

*Curriculum Vitae*

**CHRISTOPHER THOMAS GRIFFIN**

**DEPARTMENT OF GEOSCIENCES**

Virginia Polytechnic Institute and State University

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**Education**

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*Virginia Polytechnic Institute and State University*, Blacksburg, VA.

Ph.D. in Geosciences (2019, anticipated)

M.S. in Geosciences (2016)

*Cedarville University*, Cedarville, OH.

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

**Grants/Fellowships**

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- 2017** Virginia Tech Graduate Student Assembly Research Grant—\$1,000  
International Symposium on Paleohistology Travel Grant—\$400  
Geological Society of America Graduate Student Research Grant—\$1,755  
National Geographic Society Young Explorers Grant—\$4,980
- 2015** NSF 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

**Awards, Scholarships, and Honors**

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- 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 (Virginia Tech)  
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

## Publications

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- 7) **Griffin, C. T.**, C. M. Stefanic, W. G. Parker, A. Hungerbühler, M. Stocker. In review. Anatomy of the sacrum of the phytosaur *Smilosuchus adamanensis*, with implications for pelvic girdle evolution among Archosauriformes. *Journal of Anatomy*.
- 6) **Griffin, C. T.** In revision. Large neotheropods from the Upper Triassic of North America and the early evolution of large theropod body sizes. *Journal of Paleontology*.
- 5) **Griffin, C. T.** In review. Developmental patterns and variation among early theropods. *Journal of Anatomy*.
- 4) **Griffin, C. T.** and S. J. Nesbitt. In review. Does the maximum body size of theropods increase across the Triassic–Jurassic boundary? Integrating ontogeny, phylogeny, and body size. *Biology Letters*.
- 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. Meral, 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.

## Presentations

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- 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.

- 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.

**Key:** \* = podium presentation, ° = poster presentation, † = undergraduate coauthor

## Research Experience

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### Graduate

Member of the Paleobiology and Geobiology Research Group, Department of Geosciences, Virginia Tech. 2014-2019 (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, PhD

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, PhD and Alicia Schaffner, PhD
- The origin and geomorphology of gorges in southwest Ohio. 2012. Advisor: John Whitmore, PhD

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, PhD
- Geochemistry of dolomite formation. 2011. Advisor: Aaron Hutchison, PhD

## Field Experience

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### Principle investigator:

2017 Mashonaland West, Zimbabwe (anticipated)

### Participant:

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

## Skills

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### Computer

- Excel
- Photoshop/Illustrator
- R
- PAUP\*
- Mesquite
- Basic experience with:
  - TNT
  - MrBayes

### Paleontological

- Preparatory techniques, including acid washing, air scribe and air-abrasive cleaning
- Molding and casting specimens
- Histological thin-section preparation
- Histological microscopy
- Paleontological field techniques

### Biological

- Immunoreactive assays
- Dissection technique
- Starting and maintaining dermestid beetle colony
- Western blotting
- Gel electrophoresis
- Reverse transcriptase polymerase chain reaction

- Immunoprecipitation, including chromatin immunoprecipitation
- ELISA assays
- Microscopy

### Geological

- Petrographic microscopy/optical mineralogy
- Geologic field mapping/stratigraphical measurement

## **Invited Lectures**

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- “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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- 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)
- 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 (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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- “Virginia Tech geoscientists size-up early dinosaurs, find surprising variation.” VT News, 12/7/2016. <https://vtnews.vt.edu/articles/2016/12/120616-fralin-dinosaursize.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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- Grant Peer Reviewer, National Science Centre (Narodowe Centrum Nauki), Poland (2017).
- Session Chair
  - “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)

## Professional Memberships

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- 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