

Alice Marie Carter

PhD Candidate, Department of Biology
French Family Science Center 3304, Science Dr.
Duke University, Durham, NC 27708
(801)-910-8739
alice.m.carter@duke.edu

Education

Duke University , Durham, NC	PhD. in Ecology	2016-present
Northwestern University , Evanston, IL	B. A. in Integrated Science, Mathematics and Geology	2012
Marine Biological Laboratory , Woods Hole, MA	Semester in Environmental Science	2010

Professional Appointments

Ph.D. Student, Department of Biology, Duke University Advisors: Dr. Emily S Bernhardt, Dr. Jim B Heffernan	2016-present
Research Assistant, Oceanic Flux Program, Bermuda Institute of Ocean Sciences and Marine Biological Laboratory, Woods Hole, MA	2014 – 2016
Research Assistant, Toolik Lake Long Term Ecological Research Station, Alaska	2013, 2014
Teaching Assistant, Semester in Environmental Science Program, Marine Biological Laboratory, Woods Hole, MA	2012, 2013

Grants, Fellowships and Awards

Duke University Preparing Future Faculty Fellow	2020
Duke University Environmental Impact Fellow	2019
Duke University Wetland Center Graduate Student Research Grant (\$2,425)	2019
Duke Data Expedition (\$1,500)	2019
Data+ Duke Big Data Initiative (\$12,500)	2019
Duke Biology Grant in Aid of Research (\$1,000; \$1,000)	2019, 2018
CUAHSI Instrumentation Discovery Travel Award (\$1,000)	2018
Duke University Summer Research Funding (\$5,500; \$5,500)	2018, 2017
American Meteorological Society First Year Graduate Fellowship (\$25,000)	2016
Seymour Schlanger Memorial Award for Excellence in Earth and Planetary Sciences, Northwestern University	2012
<i>Phi Beta Kappa</i> , Northwestern University	2012
Initiative for Energy and Sustainability at Northwestern University Undergraduate Research Grant (\$1,000)	2012
Woods Hole Oceanographic Institution Summer Student Fellowship (\$5,000)	2011
Mathematics Sterling Scholar, Utah State Winner	2008

Publications

- Carter, A.M.**, Blaszcak, J.R., Heffernan, J.B., Bernhardt, E.S. Dynamic oxygen regimes and prevalent hypoxia throughout a river network in the NC Piedmont. *Limnology and Oceanography* (Accepted)
- Conte, M.H., **A.M. Carter**, D. Koweeck, S. Huang, J.C. Weber, 2019. The elemental composition of deep particle flux in the Sargasso Sea. *Chemical Geology* 511, 279-313.
- Beddows P.A., J. Glover, D. Rissolo, **A.M. Carter**, R. Jaijel, D.M. Smith, and B. Goodman-Tchernov, 2016. The Proyecto Costa Escondida: Recent interdisciplinary research in search of freshwater along the North Coast of Quintana Roo, Mexico. *WIREs Water*, 3 (5): 749-761.
- Carter A.M.**, 2012, Vista Alegre: A multiproxy environmental reconstruction from sediment cores. Undergraduate Senior Honors Thesis, Northwestern University. (Advisor: Patricia A. Beddows)

Invited Talks and Seminars

- Carter A.M.**, Blaszcak JR, Moore E, Doyle M, Helton, AM, Heffernan JB, Bernhardt ES. The Prevalence of Hypoxia in River Networks and the Role of Not So Dead Zones in Element Cycling. Society for Freshwater Science 2019. May 20-23; Salt Lake City, UT.

Contributed Talks and Posters

- Carter A.M.**, ES Bernhardt. Do Pools Respire More? Longitudinal Metabolism in a Low-Flow Stream. Society for Freshwater Science 2020. June 9-19; Online. (Poster)
- Carter A.M.**, Blaszcak JR, Moore E, Doyle M, Heffernan JB, Bernhardt ES. Lentic Rivers, Dark Energy, and Dead Zones: Emerging Insights into Southeastern River Networks in the Anthropocene. American Geophysical Union 2018. Dec 10-14; Washington DC. (Oral)
- Carter A.M.**, Ulseth A, Koenig L, Heffernan JB, Bernhardt ES. To Model or To Measure: the challenges of constraining gas evasion estimates for accurate estimation of whole-stream metabolism. Society for Freshwater Sciences 2018. May 20-24; Detroit, MI. (Poster)
- Carter A.M.**, Heffernan JB, Bernhardt ES. The Contribution of Dark Metabolism to Stream Ecosystem Energetics. Society for Freshwater Sciences 2017. Jun 4-8; Raleigh, NC. (Poster)
- Carter A.M.**, Bernhardt ES, Heffernan JB. Anaerobic Metabolic Processes in Streams. American Meteorological Society 2017. Jan 22-26; Seattle, WA (Poster)
- Carter A.M.**, Conte MH, Weber J, Shaw L. Phosphorus Phase Associations in the Deep Ocean Particle Flux in the Sargasso Sea. Ocean Sciences 2016. Feb 22-26; New Orleans, LA. (Poster)
- Carter A.M.** and Beddows PA, Holocene Sea-level and Paleo-evaporation Record from the Maritime Maya Port City of Vista Alegre, Yucatan Peninsula. Geological Society of America 2012 Nov 4-7; Charlotte, NC. (Poster)
- Carter A.M.** Controls on Particle Export from the West Antarctic Peninsula, Woods Hole Oceanographic Institute REU Symposium. Aug 2011; Woods Hole, MA. (Oral)

Carter A.M. Microbial Community Productivity and Diversity as Responses to pH Oscillation Frequency. Marine Biological Laboratory Semester in Environmental Science Symposium. Dec 2010; Woods Hole, MA. (Oral)

Skills and Training

Languages and Software: R (lme4, StreamMetabolizer, LakeMetabolizer, nhdplustools, dataRetrieval, Shiny), JAGS, Git/GitHub, Matlab, Google Earth Engine, Bash, Mathematica

Relevant Coursework:

Modeling: Bayesian Inference in Env. Models, Applied Differential Equations in Env. Science, Ecological Modeling, Ecological Forecasting, Watershed Hydrology, Time Series Analysis

Mathematics: Probability and Statistics, Complex Analysis and Group Theory, Fourier Analysis and Boundary Value Problems, Mechanics for Mathematicians, Abstract Algebra, Non-Euclidian Geometry, Multivariate Calculus, Linear Algebra

Ecology: Biogeochemistry, Advanced River Processes, Ecology Graduate Seminar

Teaching and Mentoring

Invited Lecturer, ENV 102 Duke University	2020
Graduate Teaching Assistant Field Ecology at Duke University	2019, 2018
Data Expedition Leader Duke University Undergraduate data science class	2019
Data+ Mentor Duke University Data Science ten-week summer program for Masters and Undergraduate Students	2019
Math Circle at UNC Mentor for Elementary to Middle School Students at Advanced afterschool mathematics program.	2018
GALS program Founder Summer outdoor science and leadership program for underserved high school girls, <i>Durham, NC</i> . As one of the founders I developed logistics and lesson plans and served as a group leader for the two-week pilot program.	2018, 2017
Women in Mathematics Program Mentor. Direct mentoring of 8 th grade girls Durham Public Schools, <i>Durham, NC</i> .	2017
FEMMES Teacher Public Elementary School STEM outreach, <i>Durham, NC</i> .	2017
Professional Teaching Assistant, Marine Biological Laboratory, <i>Woods Hole, MA</i> Semester in Environmental Science Program.	2013, 2012
Math Teacher and Counselor, MathPath Summer Camp, <i>St. Paul, MN</i>	2010

Teaching Coursework: College Teaching & Visual Communication, College Teaching and Course Design, Fundamentals of College Teaching

Students Mentored

2019 Wyatt Jernigan – Duke University Undergraduate Researcher

2014 Leonard Shaw – Metcalf undergraduate summer fellow at MBL

Service

University Program in Ecology Executive Committee, PhD Student Rep.	2017-2019
Ecology Symposium Coordinator, Duke University	2018, 2016
Duke River Center Chalk Talk Coordinator	2018-2019
Graduate Afternoon Seminar Series Coordinator, Nicholas School for the Environment, Duke University	2017-2018

Certifications

Certificate in College Teaching, Duke University	(in progress)
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