

## HEILI E. LOWMAN

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### EDUCATION:

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- 2020 Ph.D. Ecology, Evolution, and Marine Biology. University of California Santa Barbara.
- 2012 B.A. Chemistry, French and Francophone Studies. Vassar College.

### PROFESSIONAL EXPERIENCE:

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- 2021-*present* Postdoctoral Scholar. Department of Natural Resources and Environmental Science. University of Nevada, Reno (UNR).
- 2020-2021 Scientist. Department of Biology. Southern California Coastal Water Research Project (SCCWRP).
- 2015-2020 Graduate Researcher. Santa Barbara Coastal Long Term Ecological Research (LTER) Project. University of California Santa Barbara (UCSB).
- 2016-2019 Teaching Assistant. Department of Ecology, Evolution, and Marine Biology (EEMB); Bren School of Environmental Science and Management. UCSB.
- 2013-2015 Research Assistant. Department of Biology. University of Iowa.
- 2014 Research Assistant. Department of Engineering. University of Iowa.
- 2012-2014 Senior Associate. Healthcare Performance Improvement Practice. Berkeley Research Group.
- 2012 Communications Coordinator. National Marine Sanctuary Foundation.
- 2009-2012 Research Assistant. Department of Chemistry. Vassar College.
- 2011 Research Intern. Biogeochemistry Group. Stroud Water Research Center.
- 2010 Research Intern. Department of Marine Science. Texas A&M University Galveston (TAMUG).

### PUBLICATIONS: (+denotes undergraduate mentee co-author)

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#### Peer-reviewed manuscripts

*In Review, Submitted, or In Preparation*

- 2021 **Lowman, H.E.**, Hirsch, M.E., and J.M. Melack. Permeable Marine Sediments Surrounding Giant Kelp Forests Provide Recycled Nutrients to the Overlying Water Column. *in prep (pdf available upon request)*.

**Lowman, H.E.**, K.A. Emery, J.E. Dugan, R.J. Miller. Nutritional Quality of Giant Kelp Declines Due to Warming Ocean Temperatures. *in prep (pdf available upon request)*.

*In Press or Published*

- 2021 **Lowman, H.E.**, M. Moingt, M. Lucotte, J.M. Melack, and H.M. Page. 2021. Terrestrial Organic Matter Inputs to Nearshore Marine Sediment Under Prolonged Drought Followed by Significant Rainfall as Indicated by Lignin. *Estuaries and Coasts*. <https://doi.org/10.1007/s12237-021-00931-4>
- 2019 **Lowman, H.E.**, K.A. Emery, L. Kubler-Dudgeon<sup>+</sup>, J.E. Dugan, and J.M. Melack. 2019. Contribution of Macroalgal Wrack Consumers to Dissolved Inorganic Nitrogen Concentrations in Intertidal Pore Waters of Sandy Beaches. *Estuarine, Coastal and Shelf Science*. 219: 363-371. <https://doi.org/10.1016/j.ecss.2019.02.004>
- 2015 Schroer, A.L., **H.E. Lowman**, and C.L. Just. 2015. Educating the Aware, Informed, and Action-oriented Sustainable Citizen. *Sustainability*. 7(2): 1985-1999. <https://doi.org/10.3390/su7021985>
- 2014 Aldeborgh, H., K. George, M. Howe, **H. Lowman**, H. Moustakas, N. Strunsky, and J.M. Tanski. 2014. Analysis of Small Molecule X-Ray Crystal Structures: Chemical Crystallography with Undergraduate Students in a Teaching Laboratory. *Journal of Chemical Crystallography*. 44(2): 70-81. <https://doi.org/10.1007/s10870-013-0485-z>

**Reports and theses**

- 2021 Mazor, R.D., Topping, B., Nadeau, T.-L., Fritz, K.M., Kelso, J., Harrington, R., Beck, W., McCune, K., **Lowman, H.**, Allen, A., Leidy, R., Robb, J.T., and David, G.C.L. 2021. User Manual for a Beta Streamflow Duration Assessment Method for the Arid West of the United States. Version 1.0. Document No. EPA-800-5-21001
- 2020 **Lowman, H.** Nutrient and Organic Matter Cycling in the Nearshore Ocean and Marine Sediment of the Santa Barbara Channel. Ph.D. Dissertation. University of California Santa Barbara. <https://escholarship.org/uc/item/7nj792b9>

**Datasets**

- 2021 Santa Barbara Coastal LTER, **Lowman, H.**, J. Melack, M. Brzezinski. 2021. SBC LTER: Ocean: Diel nearshore water profiles (CTD and chemistry) during stratified conditions. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/7a41a41c52b425c564de7aa079839049>
- 2020 **Lowman, H.**, K. Emery, L. Kubler-Dudgeon<sup>+</sup>, J. Dugan, J. Melack. 2020. SBC LTER: Beach: Data to support “Contribution of macroalgal wrack consumers to dissolved inorganic nitrogen concentrations in intertidal pore waters of sandy beaches.” *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/ab62a56a85ce73f2cb93269d5482e79e>

2018 Santa Barbara Coastal LTER, Page, H., **H. Lowman**, J. Melack, J. Smith, D. Reed. 2018. SBC LTER: OCEAN: Particulate Organic Matter Content and Composition of Stream, Estuarine, and Marine Sediments. *Environmental Data Initiative*. <https://doi.org/10.6073/pasta/05ca288d7203107bddab618e95524c0a>

**R Shiny Applications** (*if required, access credentials available upon request*)

2021 **Lowman, H.**, A. Zuelow, C. Wong, A. Wong, E. Miller, D. Lin, R. Sutton, S. Weisberg. 2021. Contaminants of Emerging Concern Data Tool. [https://sccwrp.shinyapps.io/cec\\_data\\_tool/](https://sccwrp.shinyapps.io/cec_data_tool/)

2020 Thornton Hampton, L., **H. Lowman**, S. Coffin, E. Miller, L. Hermabessiere, H. De Frond, E. Darin, S. Kotar, S. Khan, B. Koelmans, C. Rochman, A. Mehinto, S. Weisberg. 2020. Toxicity of Microplastics Explorer (ToMEx). [https://sccwrp.shinyapps.io/aq\\_mp\\_tox\\_shiny/](https://sccwrp.shinyapps.io/aq_mp_tox_shiny/)

**Lowman, H.**, A. Holt, R. Mazor. 2020. Streamflow Duration Assessment Method for the Arid West: Reporting Tool version 1.0. [https://sccwrp.shinyapps.io/beta\\_awsdam\\_report/](https://sccwrp.shinyapps.io/beta_awsdam_report/)

**Software Packages**

2019 Bui, A., **H. Lowman**, A. Guerra. 2019. *calecopal*: a California-inspired package of color palettes. <https://github.com/an-bui/calecopal/>

**RESEARCH GRANTS:**

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2018	Worster Award. EEMB, UCSB. “Investigating Zooplankton as a Source of Nitrogen for Kelp Forests During Low Nutrient Periods.” Role: Lead PI.	\$5,400
2018	Emergency Grant. Associated Students Coastal Fund, UCSB. “Composition of Debris Deposited on Goleta Beach and Persistence in Marine Ecosystems.” Role: Lead PI.	\$8,840
2018	Departmental Block Grant. EEMB, UCSB. “Lignin Phenols as Biomarkers of Terrestrial Organic Matter in the Santa Barbara Channel.” Role: Graduate Researcher.	\$1,000
2017	National Science Foundation, Division of Ocean Sciences (OCE-1623590). “RAPID: Tracing the origin and fate of particulate organic matter in nearshore marine sediments.” Role: Graduate Researcher.	\$12,000

**FELLOWSHIPS AND SCHOLARSHIPS:**

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2019-2020	President’s Dissertation Year Fellowship. UCSB.	\$76,600
2020	Ocean Sciences Meeting Travel Grant.	\$380
2019	Doctoral Student Travel Grant. UCSB.	\$400
2019	Graduate Division Travel Grant. UCSB.	\$1,000
2019	Coastal and Estuarine Research Federation Travel Grant.	\$300
2016-2019	Santa Barbara Coastal LTER Graduate Fellowship. UCSB.	\$76,000
2015	EEMB Departmental Fellowship. UCSB.	\$45,000
2012	Environmental Research Institute Scholarship. Vassar College.	\$5,000

2010 National Science Foundation Research Experiences for Undergraduates (REU) Award. TAMUG. \$5,000

### HONORS AND AWARDS:

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2019-2020 President's Dissertation Year Fellowship. UCSB.  
2018 Worster Award. EEMB, UCSB.  
2010 National Science Foundation REU Award. TAMUG.

### INVITED SEMINARS:

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2020 Southern California Coastal Water Research Project. Costa Mesa, CA.  
2017 Biogeosciences Seminar Series. UCSB. Santa Barbara, CA.

### CONFERENCE ACTIVITIES: (+undergraduate lead presenter/author)

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#### Presentations

2019 Coastal and Estuarine Research Federation Conference. Mobile, AL.  
2019<sup>+</sup> Worster Award Symposium. UCSB. Santa Barbara, CA.  
2018 Association for the Sciences of Limnology and Oceanography (ASLO) Summer Meeting. Victoria, British Columbia.  
2018 Graduate Student Teaching Symposium. UCSB. Santa Barbara, CA.  
2016, 2018 EEMB Graduate Symposium. UCSB. Santa Barbara, CA.  
2014 Just Sustainability Conference. Seattle University. Seattle, WA.  
2012 Department of Chemistry Thesis Symposium. Vassar College. Poughkeepsie, NY.  
2010 National Science Foundation REU Symposium. TAMUG. Galveston, TX.

#### Chaired Sessions

2020 Ocean Sciences Meeting. San Diego, CA.

#### Posters

2020 Ocean Sciences Meeting. San Diego, CA.  
2016, 2019 Santa Barbara Coastal LTER Annual Meeting. UCSB. Santa Barbara, CA.  
2018 Long Term Ecological Research All Scientists' Meeting. Asilomar, CA.  
2018<sup>+</sup> Ocean Sciences Meeting. Portland, OR.  
2012 Hudson River Symposium. Vassar College. Poughkeepsie, NY.  
2009 Mid-Hudson American Chemical Society Research Symposium. Mount Saint Mary College. Newburgh, NY.

### WORKSHOPS LED:

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2021 Co-Organizer and Co-Instructor. Introduction to R for Ecologists. UCSB (*Virtual workshop*). [https://hlowman.github.io/ucsb\\_r\\_workshop/](https://hlowman.github.io/ucsb_r_workshop/)  
2020-2021 Organizer and Lead Instructor. *Tidy Tuesday* R Workshop Series. SCCWRP (*Virtual tutorials*). <https://github.com/hlowman/TidyTuesday>

2020 Co-Organizer and Co-Instructor. Visualizing and Mapping Bioassessment Data in R. California Aquatic Bioassessment Workgroup/California Chapter of the Society for Freshwater Science (*Virtual workshop*). [https://ucd-cws.github.io/CABW2020\\_R\\_training/](https://ucd-cws.github.io/CABW2020_R_training/)

## WORKSHOPS ATTENDED:

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2021 The Future of Synthesis in Ecology Workshop, National Center for Ecological Analysis and Synthesis.  
2020 The Carpentries Instructor Training, *Online course*.  
2020 Incorporating Data Science and Open Science Techniques in Aquatic Research, *Virtual summit*.  
2020 California Water Data Science Symposium, California Water Boards.  
2020 Ocean Sciences Data Labs Workshop, Ocean Observatories Initiative.  
2019 University of California Office of the President Fall Meeting, University of California Berkeley.  
2019 Scientific Communication Workshop, Schmidt Ocean Institute.  
2017 Coastal Resiliency Workshop, University of California Irvine (UCI).  
2017 Software Carpentry Workshop, EcoDataScience, UCSB.

## TEACHING EXPERIENCE:

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### Academic Teaching Experience

#### Bren School of Environmental Science and Management, UCSB

##### *Graduate-level coursework*

Teaching Assistant. ESM 202: Environmental Biogeochemistry.

Winter 2017, 88 students

Winter 2018, 83 students

Winter 2019, 74 students

#### Department of Ecology, Evolution, and Marine Biology, UCSB

##### *Undergraduate-level coursework*

Teaching Assistant. EEMB 148: Stream Ecology.

Spring 2017, 141 students

Spring 2018, 125 students

Teaching Assistant. EEMB 142B: Environmental Processes in Oceans/Lakes.

Winter 2016, 86 students

#### Collegebound Santa Barbara

##### *Undergraduate and High School-level coursework*

Tutor. SAT Prep, Algebra, English Composition.

Summer 2019, 6 students

### **Bilingual Teaching Experience**

The Experiment in International Living, World Learning  
Group Leader. France: French Language and Culture.  
Summer 2012, 10 students

Seedrioru Estonian Summer Camp  
Counselor. Suured Tüdrukud.  
Summer 2008, 10 campers

### **MENTORING:**

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#### **Undergraduate Independent Research Projects Advised and Student Awards**

- 2017-2019 Katherine Le, UCSB. “Investigating Pelagic Zooplankton as a Source of Nutrients for Giant Kelp Forests.” Worster Award (2018).
- 2018 Elena Staguhn, University of Maryland. “The Impact of Thomas Fire Debris on Nutrient Cycling in Nearshore Marine Sediments.” National Science Foundation REU (2018).
- 2017-2018 Lila Kubler-Dudgeon, UCSB. “Contribution of Talitrid Amphipods and their Kelp Wrack Consumption to Sandy Beach Nitrogen Cycling.” Co-author on ECSS publication (2019).
- 2017 Chloe Smith, Oregon Institute of Technology. “Effects of Low pH on Microbially Mediated Nitrogen Transformations in Marine Sediments.” National Science Foundation REU (2017), ASLO Multicultural Program Award (2018).

#### **Undergraduate & Graduate Mentees and Student Affiliations**

- 2021 Angelina Zuelow, Department of Biological Science, California State University Fullerton (CSUF).
- 2020-2021 Jhenevieve Cabasal, Department of Biological Sciences, California State University Long Beach (CSULB).
- 2019-2021 Tyler Daniel, Santa Barbara Coastal LTER, UCSB.
- 2020 Megan Mirkhanian, Department of Civil and Environmental Engineering, UCI.
- 2017-2019 Angela Delossantos, Department of Environmental Science, UCSB.
- 2017-2018 Kristine Robinson, Women in Science and Engineering, UCSB.

#### **Undergraduate Teaching Assistants (UCSB)**

- 2018 Belle Jiyarom, Sophie O’Hare
- 2017 Timothy Ngo, Paige Rasmussen

### **OUTREACH, EDUCATION, AND DIVERSITY RELATED ACTIVITIES:**

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- 2020 Facilitator, Cover Letter and CV Workshop for Undergraduates, SCCWRP
- 2020 Panelist, EEMB 120 Career Panel for Ecology Undergraduates, UCSB
- 2019 Volunteer, Coastal and Estuarine Research Federation Biennial Conference
- 2019 Co-facilitator, Ocean Change Biology REU Research Skills Workshop
- 2019 Panelist, Graduate Students for Diversity in Science Panel, UCSB

2019 Judge, Santa Barbara County Science Fair  
2018, 2019 Facilitator, Ocean Change Biology REU Career Panel  
2018 Mentor, LTER All Scientists' Meeting  
2017, 2018 Mentor, NSF REU Program  
2017-2018 Mentor, Women in Science and Engineering  
2017-2018 Panelist, EEMB 142 Career Panel for Aquatic Biology Undergraduates, UCSB  
2017 Volunteer, Santa Barbara World Oceans Day  
2017 Organizer, Introduction to R Workshop for Santa Barbara Coastal LTER Interns  
2017 Presenter, EEMB 142 Graduate School Workshop, UCSB  
2016-2017 Editor/Contributor, "Roots to STEM" blog  
2016 Facilitator, EEMB 142 Career Panel for Aquatic Biology Undergraduates, UCSB  
2010 Volunteer, Texas Marine Mammal Stranding Network  
2009 Volunteer, Auburn Heights Preserve

## PROFESSIONAL SERVICE:

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### Peer-review activities

Journal reviewer: *Biogeochemistry*, *Hydrobiologia*, *European Journal of Phycology*

### Professional memberships and associations

American Geophysical Union  
Association for the Sciences of Limnology and Oceanography  
Coastal and Estuarine Research Federation  
University of Nevada Global Water Center  
Santa Barbara Coastal Long Term Ecological Research Project  
Collaborative for Research in Aridland Stream Systems  
R-Ladies, Santa Barbara Chapter  
The Carpentries

## DEPARTMENTAL AND INSTITUTIONAL SERVICE:

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### Southern California Coastal Water Research Project

2020-2021 Member, Professional Development Training Team

### University of California Santa Barbara

2019-2020 Graduate Representative, Freshwater Ecology Faculty Hiring Committee  
2018-2020 Coordinator, Biogeosciences Seminar Series  
2019 Judge, EEMB Graduate Student Symposium  
2018 Organizer, Professional Development Seminar Series: Academic Positions  
2017-2018 Organizer, Statistical Methods and Data Visualization in Ecology Workshop  
2016 Organizer, Foundational Literature in Ecology Reading Group

### Vassar College

2011-2012 Captain, Synchronized Ice Skating Team  
2010-2012 Tour Guide, Office of Admissions  
2009-2012 Captain/Treasurer, Ski Team

## MEDIA COVERAGE:

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2020 SCCWRP Scenes, *SCCWRP Director's Report (Fall 2020)*: [Report link](#).  
2019 Featured Scientist, *Long Term Ecological Research Network*: [Instagram](#).  
2018 Interviewed for *KEYT News* story, "Clearing the Shoreline": [Video link](#).

## ADDITIONAL RESOURCES:

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2021 Metadata Tutorial, SBC LTER Data Help Desk: [Video link](#).

## ADDITIONAL SKILLS AND EXPERTISE:

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### Software

R – RStudio, RMarkdown, Shiny (*proficient*)  
Git/GitHub (*proficient*)  
Zotero (*proficient*)  
JMP (*working knowledge*)  
MATLAB (*working knowledge*)  
Mendeley (*working knowledge*)  
SQL (*novice*)

### Languages

English (*fluent*)  
Estonian (*fluent*)  
French (*fluent*)  
Italian (*novice*)

### Certificates

The Carpentries Certified Instructor