

# Hannah M. Carroll

## Curriculum Vitae

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✉ [hcarroll@iastate.edu](mailto:hcarroll@iastate.edu) ☎ 515-991-4058 🌐 hannahcarroll 🐦 hmcarro 🆔 0000-0003-3343-3358

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## Education

**PhD Candidate, Ecology and Evolutionary Biology, Environmental Science** 2012—present  
Iowa State University, Ames  
Dissertation: “Late Quaternary Paleoecology of the North American Midcontinent”  
Advisors: Dr. Lynn G. Clark and Dr. Alan D. Wanamaker

**Bachelor of Science, Environmental Science** 2008  
University of Washington, Tacoma  
Thesis: “Evaluating Conditions in In-Situ Mesocosms”  
Advisor: Dr. Bonnie J. Becker

## Teaching

*Indicates redevelopment or co-redevelopment of existing course*

**Indicates development of new course**

### Iowa State University, Ames

Teaching Assistant - Biol 312L: Ecology Laboratory, field and laboratory components	2018—2019
Teaching Assistant - Biol 212L: Principles of Biology Laboratory II	2019
Instructor - EnSci 490: Independent Study	2014—2018
Instructor - <b>EnSci 203: Exploration of Environmental Science</b>	2014—2018
Instructor - <i>EnSci 202: Exploration of Environmental Issues</i>	2013—2017
Instructor - <b>EnSci 204X: Applied Exploration of Environmental Science I</b>	2015—2017
Instructor - <b>EnSci 205X: Applied Exploration of Environmental Science II</b>	2016—2017
Instructor - Biology 486xw: Aquatic Ecology Online	2016
Teaching Assistant - Biology 394: Study Abroad: Maya Mountains & Calabash Caye, international field course	2015
Teaching Assistant - Biology 486xw: Aquatic Ecology Online	2013—2015
Instructor - <i>Biology 486L: Aquatic Ecology Laboratory</i> , field and laboratory components	2013

### University of Washington, Tacoma

Undergraduate Teaching Assistant - TESC 442: Marine Ecology, field course	2008
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## Grants

**Total = \$19,591**

Geological Society of America Graduate Student Research Grant, “Paleoecology of the Tallgrass Prairie-Ozark Forest Ecotone” \$2,500	2019
Geological Society of America Graduate Student Research Grant, “Late Quaternary Paleoecology of the Tallgrass Prairie-Ozark Forest Ecotone” \$2,500	2018

Iowa State University Department of Ecology, Evolution, and Organismal Biology, Harry and Audrey Finch Scholarship (Finch Funds Award), “Paleoecological Investigation of the Tallgrass Prairie-Ozark Forest Ecotone” \$1,500	2016
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Lois Tiffany Scholarship Award, “Holocene Paleoecology of the Midwestern United States” \$750	2016
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Harry and Audrey Finch Scholarship (Finch Funds Award), “Paleoecology of the bamboo thickets of eastern Bolivia” \$2,000	2015
Iowa State University College of Liberal Arts and Sciences Curriculum Development Grant, awarded to redevelop Biol 488 - “Identification of Aquatic Organisms Online Course.” \$1,000	2014
Association for the Sciences of Limnology and Oceanography (ASLO) Student Travel Award \$500	2014
<b>Significant contributor</b> , Downing, J.A., C. Filstrup, and C. Williams, Twin Lakes, Iowa Diagnostic and Feasibility Study (Total award \$209,854, palynology portion \$5,790)	2013
<b>Significant contributor</b> , Downing, J.A., C. Filstrup, and C. Williams, Silver Lake, Iowa Diagnostic and Feasibility Study (Total award \$210,086, palynology portion \$3,051)	2013

## Awards and Honors

Iowa State University Professional and Scientific Team Cytation Award Presented to the members of the ISU Stormwater Management Committee. This award honors a team that: 1) has performed above and beyond the call of duty, 2) has done something extraordinarily well, and 3) has acted in such a way as to make a significant impact on the institution within the past year.	2017
Iowa State University Teaching Excellence Award This award honors the top 10% of graduate students at ISU for outstanding teaching, as evaluated by their academic departments.	2016
Participant, {GeoChronR} Workshop Competitive-entry 3-day workshop hosted at Northern Arizona University in time-uncertain data analysis using the GeoChron package for R. NSF-funded; travel, room and board, and workshop entry expenses paid. Organizers: Nick McKay, Julien Emile-Geay	2016
DNR Star Award Washington Department of Natural Resources, Olympia, WA	2009

## Manuscripts in Preparation

- Carroll, H.M.**, L.G. Clark, A.D. Wanamaker, and B.J. Wilsey. In prep. Pollen of ragweed (*Ambrosia spp.*) and sagebrush (*Artemisia spp.*) can distinguish between vegetation types at broad spatial scales.  
Target: Ecology.
- Cox, M., **H.M. Carroll**, T. Gallaher, H.T. Horner, P.C. Klahs, and L.G. Clark. In prep. Mature grass (Poaceae) root anatomy: A phylogenetic survey and potential functional correlations.  
Target: American Journal of Botany.

## Technical Reports

- Significant contributor**, Municipal separate storm sewer system 2017 annual report.  
Department of Environmental Health and Safety and Facilities Planning and Management.  
Iowa State University.
- Significant contributor**, Municipal separate storm sewer system 2016 annual report.  
Department of Environmental Health and Safety and Facilities Planning and Management.  
Iowa State University.
- Downing, J.A., C.T. Filstrup, D.L. Kendall, L. Whitehouse, and **H. Carroll**. 2016. A diagnostic-feasibility

- study for the restoration of Silver Lake, Palo Alto County. Iowa State University Limnology Laboratory and Iowa Department of Natural Resources.
- Downing, J.A., C.T. Filstrup, D.L. Kendall, L. Whitehouse, and **H. Carroll**. 2015. A diagnostic–feasibility study for the restoration of North and South Twin Lakes. Iowa State University Limnology Laboratory and Iowa Department of Natural Resources.
- Significant contributor**, Municipal separate storm sewer system 2015 annual report. Department of Environmental Health and Safety and Facilities Planning and Management. Iowa State University.
- Significant contributor**, Municipal separate storm sewer system 2014 annual report. Department of Environmental Health and Safety and Facilities Planning and Management. Iowa State University.
- Significant contributor**, Municipal separate storm sewer system 2013 annual report. Department of Environmental Health and Safety and Facilities Planning and Management. Iowa State University.
- Norris, J.G., I.E. Fraser, and **H. Julich**. 2012. Underwater Videographic Survey of Submerged Aquatic Vegetation in Sequim Bay, WA, August 2011. Report to Hansi Halls, Environmental Planning Manager, Jamestown S’Klallam Tribe, Sequim, WA.
- Norris, J.G., I.E. Fraser, and **H. Julich**. 2011. Defining fish use of subtidal vegetated habitats of the Elwha and comparative shorelines. Report to Cathy Lear, Clallam County Planning Biologist, Port Angeles, Washington.
- Schanz, A., **H. Julich**, L. Ferrier, and H. Berry. 2010. Eelgrass Stressor-Response Project: Report 2007—2008. Nearshore Habitat Program. Washington Department of Natural Resources, Olympia, WA.

## Service

Graduate Student Representative - ISU Stormwater Management Committee	2014—2018
Curriculum Committee Representative , Department of Ecology, Evolution, and Organismal Biology Graduate Student Organization	2017—2018
Skype a Scientist, two high school classrooms	2018
Certified Volunteer - IOWATER volunteer water quality monitoring program	2014—2017
President - Environmental Science Graduate Student Organization	2014—2015
Graduate Student Representative - Plant or Microbial Processes Faculty Search Committee	2014—2015
Volunteer Judge - Eco Day, Nevada Middle School	2015
Volunteer Judge - Des Moines Public Schools Science Fair	2014—2015
Graduate Student Representative - EEOB external review panel	2014
Volunteer Judge - Iowa State Science and Technology Fair	2014
Volunteer Judge - Introduction to Environmental Issues Final Projects	2014
Workshop Leader - “All About Mussels” workshop for fifth grade students	2014
Social Outreach and Safety Chair - Environmental Science Graduate Student Organization	2013—2014
Volunteer - Iowa Children’s Water Festival	2013

## Invited Talks and Guest Lectures

Carroll, H. “Spatial data wrangling in R.” Demonstration for Lunchinators: an R-focused lunch seminar. Iowa State University, Ames	2019
Carroll, H. “New Solutions for Old Problems: The Power of Big Data in Late Quaternary Paleoecology.” Departmental seminar. University of Washington, Tacoma	2018
Carroll, H. “Stream Health and Ecology.” Invited guest lecture with field component. Biology 211 - Introductory Biology for Nonmajors. Iowa State University, Ames	2018
Carroll, H. “Water Quality on the Iowa State University Campus.” National Pollutant Discharge Elimination System Stakeholders Meeting. Iowa State University, Ames	2016

## Presentations and Posters

- Carroll, H.**, L.G. Clark, B.E. Caissie, and A.D. Wanamaker. 2019. "Late Quaternary vegetation dynamics at the southern limit of the temperate tallgrass prairie." Environmental Science Graduate Student Symposium, Ames, IA
- Carroll, H.**, L.G. Clark, and A.D. Wanamaker. 2018. "Preparation of a phytolith reference collection for the study of late Quaternary paleoecology in Missouri." Environmental Science Graduate Student Symposium, Ames, IA
- Carroll, H.**, 2018. Department of Ecology, Evolution, and Organismal Biology Three Minute Thesis Competition, Ames, IA
- Carroll, H.**, L.G. Clark, and A.D. Wanamaker. 2017. "Tracking Holocene vegetation change in the tallgrass prairie region: the power of big data in paleoecology." Environmental Science Graduate Student Symposium, Ames, IA
- Carroll, H.**, C.T. Filstrup, and J.A. Downing. 2016. "Comparative palynology of two agriculturally eutrophic lakes" Environmental Science Graduate Student Symposium, Ames, IA
- Carroll, H.** and J.A. Downing. 2015. "Water quality declines and diversity loss in an agriculturally eutrophic landscape" Environmental Science Graduate Student Symposium, Ames, IA
- Carroll, H.** and J.A. Downing. 2015. "Paleolimnological analysis of Iowa's changing landscapes" Graduate Research in Evolutionary Biology and Ecology symposium, Ames, IA
- Julich, H.** and J.A. Downing. 2014. "Two hundred years of landscape change: Consequences for East Okoboji Lake, Iowa." Association for the Sciences of Limnology and Oceanography Meeting, Portland, OR.
- Julich, H.** and J.A. Downing. 2014. "Use of palynological techniques to reconstruct macrophyte loss and multiple stable states in a eutrophic lake." Graduate Research in Evolutionary Biology and Ecology symposium, Ames, IA
- Julich, H.** and J.A. Downing. 2013. "Use of palynological techniques to reconstruct macrophyte loss and multiple stable states in a eutrophic lake." Association for the Sciences of Limnology and Oceanography Meeting, New Orleans, LA
- Julich, H.** and B.J. Becker. 2008. "An evaluation of conditions in in situ mesocosms" Western Society of Naturalists Meeting, Vancouver, BC, Canada
- Julich, H.** and B.J. Becker. 2008. "In situ culturing of larval sand dollars, *Dendraster excentricus*, in Friday Harbor, Washington" University of Washington Tacoma Environmental Research Symposium, Tacoma, WA
- Julich, H.** and B.J. Becker. 2008. "In situ culturing of larval sand dollars, *Dendraster excentricus*, in Friday Harbor, Washington" UW Undergraduate Research Symposium, Seattle, WA
- Julich, H.** and B.J. Becker. 2007. "In situ culturing of larval sand dollars, *Dendraster excentricus*, in Friday Harbor, Washington" Western Society of Naturalists Meeting, Ventura, CA

## Mentorship

### Iowa State University, Ames

Jacqueline Arlene Galang, Environmental Science  
Juan-Carlos Mungaray, Environmental Science  
Juan Perez, Environmental Science  
Kathryn Holmes, Environmental Science, Community and Regional Planning  
Logan Crees, Environmental Science  
Lindsay Mack, Environmental Science  
Josiah Ihnen, Environmental Science

Marlyssa Crow, Environmental Science  
Nicole Stout, Environmental Science  
Shelby Poole, Environmental Science  
Samuel Freestone, Environmental Science  
Emily Martin, Honors, Environmental Science  
Eric Tagatz, Environmental Science  
Megan Koppenhafer, Environmental Science  
Connor Nicholas, Environmental Science  
Molly Zelinskas, Environmental Science  
Molli Wienhold, Environmental Science  
Mariah Mahaney, Environmental Science  
Sarah Leichty, Honors, Environmental Science  
William Tony Manriquez, Environmental Science

#### **University of Washington, Tacoma**

Lindsay McCormick, Environmental Science

### **Interviews in the Popular or University Press**

Department of Ecology, Evolution, and Organismal Biology. Departmental Spotlight. “Introducing environmental science to a growing number of undergraduates.” September 2017

Visions Magazine (Iowa State University Alumni Association). “Three Billion Years: The Evolution of a State.” November 2016 (print only)

Environmental Monitor. “Future scientists get real-world skills in Iowa State water quality monitoring courses.” March 5, 2014

<http://www.fondriest.com/news/future-scientists-get-real-world-skills-iowa-state-water-quality-monitoring-courses.htm>

Iowa State Daily. “ISU students to monitor campus impact on water.” February 28, 2014

[http://www.iowastatedaily.com/news/article\\_01050a06-9fe2-11e3-9d48-001a4bcf887a.html](http://www.iowastatedaily.com/news/article_01050a06-9fe2-11e3-9d48-001a4bcf887a.html)

Ames Tribune. “ISU students study campus impact on waterways.” February 25, 2014

<http://www.amestrib.com/news/ames-and-story-county/isu-students-study-campus-impact-waterways>

Iowa State University News Service. “Iowa State students will check water quality on campus this semester.” February 19, 2014

<http://www.news.iastate.edu/news/2014/02/19/watertesting2014>

Iowa State Daily. “Carolyn Hoskinson makes first appearance in Iowa, speaks out about underground leakage.” November 19, 2013

[http://www.iowastatedaily.com/news/article\\_55d307f6-50a8-11e3-a53a-001a4bcf887a.html](http://www.iowastatedaily.com/news/article_55d307f6-50a8-11e3-a53a-001a4bcf887a.html)

### **Professional Memberships (Past Five Years)**

Association for Experiential Education (AEE), Association for Women in Science (AWIS), The Palynological Society (AASP), The Geological Society of America (GSA), Botanical Society of America (BSA)