

Holly A. Schreiber, Ph.D.

(née Schultz)

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EDUCATION

Ph.D. in Geology. 2011. University of California, Davis. Davis, CA. Advisor: Dr. Sandra J. Carlson. Emphasis: invertebrate paleontology. Dissertation title: Investigating the Phylogenetic Relationships and Morphological Variability of the Crura and External Shell of Extant Rhynchonellida (Brachiopoda).

M.S. in Geoscience, 2005. University of Iowa. Iowa City, IA. Advisor: Dr. Ann F. Budd. Emphasis: invertebrate paleontology. Thesis title: Neogene evolution of the reef coral species complex *Montastraea "cavernosa"*: morphometric analysis of variation within and among species.

B. S. in Geology and Geophysics. 2003. University of Wisconsin. Madison, WI. Advisor: Dr. Dana H. Geary. Emphasis: invertebrate paleontology.

PROFESSIONAL EXPERIENCE

Director of Education, Penn Dixie Fossil Park and Nature Reserve, Blasdell, NY. February 2017-present.

Postdoctoral Scholar, Department of Earth and Planetary Sciences, University of California, Davis. February 2013-2017.

Lecturer, Department of Earth and Planetary Sciences, University of California, Davis. June 2011-2017. See expanded class list below.

Visiting Lecturer, Earth and Environmental Sciences, University of the Pacific, Stockton, CA. 2011-2012.

Associate Instructor, Department of Geology, University of California, Davis. Summer Session I 2010; Summer Session II 2010.

Teaching Assistant, Department of Geology, University of California, Davis. September 2006-June 2011.

Graduate Research Assistant, Department of Geoscience, University of Iowa. September 2004-August 2006.

Teaching Assistant, Department of Geoscience, University of Iowa. September 2003-August 2004.

PUBLICATIONS

Bapst, David W., **Holly A. Schreiber**, and Sandra J. Carlson. Accepted. Combined Analysis of Extant Rhynchonellida (Brachiopoda) Using Morphological and Molecular Data. *Systematic Biology*.

Schreiber, Holly A., Peter D. Roopnarine, and Sandra J. Carlson. 2014. Three-dimensional morphological variability of Recent rhynchonellide brachiopod crura. *Paleobiology*, vol. 40, no. 4, pp. 640-658.

Schreiber, Holly A., Maria Aleksandra Bitner, and Sandra J. Carlson. 2013. Morphological analysis of phylogenetic relationships among extant rhynchonellide brachiopods. *Journal of Paleontology*, vol. 87, no. 4, pp. 550-569.

Geary, Dana H., Gene Hunt, Imre Magyar, and **Holly Schreiber**. 2010. The paradox of gradualism: phyletic evolution in two lineages of lymnocardiid bivalves (Lake Pannon, central Europe). *Paleobiology*, vol. 36, no. 4, pp. 592-614.

Schultz, Holly A. and Ann F. Budd. 2008. Neogene evolution of the reef coral species complex *Montastraea "cavernosa"* In Nehm, Ross H. and Ann F. Budd (eds.) *Evolutionary Stasis and Change in the Dominican Republic Neogene*. pp. 147-170.

PUBLISHED ABSTRACTS

Schreiber, Holly A., Natalia Lopez-Carranza, and Sandra J. Carlson. 2016. Three-dimensional geometric morphometric analyses of the recent Terebratulidina (Brachiopoda, Terebratulida) loop. *Geological Society of America Abstracts with Programs*, vol. 48, no. 7.

- Carlson, Sandra J., **Holly A. Schreiber**, Natalia Lopez-Carranza. 2016. Phylogenetic reconstruction of Recent short-loop terebratulide brachiopods: comparing sources of variability Geological Society of America Abstracts with Programs, vol. 48, no. 7.
- Lopez-Carranza, Natalia, **Holly A. Schreiber**, Peter D. Roopnarine, and Sandra J. Carlson. 2016. Quantifying long loop variability in Recent terebratulide brachiopods and its implications for species delimitation in the fossil record (Invited Presentation). Geological Society of America Abstracts with Programs, vol. 48, no. 7.
- Lopez-Carranza, Natalia, **Holly A. Schreiber**, and Sandra J. Carlson. 2015. Putting 3D models to the test: Quantifying the variability of mineralized lophophore support structures in extant Brachiopoda (Neoarticulata). Geological Society of America Abstracts with Programs, vol. 47, no. 7, p. 680.
- Bapst, David W., Sandra J. Carlson, and **Holly A. Schreiber**. 2015. Combined analysis of extant Rhynchonellida (Brachiopoda) using morphological and molecular data. Geological Society of America Abstracts with Programs, vol. 47, no. 7, p. 450.
- Carlson, Sandra J., Peter D. Roopnarine, and **Holly A. Schreiber**. 2014. Phylogeny and ontogeny: how do terebratulid short loops compare with rhynchonellid crura? . 10th North American Paleontological Convention Abstracts 2014. The Paleontological Society Special Publications, vol. 13, p. 75
- Schreiber, Holly A.**, Peter D. Roopnarine, and Sandra J. Carlson. 2013. Does ontogeny recapitulate phylogeny? An example from extant brachiopod crural types. Geological Society of America Abstracts with Programs, vol. 45, no. 7, p. 474.
- Schreiber, Holly A.** and Sandra J. Carlson. 2010. Phylogenetic relationships among extant rhynchonellid brachiopods. Geological Society of America Abstracts with Programs, vol. 42, no. 5, p. 532.
- Schreiber, Holly A.**, Sandra J. Carlson, Paul C. Fitzgerald, and Peter D. Roopnarine. 2009. Morphological variability within and between two Recent rhynchonellid (Brachiopoda) species as modeled by Elliptical Fourier Analysis. Abstracts with Programs-Geological Society of America Meeting, vol. 40.
- Schreiber, Holly A.** and Sandra J. Carlson. 2009. Three-dimensional geometric morphometric analysis of Recent rhynchonellid brachiopod crura. 9th North American Paleontological Convention Abstracts 2009. Cincinnati Museum Center Scientific Contributions, no. 3, pp101.
- Geary, Dana H., Gene Hunt, Imre Magyar, and **Holly Schultz**. 2007. Patterns of phyletic evolution in two lineages of Lymnocardiid bivalves (Lake Pannon, Central Europe). Abstracts with Programs-Geological Society of America Meeting, vol. 39, no. 6, pp. 500.
- Schultz, Holly A.** and Ann F. Budd. 2006. Micromorphological analysis of two Caribbean reef corals. Geological Society of America Meeting, North-Central Sectional Meeting.
- Schultz, Holly A.** and Ann F. Budd. 2005. Neogene evolution of the reef coral species complex *Montastraea* "cavernosa"; morphometric analysis of variation within and among species. Abstracts with Programs-Geological Society of America, vol. 37, no. 7, pp. 135.
- Geary, Dana H., Imre Magyar, and **Holly Schultz**. 2005. The relation of ontogenetic to phyletic change in two lineages of cardiid bivalves from Lake Pannon (Central Europe, Mio-Pliocene). *PaleoBios*. vol. 25, no. 2, Suppl., pp. 50.
- Schultz, Holly A.** and Ann F. Budd. 2004. Evolution of the Caribbean reef coral *Montastraea cavernosa* by analysis of morphologic change. Abstracts with Programs-Geological Society of America, vol. 36, no. 3, pp.51.

Daley, Gwen M., **Holly Schultz**, Bradley W. Mathews, and Dana Geary. 2004. Taphonomic alteration differences between bivalves and barnacles from two taphofacies. Abstracts with Programs-Geological Society of America, vol. 36, no.5, pp.382.

TEACHING EXPERIENCE -- INSTRUCTOR

University of California, Davis

Paleobiology (Summer Session II 2016, Spring 2016, Winter 2016, Summer Session I, II 2015, Spring 2015, Summer Sessions I, II 2014, Winter 2014, Fall 2013, Summer Session I, II 2012, Summer Session II 2011, Summer Session I 2010). Upper-division course that covered systematics and morphology of fossil plants and animals and current paleontological concepts and methods. I designed and prepared lectures, class activities, and exams. I also mentored teaching assistants who taught the laboratory portion of the class.

The Earth (Summer Session I 2015, Winter 2015, Winter 2012, Summer Session II 2011). Lower-division course that covered the introduction to the study of the Earth, including Earth's physical and chemical structure; internal and surface processes that mold the Earth; geological hazards and resources. I designed and prepared lectures, class activities, and exams. I also mentored teaching assistants who taught the laboratory portion of class.

Earthquakes and other Earth Hazards (Winter 2016, Winter 2015, Winter 2012). Lower-division course that covered the impact of earthquakes, volcanoes, landslides and floods on man, his structures and his environment. I designed and prepared lectures, class activities, and exams. Discussion of the causes, effects, and solutions of geologic problems in rural and urban settings are also covered.

The Evolution and Paleobiology of Dinosaurs (Summer Session I 2016). Lower-division course. Introduction to evolutionary biology, paleobiology, ecology and paleoecology, using dinosaurs as case studies. I designed and prepared lectures, class activities, and exams.

The Oceans (Fall 2016). Lower-division course. Introductory survey of the marine environment. Oceanic physical phenomena, chemical constituents and chemistry of water, geological history, the biota and human utilization of marine resources. I designed and prepared lectures, class activities, and exams.

Geology of the National Parks (Fall 2014). Lower-division course that covered the geological history of selected national parks. I designed and prepared lectures and exams. It also covered basic geological concepts like the rock cycle and the geological time scale

History of Life (Summer Session II 2016, Summer Session I 2012, Summer Session I 2011, Summer Session II 2010). Lower-division course that covered the history of life during the three and one-half billion years from its origin to the present day. I designed and prepared lectures, class activities, and exams. It also covered origin of life and processes of evolution, including how to visualize and understand living organisms from their fossil remains.

University of the Pacific, Stockton, California

Earth System Science (Spring 2012, Spring 2011). Lower-division earth science course for elementary education majors. I designed and prepared lectures, class activities, and exams. I also designed and taught the laboratory portion of the class. Lectures and laboratory exercises covered the study of the Earth system and its subsystems.

TEACHING EXPERIENCE --TEACHING ASSISTANT

University of California, Davis

The Earth Discussion (Fall 2006, Winter 2007, Fall 2008; Winter 2010). I led discussions and activities about current and relevant geological topics to undergraduate geology students and non-majors. I led discussions of material supplemental to lecture and was responsible for grading of exams and written exercises.

Evolution Discussion (Winter 2009). I led discussions and activities about current evolutionary topics to undergraduate non-majors. I also led discussions of material supplemental to lecture and was responsible for grading papers throughout quarter.

Physical Geology Laboratory (Fall 2007, Winter 2008, Fall 2010). I led discussions and lab activities to undergraduate geology students and non-majors about the Earth, its materials, and its internal and external processes.

Paleobiology Laboratory (Spring 2007, Spring 2008, Spring 2009, Fall 2009, Spring 2010, Spring 2011). I led laboratory exercises on the systematics and morphology of fossil plants and animals and current paleontological concepts and methods. I was also responsible for grading of examinations and lab exercises and developing new laboratory exercises.

University of Iowa

Earth History & Resources Laboratory (Fall 2003, Spring 2004). I led discussions and lab activities to undergraduate geology students and non-majors about the Earth, its materials, and its internal and external processes.

PROFESSIONAL ORGANIZATIONS

The Geological Society of America
The Paleontological Society
Association for Women Geoscientists
The National Association of Geoscience Teachers

GRANTS IN SUPPORT OF RESEARCH

2007. Geological Society of America Graduate Student Research Grant.

AWARDS

2009. Cordell Durrell Award, University of California, Davis, Department of Geology.
2008. Cordell Durrell Award, University of California, Davis, Department of Geology.
2007. Cordell Durrell Award, University of California, Davis, Department of Geology.
2005. Graduate Research Award, University of Iowa, Department of Geoscience.
2004. Graduate Research Award, University of Iowa, Department of Geoscience.
2003. Chamberlain Award, University of Wisconsin-Madison, Department of Geology and Geophysics.
2001. Outstanding Sophomore Award, University of Wisconsin-Madison, Department of Geology and Geophysics.

SKILLS AND EXPERIENCE

- Processing and manipulation of CT data (Computer programs: Amira, Image J, Geomagic Studio)
- 3D photo stacking
- Scanning electron microscopy
- Bodega Marine Lab Applied Phylogenetics Workshop
- iDigBio Imaging Methods for Paleontological Collections Workshop (at UT Austin)
- UC Berkeley Geometric Morphometrics Workshop
- Expert in the computer software: Mesquite, MacClade, PAUP*, Mr. Bayes, PAST
- Expert in statistical analysis of paleontological data
- Organized weekly Geology seminars at UC Davis
- Community outreach volunteer at UC Davis Picnic Day (2006-2015)

SELECTED QUOTES FROM STUDENT EVALUATIONS

“She goes out of her way to ensure that her students understand the course material, and is always working her office hours to what is most convenient for us. Her lectures are well organized and easy to follow, even if they are a bit fast paced. However, she posts notes online for students to bring to class with them if they don't want to write everything down. She is also very down to earth and easy to talk to, and overall an amazing professor who is passionate about geology. Her classes are definitely worth taking.” --- *Earthquakes and other Earth Hazards*, Winter 2015

“When I first signed up for this class, I wasn't sure what to expect. I thought I would be like Ross from Friends and I wasn't wrong. Professor Schreiber, has made this class very interesting and educational I have found a new respect for fossils and those, who study them. I will recommend Professor Schreiber and this class to my friends.” --- *Paleobiology*, Spring 2015

“It was obvious you were really passionate about the material and interested in helping students understand the topics covered in class. You're easy to approach after class and ask questions, which I find it some professors lacking at Davis. I really appreciate the fact that you spend so much time with us after class or in office hours to make sure we understand the material. I think it would help if you brought more real world news on paleobiology into the class, but I understand that class time is limited.” --- *Paleobiology*, Spring 2015

“She was very engaging, and it was obvious she loves geology.” --- *The Earth*, Winter 2015