

Henry Z. M. Fulghum

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Education

2020 **B.Sc. Earth and Space Sciences (Honors), Minor in Paleobiology**
The University of Washington, Seattle, WA

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

Work Experience

2018 – 2020 **Lab Manager**, Wilson Mantilla Lab, Burke Museum of Natural History and Culture

2017 – 2020 **Research Assistant**, Wilson Mantilla Lab

2017 – 2020 **Paleontological/Geological Fieldwork Assistant, Hell Creek Project III**, Hell Creek Formation & Fort Union Formation, MT

2019 – 2020 **Peer Teaching Assistant**, Department of Biology, Department of Earth and Space Sciences, U. Washington

BIOL 450/ESS 452: Vertebrate Paleontology, Instructor: Dr. Christian Sidor (Winter 2020)

ESS 101: Dinosaurs, Instructor: Dr. Ruth Martin (Winter 2020)

BIOL 443: Evolution of Mammals, Instructor: Dr. Gregory Wilson Mantilla (Fall 2019)

BIOL 475/ESS 450: Paleontology Field Methods, Instructor: Dr. David Grossnickle (Summer 2019)

Scholarships & Awards

2020 Departmental honors, Department of Earth and Space Sciences, U. Washington

2019 Dean's list (Spring 2019), U. Washington

2018 Mary Gates Scholarship for Undergraduate Research, U. Washington - \$5000

Research and Technical Experience

2019 – Pres. Computed Tomography (CT) segmentation and processing of plesiadapiform fossils under the direction of Drs. Gregory Wilson Mantilla (U. Washington) and Stephen Chester (Brooklyn College, CUNY, NYCEP)

2019 – Pres. Identification and CT segmentation of fossil vertebrates from the Late Cretaceous intertrappean beds of Andhra Pradesh, India; under the direction of Drs. Gregory Wilson Mantilla (U. Washington) and Anantharaman Shanmugasundaram (Geological Survey of India)

- 2017 – Pres. Comparative osteohistology of extant small-bodied mammals and multituberculate mammals; in collaboration with Dr. Megan Whitney (Harvard University) and Luke Weaver (U. Washington)
- 2017 – Pres. Comparative dental morphology of Late Cretaceous North American metatherians in collaboration with Alexandria Brannick (U. Washington)
- 2018 Comparative ecomorphology of North American mammals across the K-Pg extinction boundary; under Drs. Stephanie Smith (Field Museum of Natural History) and Gregory Wilson Mantilla (U. Washington)
- 2017 Geospatial data collection and stratigraphic mapping of the Hell Creek Formation and Fort Union Formation using Trimble GPS units; in collaboration with Dr. Thomas Tobin (University of Alabama) and Luke Weaver (U. Washington)

Publications in preparation

*estimated submission date

- 2021* Brannick, AL., **Fulghum, HZ.**, Grossnickle, DM., Wilson Mantilla, GP. Taxonomic diversification decoupled from patterns of dietary diversification in Cretaceous North American metatherians. *Palaeontologia Electronica*.
- 2021* Weaver, LN., **Fulghum, HZ.**, Grossnickle, DM., Brightly, WH., Whitney, MR. Comparative osteohistology of extant small bodied mammals. *Journal of Mammology*.
- In prep. **Fulghum, HZ.**, Grossnickle, DM., Schultz, JA., Jäger, KR., Wilson Mantilla, GP. Comparative morphology and dental function of early tribosphenic mammals and their modern analogs. *Journal of Vertebrate Paleontology*.
- In prep. Wilson Mantilla, GP., Grossnickle, DM., Tobin, TS., Weaver, LN., Hovatter, BT., **Fulghum, HZ.**, DeMar, DG. Jr., Clemens, WA. Jr. Latest Cretaceous and earliest Paleocene mammalian fossil localities of the Hell Creek area. *PaleoBios*.

Peer Reviewed Abstracts & Presentations

- 2020 **Fulghum, HZ.**, Grossnickle, DM., Schultz, JA., Jäger, KR., Wilson Mantilla, GP. Testing the use of extant didelphid marsupials as modern analogs for dental occlusion in early tribosphenic mammals using Occlusal Fingerprint Analysis. Society of Vertebrate Paleontology 80th Annual Meeting (Cincinnati, OH). **Talk** (moved online due to COVID-19).
- 2019 Brannick, AL., **Fulghum, HZ.**, Smith, SM. (2019) Exploring Late Cretaceous Patterns of Taxonomic and Ecological Diversification Among North American Stem Marsupials (Pediomyids and Alphadontids). Society of Vertebrate Paleontology 79th Annual Meeting (Brisbane, Australia). **Talk**.
- 2018 **Fulghum, HZ.**, Weaver, LN., Whitney, MR., Wilson Mantilla, GP. (2018) Comparative Osteology of Extant Small-Bodied Mammals with Implications for Understanding the Growth Dynamics of Mesozoic Mammals. Society of Vertebrate Paleontology 78th Annual Meeting (Albuquerque, NM). **Poster**.

2018 **Fulghum, HZ.** Investigating the Bone Microstructure of Extant Small-Bodied Mammals. University of Washington Mary Gates Undergraduate Research Symposium (Seattle, WA). **Poster.**

Training and relevant coursework

Specialized coursework: Minerology and Petrology, Stratigraphy, Depositional Environments, Vertebrate Paleontology, Quantitative Methods in Paleontology, Evolution and Systematics, Anatomy and Osteology, Evolution of Mammals and their Ancestors.

Computer programs: Avizo, GeoMagic, MeshLab, R, ImageJ, Photoshop, Illustrator, NIS Elements, Occlusal Fingerprint Analyzer.

Laboratory techniques: Autoclave use, sediment processing, fossil identification, traditional and geometric morphometrics, osteohistology analysis and slide preparation, advanced polarized microscopy, silicon cast and mold preparation, 3D segmentation and visualization, 3D printing.

Workshops: 2018 Paleohistology Workshop, Royal Ontario Museum, University of Toronto

Service & Outreach

2019, 2020 Invited speaker – *PaleoLunch, U. Washington*. An informal, weekly seminar devoted to discussing evolution and the fossil record.

2019 Invited speaker – *TriBeta National Honor Society, U. Washington*

2018 – 2020 Screenwashing Facility Manager – *Burke Museum of Natural History and Culture*. Responsible for the training of 50+ undergraduates and volunteers in sediment processing and fossil identification techniques.

2017 – 2020 Instructor – *Discoveries in Geoscience (DIG) Field School*. A non-profit program training K–12 teachers in geology and paleontology field methods and developing in-class Earth Science curricula (www.digfieldschool.org)

2017 – 2020 Fossil identification and cataloging volunteer – *Vertebrate Paleontology Collections, Burke Museum of Natural History and Culture*

2017 – 2019 Volunteer – *Dino Days, Burke Museum of Natural History and Culture*

2017 Invited presenter – *STEM Night, Beverly Middle School*

Professional Affiliations

2020 Society of Integrative and Comparative Biology (SICB)

2018 – Pres. Geological Society of America (GSA)

2018 – Pres. Society of Vertebrate Paleontology (SVP)

References

David Grossnickle, Ph.D., Postdoctoral Researcher, Department of Biology, University of Washington, Seattle, WA 98195; davegrossnickle@gmail.com

Julia Schultz, Ph.D., Research Assistant, Universität Bonn, 53115 Bonn, Germany; jaschultz@uni-bonn.de

Christian Sidor, Ph.D., Curator, Burke Museum of Natural History and Culture, University of Washington, Seattle, WA 98195; casidor@u.washington.edu

Caroline Strömberg, Ph.D., Professor, Department of Biology, University of Washington, Seattle, WA 98195; caestrom@u.washington.edu

Gregory Wilson Mantilla, Ph.D., Professor, Department of Biology, University of Washington, Seattle, WA 98195; gpwilson@u.washington.edu