

Chemical Oceanographer

Respected oceanographer with expertise in marine biogeochemical cycling, aquatic chemistry and ocean technology. Proven track record as a leader of cross-functional teams to solve complex problems and deliver results. Over 10 years of professional experience in marine water analysis in the laboratory and at sea.

- 275+ days working at sea.
- 12 peer-reviewed publications and numerous presentations.
- Wrote and managed federal and state grants/funding totaling over \$3M
- 8 doctoral and post-doctoral research awards.

Research/Sampling Design
Field Experiments
Spatial Analysis
Lab Analysis

Shipboard Sampling/Analysis
Data Management
Statistical/Data Analysis
Professional Presentations

Technical Reports
Grant Writing
Budget Management
CAD/3D printing

PROFESSIONAL EXPERIENCE

Staff Scientist and Manager of the Ocean Technology and Marine Biogeochemistry Programs*Mote Marine Laboratory, Sarasota, FL**July 2020 – present*

Oversee research projects in biogeochemistry and technology development, manage an engineering team to further develop and sustain oceanographic instrumentation on autonomous platforms and fixed stations, manage a coastal ocean observing system that supports buoyancy-driven gliders and near-shore sampling stations, prepare and procure grants, publish manuscripts in interdisciplinary research.

- \$525k budget in '20/'21; Awarded \$850k/5yrs NOAA GCOOS grant; Increased lab efficiency by \$50k/yr

Postdoctoral Fellow*Monterey Bay Aquarium Research Institute, Moss Landing, CA**Aug 2018 – Oct 2019*

Studied carbon export in the Northeast Pacific using a decade of data collected by autonomous profiling floats on a federally-funded project. The project coincided with, and provided regional and historic hydrographic context for, in-situ, ship-based and satellite-based export assessments made during the NASA EXPORTS study.

- Used O₂, NO₃⁻, bio-optical, and pH sensors on profiling floats to make budgets of chemical tracers
- Evaluated the evolution of carbon export in distinct biogenic carbon pools over multiple timescales

Postdoctoral Scholar*Marine Science Institute, UC Santa Barbara, Santa Barbara, CA**Sept 2017 – Apr 2018*

Studied the rate and magnitude of nitrate flux to kelp forest ecosystems off the Southern California coast. This project was part of a \$6M, multi-year federal research grant to study the impact of climate change on marine life, the Santa Barbara Coastal Long Term Ecological Research (SBC-LTER) project.

- Operated Autonomous Underwater Vehicles (AUVs; Hydroid Remus 600 and Slocum glider) in the field
- Performed data synthesis and analysis on acoustic and optical sensor datasets
- Reported findings to SBC-LTER leaders and wrote a research paper for peer-review

NSF-OCE Postdoctoral Fellow*Marine Science Institute, UC Santa Barbara, Santa Barbara, CA**Sept 2015 – Sept 2017*

Awarded a multi-year fellowship to study the vertical flux of nitrate due to the interaction of internal waves with shelf topography at the Mid-Atlantic and Southern California shelf breaks.

- Wrote and managed \$174K National Science Foundation grant
- Operated a propelled AUV (Hydroid Remus 600) with CTD, microstructure, ADCP, and nitrate sensors
- Analyzed data for vertical turbulent nitrate flux, collected for nutrients and calibrated optical sensors
- Published 4 peer-reviewed research papers
- Awarded the Woods Hole Oceanographic Institution Postdoctoral Scholarship (*declined*)

- *Invited Participant* to Dissertations Symposium in Chemical Oceanography (DISCO XXV)

Graduate Research and Teaching Assistant

University of Southern California, Department of Earth Sciences, Los Angeles, CA Aug 2009 – Aug 2015

Designed and implemented a bi-weekly oceanographic time-series to study how nutrient input rate and ecosystem dynamics control export efficiency during upwelling in the Southern California Bight.

- Wrote and managed a \$650K US National Science Foundation grant
- Chief Scientist for 21 cruises in coastal California, 36 days at sea
- Collected/analyzed seawater for inorganic nutrients, radionuclides (^7Be and ^{234}Th), DO, O₂/Ar and O₂ isotopes, deployed drifting sediment trap arrays, and deployed a Slocum glider – analyzed all datasets.
- Published 5 peer-reviewed research papers, a Ph.D. dissertation and M.S. Thesis

FIELD EXPERIENCE

West Florida Shelf glider operations	Aug 2020 - present
California Current Carbon Export (R/V <i>Sally Ride</i>)	Dec 2019
Line P Cruise, Northeast Pacific (CCGS <i>John P. Tully</i>)	Jun 2019
Coastal Remus 600 operations, Santa Barbara Channel/Shelf Break	2016 - 2018
Remus-Integrated Laser Optic Imaging, Naval Air Station Patuxent River, MD (R/V <i>Rachel Carson</i>)	July 2017
Northrup Grumman Remus team, Annual Naval Technology Exercise, NUWC, Newport, RI	Aug 2016
UNOLS Chief Scientist Training Course cruise, <i>Invited Participant</i> (R/V <i>Thomas Thompson</i>)	Feb 2016
Drifting and Autonomous Platforms at the Mid-Atlantic Shelf Break (R/V <i>Endeavor</i>)	Nov 2015
21 Upwelling Regime In-Situ Ecosystem Efficiency (UpRISEE) Cruises (R/V <i>Yellowfin</i>)	Jan 2013- June 2014
Monthly San Pedro Ocean Time-Series (SPOT) Cruises (R/V <i>Yellowfin</i>)	2009 - 2014
Eastern Tropical South Pacific (R/V <i>Melville</i> & R/V <i>Atlantis</i>)	Feb – Mar 2010 & Mar – Apr 2011
Several Bermuda Atlantic Time Series (BATS) Cruises (R/V <i>Atlantic Explorer</i>)	2007 – 2009

INSTRUMENT EXPERIENCE

Particulate and dissolved nutrient sampling/analysis via UV/VIS spectrophotometry
 CTD rosette deployment/assembly/maintenance/SeaBird data processing
 O₂/Ar and triple oxygen isotopes, dissolved O₂ (Winkler titration), and O₂ sensor (optode) sampling/analysis
 Underway O₂/Ar by equilibrator inlet mass spectrometry (EIMS; Pfeiffer PrismaPlus QMG)
 Sediment trap deployment/maintenance and trap material analysis
 Radioisotope analysis using gamma spectra and alpha counting
 Hydroid Remus and Slocum glider piloting/field ops/ sensor calibration
 Data processing, biogeochemical modeling, and coding in Matlab (C++) and Python

PROFESSIONAL SERVICE, LEADERSHIP, AND OUTREACH

Review Editor, <i>Frontiers in Marine Science</i>	2016 – Present
Manuscript Reviewer, <i>Marine Chem., GBC, JGR-Oceans, Prog. In Oceano., DSR, Biogeosci.</i>	2015 – Present
Proposal Reviewer and Panelist, <i>National Science Foundation (Chemical Oceanography)</i>	2015 – Present
Participant, <i>NSF OOI Coastal Arrays Workshop (Arlington, VA)</i>	2016
Chair, <i>Southern California Geobiology Symposium Organizing Committee</i>	2014
NSF-OCE Broadening Participation Postdoctoral Fellow	2015 – 2017
Presenter, <i>UMCES Horn Point Lab. Open House (public), Autonomous vehicles in marine research</i>	2015
Mentor, <i>USC Young Researchers Program, Advised underrepresented L.A. high school students</i>	2012 – 2014

EDUCATION

Ph.D. (and M.S.) in Ocean Sciences, <i>University of Southern California</i>	2015 (2011)
Keck Endowed Fellowship, 2015 Sonosky Fellowship 2013 Dept. TA Award 2010 & 2011	
B.S. in Chemistry and Marine Science <i>Honors, University of Miami, RSMAS</i> Merrick Scholarship ('05-'09)	2009