Lyda Harris
Curriculum Vitae

Education

Ph.D.
University of Washington, 2020
Department of Biology with a concentration in public policy, advised by Dr. Emily Carrington
Dissertation: *Marine microplastic pollution: An interdisciplinary approach to understanding the effects on organisms, ecosystems, and policy*

B.A. with Honors
University of Chicago, Biological Science, 2014

Research Interests

Marine Ecology – Organism responses, population dynamics, and competitive interactions of mussels and the surrounding intertidal communities under anthropogenic stressors, specifically increasing levels of microplastics.

Microplastic Contamination – Quantifying microplastic contamination in the Salish Sea to identify if an urban gradient exists and if contamination levels in mussels, water, and sediment are related.

Policy – Understanding how marine microplastic pollution research and plastic public policy has grown and spread over the past decade.

Experience

Microplastic Postdoctoral Fellow, Seattle Aquarium, Seattle WA. 2020-Present.

- Expand the organization's microplastic program through creating new partnerships, applying for grants and funding from government, foundation, and private entities, and building relationships with collaborators.
- Develop new projects based on scientific and community need as well as the Aquarium's capacity. New projects include field monitoring across 10 sites, sediment sampling, vertical transport assessment, and sea otter trophic transfer.
- Incorporate and implement rigorous laboratory techniques including quality control and assurance.
- Write and publish scientific papers, white papers, blog posts, and general-audience material.
- Attain external funding through grants, private donations, and organizations.

Research Fellow, Dr. Emily Carrington, University of Washington, Seattle, WA 2017-2020.

- Conducted field and laboratory research on marine mussels, microplastics, color spectra in the intertidal, biomechanics, and ocean change.
- Mentored more than 10 undergraduates in independent research projects, often culminating in a presentation at the Undergraduate research symposium.

- Wrote and published scientific papers, white papers, blog posts, and general-audience material.

Teaching Assistant, University of Washington, Seattle, WA, 2015-2020

- Teach discussion and laboratory sections for more than 600 students. Courses include: *Introductory Biology , Foundations in Physiology, Limnology, Marine Ecology, Invertebrate Zoology, Ecosystem Function of the San Juans, Foundations in Ecology, Civilization Biology.* See teaching section for more information.

Metcalf Fellow, Dr. Roger Hanlon, Marine Biological Laboratories, Woods Hole, MA, 2014.

- Video analyses of field behavior and color change in a variety of fishes; emphasis on the speed of change of coloration.
- Live animal experiments and observations of flounder rapid adaptive coloration.
- Morphological characterization of fish chromatophores using a variety of photographic, histological and microscopy techniques.

Research Scientist, Dr. Mark Westneat and Dr. Justin Grubich, Department of Organismal Biology and Anatomy, University of Chicago and Fishes Division, Field Museum of Natural History, Chicago, IL, 2013-2014.

- Lionfish (*Pterois volitans and P. miles*) metadata measurement and analysis.
- Kinematics profile of lionfish (*P. volitans*) through high speed video and computational analysis in ImageJ.
- Georeference historic fish collections around the world and map onto a single interface.

Teaching Assistant, University of Chicago, Chicago, IL, 2013-2014

- Teach discussion and laboratory sections for *Core Biology* and *Natural History of North American Deserts.* See teaching section for more information

Research Assistant, Dr. Stephen Pruett-Jones Laboratory, Department of Ecology and Evolution, University of Chicago, Chicago IL, 2013.

- Preformed literary research, data analysis, and data summaries of various bird species.
- Compiled life histories of parrots found in US.

Laboratory Assistant, Dr. Cathy Pfister and Dr. Tim Wootton, Department of Ecology and Evolution, University of Chicago, Chicago, IL, 2012.

- Prepared and compile data sets from summer field season.
- Prepared plankton and algal samples for composition testing.

Field Assistant, Dr. Cathy Pfister and Dr. Tim Wootton, Department of Ecology and Evolution, University of Chicago, Sekiu and Tatoosh Island, WA, 2012.

- Measured oceanic pH levels, algal growth, competitive interactions, and nitrogen fixation in community plots as well as in small oxygen tight chambers. Work was done in intertidal, surface waters, and subtidal environments.
- Researched in remote intertidal mainland and isolated island sites as well as offshore deep water sites accessed by boat.
- Field work review published in New York Times; *Scientists Adopt Tiny Island as a Warming Bellweather*, Oct 6, 2012.

Project Management

Supervise high school students in science fair research, Virtual, 2021

Supervise Microplastic Volunteers, Conservation Programs and Partnerships, Seattle Aquarium, Seattle, WA, 2020-Present.

Lead the Marine Microplastics Program, Seattle Aquarium, Seattle, WA, 2020-Present.

Organized and hosted the second annual Pacific Northwest Microplastic Workshop at the Seattle Aquarium, Virtual, 2021.

Supervise Plastic Tides Global Youth Mentor Program, Virtual, 2020-2021
John Abad, Lima, Peru; Naomi Sladkus, NYC, USA.

Supervise undergraduate researcher projects, University of Washington, 2016-2020.

Department of Biology, 2017-2020

- Wasfia Hoque; *Spectral properties of intertidal organisms: Reflections on the role of color.*
- Harsimran Gill; *Microplastic changes the sinking and resuspension rates of marine mussel biodeposits.*
- Jackson Fennell; *Spatial-temporal growth, distribution, and diffusion of marine microplastic research and national plastic policies.*
- Nell Baumgarten; *Polymer analysis of marine debris in the Salish Sea using RAMAN spectroscopy.*
- Louise Sutters; *Determining the distribution of microplastic in the Salish Sea.*
- Claire Hutchinson; *Is there a diffusion pattern of published marine microplastic research from 2008-2018?*
- Anthony Abruzzini; *Do marine microplastic publications influence public awareness?*

Friday Harbor Laboratory, 2016 - 2017

- Diana Dimarco, Seattle University. *The effect of microplastic and silt on the clearance rate of marine mussels.*
- Jalene Weatherholt; *Microplastic's effect on marine mussel fecal matter and its integration into the coastal food chain.*

Scientific Conference Presentations

Society of Environmental Toxicology and Chemistry, North America, Virtual, 2021.

Western Society of Naturalists, Virtual, 2021.

Pacific Northwest Microplastics Workshop, Seattle Aquarium, Virtual, 2021.

Western Society of Naturalists, Virtual, 2020.

Ocean Sciences Meeting, San Diego, CA, 2020.

American Association for the Advancement of Science (AAAS), Seattle, WA, 2020.

Best Student Talk, Ecosystem Ecology, Western Society of Naturalists, Ensenada, Mexico, 2019.

Pacific Coast Shellfish Growers Association, Portland, OR, 2019.

Graduate Student Symposium, University of Washington, Seattle, WA, 2019.

Western Society of Naturalists, Tacoma, WA, 2018.

Pacific Coast Shellfish Growers Association, Blaine, WA, 2018.

WRC NOAA Open House, Seattle, WA, 2018.

Graduate Student Symposium, University of Washington, Seattle, WA, 2018.

Society of Integrative and Comparative Biology, San Francisco, CA, 2018

Graduate Student Symposium, University of Washington, Seattle, WA, 2017.

Graduate Climate Conference, Pack Forest, WA, 2016.

Metcalf Fellowship Symposium, Marine Biological Laboratory, Woods Hole, MA, 2014.

Invited Talks

Tide Talk for Aquarium Volunteers, Seattle Aquarium, WA, Virtual, 2021.

Ocean Career Series, Seattle Aquarium, WA, Virtual, 2021.

Guest Lecture, Civilization Biology, University of Washington, WA, Virtual, 2021.

Guest Lecture, Marine Conservation, University of California Irvine, Masters in Conservation and Restoration Science, Virtual, 2021.

Marine Resource Commission, Northwest Straits Alliance, 2021.

TedxUW Talk, "The Microplastic Problem,"*, 2020.

Volcan Mountain Foundation Invited Lecture, San Diego, CA, 2019.

Marine Debris Workshop, NOAA, 2018.

Guest Lecture, Foundations in Ecology, University of Washington, WA, Winter Quarter 2018.

Plastic pollution in local waters, Plastic pollution workshop, Seattle, WA, 2018.

**Cancelled due to COVID-19*

Public Outreach

Volunteer with Puget Soundkeepers in their Clean Parks and Waters program, 2021

Action Network Speaker Series on Plastic, Chautauqua Elementary School, 2020

Seattle Children's Film Festival, 2019

Science Writer, "Sea to Source," Educurious, National Geographic, 2019

Marine Debris, Pint Sized Science, Puget SoundKeepers, 2018

Winner, Seattle Science Slam #14, Seattle, WA, 2018.

Ignite talk, MADart Gallery, Seattle, WA, 2018.

Media

Interview, KNXK (NPR), Bellemy Pailthorp, Radio, 2021.

Human Elements, Season 2, KCTS/PBS, Sarah Hoffman, 2021.

Microplastics and mussel poops, Tide Bite Newsletter, Friday Harbor Laboratories, 2021. https://depts.washington.edu/fhl/tidebites/Vol95/index.html

What are microplastics and why are they a problem? Right as Rain by UW Medicine, 2020. https://rightasrain.uwmedicine.org/well/health/microplastics

Tiny Plastics, Big Problems, University of Washington Arts and Sciences Newsletter, 2019. https://artsci.washington.edu/news/2019-10/tiny-plastics-big-problems

Publications

Harris, L. S. T., J. Fennell, R. J. Fales, and E. Carrington. 2021. *Spatial-temporal growth, distribution, and diffusion of marine microplastic research and national plastic policies.* Water, Air, and Soil Pollution. doi: 10.1007/s11270-021-05352-4

Harris, L. S. T., L. LaBeur, A. Olsen, A. Smith, L. Damazo, J. Van Brocklin, E. Pederson, S. Brander, and S. Larson. 2021. *Temporal variability of microplastics under the Seattle Aquarium, WA: Documenting the global Covid-19 pandemic.* Environmental Toxicology and Chemistry. In Press. doi: 10.1002/etc.5190

Harris, L. S. T., H. Gill, and E. Carrington. 2021. *Microplastic changes the sinking and resuspension rates of marine mussel biodeposits.* Marine Pollution Bulletin. doi: 10.1016/j.marpolbul.2021.112165

Harris, L. S. T. and E. Carrington, 2019. *Impact of microplastic vs natural abiotic particles on the clearance rate of a marine mussel.* Limnology and Oceanography. Special Issue: Microplastics in marine and freshwater organisms. doi: 10.1002/lol2.10120

Harris, L. S. T., S. Phan, D. DiMarco, C. Lombcome, J. Padilla-Gamino, and E. Carrington. In review. *Microplastic contamination of mussels along an urban gradient in the Salish Sea, WA.*

In-preparation manuscript – La Beur, L., **L. S. T. Harris**, J. Masura. *Literature review of micro-debris and microplastic research in the Salish Sea, WA.*

In-preparation manuscript – **Harris, L. S. T.,** W. Hoque, E. Carrington, S. Moore, B. Helmuth, C. Harley. *Spectral properties of intertidal organisms: Reflections on the role of color.*

Fellowships, Awards, and Honors

Honorable Mention, AIBS Emerging Public Policy Leadership Award, 2020.

Nominee, Excellence in Teaching, University of Washington, Seattle, WA, 2020.

Kathryn C. Hahn Writing Fellowship, Department of Biology, University of Washington, Seattle, WA, 2019.

Best Student Talk, Ecosystem Ecology, Western Society of Naturalists, Ensenada, Mexico, 2019.

Travel Award, $500, Department of Biology, University of Washington, Seattle, WA, 2019.

WRF Hall Endowment for Graduate Student Excellence in Biology. Department of Biology, University of Washington, Seattle, WA, 2019.

Edmonson Award, $2000, Department of Biology, University of Washington, Seattle, WA 2019.

Friday Harbor Laboratories Research Award, $800. University of Washington, Friday Harbor, WA, 2019.

Robert T. Paine Experimental and Field Ecology Endowed Fund, Department of Biology, University of Washington, Seattle, WA, 2019.

Edmonson Award, $3000, Department of Biology, University of Washington, Seattle, WA 2019.

Resident scientist for the Marjorie and Joseph Rubenson Endowment for Art and Science on Volcan Mountain, $2000, Volcan Mountain, CA, 2019.

Carrington Travel Grant, $400, Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, 2018.

Pamela Roe Graduate Student Endowed Fellowship, $2000, Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, 2018.

Wingfield/Ramenofsky Award, $700, Department of Biology, University of Washington, Seattle, WA, 2018.

Edmonson Award, $3500, Department of Biology, University of Washington, Seattle, WA 2018.

Friday Harbor Laboratories Research Fellowship, $450, Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, 2017.

Carrington Travel Grant, $600, Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, 2017.

Strathmann Fellowship, $1400, Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, 2017.

Washington SeaGrant Fellowship, Carrington and Friedman No. NA14OAR4170078, University of Washington, Friday Harbor, WA 2016

Strathmann Fellowship, $4000, Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, 2016.

Edmonson Award, $3500, Department of Biology, University of Washington, Seattle, WA, 2015.

Metcalf Fellowship, granted by University of Chicago to work at Marine Biological Laboratory, Woods Hole, MA, 2014.

Dean's List, University of Chicago, Chicago, IL, 2011, 2013, and 2014.

Teaching Experience

Teaching Assistant, Laboratory and Discussion Leader, Department of Biology, University of Washington, WA, 2015-2020.

Civilization Biology, Dr. Ben Wiggins, 2018-2020.

Foundations in Ecology, Dr. Hilary Hayford, 2018.

Marine Ecology, Dr. Jennifer Ruesink, 2017.

Introduction to Biology, Dr. Fredrick Dooly, Dr. Jake Cooper, Dr. Scott Freeman, 2015-2017.

Limnology, Dr. Daniel Schindler, 2016, 2018.

Foundation of Physiology, Dr. Michael Kennedy, 2016, 2018, 2019.

Laboratory Instructor, Friday Harbor Laboratories, University of Washington, WA, 2017

Pelagic Ecosystem Functions of the San Juan Archipelago, Dr. Jan Newton, Dr. Matt Baker, Dr. Rebecca Guenther, 2017.

Marine Invertebrate Zoology, Dr. Gustav Paulay and Dr. Peter Funch, 2017.

Teaching Assistant and Laboratory Instructor, Department of Ecology and Evolution, University of Chicago, IL, 2013-2014.

Natural History of North American Deserts, Dr. Eric Larsen, 2014.

Core Biology, Dr. Beatrice Fineschi, 2013-2014.

Additional Work Experience

Field Technician and Art Director, Harris Environmental Group Inc. Tucson, AZ, 2012-2015.
Conducted field work on wetlands and desert habitats. Organized and selected photos and media.

Barista, Ex libris Coffee Shop, University of Chicago. Chicago, IL, 2011-2014.
Prepared espresso and coffee drinks in the University library.

Independent Tutor, Math Tutor, Tucson AZ, 2010-2012.
Prepared students for high school math classes and standardized tests.

Relevant Skills

Project management: Grant writing, database management, scientific publications, project development

Field and Laboratory Techniques: Environmental sampling, organism collection, certified PADI open water SCUBA, kayaking, RAMAN and FTIR spectroscopy, high speed filming, photo analysis, fish tagging, and marine vertebrate and invertebrate animal care.

Computer: Microsoft Office Suite, R (programming and statistics), ImageJ, Adobe Illustrator.

Language - Intermediate Spanish level

Social Butterfly – Organize happy hours, recruitment events, invertebrate balls, and class trips

Jam connoisseur – First place & people's choice for blackberry jam at the San Juan County Fair 2017, 2018

Arts and Materials Work - Woodwork, digital media, digital film, digital and film photography, oil painting