

# EMILY WAGGONER

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## Education

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**PhD student:** Molecular and Cellular Biology, *University of Arizona (2020-present)*

**Bachelor of Science:** Environmental Studies - concentration in Ocean Sciences, *University of Southern California, (2014-2018)*

**Minor:** Science Visualization, *University of Southern California, (2014-2018)*

Portfolio: [emilywaggs.wixsite.com/portfolio](http://emilywaggs.wixsite.com/portfolio) | Minor Capstone: [www.meetthegrays.org](http://www.meetthegrays.org)

## Research Experience

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### Research Specialist

**September 2019 - August 2020**

*Duhamel Lab, Molecular & Cellular Biology, University of Arizona*

*Tucson, Arizona*

- Acting lab manager responsible for general maintenance, chemical and supply inventory, scientific equipment calibration and maintenance
- Continuing work on *Synechococcus* P-hydrolysis experiments, ([OCE: 1737083](#))

### Research Technician

**January 2019 - March 2019**

*Duhamel Lab, Lamont-Doherty Earth Observatory, Columbia University*

*Palisades, NY*

- Assessing the role of compound-specific phosphorus hydrolase transformations in the marine phosphorus cycle ([OCE: 1737083](#))
  - Grew and maintained axenic *Synechococcus* strains
  - Carried out enzymatic activity experiments to track *Synechococcus* P-hydrolysis rates

### Research Assistant

**September 2014 - December 2017**

*Ziebis Lab, Marine Environmental Biology Department, USC*

*Los Angeles, CA*

- Investigated the following projects as an RA and independent researcher:
  - Prokaryotic and Viral Activity in Sediment Porewater
  - The Impacts of *Neotrypaea californiensis* Bioturbation on the Flux of Nitrous Oxide
  - The Impacts of Carbon Loading on the Benthos

### Research Fellow

**May 2016 - August 2016**

*Women in Science & Engineering (WiSE), USC*

*Los Angeles, CA*

- Fellowship received to pursue the *Production and Flux of Nitrous Oxide in Coastal Zones*
  - Aquaria designed (cooling system, tidal flow, oxygen source) for in-situ experiments
  - Unisense amperometric microsensors used to profile N<sub>2</sub>O, H<sub>2</sub>S and O<sub>2</sub> concentrations

### Marine Wildlife Guide & Skipper

**June 2015 - August 2015**

*North 58° Sea Adventures*

*Scotland, UK*

- Investigated the impacts of motorized vessels on common seal population behaviors
- Finalized a photo identification database of local Bottlenose dolphins
- Carried out zodiac wildlife tours in the Moray Firth as a Skipper

## Research Assistant & Informal Education Guide

Seasonal, 2010 - 2015

### *Carrie's Whale EcoExcursions*

*Depoe Bay, Oregon*

- Conducted local marine life eco-excursion zodiac tours
- Logged 200 days at sea to photo identify 80 Oregon resident gray whales

## Field Research Experience

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### **Oceanographic Cruises**

March, 2019

N. Atlantic - *R/V Savannah*

August - September, 2018

Gulf of Mexico - *R/V Endeavor*

April - May, 2018

Tropical N. Atlantic - *R/V Endeavor transit*

## Teaching Experience

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### **PADI Summer Research Program Mentor**

**June 2018 - August 2019**

*Cabrillo Marine Aquarium*

*San Pedro, CA*

- Supervised the 2019 PADI 9-week program, from program design to execution
- Mentored five high school students through independent research projects, from design to dissemination

### **Aquatic Nursery Research Lab Guide**

**January 2018 - July 2018**

*Cabrillo Marine Aquarium*

*San Pedro, CA*

- Mentored middle & high school CMA Young Scientists (YS) over a year-long research program
- Developed creative content for the 2018 YS Symposium
- Launched an initiative to increase YS program diversity and student accessibility

### **Science Visualization Intern**

**January 2017 - December 2017**

*Joint Educational Project, USC*

*Los Angeles, CA*

- Created ocean science K-5 curriculum to introduce ocean sciences through digital art
- Beta-tested the 3D printed gray whale migration lesson plan in a 5<sup>th</sup> grade classroom

### **Course Assistant**

**May 2016 - June 2016**

*BISC-457: Methods in Oceanography, USC*

*Los Angeles, CA*

- Advised 15 upperclassmen through a 4-week spring course taught on Catalina Island
- Led demonstrations for labs, rosette sampling, and intertidal water and sediment sampling

## Professional Experience

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### **Cruise Participant**

**April 2018 - May 2018**

*STEM Student Experiences Aboard Ships, STEMSEAS ([ICER:1701174&1701168](#))*

*Narragansett, RI*

- One of 10 students selected to participate in the April 2018 transit from Rhode Island to Barbados
- Mentored by experienced oceanographers and exposed to the innerworkings of scientific cruises

### **Special Projects Manager**

**July 2016 - December 2017**

*Office of the Dean, USC Viterbi School of Engineering*

*Los Angeles, CA*

- Carried out projects from the executive dean, six vice deans and the administrative assistants
- Managed three graduate students, completing a faculty awards database project for the dean

## Honors and Awards

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2020	University of Arizona Graduate Access Fellowship STEMSEAS Mentor
2018	Renaissance Scholar, University of Southern California National Marine Sanctuary Foundation Scholarship Jane Goodall Roots and Shoots Mini Grant
2017	USC Women in Science and Engineering (WiSE) Fall Researcher USC WiSE Travel Grant Anita B. Wilson Scholarship
2015 - 2016	USC Helenes Luc Scholarship USC WiSE Summer Research Fellowship Harry A. Miller Scholarship
2012	WhaleFest Travel Grant Oregon State University \$24,000 NWSE Scholarship (declined)

## Certifications

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2020	Radiation Laboratory Safety, <i>University of Arizona - Tucson, AZ</i>
2019	Laboratory Safety, <i>University of Arizona - Tucson, AZ</i>
2015	Powerboat Level 2 License, <i>RYA - Scotland, UK</i> Sea Survival, <i>RYA - Scotland, UK</i> VHF Radio, <i>RYA - Scotland, UK</i>
2014	General Laboratory Safety, <i>USC EH&amp;S - Los Angeles, CA</i>

## Conference Presentations

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### Oral Presentations

**Waggoner E\***, Kast D\*. Engaging Young Scientists: Visual Technology and interactive models for K-3 marine science curriculum. Talk given at: National Marine Education Association (NMEA) Conference; 2018 June 15-17; Long Beach, CA

### Poster Presentations

Djaoudi K<sup>1\*</sup>, Plummer S<sup>2</sup>, Steffen R<sup>3</sup>, **Waggoner E<sup>1</sup>**, Diaz J<sup>2</sup>, Duhamel S<sup>4</sup>. Bioavailability of representative dissolved organic phosphate compounds to microbial communities in the western North Atlantic. Talk will be presented at Ocean Sciences Meeting; February 16-21, 2020; San Diego, CA.

**Waggoner E<sup>1</sup>**, Diaz J<sup>3</sup>, Duhamel S<sup>2</sup>. Dissolved Organic Phosphorus Utilization by *Synechococcus*. Poster will be presented at Ocean Sciences Meeting; February 16-21, 2020; San Diego, CA.

Lehman J, Lambretti A, **Waggoner E\***, Danford S, Cheng B, Ziebis W. Production and Fluxes of Nitrous Oxide in Coastal Zones. Poster presented at: West Coast Biological Sciences Undergraduate Research Conference (WCBSURC); 2017 April 22; Santa Clara, CA

Lehman J\*, Lambretti A, **Waggoner E**, Danford S, Cheng B, Ziebis W. Production and Fluxes of Nitrous Oxide in Coastal Zones. Poster presented at: ASLO Aquatic Sciences Meeting; 2017 Feb 26-Mar 3; Honolulu, HI

**Waggoner E\***, Bermudez D, Newell C. Effect of Angle Variation on the Relative Area of *Eschrichtius Robustus* Markings. Poster presented at: WhaleFest Conference; 2012 Nov 2-3; Sitka, AK

**Waggoner E\***, Bermudez D, Newell C. Effect of Angle Variation on the Relative Area of *Eschrichtius Robustus* Markings. Poster presented at: Northwest Science Expo; 2012 Mar 23; Portland, OR

**Presenter\***

## **Publications**

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Djaoudi K<sup>1\*</sup>, Plummer S<sup>2</sup>, Steffen R<sup>3</sup>, **Waggoner E<sup>1</sup>**, Diaz J<sup>2</sup>, Duhamel S<sup>4</sup>. Bioavailability of representative dissolved organic phosphate compounds to microbial communities in the western North Atlantic. In prep.

**Waggoner E<sup>1</sup>**, Diaz J<sup>3</sup>, Duhamel S<sup>2</sup>. Dissolved Organic Phosphorus Utilization by *Synechococcus*. In prep.