

*Curriculum Vitae*

**CHRISTOPHER THOMAS GRIFFIN**

**DEPARTMENT OF GEOSCIENCES**

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**Education**

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*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**

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

**Internal Grants**

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| <b>2018</b> | <b>Virginia Tech Graduate Student Assembly Research Grant</b><br>\$1,000 |
| <b>2017</b> | <b>Virginia Tech Graduate Student Assembly Research Grant</b><br>\$1,000 |

**2015 Virginia Tech Graduate Student Assembly Research Grant**  
\$500

## **Awards, Scholarships, and Honors**

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- 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

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

## Peer-Reviewed Publications

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**Total citations:** 38; **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

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† = 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

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

- 18) †Taruvinga, H., S. Tolan, **C. T. Griffin**. 2016. A *Luangwa*-like cynodont from Northern Zimbabwe and endemism across the Carnian of Southern Africa. Society of Vertebrate Paleontology Annual Meeting, Albuquerque, NM.
- 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 early 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. 4<sup>th</sup> 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. 11<sup>th</sup> 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. 11<sup>th</sup> 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

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### 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**

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#### **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**

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- “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

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### 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

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- 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 (5<sup>th</sup> 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)
- 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, 7<sup>th</sup> Grade Ecology Camp, Redding CA (May 2014)

## Media Experience

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- "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

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- 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”, 11<sup>th</sup> International Congress of Vertebrate Morphology, Washington, D.C. (2016)
- Departmental Service
  - Liaison Committee, paleontology research group representative (2018-2019)

## Professional Memberships

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- 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

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