

## **CURRICULUM VITAE**

**JOSHUA RYAN LIVELY, PH.D.**

Department of Environmental Studies

University of Illinois at Springfield

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### **Education**

#### **Ph.D., Geological Sciences (2019)**

University of Texas at Austin, Austin, TX

Dissertation: Macroevolution in the Greenhouse: Morphological Disparity of Mosasaurs and the Evolution of Late Cretaceous Marine Ecosystems

#### **M.S., Geology (2013)**

University of Utah, Salt Lake City, UT

Thesis: New Baenid Turtles from the Kaiparowits Formation of Utah: Implications for Laramidian Biogeography.

#### **B.S., Geology (2010)**

Auburn University, Auburn, AL

*Summa cum Laude*

Senior Honors Scholar

Thesis: Genesis of the Tombigbee Sand Member Caprock, Eutaw Formation (Late Cretaceous), Montgomery County, Alabama with Emphasis on a Preserved Life Assemblage of Pen Shells.

### **Professional Appointment – Current**

Aug., 2019 – present: Assistant Professor, Department of Environmental Studies, University of Illinois Springfield

### **Professional Appointments – Historical**

May – Aug., 2019: Instructor, High School Science Camps, Sternberg Museum of Natural History, Fort Hays State University

Aug., 2018 – May, 2019: Doctoral Dissertation Fellow & Instructor, Department of Environmental Studies, University of Illinois Springfield

Aug., 2017 – Aug., 2018: Collections Assistant (Cretaceous WIS digitization project), Non-vertebrate & Vertebrate Paleontology Labs, University of Texas at Austin

Aug., 2016 – Aug., 2017: University Graduate Fellow, University of Texas at Austin

Aug., 2012 – May, 2016; Jan, 2017 – May, 2017: Graduate Teaching Assistant, Jackson School of Geosciences, University of Texas at Austin

June – Aug., 2015: Assistant Instructor (lecturer), Jackson School of Geosciences, University of Texas at Austin

Aug. – Dec., 2014: Instructor, Austin Monday Co-op home school

June – July, 2014: Collections Assistant, Non-vertebrate Paleontology Lab, University of Texas at Austin

Aug., 2011 – May, 2012: Graduate Teaching Assistant, Department of Geology and Geophysics, University of Utah

Aug., 2010 – May 2011: Graduate Research Fellow, Department of Geology and Geophysics, University of Utah

January 2009 – May 2010: Undergraduate Teaching Assistant, Department of Biological Sciences, Auburn University  
 May – Aug., 2007: Research Assistant, School of Forestry and Wildlife Sciences, Auburn University

### **Published journal articles**

- Lively, J.R. 2018. Taxonomy and historical inertia: *Clidastes* (Squamata: Mosasauridae) as a case study in problematic paleobiological taxonomy. *A global perspective on Mesozoic marine reptiles. Proceedings of the 5th Triennial Mosasaur Meeting 2016. Alcheringa* 42(4):516-527. DOI: 10.1080/03115518.2018.1549685.
- Lively, J.R. 2016. Baenid turtles from the Kaiparowits Formation (Upper Cretaceous: Campanian) of southern Utah. *Journal of Systematic Palaeontology* 14(11): 891-918. DOI:10.1080/14772019.2015.1120788. [published online 15 December 2015]
- Lively, J. R. 2015. A new species of baenid turtle from the Kaiparowits Formation (Upper Cretaceous, Campanian) of southern Utah. *Journal of Vertebrate Paleontology* 35(6): e1009084. 16 pp. DOI: 10.1080/02724634.2015.1009084.

### **Submitted journal articles**

- Lively, J.R. submitted. Redescription and phylogenetic assessment of ‘*Prognathodon*’ *stadtmani*: implications for Globidensini monophyly and character homology in Mosasaurinae. *Journal of Vertebrate Paleontology*.
- Bell, C.J., Sagebiel, J.C., Lundelius, E.L., Czaplewski, N.J., Lively, J.R., Minatra, D., Lenamond, K., Barcelo, F., Gelnaw, W. in review. Preliminary notice of a new Pleistocene vertebrate fauna from Crocket County, Texas: a window to the Ice-Age fauna of the western Edwards Plateau. *New Mexico Museum of Natural History Bulletin*.

### **Journal articles (completed dissertation chapters) in preparation**

- Anatomical diversity of mosasaurs in the Western Interior Seaway: abiotic drivers and the importance of variability in mosasaur lineages
- A new mosasaurine from the Taylor Group (Upper Cretaceous: Campanian) of Texas and the ecomorphological diversification of Mosasaurinae
- The evolution, diversity, and anatomical variation of basal mosasaurines based on a specimen-level phylogenetic and morphometric analyses of “*Clidastes*.”

### **Published abstracts (\* denotes undergraduate collaborator)**

- Lively, J.R. 2019. Quantifying the morphological diversity of mosasaurs: implications for macroevolution and paleoecology in the Western Interior Seaway. *Geological Society of America Abstracts with Programs* 51(5) doi: 10.1130/abs/2019AM-341117 [oral presentation]
- Lively, J.R. 2019. Contextualizing the morphological diversification of mosasaurs: insights from new mosasaurines and a disparity analysis of mosasaurs from the Western Interior Seaway. 6<sup>th</sup> Triennial Mosasaur and Marine Reptiles Meeting Abstracts, Program, Schedule of Events: 21.
- Lively, J.R. 2018. Diversification of Mosasaurinae: insights from anatomical disparity, phylogenetics, and a new mosasaur from the Western Interior Seaway. *Geological Society of America Abstracts with Programs* 50(6) doi: 10.1130/abs/2018AM-325026 [oral presentation]
- Lively, J.R. 2018. Modeling the phylogenetic and morphological diversification of Mosasaurinae: insights from two new genera from the Western Interior Seaway. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2018:169. [oral presentation]

- Lively, J.R. 2017. Understanding the diversification of Mosasaurinae based on two new genera from the Western Interior Seaway. *Geological Society of America Abstracts with Programs*. 49(6) doi: 10.1130/abs/2017AM-308098. [oral presentation]
- Lively, J.R., Bell, C.J., and Withnell, C.B. 2017. Mosasaurs and microtines: taxonomic practice shapes cognitive biases in paleontology. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2017:151. [oral presentation]
- Chapman, B.\* and Lively, J.R. 2017. A new mosasaurine from the Upper Cretaceous (Lower Coniacian) of North Texas demonstrates mosaic evolution in early mosasaurs. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2017:95. [poster presentation]
- Lively, J.R. 2016. The evolution and variation of basal Mosasaurinae based on a specimen-level phylogeny of “*Clidastes*”: implications for mosasaur macroevolution. *Journal of Vertebrate Paleontology* Program and Abstracts, 2016:176. [oral presentation]
- Chapman, B.\* and Lively, J.R. 2016. A new assemblage of mosasaurs from the Upper Cretaceous Savoy Pit, Austin Chalk, North Texas. *Journal of Vertebrate Paleontology* Program and Abstracts, 2016:114. [poster presentation]
- Lively, J.R. 2016. Understanding the evolution of basal mosasaurinae using a specimen-level phylogeny: pitfalls, polytomies, and high levels of variation within “*Clidastes*”. *Geological Society of America Abstracts with Programs* 48(7) doi: 10.1130/abs/2016AM-285579. [oral presentation]
- Lively, J.R. 2016. The evolution and variation of basal Mosasaurinae based on a specimen-level phylogeny of “*Clidastes*”. Fifth Triennial Mosasaur Meeting – a global perspective on Mesozoic marine amniotes Program and Abstracts: 22-24. [oral presentation]
- Lively, J.R. 2015. Implications of the morphology of the bony labyrinth for paleoecology and systematics of turtles. *Geological Society of America Abstracts with Programs* 47(7):451. [oral presentation]
- Lively, J.R. 2015. Implications of the morphology of the bony labyrinth for paleoecology and systematics of turtles. *Journal of Vertebrate Paleontology* 35:165. [oral presentation]
- Lively, J.R. 2014. The effects of geographic binning on phylogenetic ancestral range reconstructions: examples from the Late Cretaceous of North America. *Geological Society of America Abstracts with Programs* 46(6):367. [oral presentation]
- Lively, J.R. 2013. Eocene *Gyrolithes-Thalassinoides* ichnocoenoses from Alabama and Peru: implications for marine vertebrate taphonomy. *Geological Society of America Abstracts with Programs* 45(7):317. [poster presentation]
- Lively, J.R. 2012. Micro-computed tomography and 3-D reconstruction of a new baenid turtle from the Cretaceous Kaiparowits Formation, southern Utah. *Geological Society of America Abstracts with Programs* 44(7):370. [oral presentation]
- Lively, J.R. 2012. Testing Late Cretaceous Laramidian paleobiogeographic hypotheses: evidence from the evolution of baenid turtles. *Journal of Vertebrate Paleontology* 32:128. [oral presentation]
- Lively, J.R. and Irmis, R.B. 2011. New baenid turtles from the Kaiparowits Formation of southern Utah: Implications for Laramidian biogeography. *Journal of Vertebrate Paleontology* 31:145. [poster presentation]
- Lively, J.R. 2011. Anatomy and paleobiogeographic implications of a new baenid turtle from the Kaiparowits Formation of southern Utah. *Geological Society of America Abstracts with Programs* 43(5):457. [digital poster presentation]
- Lively, J.R. and Lewis, R.D. 2010. Paleoecology of Late Cretaceous Pinnidae in the Eutaw Formation of Alabama and an ecologic comparison with a modern assemblage in Florida. *Geological Society of America Abstracts with Programs* 42(1):125. [oral presentation]

Lively, J.R., Lewis, R.D., and Rindsberg, A.K. 2009. Analysis of two fossil concentrations in the Tombigbee Sand Member caprock, Eutaw Formation, Montgomery County, Alabama. *Geological Society of America Abstracts with Programs* 41(7):631. [poster presentation]

### **Research Grants**

Texas Academy of Science PhD student grant (2016)

\$2,000.00 (first place)

Evolving Earth Foundation Student Grant (2015)

\$3,000.00

Geological Society of America Student Research Grant (2011, 2015)

\$3,439.00; \$1,250.00

Lundelius Award in Vert. Paleontology, Jackson School of Geosciences (2013, 2014, 2015, 2016, 2017)

\$1,000.00; \$1,150.70; \$1,701.00; \$1,100.00; \$1,585.33

Ronald K. DeFord Field Scholarship Fund, Jackson School of Geosciences (2013, 2016)

\$1,100.00; \$968.00

Doris O. and Samuel P. Welles Research Fund, University of California Museum of Paleontology (2011, 2014)

\$1,400.00; \$1,818.72

Kenneth E. & Annie Caster Award, Paleontological Society (2011, 2013)

\$800.00; \$800.00

Grand Staircase Institute of Science Student Research Grant (2011)

\$3,000.00

Undergraduate Research Fellowship, Auburn University (2009)

\$1,000.00 (research funds)

### **Courses Taught**

#### **Assistant Professor**

Research Methods in Environmental Studies, Dept. of Environmental Studies, University of Illinois Springfield (2020)

Environmental Natural Sciences, Dept. of Environmental Studies, University of Illinois Springfield (2020)

Earth Science, Dept. of Environmental Studies, University of Illinois Springfield (2019-2020)

Environmental Geology, Dept. of Environmental Studies, University of Illinois Springfield (2019)

#### **Instructor**

Earth Science, Dept. of Environmental Studies, University of Illinois at Springfield (2018-2019)

Age of Dinosaurs, Dept. of Geological Sciences, University of Texas at Austin (2015)

Introduction to Paleontology and Prehistoric Life, Austin Monday Co-op, Cedar Park, TX (2014)

#### **Graduate teaching assistant**

Age of Mammals, Dept. of Geological Sciences, University of Texas at Austin (2017)

Morphology of the Vertebrate Skeleton, Dept. of Geological Sciences, University of Texas at Austin (2016)

Plate Tectonics & Earth History, Dept. of Geological Sciences, University of Texas at Austin (2014, 2015)

Sedimentary Rocks, Dept. of Geological Sciences, University of Texas at Austin (2014)

Age of Dinosaurs, Dept. of Geological Sciences, University of Texas at Austin (2013)

Life Through Time, Dept. of Geological Sciences, University of Texas at Austin (2012)

Introduction to Paleobiology, Dept. of Geology and Geophysics, University of Utah (2012)  
 World of Dinosaurs, Dept. of Geology and Geophysics, University of Utah (2011, 2012)

#### Undergraduate teaching assistant

Comparative Anatomy, Dept. of Biological Sciences, Auburn University (2009, 2010)

#### Workshops Taught

Acid Preparation (co-taught with Anthony Maltese and Lee Hall), Association for Materials & Methods in Paleontology annual meeting, Hays KS (April 2019)

#### Collections Experience

The Cretaceous World TCN: Digitizing Fossils to Reconstruct Evolving Ecosystems in the Western Interior Seaway (2017-2018)

I coordinated with the Vertebrate Paleontology and the Non-vertebrate Paleontology labs at the University of Texas to digitize specimens from the Western Interior Seaway of the United States with the eventual goal of making their images and data publicly accessible through iDigBio, iDigPaleo, etc. My part of this project included vetting and entering specimen data in our databases using Specify v. 6&7 and imaging the specimens using Helicon Remote and Helicon Focus software.

Paleogene Molluscs of Texas (2014)

I worked at the Non-vertebrate Paleontology Lab to enter data and georeference specimens in our database (Specify) that were a part of a large donation to the collections.

#### Student and volunteer supervision

*A new mosasaur assemblage from the Upper Cretaceous Savoy Pit, North Texas* (research project)

- Blake Chapman, undergraduate, University of Texas at Austin (October 2015 – July 2018). Blake completed this project as a senior thesis through the Jackson School's honors program. We are currently working to publish this project in *Peer J*. He began working on his M.S. at Ft. Hays State University in Fall 2018.

*The multituberculate mammals of Terlingua Microsite, Aguja Formation (Upper Cretaceous: Campanian), Trans-Pecos, Texas* (research project)

- Michael C., high school senior (July 2017 – July 2018). Michael worked with me on this project as part of his senior year honors program. He began working on his undergraduate degree at UT-Austin in Fall, 2018.

*Morphology and taxonomic distribution of the os cordis* (research project)

- Grace Self, post-graduate, University of Texas at Austin (June 2016 – present). Grace has been co-advised by Christopher Bell and I on this independent research project. She is currently employed by Triebold Paleontology as a preparator.

*Morphological diversity of the mosasaur frontal: assessing taxonomic utility of shape with geometric morphometrics* (research project)

- Paul Redman, undergraduate, University of Texas at Austin (January 2018 – May 2018). Paul worked with me on quantifying shape variation in the mosasaur frontal as part of a class project. He is currently an undergraduate in Geological Sciences.

*CT segmentation of modern Trionychidae and Varanus salvator* (volunteer and research experience)

- Yukun Yang, undergraduate, University of Texas at Austin (October 2017 – December 2017)
- Irineo Sanchez, undergraduate, University of Texas at Austin (October 2017 – December 2017)
- Sophie Jerwick, undergraduate, University of Texas at Austin (October 2016 – January 2017)
- Yinuo Wang, undergraduate, University of Texas at Austin (October 2016 – May 2017)

- Timothy Williams, undergraduate, University of Texas at Austin (October 2014 – May 2015)  
*Mosasaur preparation* (volunteer experience)
  - Paul Redman, undergraduate, University of Texas at Austin (October 2017 – July 2018)
  - Humberto Venancio, undergraduate, University of Texas at Austin (October 2017 – May 2018)
  - Grace Self, post-graduate, University of Texas at Austin (June 2016 – January 2017; now employed as a preparator at Triebold Paleontology)
  - Chase Shelbourne, post-graduate, University of Texas at Austin (January 2016 – December 2016; now a master's student at Fort Hays State University)
- An Eocene gastropod assemblage from Alabama* (volunteer and research experience)
- Kendall Yates, undergraduate, University of Texas at Austin (June 2015 – December 2015)

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

University Graduate Continuing Fellowship, The University of Texas at Austin (2016-2017)

\$36,000.00

William Lee Stokes Graduate Fellowship, University of Utah (2010-2011)

\$14,700.00

Dean's Medalist, College of Science and Mathematics, Auburn University (2010)

Outstanding Senior in Geology

Undergraduate Research Fellowship, Auburn University (2009-2010)

\$4,800.00 (scholarship funds)

The Honor Society of Phi Kappa Phi (Initiated 2009)

Sigma Gamma Epsilon earth science honor society (Initiated 2008)

Outstanding Junior in Geology, Auburn University (2009)

Dean's List, Auburn University (five semesters)

Phi Eta Sigma Freshman Honor Society (2007)

Vulcan Materials Scholarship, Dept. of Geology & Geography, Auburn University (2009-2010)

\$2,000.00

Presidential Scholarship, Auburn University (2006-2010)

\$5000.00/year, four years

Freshman Academic Scholarship, Auburn University (2006-2010)

Full tuition, four years

### **Professional Service and Leadership**

Government Affairs Committee, Paleontological Society (2018-present)

Collections and Repository Committee, Society of Vertebrate Paleontology (2018-present)

Vice Chair, Systematics & Evolutionary Biology section, Texas Academy of Science (2016-2018)

Review of US House draft bill that could affect paleontological resources in collaboration with SVP

Government Affairs Committee (2017)

Protecting fossil resources in national monuments, outreach with SVP at the Geological Society of America Annual Meeting (2017, 2018)

Session moderator, Society of Vertebrate Paleontology 76<sup>th</sup> Annual Meeting (2016)

### **Professional Development and Workshops Attended**

Active Shooter/Active Threat Training (UIS)

How to Engage Students (UIS)

Engaging Students through Active Learning (InTeGrate)

Engaging Generation Z Students in Learning (UIS)

Expect the Unexpected – Fieldwork Safety (SVP)

Funding Your Ideas (UIS)  
 Engaging Undergraduates in Research (GSA)  
 Field Safety Leadership Training (UT-Austin)

### **Professional Memberships**

Society of Vertebrate Paleontology  
 Geological Society of America  
 Paleontological Society  
 Society for the Preservation of Natural History Collections  
 Association for Materials and Methods in Paleontology  
 Society for Integrative and Comparative Biology  
 Society for Systematic Biology  
 Society of Sedimentary Geology

### **Peer Review**

*Bulletin of the Yale-Peabody Museum*  
*Journal of Vertebrate Paleontology*  
*Neues Jahrbuch für Geologie und Paläontologie*  
*New Mexico Museum of Natural History Bulletin*  
*Paleobios*  
*Paleontologica Electronica*  
*PeerJ* (2)

### **Public and Invited Lectures**

Oceanfront Property in Colorado: mosasaurs from the Western Interior Seaway as a system for understanding evolution during greenhouse climates  
 Paul Mickey Learning Series, Illinois State Museum, Springfield, IL (July 3, 2019)  
 Mosasaur Discovery: '*Prognathodon*' *stadtmani* from the Mancos Shale of Cedaredge, CO  
 Voices of the Western Slope public presentation, Cedaredge, CO (May 14, 2019)  
 Mosasaurs from the Western Interior Seaway and evolution during greenhouse climates  
 Faculty Scholarship Series, University of Illinois Springfield (April 4, 2019)  
 Oceanfront Property in Colorado: Mosasaurs and Muds in the Mancos of Montrose  
 Colorado Canyons Association public presentation, Montrose CO (August 12, 2018)  
 Talking Texas Fossils: Lizard Leviathans: Mosasaurs and other Marine Reptiles of Texas  
 Vertebrate Paleontology Collections, The University of Texas at Austin (April 19, 2018)  
 The Diversification of Mosasaurines: Two New Genera from the Upper Cretaceous of Texas and Colorado  
 Paleontological Society of Austin (February 20, 2018)  
 Ocean Front Property in Southern Utah  
 Lago Vista High School (December 7, 2017)  
 Undergrad Geological Society, UT-Austin (November 29, 2017)  
 Turtle fossils from the Cretaceous Kaiparowits Formation  
 Grand Staircase-Escalante National Monument 20<sup>th</sup> anniversary Science Forum (August 2, 2016)  
 Evolution of the North American turtle fauna  
 Austin Herpetological Society (April 9, 2016)  
 Mosasaurs of Texas  
 Paleontological Society of Austin (July 21, 2015)

- Baenid turtles from the Kaiparowits Formation of southern Utah: implications for Laramidian biogeography  
 Paleontological Society of Austin (November 19, 2013)  
 Alabama Paleontological Society (July 2, 2012)  
 Utah Friends of Paleontology (November 10, 2011)
- Paleoecology of the Tombigbee Sand Member caprock exposed at Catoma Falls, Montgomery Co., AL  
 Alabama Paleontological Society (June 7, 2010)

### **Community Outreach**

- Collections tours for GeoForce, Jackson School of Geosciences, UT-Austin (June-July 2018)
- Talking Texas Fossils: *Jurassic World: Fallen Kingdom* preview, Alamo Drafthouse, Austin TX (June 2018)
- Talking Texas Fossils, Vertebrate Paleo Collections, University of Texas at Austin (February 2018)
- Darwin Day – Center for Inquiry, Austin Texas (2013, 2014, 2015, 2016, 2017, 2018)  
 Public outreach about fossils and evolution (graduate student coordinator 2014-2017).
- Fossil Fest (Paleontological Society of Austin), Round Rock, TX (2013, 2014, 2015, 2016, 2017)  
 Public outreach about paleontology (graduate student coordinator, 2013-2016).
- Thinkery21 event, Thinkery, Austin, TX (2017)  
 Public outreach about fossils from Texas for a 21+ event at a local science museum.
- Paleontology presentation for Barton Creek Elementary School STEM day, Austin, Texas (2016)
- Field trip co-leader (with Alan Titus) to Kaiparowits Formation, Grand Staircase-Escalante National Monument 20<sup>th</sup> Anniversary Science Forum (2016)
- Science Olympiad, Austin Invitational event coordinator – Fossils (2016)
- Science Olympiad, Austin Regional event coordinator – Fossils (2014, 2015, 2016)
- Earth Science Career Day, The University of Texas at Austin (2014, 2015)
- Explore UT, The University of Texas at Austin (2014, 2015)
- Dancing Moose Montessori School, Salt Lake City, Utah (2010-2012)  
 Taught kindergarten and first grade students about rocks/minerals and dinosaurs on several occasions.
- Adamsville Elementary, Adamsville, Alabama (2011)  
 Taught a class on paleontology to second grade students
- What's in the Basement, Utah Museum of Natural History (2010)
- Handley High School, Roanoke, Alabama (2009-2010)  
 On two separate occasions, I talked to students about paleontology in the state of Alabama.
- College of Science and Mathematics AU Explore, Auburn University (2008-2010)

### **Major Departmental, College, & University Service**

- College Level Personnel Committee, College of Public Affairs and Administration, UIS (2019-2020)  
 Review of tenure/promotion and reappointment for faculty in CPAA.
- Editor and Social Media Coordinator, Jackson School of Geosciences student blog *Science Y'all!* (2016-2018)  
 I assisted in the solicitation of blog posts from graduate students related to their research, travel, and work experience, and editing those posts. I also ran the social media accounts for the blog.
- Paleontology grad student outreach coordination, The University of Texas at Austin (2014-2016)  
 I organized numerous outreach events every semester by coordinating with the even staff, taking specimens on loan from our collection, and coordinating graduate student volunteers.
- Public fossil identification liason, Vertebrate Paleontology Lab, The University of Texas at Austin (2015-2016)



I responded to e-mail and in-person inquiries about potential fossil discoveries by the general public. At times, this involved traveling hours to investigate potential discoveries.

Students Raising Students mentor, The University of Texas at Austin (2015-2016)

I mentored an undergraduate student with an interest in attending graduate school in geobiology.

Weekly paleontology seminar coordinator, The University of Texas at Austin (2014-2015)

For one academic year, I coordinated our paleontology brownbag seminar by scheduling 15 talks each semester, including both in-house and out-of-state speakers.

Chapter President, Sigma Gamma Epsilon, Auburn University (2009-2010)

Chapter President, American Association of Petroleum Geologists, Auburn University (2009-2010)

Weekly geology colloquium coffee and snack coordinator, Auburn University (2009-2010)

For the senior year of my undergraduate studies, I organized the snacks and coffee for our weekly departmental seminar series.

### **Additional Service**

Served on tenure committees for two department colleagues, Department of Environmental Studies, UIS (October, 2019)

Served on promotion committee for a department colleague, Department of Environmental Studies, UIS (September, 2019)

Organized lunch for visiting speaker, Dr. Carl Simpson (March 2018)

Student recruitment for Jackson School at GSA Annual Meeting (October 2017)

Organized dinner for preparator job candidate, Vertebrate Paleontology Lab (October 2016)

Student recruitment for Jackson School at GSA Annual Meeting (September 2016)

Assisted with visit of guest speaker, Dr. Mark Norrell (April 2016)

Organized graduate student lunch for visiting speaker, Michael Polcyn (April 2016)

Organized graduate student lunch for visiting speaker, Dr. Mark Norrell (April 2016)

Assisted with visit of prospective paleontology graduate student (March 2016)

Organized dinner for paleontology prospective student weekend event (February 2016)

Participant, prospective student weekend, The University of Texas at Austin (February 2016)

Student recruitment for Jackson School at GSA Annual Meeting (November 2015)

Organized graduate student lunch for visiting speaker, Dr. Johannes Müller (March 2015)

Participant, prospective student weekend, The University of Texas at Austin (February 2015)

Organized graduate student lunch for visiting speaker, Dr. Mark Goodwin (December 2014)

Hosted visiting speaker, Dr. Randall Irmis (December 2014)

Organized graduate student lunch for visiting speaker, Dr. Randall Irmis (December 2014)

Organized graduate student lunch for visiting speaker, Dr. Tom Yancey (November 2014)

Student recruitment for Jackson School at GSA Annual Meeting (October 2014)

Student volunteer, GSA Annual Meeting (October 2014)

Organized graduate student lunch for visiting speaker, Dr. Daniel Peppe (September 2014)

Participant, prospective student weekend, The University of Texas at Austin (February 2014)

Student recruitment for Jackson School at GSA Annual Meeting (October 2013)

Participant, prospective student weekend, The University of Texas at Austin (February 2013)

Student recruitment for Jackson School at GSA Annual Meeting (November 2012)

Participant, prospective student weekend, The University of Texas at Austin (February 2012)

Student recruitment for Department of Geology and Geophysics, University of Utah at GSA Annual Meeting (October 2011)

### **Paleontological Field Projects/Experience**

Upper Cretaceous Mancos Shale, Colorado, USA (2017-present)

A field project I am funding and leading as primary investigator. The goal of this work is to understand the evolution of the marine biota of the Mancos Shale. In western Colorado, the Mancos preserves a succession that ranges from the Cenomanian through Campanian, which captures several major paleoceanographic and climatic events during the Cretaceous greenhouse. This stratigraphic interval also has the potential to preserve a record of the origin and diversification of mosasaurs. This will be a long-term investigation that, in the coming years, will include geochemical and geochronological work to understand the timing of and nature of oceanographic change in the Western Interior Seaway.

Upper Cretaceous Kaiparowits Formation, Utah, USA (2010-present)

Continuing collaboration with the Natural History Museum of Utah, Bureau of Land Management, and the Denver Museum of Nature and Science. I have been involved with prospecting for and excavation of vertebrates and have contributed to the description of the turtle component of the fossil assemblage.

Upper Cretaceous Austin Chalk, Texas, USA (2018)

I led a successful reconnaissance trip to relocate a historic quarry that was excavated by the Texas Bureau of Economic Geology and the Works Progress Administration in 1940. We relocated the old quarry, collected rock samples, and discovered more fossils. My collaborator Blake Chapman and I are describing mosasaur specimens that were discovered at this locality as part of his undergraduate honors thesis.

Lower Cretaceous Cloverly Formation, Wyoming, USA (2016-2017)

In collaboration with Dr. Michael D'Emic, I assisted in the excavation of large vertebrate fossils from a historic quarry.

Upper Jurassic Malone Formation, Texas, USA (2015-2016)

A collaboration with Drs. Steven May and Lisa Boucher, prospecting for marine vertebrate and marginal marine plant localities in the only exposed Upper Jurassic rocks in Texas.

Upper Cretaceous Tropic Shale, Utah, USA (2016)

I assisted Dr. Barry Albright in the excavation of a plesiosaur.

Upper Cretaceous Nelsen Formation, Utah, USA (2016)

In collaboration with Dr. Peter Flaig, we collected stratigraphic data and completed preliminary reconnaissance for paleontological prospecting areas.

Upper Cretaceous Tarantula Mesa Sandstone and 'beds on Tarantula Mesa', Utah, USA (2014)

In collaboration with Drs. Randall Irmis and Jeffrey Eaton, we prospected for and excavated large vertebrates on top of Tarantula Mesa near the Henry Mountains. Over the coming years, we will collaborate to describe the assemblage we discovered.

Upper Cretaceous Fruitland and Kirtland Formations, New Mexico, USA (2014)

In collaboration with Drs. Joe Sertich and Ian Miller of the Denver Museum of Nature and Science, we prospected for vertebrate and plant localities in a number of areas of the San Juan Basin.

Lower Jurassic Fernie Formation, Alberta, Canada (2014)

I assisted in the planning of field logistics and the excavation of both small vertebrates and marine invertebrates from a lagerstätte outside of Banff National Park.

Eocene Paracas and Otuma formations, Ica, Peru (2013)

In a collaborative project with Dr. Julia Clarke, I planned our field schedule and routes through the northern Atacama Desert, acquired partial funding for the expedition, and measured stratigraphy and completed a facies analysis of several previously-excavated marine vertebrate localities.

Eocene Lisbon Formation, Alabama, USA (2013)

I led and funded an exploratory trip to potential field localities in southern Alabama.

Philip's Paleo Cave, Texas, USA (2013)

I assisted Drs. Christopher Bell and Ernie Lundelius in the partial excavation of a Pleistocene cave deposit in Crockett County, Texas.

Triassic Chinle Formation, New Mexico, USA (2011)

I assisted Dr. Randall Irmis and collaborators in the excavation of the Hayden Quarry at Ghost Ranch.

Triassic Chinle Formation, Utah, USA (2011)

I helped complete a survey of the Chinle Formation within Dinosaur National Monument working with teams led by Drs. Randall Irmis and Daniel Chure.

Upper Cretaceous Wahweap Formation, Utah, USA (2010-2011)

As part of the NHMU team, I contributed to prospecting for and excavation of terrestrial vertebrates.

Upper Cretaceous Straight Cliffs Formation, Utah, USA (2010-2011)

As part of the NHMU team, I helped prospect for and excavate large vertebrates.

Upper Cretaceous Eutaw Formation, Alabama, USA (2008-2010)

I acquired funding for and completed fieldwork that included measuring section, collecting geologic samples, and mapping an in situ bivalve assemblage as part of my undergraduate thesis.