

## CURRICULUM VITAE

### Megan R. Whitney

Assistant Professor of Biology

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## Research

- **Form & Function:** how histomorphologies are adapted for specific functions with links to critical physiological adaptations?
- **Evolutionary physiology & pathology:** how have physiological adaptations and pathologies evolved and shaped vertebrate evolution?

## Education

- Ph.D. Biology, University of Washington, Seattle 2019  
Supervisory committee: Dr. Christian Sidor (Advisor),  
Dr. Gregory Wilson, Dr. Susan Herring, Dr. Aaron Leblanc, and Dr. Tracy Popowics
- B.A. Biology, Macalester College, Saint Paul 2013  
Dr. Kristina Curry Rogers (Advisor)

## Positions

- Assistant Professor of Biology, Loyola University Chicago 2020-present
- Postdoctoral Fellow, Museum of Comparative Zoology (MCZ), Harvard University 2020-2022
- Curatorial Assistant, UW Burke Museum 2017-2019
- Research Assistant, UW, Dr. Christian Sidor 2015-2019
- Paleohistology Lab Technician, Macalester College 2013-2014
- Research Assistant, Macalester College, Dr. Kristina Curry Rogers 2012-2013
- Undergraduate Researcher, SIT Ecology Ecuador 2012
- Research Assistant, Macalester College, Dr. Mark Davis 2011

## Grants & Awards

- MCZ Wetmore Coles Award (\$1300) 2021
- Australian Synchrotron Beamtime (\$23,720) 2021
- Society of Vertebrate Paleontology Romer Prize Speaker 2020
- Richard C. Snyder Award (\$1,000) 2019
- Tunncliffe Graduate Fellowship, University of Washington (UW) (1 Q support) 2018
- Society of Vertebrate Paleontology Dawson Pre-Doctoral Fellowship (\$3,000) 2017
- Richard C. Snyder Award (\$1,800) 2017
- National Science Foundation Doctoral Dissertation Improvement Grant (\$20,043) 2017
- UW Student Technology Fund Award (\$38,974) 2016
- National Science Foundation Graduate Research Fellowship Program Honorable Mention 2016

BEACON Evolution Award (\$1,000)	2016
UW Graduate Student Symposium: Faculty Choice for Best Talk	2016
Washington Research Foundation & Benjamin Hall Fellowship (1 Q support)	2015
Washington Research Foundation & Benjamin Hall Award (\$800)	2015

## Publications

Citations: 190; h-index: 8; i10-index: 7

Underline author designates mentored student

\* article with an Almetric score in the top 5% of all research outputs

Weaver, L. N., H. Z. Fulghum, D. M. Grossnickle, W. H. Brightly, Z. T. Kulik, G. P. Wilson Mantilla, **M. R. Whitney**. 2022. Multituberculate mammals show evidence of a life history strategy similar to that of placentals, not marsupials. *The American Naturalist* 200 (3): <https://doi.org/10.1086/720410>

\***Whitney, M. R.**, K. D. Angielczyk, C. A. Sidor, B. R. Peacock. 2021. The evolution of the synapsid tusk: insights from non-mammalian dicynodont tusk histology. *Proceedings of the Royal Society B* 288:20211670.

**Whitney, M. R.** and S. E. Pierce. 2021. Osteohistology of *Greererpeton* provides insight into the life history of an early Carboniferous tetrapod. *Journal of Anatomy* DOI: 10.1111/joa.13520.

\***Whitney, M. R.**, A. R. H. LeBlanc, A. R. Reynolds, and K. S. Brink. 2020. Convergent dental adaptations in the serrations of hypercarnivorous synapsids and dinosaurs. *Biology Letters* 16(12):20200750.

\***Whitney, M. R.** and C. A. Sidor. 2020. Evidence of torpor in the tusks of *Lystrosaurus* from the Early Triassic of Antarctica. *Communications Biology* 3:471.

**Whitney, M. R.** and C. A. Sidor. 2019. Histological and developmental insights into the herbivorous dentition of tapinocephalid therapsids. *PLoS ONE* 12(10):e0223860.

**Whitney, M. R.**, Y. T. Tse, and C. A. Sidor. 2019. Histological evidence of trauma in tusks of southern African dicynodonts. *Palaeontologia africana* 53:75–80.

\*LeBlanc, A. R. H., K. S. Brink, **M. R. Whitney**, F. Abdala and R. R. Reisz. 2018. Dental ontogeny in extinct synapsids reveals a complex evolutionary history of the mammalian tooth attachment system. *Proceedings of the Royal Society B* 285:20181792.

Wynd, B. M., B. R. Peacock, **M. R. Whitney**, and C. A. Sidor. 2017. The first occurrence of *Cynognathus* (Synapsida: Cynodontia) in Tanzania and Zambia, with implications for the age and biostratigraphic correlation of Triassic Strata in southern Pangea. pp. 228-239 in C. A. Sidor and S. J. Nesbitt (eds.), *Vertebrate Climatic Evolution in the Triassic Rift Basins of Tanzania and Zambia*. Society of Vertebrate Paleontology Memoir 17. *Journal of Vertebrate Paleontology* 37(6).

\***Whitney, M. R.**, L. Mose, C. A. Sidor. 2016. Odontoma in a 255-Million-Year-Old Mammalian Forerunner. *JAMA Oncology* 3(7):998–1000.

\*Curry Rogers, K. A., **M. Whitney**, M. D’Emic and B. Bagley. 2016. Precocity in a tiny titanosaur from the Cretaceous of Madagascar. *Science* 352(6284):450-453.

**Whitney, M. R.** and C. A. Sidor. 2016. A new therapsid from the Permian Madumabisa Mudstone Formation (Mid-Zambezi Basin) of southern Zambia. *Journal of Vertebrate Paleontology*. Doi: 10.1080/02724634.2016.1150767.

Davis, M. A., A. Colehour, J. Daney, E. Foster, C. MacMillen, E. Merrill, J. O’Neil, M. Pearson, **M. Whitney**, M. D. Anderson, and J. J. Dosch. 2012. The Population Dynamics and Ecological Effects of Garlic Mustard, *Alliaria petiolata*, in a Minnesota Oak Woodland. *The American Midland Naturalist* 168(2):364-374.

## Conference Abstracts

**M. R. Whitney**, P. J. Bishop, J. Bevitt, S. Hucknell, and S. E. Pierce. 2022. Life history features of the Gondwanan early tetrapod *Ossinodus* revealed from osteo- and odontohistological synchrotron data. Society of Vertebrate Paleontology Annual Meeting. Toronto, Canada.

Sidor, C. A, B. M. Gee, W. R. Hammer, A. K. Huttenlocker, Z. T. Kulik, P. J. Makovicky, J. A. McIntosh, N. D. Smith, N. J. Tabor, **M. R. Whitney**. 2022. The fossil record of the Triassic Fremouw Formation (Antarctica): history of collecting and a new bauriamorph (Therapsida: Therocephalia). Society of Vertebrate Paleontology Annual Meeting. Toronto, Canada.

**M. R. Whitney** and S. E. Pierce. 2021. The comparative osteohistology of *Greererpeton* and *Proterogyrinus* (Tetrapoda) from the Carboniferous of North America. Society of Vertebrate Paleontology Annual Meeting. Minneapolis, MN.

Peacock, B. R., K. D. Angielczyk, J. K. Lungmus, J. A. McIntosh, C. A. Sidor, R. M. H. Smith, S. Tolan, P. A. Viglietti, and **M. R. Whitney**. 2021. Rhynchosaur relativity: new stenaulorhynchines from the Mid-Luangwa Basin, Zambia, and the evolving biostratigraphy of vertebrate assemblages at the Middle-Late Triassic Boundary. Society of Vertebrate Paleontology Annual Meeting. Minneapolis, MN.

**Whitney, M. R.** 2020. Histological insights into mammalian dental evolution from the dentitions of non-mammalian synapsids. *Romer Prize Session*. Society of Vertebrate Paleontology Annual Meeting. Cleveland, OH.

Sidor C. A., B. M. Gee, Z. T. Kulik, J. A. McIntosh, R. M. H. Smith, N. J. Tabor, and **M. R. Whitney**. 2020. The first vertebrate assemblage from the middle Fremouw Formation (Triassic) of Antarctica. Society of Vertebrate Paleontology Annual Meeting. Cleveland, OH.

- Peacock B. R., P. A. Vigleitti, K. D. Angielczyk, C. F. Kammerer, J. K. Lungmus, J. A. McIntosh, C. A. Sidor, S. Tolan, R. M. H. Smith, and **M. R. Whitney**. 2020. A new stratigraphic framework for the Permo-Triassic strata of the mid-Luangwa Basin, Zambia: upper Permian turnover and Middle-Upper Triassic vertebrate assemblages. Society of Vertebrate Paleontology Annual Meeting. Cleveland, OH.
- Whitney, M. R.**, K. D. Angielczyk, C. A. Sidor, and B. R. Peacock. 2019. Comparative histology of dicynodont tusks reveals cryptic diversity of tissue composition, development, and attachment strategies. Society of Vertebrate Paleontology Annual Meeting. Brisbane, Australia.
- Sidor, C. A., P. Makovicky, J. A. McIntosh, N. Smith, R. M. Smith, N. J. Tabor, **M. Whitney**, and C. H. Woolley. 2019. Vertebrate paleontology of the Lower Triassic Fremouw Formation in the Shackleton Glacier area (Antarctica). Society of Vertebrate Paleontology Annual Meeting. Brisbane, Australia.
- Whitney, M. R.** and C. A. Sidor. 2019. Comparative Histology and Development of Dicynodont Tusks. Western Association of Vertebrate Paleontology. Eugene, OR.
- Sidor, C. A., J. A. McIntosh, R. M. H. Smith, N. J. Tabor, and **M. R. Whitney**. 2019. Vertebrate Paleontology of the Lower Triassic Fremouw Formation in the Shackleton Glacier Region (Antarctica). Western Association of Vertebrate Paleontology. Eugene, OR.
- Whitney, M. R.**, C. A. Sidor, and A. R. H. LeBlanc. 2018. A Permanent ligamentous tooth attachment in Permian gorgonopsians expands the phylogenetic and ecological distribution of a gomphosis in synapsids. Society of Vertebrate Paleontology Annual Meeting. Albuquerque, NM.
- Fulghum, H. Z., L. N. Weaver, **M. R. Whitney**, and G. P. Wilson. 2018. Comparative osteohistology of extant small-bodied mammals with implications for understanding the growth dynamics of Mesozoic mammals. Society of Vertebrate Paleontology Annual Meeting. Albuquerque, NM.
- Wosik, M., **M. Whitney**, K. Curry Rogers, H. Woodward, and D. C. Evans. 2018. Defining dinosaur neonatal body size using osteohistological evidence. Society of Vertebrate Paleontology Annual Meeting. Albuquerque, NM.
- Sidor, C. A., B. R. Peacock, C. V. Beightol, T. Kaye, Z. T. Kulik, G. Livingston, W. G. Parker, S. L. Olroyd, and **M. R. Whitney**. 2018. The shuvosaurid quarry: a multitaxic bonebed from the Sonsela Member of the Chinle Formation at Petrified Forest National Park. Society of Vertebrate Paleontology Annual Meeting. Albuquerque, NM.
- Tse, Yuen Ting, **M. R. Whitney**, C. A. Sidor. 2018. Histological evidence of trauma in a tusk of *Lystrosaurus* (Synapsida: Anomodontia). Geological Society of America Annual Meeting. Indianapolis, IN.
- M. R. Whitney**, Y. T. Tse, and C. A. Sidor. 2018. Comparative tusk histology of *Lystrosaurus* from the Early Triassic of South Africa and Antarctica shows pronounced seasonality. 5<sup>th</sup> International Palaeontological Congress. Paris, France.

- Curry Rogers, K. A. , Z. Kulik, Bui, H. N., and **M. R. Whitney**. 2018. Titanosaur paleobiology: insights from Rapetosaurus krausei (Maevarano Formation, Madagascar). 5<sup>th</sup> International Palaeontological Congress. Paris, France.
- Weaver, L. N., **M. R. Whitney**, and G. P. Wilson. 2018. Osteohistology of multituberculate femora from northeastern Montana suggests variation in growth rate near the K-Pg Boundary. Society for Integrative and Comparative Biology.
- Whitney, M. R.** and C. A. Sidor. 2017 Taphonomic indicators of tooth attachment in fossil synapsids with implication for oral food processing in tapinocephalids. Society of Vertebrate Paleontology Annual Meeting. Calgary, Alberta, Canada.
- Tse, Y. T., **M. R. Whitney**, R. M. H. Smith, and C. A. Sidor. 2017. Unusual dentin deposition in the tusk of Lystrosaurus sp. (Synapsida: Anomodontia) from the Early Triassic of southern Pangea. Society of Vertebrate Paleontology Annual Meeting. Calgary, Alberta, Canada.
- Weaver, L. N., **M. R. Whitney**, and G. P. Wilson. 2017. First osteohistological description of a Late Cretaceous multituberculate from North America and implications for growth rates across the K-PG Boundary. Society of Vertebrate Paleontology Annual Meeting. Calgary, Alberta, Canada.
- Sidor, C. A., K. D. Angielczyk, S. J. Nesbitt, B. R. Peacock, R. M. H. Smith, N. J. Tabor, S. Tolan, **M.R. Whitney**. 2017. Burnetiamorphs did it first: cranial adornment, rates of speciation, biogeography, and sampling in a Permian lineage of therapsids. Society of Vertebrate Paleontology Annual Meeting. Calgary, Alberta, Canada.
- Whitney, M. R.**, M. Wosik, L. Doran, K. A. Curry Rogers, H. Woodward, and D. C. Evans. 2017. Osteohistological signatures of hatching in modern ratites with implications for reconstructing the early ontogeny of dinosaurs. International Symposium on Paleohistology. Trenton, NJ.
- Whitney, M. R.**, L. Mose, and C. A. Sidor. 2016. Histopathology of a potentially cancerous mass in a late Permian gorgonopsian canine. Society of Vertebrate Paleontology Annual Meeting. Salt Lake City, UT.
- Whitney, M. R.**, L. Mose, and C. A. Sidor. 2016. Mammal-like thecodonty in several PermoTriassic therapsids: Implications for the evolution of tooth attachment in mammals. Society for Integrative and Comparative Biology Annual Meeting, Portland, Oregon. Abstract P2.164.
- Curry Rogers, K., **M. Whitney**, B. Bagley, and M. D'Emic. 2015. Tiny titanosaurs: Primary growth and early ontogeny in a very young sauropod from Madagascar. Society of Vertebrate Paleontology Annual Meeting. Dallas, TX.

**Whitney, M.** and C. A. Sidor. 2015. Mammal-like thecodonty in herbivorous middle Permian tapinocephalids (Therapsida, Dinocephalia). Society of Vertebrate Paleontology Annual Meeting. Dallas, TX.

Curry Rogers, K., **M. Whitney**, and B. Bagley. 2013. Tiny Titanosaurs: Primary growth rates in hatchling sauropods from Madagascar. International Symposium on Paleohistology, Bozeman, MT. July 19.

**Whitney, M.**, K. Curry Rogers and B. Bagley. 2013. Bone histology and primary growth rates in hatchling titanosaurs from Madagascar: New insights from micro-computed tomography. Society for Integrative and Comparative Biology Annual Meeting, San Francisco, California. Abstract P3.197

**Whitney, M.**, M. Bernard, B. Bagley, and K. Curry Rogers. 2012. Tiny Titanosaurs: Micro-computed tomography and primary growth rates in hatching sauropods from Madagascar. Geological Society of America Abstracts with Programs, Vol. 44:231.

## Fieldwork

Chinle Formation (Triassic), Arizona, USA	2015-2019
Madumabisa (Permian) and Ntaware (Triassic) Formations, Zambia	2018, 2019
Fremouw Formation (Triassic), Antarctica	2017-2018
Hell Creek Formation (Cretaceous), Montana, USA	2016
Judith River Formation (Cretaceous), Montana, USA	2012

## Collections Experience

Museum of Comparative Zoology, Cambridge, USA: Paleontology, Herpetology, Ichthyology  
Natural History Museum LA County, Los Angeles, USA  
Cambridge Museum of Zoology, Cambridge, England  
British Museum of Natural History, London, England  
South African Museum, Cape Town, South Africa  
Evolutionary Studies Institute, Johannesburg, South Africa  
American Museum of Natural History, New York, USA  
Field Museum of Natural History, Chicago, USA  
Burke Museum of Natural History, UW: Vertebrate Paleontology, Ornithology

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## Educational & Outreach Activities

### Positions

Instructor: Loyola University Chicago BIOL 242: Human Structure and Function I

Head Teaching Instructor: Harvard University OEB 207: The Fishy Aspects of the Human Body

Teaching Assistant: UW Biology 450: Vertebrate Paleontology  
UW Biology 453: Comparative Vertebrate Anatomy  
UW Biology 200: Introductory Biology (Cell Biology)

UW Biology 180: Introductory Biology (Evolution and Ecology)  
Macalester College Biology 394: Research in Paleobiology  
Macalester College Biology 112: Origins (Non-majors evolution)  
Macalester College Biology 270: Biodiversity and Evolution

## **Pedagogical Development**

*Harvard University Faculty of Arts and Science: Science Education and Mentoring Certificate*  
Intensive workshops reviewing undergraduate research fellowships, recommendation letters, project development, diversity and inclusion, student science writing

*UW Biology 505: Teaching Undergraduate Biology for Diverse Audience*  
Graduate-level course reviewing best-practices and literature in undergraduate biology education. Topics included reducing achievement gaps, implementing active learning in the classroom, and exam structure.

## **Guest Lectures**

Harvard University Organismal and Evolutionary Biology: Vertebrate Evolution

*The Forerunners of Mammals*

*Becoming a Mammal*

UW Biology: Vertebrate Paleontology

*Evolution of Hard Tissues*

*Lepidosaur Evolution*

UW Biology: Comparative Vertebrate Anatomy

*Evolution of Teeth and Scales*

*Evolution of Fin and Limbs*

*Human Anatomy and Evolution*

Kennebunk High School 9<sup>th</sup> – 12<sup>th</sup> Biology

*Paleontology in Antarctica*

## **Mentored Student Researchers**

*Italicized = supervised thesis title*

Underline = source of funding

Luann Zerefa 2020-2021

*Extant salamander bone histology: a framework for interpreting ontogenetic and functional signals in early tetrapod bone histology*

Harvard College Research Award, Harvard Program for Research in Science and Engineering Award

Henry Z. Fulghum 2017-2021

*Comparative osteohistology of extant small-bodied mammals with implications for understanding the growth dynamics of Mesozoic mammals.*

UW Mary Gates Research Scholar

Amanda Peng 2017-2018

National Science Foundation DDIG Grant (DEB-1701383)

Currently a PhD Student at Oregon State University, Hopkins Lab

Yuen (Athena) Ting Tse 2016-2017  
National Science Foundation DDIG Grant (DEB-1701383)  
MSc from the Ohio State University, Caledale Lab

Lisa Doran 2016-2017  
*Osteohistological signatures of hatching in modern ratites with implications for reconstructing the early ontogeny of dinosaurs.*

Larry Mose 2015-2017  
*Odontoma in a 255-Million-Year-Old Mammalian Forerunner*  
UW Mary Gates Research Scholar

Eryca Benson 2016

Cody Rose Knaub 2015

### **Academic-Based Outreach**

*Italicized indicates programs where original content was developed*

Harvard Museum of Natural History I ♥ Science Day; 2020-2021  
[National Fossil Day](#)

UW Burke Museum *Dino Day, Birds at the Burke;* 2014-2019  
*Behind the Scenes Night;*  
*Girl Scouts of America Women in Science*

Field Museum of Natural History Donor dinner and unpacking party 2018  
of collected fossils

Expanding Your Horizons *STEM outreach workshops for middle 2016*  
*school and high school girls and women*

DIG Field School Instructor Program for K-12 teachers to get hands-on 2016  
experience in paleontology in SE Montana

### **Popular Science Outreach**

Minutiae: Essays of the Scientific Process

By: Roberta Kwok, *in Prep*

North Carolina Museum of Natural Science: Life Before Dinosaurs the Permian Monsters

Public lecture: Pathologies of the Paleozoic

Lost Worlds: Microphotography of Extinct Species

Photo exhibition of photographs and artifacts from the field of paleontology

[Harvard Gazette: Serrations of an ancient predator](#)

[Giant Screen Films: Dinosaurs of Antarctica](#)

[Nature Ecology and Evolution Contributor](#)

[UW Burke Museum: Burke paleontologists investigate mass extinctions in Zambia](#)



[Antarctica Sun: Paleo Gondwanaland Was Full of Lystrosaurus](#)

[UW Burke Museum: Going to the end of the earth to uncover fossil life in Antarctica](#)

[UW Today: F&Q Odontoma in a gorgonopsian](#)

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## Academic Service

### Department Seminars

Museum of Comparative Zoology Lunchtime seminar series	November 2021
Field Museum of Natural History The life history of the early tetrapod <i>Greerepeton</i>	August 2021
The Ohio State University "Tooth Talks": Departments of Anthropology & Dentistry	June 2021
The Ohio State University Department of Evolution, Ecology and Organismal Biology	April 2021
University of Washington Department of Oral Health Sciences	August 2019

### Peer Review

Scientific Reports  
Palaeontology  
Zoological Journal of the Linnean Society  
PLoS One  
Royal Society Open Science  
Peer J  
Journal of Anatomy  
The Science of Nature  
Journal of Vertebrate Paleontology  
Journal of Systematic Palaeontology  
Palaeontologia Electronica

### Data Availability/Access

MorphoBank Focus Group Advisor	Since 2021
MorphoSource Contributor	Since 2021

### Departmental Service

MCZ 'Virt Paleo' Seminar Organizer	2021-2022
UW Faculty Meeting Graduate Student Representative	2017-2019
UW Graduate Student Symposium Organizer	2017