

Kaleigh Davis

University of British Columbia
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Curriculum Vitae

Education

2017 - present: PhD Student, Zoology Department, University of British Columbia
Faculty Advisor: Dr. Mary O'Connor

2011 - 2015: B.S. Ecology, Odum School of Ecology, University of Georgia

2011 - 2015: B.S. Biology, Franklin College of Arts and Sciences, University of Georgia

Undergraduate Honors Thesis: *The effects of salinity on the temporal and spatial variability of the oyster-boring sponge, cliona sp.*

Faculty Advisor: Dr. Jeb Byers

PhD Research

O'Connor Lab, Zoology Department, UBC

- Incorporating biological nitrogen fixation into the metabolic theory of ecology
 - I use ecological theory in combination with lab and field experiments to study how temperature affects biological nitrogen fixation and downstream consequences for aquatic community structure and function. I look for generality in these temperature signals across ecosystems and biological scales.
- Assessing eelgrass ecosystem health in James Bay, Quebec
 - I use field surveys and experiments to study drivers of eelgrass ecosystem degradation over the past four decades in James Bay, Quebec. I work on a collaborative team with scientists from all over Canada and local Cree experts to understand the current abundance and distribution as well as the capacity for eelgrass recovery in the Bay.

Ocean Leaders Fellowship Program, UBC

- 09/2017 - Present: Understanding the marine impacts of university plastic consumption
 - I combine plastic consumption data with information on local waste management practices to develop waste reduction strategies that are appropriate to an institution or municipality's practices and capacity.

Peer-reviewed Publications

ORCID: 0000-0002-3127-9484

* undergraduate mentee

- **Davis KE**, Beaty, F, *Sanchez, C. 2021. A flexible risk assessment framework for marine plastic pollution based on waste management and ecological impact data. *Marine Policy*. (submitted to *Marine Policy*)
- Mason CM, Goolsby EW, **Davis, KE**, Bullock, DV, Donovan LA. 2017. Evolution of biomass allocation and flowering time with environment, growth form, and leaf economics across Helianthus. *Annals of Botany* 119 (7), 1131-1142.
- Mason CM, Patel, H, **Davis, KE**, Donovan, LA. 2017. Evolution of floral architecture across the wild sunflowers (Helianthus). *Plant Ecology and Evolution* 150 (2), 139-150

Selected Oral Research Presentations

- **Davis, KE**. The Ecology of Eelgrass in James Bay, Quebec. 2019. *Western Society of Naturalists, Ensenada, Baja California, Mexico*.
- **Davis, KE**, Beaty, F. UBC's plastic in the ocean. 2018. *Zero Waste Action Committee Meeting, UBC*.
- **Davis, KE**, Beaty, F. UBC's Plastics -- A short path to the ocean. 2018. *Making Waves Community Event, Vancouver, British Columbia, Canada*.
- **Davis KE**, Harris RD, Byers, JE. Sponge colonization across varying salinity regimes. 2015. *Center for Undergraduate Research Opportunities Symposium, Athens, Georgia, USA*.

Service to the Academic Community

Reviewer for peer-reviewed journals

- PNAS, Dec 2020 (1)

Departmental Committee Service

- July 2020 - Present: Zoology Equity, Diversity, and Inclusion Committee: member

Western Society of Naturalists

- 07/2018 - 11/2020 : Western Society of Naturalists Secretariat
 - Managed website and registration database for 2018, 2019, and 2020 meetings (total ~2000 participants)
 - Managed conference schedule, registrant correspondence, and organization

UBC Conservation Discussion Group

- 07/2018 - present: Co-founder and organizer
 - Organize weekly sessions to discuss current and classical conservation

literature (consistent participation from seven departments at UBC)

- Coordinate guest speakers
- Co-organized two mini-conferences with UBC Conservation Initiative (led by Dr. Claire Kremen), which featured Conservation work conducted in the Biodiversity Research Centre at UBC (2020)

Selected Poster Research Presentations

- **Davis, KE**, O'Connor, MI. Metabolic Theory and Resource Supply. 2017. *Zoology Graduate Student Research Symposium, Vancouver, BC*. (2nd Place)
- **Davis, KE**, Beaty, F. UBC's Plastics -- A short path to the ocean. 2018. *Zero Waste Food Ware Strategy Consultation Event, UBC, Vancouver, BC*. Invited Presentation.
- Kerr, KL, **Davis, KE**, Temme, AA, Donovan, LA. Physiological insights to low nutrient stress resistance using cultivated sunflower. 2016. *UGA Plant Center Conference, Helen, GA*. (1st place)
- **Davis KE**, Harris RD, Byers JE. 2015. Sponge colonization across varying salinity regimes. *Odum School of Ecology Graduate Student Symposium, Athens, GA*.
- **Davis KE**, Mason CM, Donovan, LA. 2014. Evolution of flowering time and disc color across the genus *Helianthus*. *Society for the Study of Evolution Conference. Raleigh, NC*.
- **Davis KE**, Mason CM, Donovan LA. 2014. Evolution of flowering time across the genus *Helianthus*. *Department of Plant Sciences Graduate Student Symposium. Athens, GA*. (2nd Place)
- **Davis KE**, Mason CM, Donovan LA. 2014. Evolution of flowering time across the genus *Helianthus*. *Center for Undergraduate Research Symposium. Athens, GA*.

Media Interviews

- **Ryan Jespersen Morning Show**. Alberta, CA. July 2018. Ocean Plastics.
- **City TV interview**. Vancouver, BC, CA. March 2018. Ocean Plastics.
- **CBC The Early Edition**. Vancouver, BC, CA. March 2018. Ocean Plastics.

Relevant Conferences and Workshops Attended

- Gordon Research Conference: Unifying Ecology Across Scales. Conferee. July 2018. *University of New England, Biddeford, ME*.
- GLOBE Forum. Youth Leadership Delegate. March 2018. *Simon Fraser University, Vancouver, BC*.
- Collective Leadership Workshop, Leopold Program. October 2017. *UBC*,

Vancouver, BC.

- BioTAP: General Teaching Assistant. Teaching Workshop. September 2017. *UBC, Vancouver, BC.*
- BioTAP: Reflection and Improvement. Teaching Workshop. April 2018. *UBC, Vancouver, BC.*

Grants, Awards, and Honors

- Ocean Leaders Graduate Fellowship: 4 year funding fellowship for graduate research at UBC; total value \$45000 (2017)
- NSF GRFP Honorable Mention (2016)
- Zell Miller Scholarship (2011-2015)
- Graduation with Honors (UGA 2015)
- Dean's List (UGA 2011, 2013)

Undergraduate Students Mentored

- **Carolina Sanchez, University of British Columbia, 2018-2019:** I co-supervised Carolina with another graduate student in the Biodiversity Research Centre on our ocean plastics policy project. We secured funding for Carolina through the Ocean Leaders Fellowship.
- **Rebekah Davis, University of Central Florida, 2017-2019:** I directly supervised Rebekah during my employment as lab manager at UCF (2017) as she helped me develop methods for a new project. I now co-supervisor her with Dr. Chase Mason as she pursues her Undergraduate Honors Thesis on a follow-up project.

Courses Taught (Teaching Assistant)

- Biol 402: Aquatic Ecology (UBC, 2020)
- Biol 406: Methodological Ecology (UBC, 2019)
- Biol 306: Advanced Ecology (UBC, 2017)
- Biol 345: Human Ecology (UBC, 2018)
- Bio 1104: General Biology for non-science majors (UGA, 2014)

Research Interests

- Nutrient cycling and ecosystem function
- Marine phytoplankton community composition
- Metabolic theory of ecology
- Science communication and policy
- Conservation biology/ecology

Other Authorship

- Athens Science Observer-- Staff writer (2016-2018)
 - <https://athensscienceobserver.com/tag/kaleigh-davis/>

Other Academic Positions Held

Mason Lab, Biology Department, University of Central Florida

- January 2017-August 2017: Lab Manager
 - Purchasing and managing laboratory equipment and supplies
 - Building a library of reference standards for micellar electrokinetic chromatography Plant husbandry and managing greenhouse studies
 - Supervising and mentoring undergraduate researchers

Donovan Lab, Department of Plant Biology, UGA

- March 2016- December 2016: Research Technician
 - Setup and conducted extensive field and greenhouse studies
 - Organized and executed large scale data collection for field and greenhouse studies
 - Managed and analyzed large data sets (Excel, R, JMP)
 - Trained and mentored undergraduate students
- May 2013-July 2014: Undergraduate Research Student
 - Investigated evolution of flowering time in sunflowers (Two publications in progress)
 - Collected and analyzed qualitative and quantitative data
 - Extensive training in statistical data analysis using JMP
- May 2015- August 2015: Undergraduate Laboratory Assistant
 - Collected data for projects pertaining to sunflower leaf economic spectrum (LES) and metal hyperaccumulation

Byers Lab, Odum School of Ecology, UGA

- August 2014- August 2015: Research Student
 - Developed a project investigating the relationship between salinity regime and sponge density in intertidal oyster reef systems
 - Performed all statistical analyses on field and lab data (JMP, Excel)
 - Honors Senior Thesis: *The Effects of Salinity on the Spatial and Temporal Variability of the Oyster-Boring Sponge, Cliona sp.* (2015)
- July 2014-August 2014: Research Assistant (St. Catherine's Island, GA)
 - Set up extensive manipulative field experiment across multiple sites; processed samples and data