

Sophie J. McCoy, Ph.D.

Florida State University
Department of Biological Science
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Professional Appointments

Department of Biological Science Florida State University	Assistant Professor 2016 - present
Marine Ecology and Biodiversity Plymouth Marine Laboratory	Marie Curie Fellow 2014 - 2016

Education

Ph.D. Ecology and Evolution The University of Chicago Advisor: Dr. Catherine A. Pfister	2009 - 2014
Sc.B. Chemistry with Honors Brown University	2004 - 2008

Awards & Honors

Best Dissertation in the Biological Sciences, University of Chicago	2014
Departmental Award, Ecology and Evolution, University of Chicago	2014
Invited Speaker, University of Michigan Early Career Scientists Symposium	2014
Bold Award (Best Student Presentation), Phycological Society of America	2013
Outstanding Student Paper Award, Ocean Sciences Section, AGU Fall Meeting	2011

Fellowships

MASTS Postdoctoral and Early Career Researcher Exchange (PECRE) Fellowship	2016
EU FP7 Marie Curie International Incoming Fellowship (IIF)	2014 - 2016
NSF Graduate Research Fellowship (GRFP)	2010 - 2014
National Defense Science & Engineering Graduate Fellowship (NDSEG)	2010 - 2013
EPA Science to Achieve Results (STAR) Fellowship, <i>declined for GRFP & NDSEG</i>	2010
NASA Planetary Biology Internship (PBI) Award	2009
Karen T. Romer Undergraduate Research Assistantship, Brown University	2007

Publications

ORCID ID 0000-0003-1324-1578

13. **McCoy, SJ**, NA Kamenos, P Chung, JT Wootton, CA Pfister (2018), Altered crystal mineralogy in the California mussel on decadal and centennial scales in a changing ocean. In press, *Global Change Biology*. doi: 10.1111/gcb.14013
12. Pfister, CA, K Roy, JT Wootton, **SJ McCoy**, RT Paine, TS Suchanek, and ES Sanford (2016), Historical baselines and the future of shell calcification for a foundation species in a changing ocean, *Proceedings of the Royal Society, B*, 283: 20160392. doi 10.1098/rspb.2016.0392
11. **McCoy, SJ**, CA Pfister, G Olack, and AS Colman (2016), Diurnal and tidal patterns of carbon uptake and calcification in geniculate intertidal coralline algae, *Marine Ecology*, 37(3): 553-564. doi 10.1111/maec.12295
10. **McCoy, SJ**, S Allesina and CA Pfister (2016), Ocean acidification affects competition for space: projections of community structure using cellular automata, *Proceedings of the Royal Society, B*, 283: 20152561. doi 10.1098/rspb.2015.2561
9. Nunes, J, **SJ McCoy**, HS Findlay, F Hopkins, V Kitidis, AM Queirós, L Rayner, and S Widdicombe (2016), Two intertidal, non-calcifying macroalgae (*Palmaria palmata* and *Saccharina latissima*) show complex and variable responses to short-term CO₂ acidification, *ICES Journal of Marine Science*, 73(3): 887-896. doi 10.1093/icesjms/fsv081
8. **McCoy, SJ** and NA Kamenos (2015), Coralline algae (Rhodophyta) in a changing world: integrating ecological, physiological, and geochemical responses to global change, *Journal of Phycology*, 51:6-24.
7. **McCoy, SJ** and F Ragazzola (2014), Skeletal trade-offs in coralline algae in response to ocean acidification, *Nature Climate Change*, 4: 719-723.
• *Highlighted article in Nature Climate Change: News and Views*
6. **McCoy, SJ** and CA Pfister (2014), Historical comparisons reveal altered competitive interactions in a guild of crustose coralline algae, *Ecology Letters*, 17: 475-483.
5. **McCoy, SJ** (2013), Morphology of the crustose coralline alga *Pseudolithophyllum muricatum* (Rhodophyta, Corallinaceae) responds to 30 years of ocean acidification in the northeast Pacific, *Journal of Phycology*, 49(5): 830-837.
4. Garrard, SL, R Hunter, A Frommel, AC Lane, JC Phillips, R Cooper, R Dineshram, U Cardini, **SJ McCoy**, M Arnberg, BG Rodrigues Alves, S Annane, MR de Orte, A Kumar, G Aguirre-Martínez, RH Maneja, MD Basallote Sánchez, F Ape, A Torstensson, and MM Bjoerk (2013),

Ocean acidification: the next generation - a postgraduate perspective on research priorities, *Marine Biology*, 160: 1789-1805.

3. Pfister, CA, **SJ McCoy**, JT Wootton, PA Martin, AS Colman and D Archer (2011), Rapid environmental change over the past decade revealed by isotopic analysis of the California mussel in the northeast Pacific, *PLoS One*, 6(10): e25766.
2. **McCoy, SJ**, LF Robinson, CA Pfister, JT Wootton, and N Shimizu (2011), Exploring B/Ca as a pH-proxy in bivalves: relationships between *Mytilus californianus* B/Ca and environmental data from the northeast Pacific, *Biogeosciences*, 8: 2567-2579.
1. Russell, JM, **SJ McCoy**, D Verschuren, I Bessems, and Y Huang (2009), Human impacts, climate change, and aquatic ecosystem response during the past 2000 yr at Lake Wandakara, Uganda, *Quaternary Research*, 72(3): 315-324.

Manuscripts

14. **McCoy, SJ** and NA Kamenos. Coralline algal skeletal mineralogy affects grazer impacts. In preparation for *Global Change Biology*.
15. **McCoy, SJ**, CC Stepien and JT Wootton. Local movement of the intertidal chiton *Katharina tunicata* varies with grazer density among nearby populations. In preparation for *Ecology*.
16. **McCoy, SJ** and S Widdicombe. Effects of phenotypic plasticity and recent exposure on thermal tolerance. In preparation for *Journal of Ecology*.
17. **McCoy, SJ**, NA Kamenos and CA Pfister. Calibration of Raman metrics of shell chemistry with trace metal analysis in the calcitic mussel *Mytilus californianus*. In preparation for *Geology*.

Reports

AMAP (2013) AMAP Assessment 2013: Arctic Ocean Acidification. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. viii + 99 pp.

Research Grants

Florida State University First Year Assistant Professor Award, PI: SJ McCoy

05/17 - 08/17 \$20,000

Seagrasses as Chemical Ecosystem Engineers

EU FP7 Marie Curie International Incoming Fellowship, PI: SJ McCoy

04/14 - 08/16 €221,606.40

REAFCC - Response of Ecosystem Assembly and Function to Climate Change:

A multidisciplinary approach to understand community response to climate change in coastal rocky ecosystems

NSF Doctoral Dissertation Improvement Grant, DEB-1110412, PI: CA Pfister & SJ McCoy

05/11 - 05/13 \$14,968

Effects of Ocean Acidification on the Physiology and Species Interactions of Crustose Coralline Red Algae

Achievement Rewards for College Scientists (ARCS) Foundation, PI: SJ McCoy

10/11 - 10/13 \$20,000

Effects of Ocean Acidification on Coralline Algal Ecology

Small Grants (<\$10,000)

Early Career Travel Award, ASLO Aquatic Sciences Meeting (\$500)	2015
Graduate Student Affairs Travel Fund, The University of Chicago (\$750)	2014
Division of Biological Sciences Travel Award, The University of Chicago (\$500)	2012
Early Career Travel Support, Third Symposium on the Ocean in a High-CO ₂ World (\$500)	2012
The University of Chicago, Hinds Fund (\$1,800)	2011
Student Travel Award, Acidification in Aquatic Environments Workshop (\$1,250)	2011
Phycological Society of America, Grant-In-Aid of Research (\$1,200)	2010
Geological Society of America, Research Grant (\$3,123)	2010
The University of Chicago, Hinds Fund (\$1,200)	2010

Teaching

Certificate in University Teaching

The University of Chicago Center for Teaching & Learning 2013

Courses Developed and Taught, Florida State University

Experimental Biology Laboratory: Environmental and Ecological Physiology (Bio 3042L)
Fall 2016, 2017 Undergraduate course.

Ecophysiology (Bio 4933/5933)

Spring 2018 Advanced undergraduate lecture course co-listed for graduate enrollment.

Courses Developed, The University of Chicago

Topics in Aquatic Ecology: Macroalgal Phototrophs (EceV 42700) with C. Stepien, C. Pfister
Fall 2012 Graduate directed reading group.

Approaches to Teaching in the Darwinian Sciences (Evol 49401) with N. Block, M.

LaBarbera, Fall 2011 Advanced graduate course on teaching pedagogy - *developed with the University of Chicago Center for Teaching and Learning and faculty in the Dept. Ecology & Evolution and the Committee on Evolutionary Biology.*

Guest Lectures

Marine Ecology, Plymouth University, M. Brown, Autumn 2015
Teaching Assistant Training, University of Chicago, V. Prince, Fall 2013
Tropical Ecology: Biodiversity and Human Impacts, U. Chicago. E. Larsen, Winter 2013
Marine Ecology, University of Chicago, J.T. Wootton, Winter 2011

Graduate Teaching Assistant, The University of Chicago, 2009-2014

Population Ecology (Evol 42800) C. Pfister
Natural History of North American Deserts - Field School (Bios 13112) E. Larsen
Biodiversity (Bios 20198) M. LaBarbera
Tropical Ecology: Biodiversity and Human Impacts (Bios 13126) E. Larsen
Natural History of North American Deserts (Bios 13111) E. Larsen
Environmental Ecology (Bios 13107) T. Price
Approaches to Teaching in the Darwinian Sciences (Evol 49401) M. LaBarbera
Marine Ecology (Bios 23289) T. Wootton
Ecology and Evolution (Bios 20185) J. Coyne, G. Dwyer

Undergraduate Teaching Assistant, Brown University, 2006-2008

Introductory Chemistry (Chem 10) J. Lusk, S. Russo-Rodriguez
Equilibrium, Rate, and Structure (Chem 33) J. Doll, C. Rose-Petruck, R. Stratt

Advising and Mentorship

Doctoral Students Advised

Florida State University, Dept. Biological Science
Ethan Cissel ('23)
Joshua Manning ('23)
Abigail Engleman ('21; co-advised with Sandra Brooke)

Doctoral Students Mentored as a Dissertation Committee Member

Florida State University
Alexandra Hooks ('22, Advisor: Scott Burgess)
Brendan Scherer ('21; Advisor: Austin Mast)
Margaret Vogel ('21; Advisor: Tom Miller)

Plymouth Marine Laboratory (visiting students 2015 - 2016)
Chiara Ravaglioli (University of Pisa, Italy)
Visnu da Cunha Sarmiento (Universidade Federal de Pernambuco, Brazil)

University of Portsmouth (external committee member)
Regina Kolzenburg, Institute of Marine Sciences ('18 ; Advisor: Federica Ragazzola)

Masters Research Students Advised

Plymouth Marine Laboratory (co-advised by Murray Brown, Plymouth University)
Elizabeth Elliot (M.Sc. Environmental Consultancy Programme, Plymouth University '15)
Kirsten Seal (M.Sc. Applied Marine Science Programme, Plymouth University '15)

Masters Research Students Mentored as a Dissertation Committee Member

Florida State University

Katherine Kaiser ('17 ; Advisor: Janie Wulff)

Undergraduate Research Supervised (laboratory research, ° field research)*

Florida State University

Biological Science Honors Program, Advisor

Penelope Ales* ('17)

Environmental Science Honors Program, Outside Committee Member

Yuliya Danyuk ('17)

Plymouth Marine Laboratory

Faye Dixon*° (Lancaster University '16)

The University of Chicago

Allison Barner* ('09), Brendan Colson*° ('10), Michaelyn Kanichy° (Stanford '14),

Peter Zaykoski° ('11), Rachel Belangers* ('11), Samuel Betcher° ('12), Lyda Harris° ('14)

High School Students Supervised (laboratory research, ° field research)*

Florida State University Young Scholars Program

Natalie Bailey* (Oviedo High School '18), Carson Cole* (Space Coast High School '18)

Plymouth Marine Laboratory

Flora Christodoulou° (Eggbuckland Community College '15), Jacob Massey* (All Saints Academy '16)

Service

Steering Committee Member, NOAA Gulf of Mexico Ocean Acidification Network 2016 - present

Florida State University

Faculty Steering Committee: Southern Biogeochemistry Symposium at FSU, 2018

Research Faculty Search Committee: Coastal and Marine Laboratory, 2017, 2018 (Chair)

Co-organizer and presenter: NSF GRFP Workshop for Graduate Students, 2017

Advisor to Student Group: Seminole Scuba Club, 2017 - present

Mote Committee: Department of Biological Sciences, 2016 - present

Coastal and Marine Conservation Student Research Award Committee: Coastal and Marine Laboratory, 2016 - present

Elections Committee: Department of Biological Sciences, 2016 - 2017

Editorial Board

Frontiers in Marine Science, Global Change and the Future Ocean specialty

Review Editor

2016 - present

Reviewer

Acta Botanica Brasilica, African Journal of Environmental Science and Technology, The Biological Bulletin, Continental Shelf Research, Coral Reefs, Ecology, Ecology Letters, Frontiers in Marine Science, Geology, Global Change Biology, Journal of Experimental Marine Biology and Ecology, Journal of Phycology, Marine and Freshwater Research, Marine Biology, Marine Ecology Progress Series, Marine Environmental Research, Nature Ecology and Evolution, Palaeogeography, Palaeoclimatology, Palaeoecology (Palaeo3), PeerJ, PLoS One, Proceedings of the Royal Society, B, Science, and Scientific Reports.

External Reviewer

Arctic Monitoring and Assessment Programme (AMAP) Assessment on Ocean Acidification in the Arctic, 2018

Grant Reviewer

NSF (Biological Oceanography), NSF (Graduate Research Fellowship Program), ASEE NDSEG Fellowship (Biosciences), NOAA Domestic Coral Reef Conservation Grant Program, the National Geographic Society, and the Phycological Society of America.

Grant Review Panelist

ASEE NDSEG Fellowship (Biosciences) 2015 -

Community and Educational Outreach

Oasis Center for Women and Girls, Bio for the Win Science Blog, Chicago's Shedd Aquarium, ARCS Foundation, Chicago Council on Science and Technology (C²ST), the American Geophysical Union Climate Science Q&A Service, Nuffield Foundation Research Placements, UTC Plymouth Women in STEM, Chicago Museum of Science and Industry (Science Works: Cool Jobs, Hot Careers 2013), University of Chicago GeoUnion Undergraduate Club, Spark Chicago Career Mentor, Chicago's Shedd Aquarium (Shedd Explorers Summer Camp), Chicago Public Schools Perspectives Charter School, and the Boys' and Girls' Club of Greater Lawrence.

Meeting Session Organizer

'Scaling up individual processes to ecosystem levels in an era of global change,' Ocean Sciences Meeting, February 2014, Honolulu, HI

Talks and Seminars

Research Seminars

2017 Biological Sciences Postdoctoral Association, Florida State University, Tallahassee, FL
Tri-Beta Biological Honor Society, Florida State University, Tallahassee, FL

2016 Coastal & Marine Laboratory, Florida State University, St. Teresa, FL
Department of Zoology, Oxford University, Oxford, England

- Marine Alliance for Science & Technology Scotland, Webinar
 Scottish Association for Marine Science, Oban, Scotland
- 2015 School of Marine Science & Engineering, Plymouth University, Plymouth, England
 GEOMAR Helmholtz Centre for Ocean Research, Kiel, Germany
 School of Geographical and Earth Sciences, Univ. Glasgow, Glasgow, Scotland
 Department of Biological Science, Florida State University, Tallahassee, FL
- 2014 Department of Integrative Biology, The University of Texas at Austin, Austin, TX
 Plymouth Marine Laboratory, Plymouth, England
 School of Biology, Georgia Institute of Technology, Atlanta, GA
 Climate Change Forum, The Field Museum, Chicago, IL
 Department of Ecology & Evolutionary Biology, University of Michigan, Ann Arbor, MI
- 2013 John G. Shedd Aquarium, Chicago, IL
- 2009 PaleoLunch Series, Woods Hole Oceanographic Institution, Woods Hole, MA

Conference Presentations (First Author)

- 2016 Gordon Research Conference, Classifying Biotic Responses to a Rapidly Changing Ocean: From Genes to Ecosystems, Waterville Valley, NH (*Invited Speaker*)
 Western Society of Naturalists, Monterey, CA (*Invited Speaker*)
 The IXth International Symposium on Inorganic Carbon Utilization by Aquatic Photosynthetic Organisms, Cambridge, England
- 2015 Aquatic Biodiversity and Ecosystems, Liverpool, England
 Aquatic Sciences Meeting, Granada, Spain
- 2014 Ecological Society of America 99th Annual Meeting, Sacramento, CA
 Ocean Sciences Meeting, Honolulu, HI
- 2013 International Phycological Congress / Phycological Society of America, Orlando, FL
 • *Harold C. Bold Award for Best Student Presentation*
- 2012 Third Symposium on the Ocean in a High-CO₂ World, Monterey, CA
 Ecological Society of America 97th Annual Meeting, Portland, OR
- 2011 Fall Meeting of the American Geophysical Union, San Francisco, CA
 • *Outstanding Student Paper Award, Ocean Sciences Section*
 Workshop on Acidification in Aquatic Environments, Tromsø, Norway
- 2010 Ocean Sciences Meeting, Portland, OR
- 2009 Fall Meeting of the American Geophysical Union, San Francisco, CA