Max Christie

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Education

Ph.D., Pennsylvania State University – August 2017

Dissertation Title: "Biogeographic, Functional, and Phylogenetic Changes from the Pliocene to Modern, Western Atlantic Coastal Plain"

Advisor: Dr. Mark E. Patzkowsky

M.S., Geology, University of Georgia – August 2011

Thesis Title: "Does Ecological Change Scale with Percent Extinction? Quantifying the Difference between Taxonomic Loss and Functional Ecology"

Advisor: Dr. Steven M. Holland

B.S., Biology, License in Education, College of William and Mary – May 2009

Honors Thesis Title: "Ecological Interactions Across the Plio-Pleistocene Extinction: Naticid Cannibalism North and South of Cape Hatteras, NC"

Advisor: Dr. Rowan Lockwood and Dr. Karen Layou

Experience

- **Lecturer, The University of Illinois (August 2017 – Present)**
  Courses Taught
  GEOL 208 - History of the Earth System
  GEOL 143 - The History of Life
  GEOL 118 - Natural Disasters
  GEOL 440 - Sedimentology and Stratigraphy
  GEOL 417 - Geological Field Methods, Western US
  GEOL 497 - Paleobiology
  GEOL 490/492 - Independent Research/Senior Thesis
  GEOL 415/515 – Field Methods (Ireland)
  GEOL 107 – Physical Geology
  ZJU Short Course in Natural Disasters

- **Teaching Assistant, Penn State**

  Geobiology: Geobiology is a required majors course that explores the interaction between life and the earth, including capstone fieldwork in Denver, Colorado.

  Field School: PSU Field Camp teaches stratigraphy, sequence stratigraphy, and geologic mapping in Utah, Wyoming, Montana, and Idaho.

  Physical Geology: Physical geology lab teaches major and non-major students basic rock identification and geological concepts.

Field Stratigraphy: Field stratigraphy is a graduate level field course held in the Guadalupe Mountains in west Texas.

Stratigraphic Paleobiology Field Course: This course was sponsored by the Paleontological Society for graduate students to learn the principles of stratigraphic paleobiology in the Tobacco Root Mountains, Montana.

The Sea Around Us: The Sea Around Us is a non-major introductory physical oceanography course.

The Earth System: The Earth System is a non-major introductory earth science course designed to teach how the different earth systems (ie. geosphere, cryosphere) interact.

- **Research Assistant, Penn State**
- **Teaching Assistant, The University of Georgia**

  Historical Geology: Historical geology lab taught mineral and rock identification, major fossil identification, and basic historical geological concepts.
- **Student Teaching, Woodside High School, Newport News, Virginia**

Research Students

- Monika O'Brien – Senior Thesis – BA 2019
- Bohao Mai – Senior Thesis – BS 2019
- Erich Ceisel – Senior Thesis – BS 2019
- Michelle Frankel – Senior Research Project – BS 2019
- Andrew Garcia – Senior Research Project – BS 2019
- Miguel Castillo – Senior Thesis – BS expected 2020
- Claire Williams – Senior Research Project – BS expected 2020
- Marjean Cone – Research Project – BS expected 2021

Research Interests

- Paleobiology, paleoecology, and the effects of extinction on paleocommunites.
- The effects of extinction on functional ecology.
- Biogeography and the distribution of taxa in space and time.
- Sedimentology and sequence stratigraphy and how these fields inform the fossil record.

Published Papers

Milideo, L.E., Graham, R.W., Falk, C.R., Semken, H.A., Christie, M.L. 2018. Overprinting of taphonomic and paleoecological signals across the forest–prairie environmental gradient, mid-continent of North America. Paleobiology 44:546-559

Christie, M., S. M. Holland, and A. M. Bush. 2013: Contrasting the ecological and taxonomic consequences of extinction. Paleobiology 39:538–559.

Holland, S. M., and M. Christie. 2013: Changes in area of shallow siliciclastic marine habitat in response to sediment deposition: implications for onshore-offshore paleobiologic patterns. Paleobiology 39:511–524.

Abstracts

*Key: * = undergraduate author*

Sclafani, J.A., Roselle, B.*, Christie, M., 2017. Structure from motion as a tool for 3d morphometrics: a new paleobiological application for a young geological method. GSA 2017, Seattle, Washington.

Christie, M., Patzkowsky, M.E., Dietl, G.P., Kelley, P.H., Whitaker, A.F.*, 2017. Changes in taxonomic and functional ecology north of a biogeographic boundary during the Pliocene to modern, Western North Atlantic. GSA 2017, Seattle, Washington.

Whitaker, A.F.*, Christie, M., Patzkowsky, M.E., 2017. Environmental gradient analysis in the upper Ordovician Taconic foreland basin, central Appalachians, USA. GSA 2017, Seattle, Washington.

Christie, M., Congreve, C.R., Patzkowsky, M.E., 2016. Phylogenetic Diversity of the Lucinidae in the Western Atlantic using Fossils and Molecules. GSA 2016. Denver, Colorado.

Whitaker, A.F.*, Christie, M., Patzkowsky, M.E., 2016. Environmental affinities and distribution of fossil taxa in the Taconic Foreland basin, Tennessee to Pennsylvania, USA. GSA 2016. Denver, Colorado.

Christie, M., Congreve, C.R., Patzkowsky, M.E., 2015. Phylogenetic diversity of the Lucinidae from the Pliocene to modern in the Western Atlantic. GSA 2015. Baltimore, Maryland.

Whitaker, A.F.*, Christie, M., Patzkowsky, M.E., 2015. Paleoecological analysis of furnace gap, a new upper Ordovician ophiuroid locality in Pennsylvania. GSA 2015. Baltimore, Maryland.

Christie, M. and M. E. Patzkowsky. 2014. Biogeographic Changes From the Pliocene to Modern in the Atlantic Coastal Plain. GSA 2014. Vancouver, B.C.

Whitaker, A.F.*, Christie, M., Patzkowsky, M.E., Pectinidae Along the Western Atlantic Coastal Plain: Miocene to Recent. GSA 2014. Vancouver, B.C.

Lavine, R.J., Orzechowski, E.A., Pierrehumbert, N.D., Rojas, A., Sclafani, J.A., Yager, J.A., Christie, M., McMullen, S.K., Holland, S.M., Patzkowsky, M.E. 2014. Ecological Gradient Structure in the Mississippian Lodgepole Formation, Southwest Montana. GSA 2014. Vancouver, B.C.

Loughney, K.M., Jarochowska, E., Keller, A.L., Kimmig, J., Larina, E., Singer, A., Mcmullen, S.K., Christie, M., Holland, S.M., Patzkowsky, M.E. 2014. Sequence Stratigraphic Architecture Drives Biofacies Distribution of the Mississippian Lodgepole Formation in South-Central Montana. GSA 2014. Vancouver, B.C.

Christie, M, and M. E. Patzkowsky. 2014. Taxonomic and Ecological Changes across the Plio-Pleistocene Extinction: Different Mechanisms in the Caribbean and North America? NAPC 2014, Gainesville, Florida

Christie, M., and M. E. Patzkowsky. 2013. Development of a biogeographic boundary: Pliocene to recent in the Western Atlantic Coastal Plain. GSA 2013, Denver, Colorado

Christie, M., S. M. Holland, and A. M. Bush. 2012. Contrasting taxonomic and ecological change across the mid-late Devonian interval. GSA 2012, Charlotte, North Carolina

Holland, S. M., Christie, M., 2011, Deposition-driven changes in habitat area: The shoreface as a diversity factory. GSA 2011, Minneapolis, Minnesota

Christie, M., Holland, S.M., Bush, A.M., 2011, Does ecological change scale with percent extinction? Quantifying the difference between taxonomic loss and functional ecology. GSA 2011, Minneapolis, Minnesota

Smith, J.A., Dietl, G.P., Kelley, P.H., Christie, M., Lockwood, R., and Layou, K.M., 2011, Confamilial predation on naticid gastropods through a pulsed extinction in the Plio-Pleistocene of the Carolinas. GSA 2011, Minneapolis, Minnesota

Christie, M., Holland, S.M., 2010, The contrasting effects of extinction on taxonomic and ecological composition: Initial results of numerical experiments. GSA

2010, Denver, Colorado

Christie, M., Dietl, G.P., Kelley, P.H.,Layou, K.M., Lockwood, R., Visaggi, C., 2009, Confamilial predation across a biogeographic boundary at Cape Hatteras, North Carolina: Naticid ecological interactions across a late Pliocene interval of faunal turnover. NAPC 2009, Cincinnati, Ohio

Christie, M., Dietl, G., Kelley, P., Layou, K., Lockwood, R., Visaggi, C., 2009, Ecological interactions across a late pliocene interval of faunal turnover: Naticid cannibalism north and south of Cape Hatteras, North Carolina. Southeastern GSA 2009, Tampa, Florida

Kelley, P., Dietl, G. P., Visaggi, C., Christie, M., Durham, S.R., Graybill, E.A., Monarrez, P.M., Parnell, B. A., 2009, Effects Of A Late Pliocene Extinction In North Carolina On Mollusk Diversity And Ecology: Preliminary Results. Southeastern GSA 2009, Tampa, Florida

Zaffos, A., Bonnette, M., Christie, M., Lunze, J. L., Pryor, A. L., and Layou, K. M., 2008, Implications of beta: Diversity partitioning during Miocene-Pliocene background extinction. Southeastern GSA 2008, Charlotte, North Carolina

Field Work

2011-2016	Virginia and North Carolina Coastal Plain, currently ongoing
2011-2016	Stratigraphy and Geological Mapping, Utah, Wyoming, Montana, and Idaho, 24 weeks
2012, 2014	Stratigraphy and Sequence Stratigraphy, Guadalupe Mountains, Texas. 4 weeks
2014	Stratigraphic Paleobiology, Tobacco Root Mountains, Montana, 2 weeks
2010	West New York Canadaway Group, 5 weeks
2008	North Carolina Coastal Plain, 2 months

Professional Development

Paleobiology Database Intensive Workshop in Analytical Methods – Summer 2010

I was selected as one of twelve students worldwide to participate in the Paleobiology Database Workshop for five weeks. We learned how to use cutting edge analytical methods specifically tailored to paleontology and how to apply those to large datasets.

Stratigraphic Paleobiology Field Course – July 2014

I helped lead the Paleontological Society's first Stratigraphic Paleobiology Field Course. I helped organize and coordinate the two week long course, and assisted students in the field.

Awards

George Schenck Teaching Assistant of the Year, College of Earth and Mineral Sciences - Spring 2013

I was awarded the George Schenck Teaching Assistant Award for the 2012 academic

year. This award is given to one Teaching Assistant per year from the College.

Department of Geology Teaching Award, University of Georgia - Spring 2011

I was awarded the departmental teaching award while I was a Master's student at the University of Georgia.

Service

Paleontological Society Student Representative – 2012-2014

I am served a 2-year term as one of 2 student representatives to the Paleontological Society

NASA Astrobiology: Exobiology and Evolutionary Biology Panel – October 2013

Professional Memberships

Geological Society of America
The Paleontological Society