

Curriculum Vitae

CHRISTOPHER THOMAS GRIFFIN

DEPARTMENT OF GEOSCIENCES

Virginia Tech

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Education

Virginia Tech, Blacksburg, VA, U.S.A.

Ph.D. in Geosciences (2020, anticipated)

M.S. in Geosciences (2016)

Cedarville University, Cedarville, OH, U.S.A.

B.S. in Biology, Geology, and Molecular & Cellular Biology, with highest honor (2014)

External Grants and Fellowships

2018	National Geographic Society Exploration Grant \$27,390 (co-principal investigator)
2017	Geological Society of America Graduate Student Research Grant \$1,755 National Geographic Society Early Career Grant \$4,980
2015	National Science Foundation Graduate Research Fellowship Program \$132,000 Geological Society of America Graduate Student Research Grant \$1,607 Virginia Tech Graduate Student Assembly Research Grant \$500
2014	Jurassic Foundation Research Grant \$2,356

Internal Grants

2018	Virginia Tech Graduate Student Assembly Research Grant \$1,000
2017	Virginia Tech Graduate Student Assembly Research Grant \$1,000

2015 Virginia Tech Graduate Student Assembly Research Grant
\$500

Awards, Scholarships, and Honors

- 2018 Charlotte Mangum Student Support Program**
Society for Integrative and Comparative Biology
- 2017 Colbert Prize for Outstanding Student Poster Presentation**
Society of Vertebrate Paleontology Annual Meeting
Taylor & Francis Award for Best Student Article in the *Journal of Vertebrate Paleontology*, Second Place
Society of Vertebrate Paleontology
Travel Grant
International Symposium on Paleohistology
Travel Grant
Last Days of Pangea Symposium
- 2016 Department Outstanding Master's Student**
VT Department of Geosciences
College of Science Outstanding Master's Student
Virginia Tech
Graduate Student Assembly Travel Fund
Virginia Tech
- 2015 Graduate Student Assembly Travel Fund**
VT Graduate Student Assembly
Charles E. and Frances P. Sears Research Scholarship
VT Department of Geosciences
Charles E. and Frances P. Sears Summer Scholarship
VT Department of Geosciences
- 2014 Graduate Student Assembly Travel Fund**
Virginia Tech
CCCU Tuition Waiver
2010-2014, Cedarville University
Transfer Academic Excellence Award
2010-2014, Cedarville University
Transfer Academic Grant
2010-2014, Cedarville University
Dean's List
2010-2014, Cedarville University
- 2013 BIO-OCE REU Travel Scholarship**
National Science Foundation
Alumni Honor Scholarship for Science and Mathematics
Cedarville University

2012 L. Bert Frye Geology Award
Cedarville University
Academic Excellence Geology Award
Cedarville University

Research Interests

- The relationship between evolution and development
- Intraspecific variation
- Evolutionary radiations and post-extinction ecological recovery
- Homology and mechanisms of convergent evolution

Peer-Reviewed Publications

Total citations: 41; **h-index:** 2 (Google Scholar)

- 8) **Griffin, C. T.** In press. Pathological bone tissue in a Late Triassic neotheropod fibula, with implications for the interpretation of medullary bone. *New Jersey State Museum Investigations* 6.
- 7) **Griffin, C. T.** and S. J. Nesbitt. In press. Does the maximum body size of theropods increase across the Triassic–Jurassic boundary? Integrating ontogeny, phylogeny, and body size. *The Anatomical Record*.
- 6) McLain, M., D. Nelsen, K. Snyder, **C. T. Griffin**, B. Siviero, L. Brand, A. Chadwick. 2018. Tyrannosaur cannibalism: A case of a tooth-traced tyrannosaurid bone in the Lance Formation (Maastrichtian), Wyoming. *PALAIOS* 33: 164–173.
- 5) **Griffin, C. T.** 2018. Developmental patterns and variation among early theropods. *Journal of Anatomy* 232: 604–640.
- 4) **Griffin, C. T.**, C. M. Stefanic, W. G. Parker, A. Hungerbuehler, M. Stocker. 2017. Sacral anatomy of the phytosaur *Smilosuchus adamanensis*, with implications for pelvic girdle evolution among Archosauriformes. *Journal of Anatomy* 231:886–905. doi:10.1111/joa.12681.
- 3) **Griffin, C. T.** and S. J. Nesbitt. 2016. Anomalously high variation in postnatal development is ancestral for dinosaurs but absent in birds. *Proceedings of the National Academy of Sciences, USA* 113: 14757-14762. doi:10.1073/pnas.1613813113.
- 2) Kuruvilla, H., B. Schmidt, S. Song, M. Bhajjan, M. Merial, C. Alley, **C. Griffin**, D. Yoder, J. Hein, D. Kohl, C. Puffenberger, D. Petroff, E. Newcomer, K. Good, G. Heston, A. Hurtubise. 2016. Netrin-1 peptide is a chemorepellent in *Tetrahymena thermophila*. *International Journal of Peptides* 2016: 7142868. doi: 10.1155/2016/7142868
- 1) **Griffin, C. T.** and S. J. Nesbitt. 2016. The histology and femoral ontogeny of the Middle Triassic (?late Anisian) dinosauriform *Asilisaurus kongwe* and implications for the growth of early dinosaurs. *Journal of Vertebrate Paleontology* 36: e1111224. doi: 10.1080/02724634.2016.1111224.

Submitted Publications

† = mentored undergraduate

- 3) **Griffin, C. T.** and K. Angielczyk. In review. The evolution of the dicynodont sacrum: constraint and innovation in the synapsid axial column. *Paleobiology*.
- 2) **Griffin, C. T.**, †L. S. Bano, A. H. Turner, N. D. Smith, R. B. Irmis, S. J. Nesbitt. In review. Integrating gross morphology and bone histology to assess skeletal maturity in early dinosauromorphs: new insights from *Dromomeron*. *PeerJ*.
- 1) **Griffin, C. T.** In review. Large neotheropods from the Upper Triassic of North America and the early evolution of large theropod body sizes. *Journal of Paleontology*.

Presentations

* = podium presentation, ° = poster presentation, † = mentored undergraduate

- 18) †Taruvinga, H., B. Wynd, S. Tolan, **C. T. Griffin**. 2018. A *Luangwa*-like cynodont from Northern Zimbabwe and endemism across the Carnian of Southern Africa. Society of Vertebrate Paleontology Annual Meeting, Albuquerque, NM. *Winner of the Scientists from Economically Developing Nations Award*.
- 17) ***Griffin, C. T.**, D. Munyikwa, T. J. Broderick, S. Tolan, M. Zondo, S. J. Nesbitt, H. Taruvinga. 2018. An exceptional new Late Triassic (Carnian) fossil assemblage from Zimbabwe and the biogeography of the earliest dinosaurs across Pangea. Society of Vertebrate Paleontology Annual Meeting, Albuquerque, NM.
- 16) Nesbitt, S. J., **C. T. Griffin**, E. Evans, R. T. Mueller, C. Pacheco, F. Preto, S. Cabreira, A. Marsh, B. M. Wynd, M. Langer. 2018. Prevalent ontogenetic changes characterize early dinosaurs and their closest relatives: implications for species identification, phylogeny, and the loss of these changes in later dinosaurs. Society of Vertebrate Paleontology Annual Meeting, Albuquerque, NM.
- 15) Evans, E. L., **C. T. Griffin**, N. Smith, A. H. Turner, R. B. Irmis, S. J. Nesbitt. 2018. Ontogenetic changes in the femur of *Tawa hallae* and implications for species diversity of Late Triassic dinosaurs. Society of Vertebrate Paleontology Annual Meeting, Albuquerque, NM.
- 14) ***Griffin, C.** and K. Angielczyk. 2018. The evolution of the dicynodont sacrum, and constraint on the axial column in crown Mammalia. Society of Integrative and Comparative Biology Annual Meeting, San Francisco, CA.
- 13) °**Griffin, C. T.** and K. D. Angielczyk. 2017. The evolution of the dicynodont sacrum, with implications for evolutionary constraint in the vertebral column of Mammalia. Society of Vertebrate Paleontology Annual Meeting, Calgary, Alberta. *Winner of the Colbert Prize for Outstanding Student Poster Presentation*.
- 12) °**Griffin, C. T.** 2017. Pathological bone tissue in a Late Triassic theropod fibula, with implications for the interpretation of medullary bone. 4th International Symposium on Paleohistology, Trenton, NJ.

- 11) ***Griffin, C. T.** and S. J. Nesbitt. 2017. Does the maximum body size of theropod dinosaurs increase across the Triassic-Jurassic boundary? Integrating ontogeny, phylogeny, and body size. Last Days of Pangea Triassic-Jurassic Research Symposium, Greenwich, CT.
- 10) ***Griffin, C. T.** and S. J. Nesbitt. 2016. Anomalously high intraspecific variation in ontogeny is the ancestral dinosaurian growth condition. Society of Vertebrate Paleontology Annual Meeting, Salt Lake City, UT.
- 9) ***Griffin, C. T.** and S. J. Nesbitt. 2016. Intraspecific variation and the evolution of the ancestral dinosaurian growth condition. 11th International Congress of Vertebrate Morphology, Washington, D.C.
- 8) †Bano, L. and **C. T. Griffin**. 2016. Integration of histology and morphology to assess the skeletal maturity of early-diverging dinosauromorphs. 11th International Congress of Vertebrate Morphology, Washington, D.C.
- 7) ***Griffin, C. T.** and S. J. Nesbitt. 2016. The evolution of intraspecific variation in growth patterns among early dinosaurs and their relatives. Southeastern Association of Vertebrate Paleontology annual meeting, Martinsville, VA.
- 6) ***Griffin, C. T.** and S. J. Nesbitt. 2015. Does the maximum body size of theropod dinosaurs increase across the Triassic-Jurassic boundary? Integrating phylogeny, growth, and body size. Society of Vertebrate Paleontology Annual Meeting, Dallas, TX.
- 5) ***Griffin, C. T.** and S. J. Nesbitt. 2015. Does the maximum body size of theropod dinosaurs increase across the Triassic-Jurassic boundary? Using ontogeny and phylogeny to understand transitions in Earth history. Geological Society of America Annual Meeting, Baltimore, MD.
- 4) †Bano, L. and **C. T. Griffin**. 2015. Integrating histology and morphology to assess the skeletal maturity of early-diverging dinosauromorphs. Geological Society of America Annual Meeting, Baltimore, MD.
- 3) °**Griffin, C. T.** and S. J. Nesbitt. 2014. The histology and femoral ontogeny of the Middle Triassic (?late Anisian) dinosauriform *Asilisaurus kongwe* and implications for the growth of early dinosaurs. Society of Vertebrate Paleontology Annual Meeting, Berlin, Germany.
- 2) ***Griffin, C. T.** and S. J. Nesbitt. 2013. How to grow a dinosaur: the histology and femoral ontogeny of the Middle Triassic (?late Anisian) dinosauriform *Asilisaurus kongwe* and implications for the growth of early dinosaurs. Geological Society of America Abstracts with Programs 45:474.
- 1) McKevitt, D. J., **C.T. Griffin**, R. T. Gustafson, and J. H. Whitmore. 2013. Glacial outflow origin of Massie Creek Gorge, Greene County Ohio. Geological Society of America Abstracts with Programs 45:378.

Research Experience

Graduate

- Visiting Researcher, Department of Geology and Geophysics, Yale University. Faculty advisor: Bhart-Anjan Bhullar. Fall semester, 2017.

- Member of the Paleobiology and Geobiology Research Group, Department of Geosciences, Virginia Tech. 2014-2020 (anticipated).

Undergraduate

NSF REU research intern, Geology Department, Field Museum of Natural History, Chicago, IL. 2013.

- Project: The histology and ontogeny of the dinosauriform *Asilisaurus kongwe*. Advisor: Sterling Nesbitt

Independent research, Department of Science and Mathematics, Cedarville University, Cedarville OH.

Funded by the Department of Science and Mathematics, Cedarville University.

- The molecular paleontology and immunoreactivity of dinosaur osteocytes. 2013. Advisors: John Whitmore and Alicia Schaffner
- The origin and geomorphology of gorges in southwest Ohio. 2012. Advisor: John Whitmore
Research assistant, Department of Science and Mathematics, Cedarville University, Cedarville, OH.
- The effect of vertebrate neuronal chemorepellents Semaphorin 3C and Netrin-1 on *Tetrahymena thermophila*. 2013. Advisor: Heather Kuruvilla
- Geochemistry of dolomite formation. 2011. Advisor: Aaron Hutchison

Field Experience

Principal investigator:

2019 Mashonaland West, Zimbabwe (anticipated, fully funded)

2017 Mashonaland West and Mashonaland Central, Zimbabwe

Participant:

2018 Apache County and Petrified Forest National Park, Arizona

2015 Fremont County, Wyoming
Ghost Ranch, New Mexico
Apache County, Arizona
Anton Chico, New Mexico

2014 Ghost Ranch, New Mexico
Geology Field Camp, Southern Utah University

Invited Lectures

- “Museum Collections, Expeditions, and One of Africa’s Oldest Dinosaurs”—Natural History Museum of Zimbabwe, Bulawayo (August 2017).
- “Using Emus to Understand the Dinosaur-to-Bird Transition”—American Emu Association Annual Meeting, Springfield, MO (July 2017).
- “The Dinosaurs of Zimbabwe”—Natural History Museum of Zimbabwe, Bulawayo (May 2015).

Teaching Experience

Virginia Tech

Graduate Teaching Assistant:

- GEOS-1104 Physical Geology (Fall 2015; Student Perception of Teaching score: 5.8/6)
- GEOS-1014 The Earth and Life Through Time (Fall 2014; Student Perception of Teaching scores: 5.5/6; 5.6/6)

Cedarville University

Presented lectures:

- GSCI 1010 Principles of Earth Science
- GEOL 1120 Historical Geology
- GEOL 3200 Invertebrate Paleontology
- GEOL 4200 Sedimentology and Stratigraphy

Teaching assistant/tutor:

- GSCI 1010 Principles of Earth Science
- GEOL 3300 Petrology
- CHEM 3510 Organic Chemistry

Outreach

- This & That Educational Summer Camp outreach, Lyric Theatre, Blacksburg (2018)
- Jurassic World Opening Night education display, Frank's Cinebowl, Blacksburg, VA (2018)
- Kindergarten 2 College (5th grade) paleontology lab tour (2017)
- Virginia Tech Museum of Geoscience GeoFair (2016)
- Living Library science outreach volunteer, Blacksburg Public Library (2016)
- Public Lecture, "When did the carnivorous dinosaurs first become giants?", VT Museum of Geosciences (2015)
- Virginia Tech Museum of Geoscience Display Design (Fall 2015)
- Virginia Tech Paleo Public Unwrapping Party (August 2015; August 2017; September 2018)
- Virginia Science Festival–Department of Geosciences Paleontology Lab (September 2014–2016; 6,000 attendees from >6 school systems)
- Science outreach talks to middle school and junior high school students, Redding, CA (2012-2014)
- Volunteer tutor for high school and college students in Algebra, Biology, and Geology (2010-2012)
- Volunteer, 7th Grade Ecology Camp, Redding CA (May 2014)

Media Experience

- "Bringing Fossils Back to Life." 3D film, Moss Arts Center, Virginia Tech
- "Virginia Tech geoscientists size-up early dinosaurs, find surprising variation." VT News, 12/7/2016. <https://vtnews.vt.edu/articles/2016/12/120616-fralin-dinosaurusize.html>
- Featured in *NSF Science Now* episode 43, 5/13/2016. <https://science360.gov/obj/video/97a7696e-afd1-48c4-9254-32b79b3a85d4/nsf-science-now-episode-43>

- “‘Bone scars’ reveal varied growth in dinosaur cousins.” Fox News, 4/6/2016. <http://www.foxnews.com/science/2016/04/06/bone-scars-reveal-varied-growth-dinosaur-cousins.html>
- “240-million-year-old fossils provide new insight into how dinosaurs grew from hatchling to adult.” VT News, 4/4/2016. <https://vtnews.vt.edu/articles/2016/04/science-AsilisauruskongweGriffin.html>

Professional Service

- Journal Peer Reviewer
 - *Acta Palaeontologica Polonica* (1)
 - *Anais da Academia Brasileira de Ciências* (1)
- Grant Peer Reviewer
 - National Science Centre [Narodowe Centrum Nauki], Poland (2)
- Session Chair
 - “Technical Session I: Dinosaurs”, Society of Vertebrate Paleontology Annual Meeting, Albuquerque, New Mexico (2018)
 - “Technical Session XV: Sauropods, etc.”, Society of Vertebrate Paleontology Annual Meeting, Salt Lake City, Utah (2016)
 - “Paleontology 3”, 11th International Congress of Vertebrate Morphology, Washington, D.C. (2016)
- Departmental Service
 - Liaison Committee, paleontology research group representative (2018-2019)

Professional Memberships

- Society for the Study of Evolution
- Society for Integrative and Comparative Biology
- Society for Developmental Biology
- Society of Vertebrate Paleontology
- Geological Society of America
- Paleontological Society

Professional Training

- Mentoring Undergraduates Workshop: 2016, Virginia Tech Office of Undergraduate Research
- REU Phylogenetics Workshop Series: 2013, The Field Museum of Natural History, Chicago