

LUCAS N. WEAVER

1105 N. University Ave, Ann Arbor, MI 48109 | 303-304-4388 | lukeweav@umich.edu

EDUCATION

- 2021 **Ph.D. Biology, University of Washington**, Seattle, WA
Advisor: Gregory P. Wilson Mantilla
Multituberculates as living animals: new insights into the ecomorphology, behavior, and life history of one of the most successful mammalian lineages
- 2015 **B.A. Anthropology (Geology minor), Colorado State University**, Fort Collins, CO
Advisors: Thomas Bown, Kimberly Nichols

PROFESSIONAL APPOINTMENTS

- 2024– **University of Michigan**, Assistant Curator & Assistant Professor
Museum of Paleontology & Department of Earth and Environmental Sciences
- 2023–24 **Kent State University**, Assistant Professor
Department of Earth Sciences
- 2021– **Denver Museum of Nature and Science**, Research Associate
Earth Sciences Department
- 2021– **Burke Museum of Natural History and Culture**, Paleontology Research Associate
- 2021–23 **University of Michigan**, NSF Postdoctoral Research Fellow in Earth Sciences
Department of Ecology and Evolutionary Biology (C. Badgley lab) and Museum of Paleontology

PUBLICATIONS

- In Review* Nations, JA., **Weaver, LN.**, Grossnickle, DM. Predictors of arboreality from the mammalian appendicular skeleton illuminate locomotor trends among early mammals. In: Granatosky, MC., Toussaint, SLD., Youlatos, D. (eds.) *Functional Morphology and Biomechanics of Arboreal Locomotion in Tetrapods*. Springer Nature.
- 2024 **Weaver, LN.**, Crowell, JW., Chester, SGB., & Lyson, TR. Skull of a new periptychid mammal from the lower Paleocene Denver Formation of Colorado (Corral Bluffs, El Paso County). *Journal of Mammalian Evolution* 31:1–26.
- 2024 **Weaver, LN.**, Kelson, JR., Holder, RM., Niemi, NA., & Badgley, C. On the role of tectonics in stimulating the Cretaceous diversification of mammals. *Earth-Science Reviews* 248:104630.
- 2024 Grossnickle, DM., Brightly, WH., **Weaver, LN.**, Stanchak, KE., Roston, RA., Pevsner, SK., Stayton, CT., Polly, PD., & Law, CJ. Challenges and advances in methods for measuring phenotypic convergence. *Evolution* p.qpae081.

- 2023 Claytor, JR., **Weaver, LN.**, Tobin, TS., & Wilson Mantilla, GP. New mammalian local faunas from the first ca. 80 ka of the Paleocene in northeastern Montana and a revised model of biotic recovery from the Cretaceous-Paleogene mass extinction. *Journal of Vertebrate Paleontology*, e2222777.
- 2022 **Weaver, LN.**, Fulghum, HZ., Grossnickle, DM., Brightly, WH., Kulik, ZT., Wilson Mantilla, GP., & Whitney, MR. Multituberculate mammals show evidence of a life history strategy similar to that of placentals, not marsupials. *The American Naturalist* 200:383–400. (ASN Presidential Award Winner for Best Paper of the Year in *The American Naturalist*)
- 2022 **Weaver, LN.**, Tobin, TS., Claytor, JR., Wilson, PK., Clemens, WA., & Wilson Mantilla, GP. Revised stratigraphic relationships within the lower Fort Union Formation (Tulloch Member; Garfield County, Montana, U.S.A.) provide a new framework for examining post K-Pg mammalian recovery dynamics. *PALAIOS* 37:104–127. (Featured on the cover)
- 2021 **Weaver, LN.**, Varricchio, DJ., Sargis, EJ., Chen, M., Freimuth, WJ., & Wilson Mantilla, GP. Early mammalian social behavior revealed by multituberculates from a dinosaur nesting site. *Nature Ecology & Evolution* 5:32–37. (Published online November 2020)
- 2021 **Weaver, LN.**, and Wilson, GP. Shape disparity in the blade-like premolars of multituberculate mammals: functional constraints and the evolution of herbivory. *Journal of Mammalogy* 102:967–985. (Published online May 2020)
- 2021 Grossnickle, DM., **Weaver, LN.**, Jäger, KRK., & Schultz, JA. The evolution of anteriorly directed occlusion in therian mammals. *Zoological Journal of the Linnean Society* 194: 349–365.
- 2021 Freimuth, WJ., Varricchio, DJ., Brannick, AL., **Weaver, LN.**, & Wilson Mantilla, GP. Mammal-bearing fossil gastric pellets potentially attributable to *Troodon formosus* at the Egg Mountain locality, Two Medicine Formation, Montana, U.S.A. *Palaeontology* 64:699–725.
- 2021 Tobin, TS., Honeck, JW., Fendley, IM., **Weaver, LN.**, Sprain, CJ., Tuite, ML., Flannery, DT., Mans, WW., & Wilson, GP. Analyzing sources of uncertainty in terrestrial organic carbon isotope data: a case study across the K-Pg boundary in Montana, USA. *Palaeogeography, Palaeoclimatology, Palaeoecology* 574:110451.
- 2020 **Weaver, LN.**, & Grossnickle, DM. Functional diversity of small-mammal postcrania is linked to both substrate preference and body size. *Current Zoology* 66:539–553. (invited submission)
- 2020 Grossnickle, DM., Chen, M., Wauer, JGA., Pevsner, SK., **Weaver, LN.**, Meng, Q-J., Liu, D., Zhang, Y-G., & Luo, Z-X. Incomplete convergence of gliding-mammal skeletons. *Evolution* 74:2662–2680.
- 2020 Rogers, RR., Regan, AK., **Weaver, LN.**, Thole, JT., & Fricke, HC. Tracking authigenic mineral cements in fossil bones from the upper Cretaceous (Campanian) Two Medicine and Judith River formations, Montana. *PALAIOS* 35:135–150.
- 2019 **Weaver, LN.**, Wilson, GP., Krumenacker, LJ., Moore, JR., & Varricchio, DJ. New multituberculate mammals from the mid-Cretaceous (lower Cenomanian) Wayan Formation of southeastern Idaho and implications for the evolution of Cimolodonta. *Journal of Vertebrate Paleontology* 39(2), e1604532.

FUNDING

Fellowships & Awards

- 2023 ASN Presidential Award for Best Paper of 2022 in *The American Naturalist* – \$1,000
- 2021 Alfred Sherwood Romer Prize, Society of Vertebrate Paleontology – \$750
- 2021 National Science Foundation, Postdoctoral Research Fellowship in Earth Sciences – \$174,000
- 2021 National Science Foundation, Postdoctoral Research Fellowship in Biology – \$138,000 (declined)
- 2021 Alexander von Humboldt Postdoctoral Research Fellowship – \$76,512 (declined)
- 2019 Dawson Pre-Doctoral Fellowship, Society of Vertebrate Paleontology – \$3,000
- 2017 National Science Foundation, Graduate Research Fellowship Program – \$138,000
- 2016 Washington Research Foundation & Benjamin Hall Graduate Fellowship – \$10,000

Grants

- 2022 David B. Jones Foundation Research Grant – \$258,945.10
- 2020 BLM National Conservation Lands Grant – \$25,000 (with G.P. Wilson & B.T. Hovatter)
- 2019 Paleontological Society Student Research Grant – \$1,200
- 2019 American Society of Mammalogists Grant-in-Aid – \$1,500
- 2019 UW Biology Department Wycoff Award – \$2,000
- 2018 Doris O. & Samuel P. Welles Fund Travel Grant – \$650
- 2017 David B. Jones Foundation Research Grant – \$126,458.21 (with G.P. Wilson & B.T. Hovatter)
- 2017 UW Biology Department Sargent & Iuvo Awards – \$1,700
- 2016 UW Student Technology Fee Grant - \$26,609

Total Funding Awarded – \$985,324.31

TEACHING EXPERIENCE

Instructor of Record

- 2023 Principles of Paleontology (ESCI 34061) Kent State University

Teaching Assistant (UW Biology)

- 2020 Human Anatomy (BIOL 310) Instructor: Casey Self
- 2020 Invertebrate Paleontology (BIOL 451) Instructor: Peter Ward
- 2019 Analytical Paleobiology (BIOL 438) Instructor: Gregory Wilson
- 2017 Invertebrate Zoology (BIOL 434) Instructor: Kenneth Sebens
- 2015–20 Introductory Biology (BIOL 180) (x5) Instructors: Scott Freeman, John Herron, and Jacob Cooper

Guest Instructor

- 2019 Cretaceous Geology of Montana, Keck Gateway Project, Macalester College, St. Paul, MN
- 2019 Paleontology Field Methods and Research (BIOL 475), University of Washington, Seattle, WA
- 2018 Paleontology Field Methods and Research (BIOL 475), University of Washington, Seattle, WA

Guest Lecturer

- 2023 Vertebrate Paleontology (BIOL 395) Loyola University Chicago, Chicago, IL
- 2021 Biology of Mammals (EEB 451) University of Michigan, Ann Arbor, MI
- 2021 Evolution of Vertebrates (EARTH 437) University of Michigan, Ann Arbor, MI
- 2019 Analytical Paleobiology (BIOL 438) University of Washington, Seattle, WA
- 2019 Evolution of Mammals and Their Ancestors (BIOL 443) University of Washington, Seattle, WA
- 2019 Vertebrate Paleobiology and Evolution (GEOL 416) Macalester College, St. Paul, MN
- 2018 Paleobiology (GEOL 300) Macalester College, St. Paul, MN
- 2018 Functional Morphology (BIOL 439) University of Washington, Seattle, WA
- 2017 Evolution of Mammals and Their Ancestors (BIOL 443) University of Washington, Seattle, WA
- 2017 Invertebrate Zoology (BIOL 434) University of Washington, Seattle, WA
- 2017 Stratigraphy (ESS 455) University of Washington, Seattle, WA

Postdoc Mentorship

- 2024– **Anna Wisniewski** (Ph.D. from U. Chicago)

Graduate Students—Primary Advisor

*Student co- or lead-authors in published peer-reviewed papers or conference abstracts

2024– **Rory Sweedler** (Primary advisor for Ph.D., U. Michigan)

2024– **Jared Shiffert** (Primary advisor for Ph.D., U. Michigan)

2023– **Athena Vohs*** (Primary advisor for M.S., Kent State University & U. Michigan)

Graduate Students—Committee Member

2024– **Elena Lee** (Ph.D. student, U. Michigan)

2024– **Adriana Brown** (Ph.D. student, U. Michigan)

2024– **Zach Lyons-Weiler** (Ph.D. student, U. Michigan)

2022–23 **Richardson Pedigo** (M.S. student, committee member, SUNY ESF)

Undergraduate Student Mentorship

*Student co- or lead-authors in published peer-reviewed papers or conference abstracts

2024– **Sara Zain** (U. Michigan, Undergraduate Research Opportunity Program)

2024– **Samantha Goldstein** (U. Michigan, Undergraduate Research Opportunity Program)

2024– **Clea Graham** (U. Michigan, Undergraduate Research Opportunity Program)

2024– **Liam McNulty** (U. Michigan, Undergraduate Research Opportunity Program)

2024– **Ella Squire** (U. Michigan)

2024– **Piper Hattenbach** (Mount Holyoke College, Remote Research Intern)

2023– **Abby Waller*** (U. Michigan; **UMMP Stocker-Nesbitt Awardee**, 2024)

2022–23 **Kari Myhran*** (Macalester College, Honors Thesis committee member)

2022– **Megan Riley*** (U. Michigan; **Weaver Lab manager**, 2024–2025 academic year)

2022–24 **Sofia Belabbes*** (U. Michigan)

2022–23 **Jacob Chu** (U. Michigan)

2021– **Grace Pizzini*** (U. Michigan, Undergraduate Research Opportunity Program)

2021– **Jake Downey*** (U. Michigan, Undergraduate Research Opportunity Program)

2022 **Fern Sexton** (U. Michigan)

2021–22 **Benny Cho*** (U. Michigan, Undergraduate Research Opportunity Program)

2017–21 **Henry Fulghum*** (U. Washington; **current Ph.D. student**, U. Chicago)

2019–21 **Xu ‘Stokke’ Ziqi** (U. Washington; **current M.S. student**, E. Tennessee St. U.)

2019–20 **Michaela Leung** (U. Washington; **current Ph.D. student**, UC Riverside)

Public Outreach (since 2018)

2015–22 Instructor: **Discoveries in Geoscience (DIG) Field School**, a non-profit program training K–12 teachers in geology and paleontology field methods and developing in-class Earth Science curricula (www.digfieldschool.org)

2020 Guest speaker: Facebook live event, “Ask a Paleontologist”

2020 Volunteer: Burke Behind the Scenes Night—Burke Museum of Natural History and Culture, Seattle, WA

2020 Invited Speaker: Physics, biomechanics, and their importance for understanding mammal evolution—Islander Middle School, Mercer Island, WA

2018 Invited Speaker: Seattle Public Schools Middle School Science and Engineering Fair—Seattle Museum of Flight, Seattle, WA

2018 Volunteer: Dino Days—Burke Museum of Natural History and Culture, Seattle, WA

PRESENTATIONS

Invited Lectures

2024 **Ohio State University**, EEOB Seminar (invited by John Hunter)

2024 **Northeast Ohio Medical University**, NEOMED Seminar (invited by Lisa Cooper)

2024 **New York Institute of Technology**, Dept. of Anatomy Seminar (invited by Simone Hoffmann)

2023 **Case Western Reserve University**, EEPS Seminar (invited by Darin Croft and Beverly Saylor)

2023 **University of Texas–Austin**, Paleo Seminar (invited by Ben Rodwell)

2023 **University of Chicago**, EvMorph Seminar (invited by Graham Slater)

2023 **Denver Museum of Nature & Science**, Earth Sciences Colloquium (invited by Tyler Lyson)

2023 **Yale University**, Yale Institute for Biospheric Studies (invited by Eric Sargis)

2023 **Stony Brook University**, Department of Anatomical Sciences (invited by Alan Turner)

2022 **Burpee Museum of Natural History**, PaleoFest (invited by Josh Matthews)

2022 **University of Michigan**, Ecology and Evolutionary Biology (invited by graduate students)

- 2022 **Princeton University**, Department of Geosciences (invited by Blair Schoene)
- 2022 **University of Michigan**, Department of Earth and Environmental Sciences (invited by Jeff Wilson Mantilla)
- 2021 **University of Michigan**, Friends of the Museum of Paleontology (invited by Matt Friedman). *Remote due to coronavirus.*
- 2021 **University of Edinburgh**, School of Geosciences (invited by Steve Brusatte). *Remote due to coronavirus.*
- 2021 **Universität Bonn**, Institut für Geowissenschaften (invited by Julia Schultz). *Remote due to coronavirus.*
- 2021 **East Carolina University**, Department of Biology (invited by Timothy Lee). *Remote due to coronavirus.*
- 2020 **University of Michigan**, Museum of Paleontology (invited by Matt Friedman). *Remote due to coronavirus.*
- 2020 **Adelphi University**, Department of Biology (invited by Mike D'Emic). *Remote due to coronavirus.*

Professional Conference Presentations

- 2024 North American Paleontological Convention, Ann Arbor, MI (Talk)
Society of Vertebrate Paleontology Annual Meeting, Minneapolis, MN (Talk)
- 2023 Society of Vertebrate Paleontology Annual Meeting, Cincinnati, OH (Talk)
Geological Society of America Annual Meeting, Pittsburgh, PA (Talk)
- 2022 Society of Vertebrate Paleontology Annual Meeting, Toronto, ON (Talk)
Geological Society of America Annual Meeting, Denver, CO (Poster)
- 2021 Romer Prize Session, Society of Vertebrate Paleontology Annual Meeting, Virtual (Talk)
American Society of Mammalogists Annual Meeting, Virtual (Talk)
Geological Society of America Annual Meeting, Portland, OR (Talk)
- 2020 Society of Vertebrate Paleontology Annual Meeting, Virtual (Poster)
- 2019 Society of Vertebrate Paleontology Annual Meeting, Brisbane, Australia (Talk)
Geological Society of America Annual Meeting, Phoenix, AZ (Talk)
Western Association of Vertebrate Paleontology Annual Meeting, Eugene, OR (Talk)
- 2018 Society of Vertebrate Paleontology Annual Meeting, Albuquerque, NM (Talk)
Society for Integrative and Comparative Biology Annual Meeting, San Francisco, CA (Talk)
- 2017 Geological Society of America Annual Meeting, Seattle, WA (Poster)
Society of Vertebrate Paleontology Annual Meeting, Calgary, AB (Talk)
- 2016 Society of Vertebrate Paleontology Annual Meeting, Salt Lake City, UT (Poster)

- 2015 Geological Society of America, Rocky Mountain Section Meeting, Casper, WY (Poster)
Western Association of Vertebrate Paleontology Annual Meeting, Turlock, CA (Poster)

ADDITIONAL EXPERIENCE

Diversity, Equity, Inclusivity, & Justice Training

- 2022 Rackham Professional Development DEI Certificate Awardee, U. Michigan
- 2021 Evidence-Based Teaching in Biology—Teaching for Equity (BIOL 505), UW Biology
- 2020–21 Diversity & Equity/Graduate & Postdoc Committee Culture Hours, UW Biology
- 2020 Race & Equity Workshop: Words Matter, Burke Museum of Natural History and Culture
- 2020 Language Matters: Considering Racial Microaggressions in Science, Society for the Advancement of Biology Education Research—Striving for Racial Justice in Academic Biology Series
- 2020 Empowering Prevention & Inclusivity Community (EPIC) Training Program, UW Biology
- 2019 #MeTooSTEM Action Workshop, University of Washington
- 2018 Identifying Sexual Harassment and Bystander Training, UW Biology
- 2016 Sexual Harassment in the Workplace Training, University of Washington

Fieldwork

- 2024 Newark Canyon Formation (Lower–mid Cretaceous), central Nevada
- 2021–24 Frontier, Mesaverde (=Eagle + Judith River), Meeteetse, and Lance formations (Upper Cretaceous), Fort Union Formation (Paleocene), Bighorn Basin, WY
- 2021–22 Goler Formation (mid–upper Paleocene), El Paso Mountains, Mojave Desert, CA
- 2021 Denver Formation (D1 sequence, lower Paleocene), Corral Bluffs, CO
- 2015–22 Hell Creek Formation & Fort Union Formation (Tullock, Lebo, and Tongue River members) (uppermost Cretaceous–Paleocene), Williston Basin, MT
- 2019 Judith River Formation (Upper Cretaceous), Williston Basin, MT
- 2019 Cloverly Formation (Lower Cretaceous), Bighorn and Clarks Fork Basins, MT/WY
- 2017 Lameta Formation (uppermost Cretaceous–lowermost Paleocene), Central India
- 2016 Chinle Formation (Upper Triassic), Petrified Forest National Park, AZ
- 2013–15 Willwood Formation (lower Eocene), Bighorn Basin, WY

2014 Cambrian through Paleogene sedimentary rocks in the Bighorn Basin, WY, Iowa State University / University of Nebraska-Lincoln Geology Field Camp

Museum Collections

2023 Field Museum of Natural History, Chicago, IL

2022 National Museum of Natural History, Washington, D.C.

2022 University of Colorado Museum of Natural History, Boulder, CO

2021–23 University of Michigan Museum of Paleontology, Ann Arbor, MI

2016–22 Denver Museum of Nature & Science, Denver, CO

2015–21 Burke Museum of Natural History & Culture, Seattle, WA

2019&23 Yale Peabody Museum of Natural History, New Haven, CT

2017 University of California Museum of Paleontology, Berkeley, CA

2017 Royal Tyrrell Museum, Drumheller, AB, Canada

2017 Geological Survey of India, Nagpur, India

2016 Utah Museum of Natural History, Salt Lake City, UT

2016&23 American Museum of Natural History, New York, NY

PROFESSIONAL SERVICE

University Service

2020–21 Search Committee, Dean of the College of Arts & Sciences, University of Washington

Peer Review

2024 (1) *Science*; (2) *Proceedings of the National Academy of Sciences, USA*; (3) *Science Advances*; (4) *Palaeontology*; (5) *PALAIOS*

2023 (1) *Cretaceous Research*; (2) *Zoological Journal of the Linnean Society*; (3) *AMNH Novitates*; (4) *Biology Letters*; (5) *Contributions from the Museum of Paleontology, University of Michigan*

2022 (1) Ohio University Baker Fund Proposal; (2) *Journal of Mammalian Evolution* (x2)

2021 (1) *Acta Palaeontologica Polonica*; (2) *Palaeontology*; (3) *Communications Biology*; (4) *Zoological Research*; (5) *Proceedings of the Royal Society B*; (6) *Journal of Vertebrate Paleontology*; (7) *Journal of Mammalian Evolution*

2020 (1) *Evolution*; (2) *Geobios*

2019 (1) *Journal of Mammalogy*; (2) *Journal of Vertebrate Paleontology*

Professional Affiliations

2017– Paleontological Society (**Development Committee Member**, since 2020)

2016– Society of Vertebrate Paleontology (Diversity Committee Member, 2022–23)

2017– Geological Society of America

2018– American Society of Mammalogists

2017– Society of Integrative & Comparative Biologists

2020–21 Association for Women Geoscientists (Treasurer, UW Student Sub-Group, Pacific NW Chapter)

Conferences

2024 Society of Vertebrate Paleontology Annual Meeting, Organized Symposium: Mammal Life History

2024 North American Paleontological Convention, Organized Symposium: Bighorn Basin

2024 North American Paleontological Convention, Field Trip Logistics

DEPARTMENT SERVICE

2024– U-M EARTH Diversity, Equity, and Inclusion Committee (Graduate Student Subcommittee)

2023 U-M EARTH Unlearning Racism in Geoscience (URGE) (Year 3 Pod Member)

2021 UW Biology Graduate & Postdoc Programming (Committee Member)

2020–21 UW Biology Diversity & Equity (Committee Member)

2020–21 UW Biology Equity in Fieldwork Task Force

2020–21 UW Biology Field Gear Co-Op (Co-founder/organizer)

2015–21 UW Biology Social Committee (Organized UW Biology Retreats, Happy Hours, and Trivia)

2017–18 UW Paleontology Professional Development Program (Co-founder/lead-organizer)

2017–18 UW Biology Faculty Note-taker

2017 Organismal Biology Graduate Student Research Seminar (Founder/organizer)

REFERENCES

Gregory Wilson Mantilla (Ph.D. advisor), Ph.D., Professor, Department of Biology, University of Washington, Seattle, WA 98195; gpwilson@uw.edu

Catherine Badgley (Postdoc mentor), Ph.D., Professor, Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI 48109; cbadgley@umich.edu

Raymond Rogers (Ph.D. committee member), Ph.D., Professor & Chair, Department of Geology, Macalester College, St. Paul, MN 55105; rogers@macalester.edu

David Krause (Collaborator), Ph.D., Senior Curator, Department of Earth Sciences, Denver Museum of Nature and Science, Denver, CO 80205; david.krause@dmns.org