

Curriculum Vitae
Ashley C. Morhardt, PhD.
November 22, 2019

Personal Information:

Pronouns: She/Her
Date of Birth: September 17, 1983
Place of Birth: Barrington, IL, USA

Citizenship:

USA Other _____
Visa Status/Type: N/A

Address and Telephone Numbers:

Current Hometown
Belleville, IL

Phone Numbers

Office: 314-273-1859
Lab: 314-273-9014
Home (Cell): 309-333-2701

Lab Website

<https://www.paleoneurology.com/>

Present Position: Assistant Professor, Department of Neuroscience, Washington University School of Medicine in St. Louis (July 2017-present)

Education:

Undergraduate:

- Bachelor of Science – Illinois College (2002–2006), Biology, English

Graduate:

- Master of Science – Western Illinois University (2007–2009), Biology
- Doctor of Philosophy – Ohio University (2010–2016), Ecology and Evolutionary Biology

Postgraduate

- Postdoctoral Research Associate – Washington University School of Medicine (2016-present), Department of Neuroscience

Academic Positions / Employment:

- Postdoctoral Research Associate, Washington University School of Medicine (Fall 2016–Summer 2017)
- Anatomy Instructor, Ohio University Heritage College of Osteopathic Medicine (Fall 2015–2016)
- Ohio Center for Ecology and Evolutionary Studies (OCEES) Graduate Research Fellow (Fall 2014)
- Biomedical Sciences Teaching Assistant, Gross Anatomy, Ohio University (Fall 2010–Spring 2015)
- Biology Laboratory Coordinator and Undergraduate Genetics Instructor of Record, Department of Biological Sciences, Western Illinois University (Fall 2009–Spring 2010)
- Fieldwork with Burpee Museum of Natural History (2008–2010)

- Teaching Assistant for the Human Anatomy labs, Department of Biological Sciences, Western Illinois University (Fall 2007–Spring 2009)
- Instructor, McHenry County College, Kids and College, Comparative Anatomy (Summer 2006)
- Intern at Illinois State Museum Collections and Research in Springfield, Illinois (Spring 2006)
- Undergraduate Lab Teaching Assistant, Department of Biology, Illinois College (2004–2005)

University and Hospital Appointments and Committees: N/A

Medical Licensure and Board Certification: N/A

Military Service: N/A

Honors and Awards:

- Living Earth Collaborative Named Fellow (2019)
- Ohio Center for Ecology and Evolutionary Studies (OCEES) Research Fellow (2014)

Editorial Responsibilities:

- Organizer and Guest Editor for the 29th Annual Karger Workshop in Evolutionary Neuroscience, November 9, 2017 in Hyattsville, MD.
 - Title: *From Fossils to Function: integrative and taxonomically inclusive approaches to vertebrate evolutionary neuroscience.*
 - Resulting Volume: <https://www.karger.com/Journal/Issue/277542>
 - Includes WUSM Neuroscience collaborative work with the Van Essen Lab:
 - <https://www.karger.com/Article/FullText/489943>

Professional Societies and Organizations:

- Society of Vertebrate Paleontology, 2008–present
- J. B. Johnston Club for Evolutionary Neuroscience, 2013–present
- American Association of Anatomists, 2017–present
- Association for Women in Science, 2017–2018
- Society of Integrative and Comparative Biology, 2010–2018
- Geological Society of America, 2009–present
- The Paleontological Society, 2008–present
- Association for Women Geoscientists, 2008–2018
- Association of Avian Veterinarians, 2017–2018
- American Ornithological Association, 2017–2018

Major Invited Professorships and Lectureships: N/A

Consulting Relationships and Board Memberships:

- Collaborating Paleontologist, St. Louis Science Center

Research Support (role, title, duration, amount):

Governmental: N/A

Non-governmental:

External Funding Sources:

- PI, Fall 2018, Collaborative Research Support Fund, St. Louis Science Center, \$1,700
- Postdoctoral Travel Award, 2017, Annual meeting of the American Association of Anatomists, \$250

- Research Collaborator, Spring 2019, Smithsonian Institute of Birds Research Honorarium, \$500
- Graduate Student Research, Spring 2013, Jurassic Foundation Research Grant, \$2880.00
- Graduate Student Research, Spring 2013, Sigma Xi Grant-in-Aid of Research, \$450.00
- Graduate Student Research, 2012, Jackson School of Geosciences Student Member Travel Grant, \$400

Internal Funding Sources:

- Graduate Teaching Assistantship, 2010-2015, Ohio University Heritage College of Osteopathic Medicine, tuition & stipend
- Graduate Research Fellowship, Fall 2014, Ohio Center for Ecology and Evolutionary Studies (OCEES), tuition & stipend
- Graduate Student Enhancement Award, Spring 2013, Ohio University, \$5140.00
- Biological/Biomedical Sciences Travel Award, distributed over 2010-2015, Ohio University, \$4800
- Graduate Student Senate Original Work Grant, Spring 2015, Ohio University, \$750
- Graduate Student Senate Travel Grant, 2011, Ohio University, \$500

Internal Funding Sources: Undergraduate:

- Illinois College Presidential Scholar Award, distributed over 2002-2006, \$30,000
- Illinois College Art Scholar Award, distributed over 2002-2006, \$2,000

Patents: N/A

Clinical Title and Responsibilities: N/A

Teaching Title and Responsibilities:

Courses taught at Washington University School of Medicine in St. Louis (2016-present):

- The Human Body: Anatomy, Embryology and Imaging
 - Gross anatomical lecture and dissection laboratory for 1st-year medical students
- Medical Neuroscience
 - Gross neuroanatomy dissection lab for 1st-year medical students

Resources Developed for Washington University School of Medicine in St. Louis (2017-present):

- Thumbroll App—Co-author and dissector for dozens of anatomical modules
 - <https://www.thumbroll.com/>

Courses taught at Ohio University Heritage College of Osteopathic Medicine (2010-2016):

- Human neuroanatomy lab for 2nd-year medical students
- Gross Anatomical Series for 1st- and 2nd-year medical students (included some histology)
- Community Based Learning (CBL) Facilitator for 1st-year medical students

Courses taught at Western Illinois University (2007-2010):

- Genetics (IoR); Ecology, Mammology (Instructor), Undergraduate Human Anatomy & Physiology (TA)

Bibliography:

Peer-reviewed publications:

- A. C. Morhardt.** 2018. From Fossils to Function: Integrative and Taxonomically Inclusive Approaches to Vertebrate Evolutionary Neuroscience. *Brain, Behavior, and Evolution.* 91(3): 123-124.
- Gignac, P. M., N. J. Kley, J. A. Clarke, M. W. Colbert, **A. C. Morhardt**, D. Cerio, I. N. Cost, P. G. Cox, J. D. Daza, C. M. Early, M. S. Echols, R. M. Henkelman, A. N. Herdina, C. M. Holliday, Z. Li, K. Mahlow, S. Merchant, J. Müller, C.P. Orsbon, D. J. Paluh, M. L. Theis, H. P. Tsai, L. M. Witmer. Diffusible iodine-based contrast-enhanced computed tomography (diceCT): an emerging tool for rapid, high-resolution, 3-D imaging of metazoan soft tissues. *Journal of Anatomy.* 228(6): 889-909.

Invited publications (e.g., reviews, book chapters, etc.):

Morhardt, A.C. 2020 (*anticipated*) Paleoneurology of Dinosaur Endocasts: past, present, and future research. In T. Dozo, T. Macrini, A. Paulina-Carabajal, and S. Walsh (eds.) *Paleoneurology and Brain Evolution: new directions in the study of fossil endocasts in reptiles, birds and mammals*. Springer, Life Sciences.

Paulina-Carabajal, A., J. A. Bourke, and **A. C. Morhardt**. 2019 (*anticipated*). *Sensory Systems in Dinosaurs*. In V. Arbour, T. Holtz, and L. Zanno (eds.) *The Complete Dinosaur*, 3rd Edition. Indiana University Press, Bloomington.

White, L., A. Farke, A. Hall, and **A. C. Morhardt**. 2019 (*anticipated*). *Dinosaurs and Education*. In V. Arbour, T. Holtz, and L. Zanno (eds.) *The Complete Dinosaur*, 3rd Edition. Indiana University Press, Bloomington.

Professional Workshops:

- Co-led:
 - Rodrigues, T., Holwerda, F. Hsiou, Hunt-Foster, R. and **A. Morhardt**. *Women in Paleontology: A Discussion on Promoting Gender Equality*. 79th Annual Meeting of the Society of Paleontology. Brisbane, Australia. Tuesday, October 8, 2019.
 - Lepore, T., A. Hall., A. Stegner, A. Marcy. **A. C., Morhardt**. *Paleontology Education: Staying at the Cutting Edge in Research, Pedagogy, and Outreach*. 77th Annual Meeting of the Society of Vertebrate Paleontology. Calgary, Alberta, Canada. August 22, 2017.
 - Gignac, P.M., N. J. Kley, A. C. Morhardt, Z. Li, and M. Colbert. *Iodine-Enhanced Soft-Tissue Imaging: An Introductory Workshop for Vertebrate Paleontologists*. 75th Annual Meeting of the Society of Vertebrate Paleontology. Dallas, Texas. October 14-17, 2015.
- Invited Participant:
 - Moore, J., A. Roundtrey, H. Scates Kettler. 2017. *Community Standards for 3D Data Preservation*. Washington University, St. Louis, MO. February 5-7, 2018. <http://gis.wustl.edu/dgs/cs3dp/>
 - NESCent Catalysis Meeting on the Evolution of the Avian Brain, Duke University, May 14, 2014. “Segmenting endocasts into brain regions: Approaches in the WitmerLab.”

Professional Presentations:

Morhardt A.C., C. Campbell, S. Bhalla, M. Steinkruger, V. Mellnick, B. Thomas. 2019. Endocranial anatomy and ontogeny of the extinct dinosaur genus *Triceratops* using 3D visualization. Annual Meeting of the J.B. Johnston Club for Evolutionary Neuroscience, Chicago, Illinois, USA. *Brain, Behavior, and Evolution*.

Morhardt, A. C., C. Campbell, S. Bhalla, M. Steinkruger, M. Miller-Thomas, V. Mellnick, B. Thomas. 2019. Endocranial Anatomy and Ontogeny in Ornithischian Dinosaurs Using Computed Tomography and 3D-Visualization. International Congress of Vertebrate Morphology, Prague, Czech Republic. *Journal of Morphology*.

Early, C. M., **A. C. Morhardt**, C. M. Milensky, H. F. James. 2019. Optimizing diceCT Staining Protocols to Mitigate Potential Degradation of Museum Specimens. International Congress of Vertebrate Morphology, Prague, Czech Republic. *Journal of Morphology*.

Morhardt, A. C., C. Campbell, S. Bhalla, M. Steinkruger, M. Miller-Thomas, V. Mellnick, B. Thomas. 2018. Study of endocranial anatomy and ontogeny in the Late Cretaceous non-avian dinosaur genus *Triceratops* using computed tomography and 3-d visualization. 78th Annual Meeting of the Society of Vertebrate Paleontology, Albuquerque, NM. *Journal of Vertebrate Paleontology Supplement—Meeting Program and Abstracts*: In press.

- Morhardt, A. C.,** R. C. Ridgely, and L. M. Witmer. 2017. Gross Anatomical Brain Region Approximation (GABRA): a new landmark-based approach for estimating brain regions in archosaurs. 129th Annual Meeting of the American Association of Anatomists, Experimental Biology Conference, Chicago, IL.
- Nassif, J. P., J. Bourke, D. G. Cerio, D. L. Dufeu, C. M. Early, **A. C. Morhardt,** W. R. Porter, R. C. Ridgely, A. F. Spaw, and L. M. Witmer. 2016. A digital menagerie: building the WitmerLab's Visible Interactive Anatomy library as an open-access resource for research and education. 76th Annual Meeting of the Society of Vertebrate Paleontology, Salt Lake City, UT. *Journal of Vertebrate Paleontology Supplement—Meeting Program and Abstracts*: 195.
- Morhardt, A. C.,** R. C. Ridgely, and L. M. Witmer. 2016. Diffusible iodine-based contrast enhancement of large, post-embryonic, intact vertebrates for CT scanning: staining, destaining, and long-term storage. Program & Abstracts of the 11th International Congress of Vertebrate Morphology, Washington, D.C. 2016. *Anatomical Record*, Volume 299, Special Feature: 89–90.
- Morhardt, A. C.,** R. C. Ridgely, and L. M. Witmer. 2016. Gross Anatomical Brain Region Approximation (GABRA): a new landmark-based approach for estimating brain regions in archosaurs. Program & Abstracts of the 11th International Congress of Vertebrate Morphology, Washington, D.C. 2016. *Anatomical Record*, Volume 299, Special Feature: 223.
- Morhardt, A. C.,** R. C. Ridgely, and L. M. Witmer. 2015. Iodine-based CT Contrast-Enhancement of Vertebrates: best practices for staining, de-staining, and long-term storage of large, post-embryonic, intact specimens. The Austin Working Group: advancing contrast-enhanced CT imaging in the Biological Sciences. The University of Texas at Austin & The High-Resolution X-Ray CT Facility. Austin, Texas.
- Morhardt, A. C.,** G. Hurlburt, R. C. Ridgely, and L. M. Witmer. 2014. EQ in the 21st century: A reassessment of non-avian dinosaur encephalization quotient calculations and implications for modern paleoneurology. 74th Annual Meeting of the Society of Vertebrate Paleontology, Berlin, Germany. *Journal of Vertebrate Paleontology Supplement—Meeting Program and Abstracts*: 191.
- Morhardt, A. C.,** R. C. Ridgely, D. Varricchio, and L. M. Witmer. 2013. New studies of braincase anatomy, brain size, and brain structure in the Late Cretaceous theropod *Troodon formosus* (Dinosauria: Saurischia) based on CT scanning and 3D visualization. 73rd Annual Meeting of the Society of Vertebrate Paleontology, Los Angeles, CA. *Journal of Vertebrate Paleontology Supplement—Program and Abstracts*: 180.
- Witmer, L. M., R. C. Ridgely, E. D. Snively, C. M. Holliday, W. R. Porter, J. Bourke, **A. C. Morhardt.** 2013. Analytical and modeling approaches for the digital restoration of dinosaur head functional anatomy within the Visible Interactive Dinosaur project. Program & Abstracts of the 10th International Congress of Vertebrate Morphology, Barcelona 2013. *Anatomical Record*, Volume 296, Special Feature: 292.
- Morhardt, A. C.,** R. C. Ridgely, and L. M. Witmer. 2012. From endocast to brain: assessing brain size and structure in extinct archosaurs using Gross Anatomical Brain Region Approximation (GABRA). 72nd Annual Meeting of the Society of Vertebrate Paleontology, Raleigh, NC. *Society of Vertebrate Paleontology—Program and Abstracts*: 11.
- Morhardt, A. C.,** R. C. Ridgely, and L. M. Witmer. 2011. New studies of brain and inner ear structure in *Stegosaurus* (Dinosauria: Ornithischia) based on CT scanning and 3D visualization. 71st Annual Meeting of the Society of Vertebrate Paleontology, Las Vegas, NV. *Society of Vertebrate Paleontology—Program and Abstracts*: 162.
- Morhardt, A. C.,** R. C. Ridgely, and L. M. Witmer. 2011. A brain the size of a walnut: new studies of brain and inner ear structure in *Stegosaurus* (Dinosauria: Ornithischia) based on CT scanning and 3D visualization. Geological Society of America Northeastern and North-Central Joint Meeting, Pittsburgh, Pennsylvania.
- Martiny, A. R., R. C. Ridgely, D. L. Dufeu, W. R. Porter, J. M. Bourke, **A. C. Morhardt,** E. D. Snively, and L. M. Witmer. 2010. Promoting a culture of outreach within an active university research lab

setting: WitmerLab at Ohio University. 70th Annual Meeting of the Society of Vertebrate Paleontology, Pittsburgh, PA.

Morhardt, A. C., M. F. Bonnan, T. Keillor. 2009. Dinosaur smiles: correlating premaxilla, maxilla, and dentary foramina counts with extra-oral structures in amniotes and its implications for dinosaurs. 69th Annual Meeting of the Society of Vertebrate Paleontology, Bristol, UK. *Society of Vertebrate Paleontology—Program and Abstracts*: Volume 29, Supp 3.

Dissertation and Thesis

- Morhardt, A. C. 2016. “Gross Anatomical Brain Region Approximation (GABRA): assessing brain size, structure, and evolution in extinct archosaurs.” PhD Dissertation. Ohio University. Athens, Ohio, USA.
- Morhardt, A. C. 2009. “Dinosaur Smiles: do the texture and morphology of the premaxilla, maxilla, and dentary bones of sauropsids provide osteological correlates for inferring extra-oral structures reliably in dinosaurs?” Master’s Thesis. Western Illinois University. Macomb, Illinois, USA.

Popular Press:

- Dinosaur brain ontogeny project
 - Washington University Press Release: “Clues to ancient past: baby mummy, dinosaur skulls scanned.” (also featured in The Washington University Record)
 - <https://medicine.wustl.edu/news/scans-baby-mummy-dinosaur-skulls-offer-clues-ancient-pasts/>
 - Earth Touch News: “There’s a lot to learn about dinosaur brains.”
 - <https://www.earthtouchnews.com/discoveries/fossils/theres-a-lot-to-learn-about-dinosaur-brains/>
 - KMOV Great Day St. Louis—morning show appearance
 - https://www.kmov.com/great_day/science-center-jurassic-world-fallen-kingdom/video_a5a49556-2c4f-5c97-9639-f3689f2c6e1c.html
 - St. Louis Public Radio—Science Feature
 - <http://news.stlpublicradio.org/post/despite-its-small-size-theres-lot-learn-studying-triceratops-brain#stream/0>
 - New Science, St. Louis Science Center, Member Publication
 - https://issuu.com/saintlouissciencecenter/docs/newscience_summer_2018_hf
- Dinosaur Brain Evolution
 - BBC Focus Magazine: “Inside the Dinosaur’s Mind: how brains, not brawn, helped the tyrannosaur become king.”
 - <https://www.sciencefocus.com/nature/inside-the-mind-of-a-dinosaur-2/>
- General Expertise
 - PBS NOVA, WGBH Boston: “Tiny ‘Coyote of the Cretaceous’ Fills a Gap in the Tyrannosaur Tree.” Author: Katherine J. Wu. May 6, 2019.
 - <https://www.pbs.org/wgbh/nova/article/suskityrannus-hazela/>
 - Smithsonian Magazine: “Newly Discovered Bat-Like Dinosaur Reveals the Intricacies of Prehistoric Flight.” Author: Riley Black. May 8, 2019.
 - <https://www.smithsonianmag.com/science-nature/newly-discovered-bat-dinosaur-reveals-intricacies-prehistoric-flight-180972128/>

Service:

- Co-organizer of the “Women in Paleontology” and “Diversity” lectures and luncheon, 77th Annual Meeting of the Society of Vertebrate Paleontology 77-79 Annual Meetings. 2017-2019.

Outreach:

- St. Louis Science Center
 - 2019
 - Science in the Classroom—Skype presentations with area elementary schools
 - Invited Table Presentation—SciFest: Extreme Earth
 - 2018
 - Organizer and Presenter—Paleontology research symposium and outreach tables for SciFest: Rock, Fossil, Quake
 - Invited Speaker—SciFest, Brain Matters
 - Invited Speaker (Keynote) —Jurassic World First Friday
 - Invited Table Presentation—Jurassic World First Friday
 - 2017
 - Invited Speaker—SciFest: Rock, Fossil, Quake
 - Invited Speaker—Club NF event
- University of Missouri, Columbia Missouri
 - Spring 2018
 - Dinosaurs and Cavemen Event—Invited Table Presentation
- The Discovery Center, Rockford, IL
 - Spring 2018
 - Paleontologists for the Day Event—Invited Table Presentation
- Website managed:
 - <https://www.paleoneurology.com/>
- Social media managed:
 - Lab Twitter: @IoDinoLab
 - Lab Facebook: IoDino Lab
 - Lab Instagram: IoDinoLab