboratory section. Administered upper level paleontology laboratory section. Helped administer an introductory geology laboratory section.

INDUSTRY EXPERIENCE *Senior Geologist* 2019-2020
Zachry Exploration LLC., San Antonio, TX
Used petrophysical well logs, production data, and 3D seismic data to develop exploration campaigns. Visited active drilling sites to oversee wireline well-logging procedures.

Geologist 2015-2019
Zachry Exploration LLC., San Antonio, TX
Conducted scientific investigations to help develop oil and gas prospects and evaluate external prospect proposals. Analyzed petrophysical well logs, production data, and 3D seismic data to characterize basin and reservoir scale subsurface geology. Visited active drilling sites to oversee wireline well-logging procedures.

PUBLICATIONS *Journal Manuscripts*

Allen, M.L., Suarez, M.B., Adams, T.L., Suarez, C.A., (Submitted for Review). Ecohydrology and paleoenvironment of the Cretaceous (Albian) Cloverly Formation: Insights from multi-taxon oxygen isotope analysis of vertebrate phosphates. Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor.

Allen, M.L., Suarez, M.B., Kalu, Q., Suarez, C., Hyland, E. : (Manuscript in Preparation). Extreme Fluctuations in Rainfall in (Albian) mid-Cretaceous Cloverly Formation of Wyoming, USA. Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor.

Allen, M.L., Suarez, M.B., Kalu, Q., Suarez, C. : (Manuscript in Preparation). Carbon Isotope Stratigraphy suggests entirely Albian age for Cloverly Formation mudstones in Wyoming, USA. Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor.

Abstracts

Allen, M.L., Suarez, M.B., 2022, Niche Partitioning and Paleohydrology: Multi-Taxa Oxygen Isotopic Analysis of Vertebrate Phosphates, Cretaceous Cloverly Formation, Montana, USA: Geological Society of America Abstracts with Programs. Vol. 54, No. 5 doi: 10.1130/abs/2022AM-382377

Allen, M.L., Coombs, N.J., Makovicky, P.J., Suarez, M.B., 2022, Faunal Comparison of Aptian-Albian Continental Vertebrates, North American WIB: Biostratigraphic and Biogeographic Context: Geological Society of America Abstracts with Programs. Vol. 54, No. 5 doi: 10.1130/abs/2022AM-383041

Allen, M.L., Lambert, L.L., 2019, New Morphometric Methods to Quantify Complex Ammonoid Sutures: Geological Society of America Abstracts with Programs. Vol. 51, No. 5 doi: 10.1130/abs/2019AM-337565

Lambert, L. L., Vote, J. J., Allen, M. L. and Lewis, D., 2018, Old localities and new specimens—Family Cyclolobidae (Middle and Late Permian) are more complex and diverse than thought. In: A. El Hassani, R. T. Becker, S. Hartenfels, and F. Luddecke (eds.), 10th International Symposium “Cephalopods – Present and Past”, Program and Abstracts, Munstersche Forschungen zur Geologie und Palaontologie, 110:70.

Allen, M.L., Lambert, L.L., 2017, The Continuing Significance of Sibley Ranch Localities (Culberson County, Texas) to Guadalupian (Middle Permian Series) Ammonoid Research: Geological Society of America Abstracts with Programs. Vol. 49, No. 6 doi: 10.1130/abs/2017AM-308319

Allen, M. L., Lambert, L. L., 2014, Sequence Stratigraphic and Biostratigraphic Correlation of the North American Atokan/Desmoinesian Boundary to the Donets Basin, Ukraine, in Proceedings, 2014 College of Science Research Conference: San Antonio, TX, University of Texas at San Antonio, p. 109

COMMUNITY INVOLVEMENT

- Co-founder, Board Member, KU Geology Graduate Student Organization (2022-2023)
- Vice President, South Texas Geological Society (2019-2020)
- Vice President, Boerne Chapter, Native Plant Society of Texas (2019-2020)
- Area Chief Volunteer, Texas Parks and Wildlife (2016-2019)
- Texas State Coordinator, Fishing’s Future (2016-2019)
- Chairman, Boerne Chapter, Ducks Unlimited (2016-2018)
- Founder, President, University of Alabama Fly Fishing Club (2012-2013)