

SHAILJA GANGRADE

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SUMMARY

I am a marine ecologist and educator with an academic background spanning biophysical oceanography, plankton ecology, climate change impacts, and water quality. As a woman of color, I am passionate about implementing inclusive student-centered teaching practices, mentoring students from diverse backgrounds, and designing opportunities for place-based learning. With abundant experience in science communication and community outreach, I work toward developing thoughtful and synergistic collaborations between scientists and the public.

PROFESSIONAL EXPERIENCE

Postdoctoral Research Associate, Brown University Apr 2025 – Present
Department of Earth, Environmental and Planetary Sciences

EDUCATION

Scripps Institution of Oceanography, UC San Diego Dec 2024
Ph.D. in Oceanography (Biological Oceanography)
Dissertation: Plankton patchiness at mesoscale fronts and filaments: drivers, dynamics, and implications in the California Current System; Advisor: Peter J. S. Franks

Scripps Institution of Oceanography, UC San Diego Jun 2021
M.S. in Oceanography (Biological Oceanography)

University of Delaware Jun 2019
B.S. in Marine Science (Marine Biology)
Bachelor in Environmental Engineering (Water & Wastewater Quality)

TEACHING

Instructor, Brown University Pre-College Programs 2026 (expected)
How The Ocean Feeds Alaska: Investigating Marine Ecosystem Dynamics

- Designing and developing 2-week, 20-person Brown Environmental Leadership Lab (BELL) course in Anchorage, Alaska
- Planning student-centered lessons, data exploration activities, guest lectures from local scientists and environmental managers, field trips focused on Alaska coastal ecosystems, native heritage, & regional wildlife

Instructor, UC San Diego Extended Studies 2023, 2024
Ocean Ecosystem Dynamics

- Designed, developed, and taught 4-week online and 3-week (75-hour) in-person pre-college course
- Created and led hands-on data-driven activities, biological sampling & experiments, and field trips to marine ecosystem sites

Teacher, STAY COOL for Grandkids 2022 – 2024
Ocean Climate Science Program

- Taught sixth-grade classes on ocean warming & acidification

Instructor, Scripps Institution of Oceanography 2024
SIO 90: Undergraduate Seminar – Perspectives on Ocean Sciences

- Led seminar course, organized class sessions, invited and collated guest speaker lectures

Teaching Assistant, Scripps Institution of Oceanography

SIO 139: Current Research in Marine Biology 2024

SIOB 280: Biological Oceanography (graduate-level) 2022

Guest Lecturer, Scripps Institution of Oceanography

SIO 134: Introduction to Biological Oceanography	2024
SIO 30: The Oceans	2022
SIO 145: Introduction to Field Methods in Biological Oceanography	2021

MENTORING

Brown University Undergraduate Teaching & Research Award Program	2026 (expected)
• Mentor undergraduate student during semester-long project	
Brown DEEPS REU Discussion Group Leader & Mentor	2025
• Led weekly discussion group meetings, providing mentorship and professional development for 12 undergraduate research students	
CCE LTER REU Mentor, Kaitlyn Reardon	2023
• Advised 10-week project visualizing offshore flow statistics along California coast using satellite data	

RESEARCH EXPERIENCE

Graduate Research Fellow , <i>Scripps Institution of Oceanography</i>	2019 – 2024
Mesoscale stirring and biological patchiness: Observations and implications in the California Current System	
• Advised by: Prof. Peter Franks	
Undergraduate Research Fellow , <i>Scripps Institution of Oceanography</i>	2018
Visual luminoscapes of four invertebrate larval species in the nearshore Southern California Bight	
• Advised by: Lillian McCormick, Jessica Garwood, Prof. Lisa Levin	
Research Cruise Volunteer , <i>Scripps Institution of Oceanography</i>	2017
Ecological Transitions in an Eastern Boundary Current Upwelling Ecosystem	
• Advised by: Prof. Mark Ohman & Dr. Ralf Goericke	
Data Annotator , <i>University of Delaware School of Marine Science & Policy</i>	2016 – 2018
Estimating sea scallop incidental mortality from photographic surveys	
• Advised by: Danielle Ferraro, Prof. Arthur Trembanis, Prof. Doug Miller	
Undergraduate Research Intern , <i>Delaware Water Resources Center</i>	2017
Fairfield Run Watershed Implementation Plan: UD Arboretum	
• Advised by: Dr. Gerald Kauffman	
Undergraduate Research Fellow , <i>University of Delaware Department of Geological Sciences</i>	2016
The influence of fiddler crabs on tidal salt marsh carbon storage	
• Advised by: Julia Guimond, Prof. Holly Michael	

PUBLICATIONS

- Gangrade, S.**, Freilich, M.A., Beaudin, E., Luis, K., Leyba, I.M., Omand, M.M., Lang, S., O'Neill, L., & Capone, D. (in prep), Open ocean biogeochemical impacts of extreme terrestrial precipitation.
- Ferrer, E., Eddebar, Y., **Gangrade, S.**, McCormick, L.R., Pezner, A.K., Robinson, D., Garçon, V., Rose, K.C., & Levin, L.A. (in review), Expanding on the aquatic deoxygenation planetary boundary: progress towards an 'unsafe' space, interactions with other stressors, and wider societal significance. *Limnology & Oceanography*.
- Stukel, M.R., Allen, A.E., Barbeau, K.A., Chabert, P., Dovel S., **Gangrade, S.**, Kranz, S.A., Lampe, R.H., Landry, M.R., Marrec, P., Messié, M., Miller, A.J., Wilkinson, G., & Ohman, M.D. (2025), Disturbance ecology in a pelagic upwelling biome: Lagrangian frameworks for studying succession, *BioScience*, 2025;, b1af144, <https://doi.org/10.1093/biosci/b1af144>
- Gangrade, S.**, Franks, P.J.S., Forsch, K.O. & Barbeau, K.A. (2025), Salinity is diagnostic of maximum potential chlorophyll and phytoplankton community structure in an Eastern Boundary Upwelling System. *Limnol. Oceanogr. Lett.* <https://doi.org/10.1002/lol2.70059>

Gangrade, S., & Mangolte, I. (2024), Patchiness of plankton communities at fronts explained by Lagrangian history of upwelled water parcels. *Limnol Oceanogr*, 69: 2123-2137. <https://doi.org/10.1002/lno.12654>

Gangrade, S., & Franks, P.J.S. (2023), Phytoplankton patches at oceanic fronts are linked to coastal upwelling pulses: Observations and implications in the California Current System. *Journal of Geophysical Research: Oceans*, 128, e2022JC019095. <https://doi.org/10.1029/2022JC019095>

McCormick, L.R., **Gangrade, S.**, Garwood, J.C., Oesch, N.W. & Levin, L.A. (2023), Oxygen and irradiance constraints on visual habitat in a changing ocean: The luminoxyscape. *Limnology and Oceanography Letters*. <https://doi.org/10.1002/lol2.10296>

Gangrade, S. (2020). Warmer Pacific Waters May Lead to Hungry Fish. *Limnology and Oceanography Bulletin*, (20200728). <https://doi.org/10.1002/lob.10387>

OUTREACH

Scripps Outreach for Public Education (SCOPE)

Coordinator

Oct 2019 – Mar 2024

- Engaged visitors in scientific activities and communicated current research initiatives at the institution
- Coordinated outreach events, organized volunteers, designed communication tools and media

Ocean Discovery Institute

Volunteer Science Leader

Feb 2021 – Jun 2023

- Engaged with K–12 students during environmental education field trips

ASLO Journalist for a Day Program

Student Journalist

Feb – Jun 2020

- Wrote and published article in *L&O Bulletin* on recent research presented at international conference

Mid-Atlantic Regional Association Coastal Ocean Observing System

Science Communications Intern

Feb – May 2019

- Developed web-based content (articles, newsletters, images, social media) to communicate scientific projects to the public, the ocean observing system community, and policy makers

Delaware National Estuarine Research Reserve

Education Outreach Volunteer

Aug 2017

- Formulated K-12 estuarine ecology lesson plans based on Next-Generation Science Standards

CERTIFICATIONS & SKILLS

Sheridan Teaching Seminar Certificate, Brown University	in progress
Student-Centered College Teaching & Course Design Certificate, UC San Diego	2024
Engineer in Training (EIT) Certification, Delaware Association of Professional Engineers	2019
PADI Open-Water SCUBA Certification	2019

Programming Languages MATLAB, R, Python

Media Canvas (Instructor), Adobe Illustrator, Adobe Lightroom, Procreate, Inkscape, Final Cut Pro, Hootsuite, WordPress, photography

FIELDWORK

Dissolved Oxygen Survey in the Narragansett Bay, <i>CTD sampling</i>	Jul 2025
Ecological Assessment of the Santa Lucia Escarpment Cruise, <i>plankton sampling</i>	May 1–8, 2024
La Jolla Canyon Moving Vessel Profile Test Cruise, <i>plankton imaging</i>	Dec 1–2, 2021
SiphWeb Process Cruise (off San Diego, CA), <i>micronekton/plankton sampling</i>	Aug 21–Sep 4, 2020
Proyecto CETACEA (Quinque, Ecuador), <i>whale acoustics, hydrophone sampling</i>	Jul 9–30, 2017
CCE LTER Process Cruise P1706, <i>plankton sampling</i>	Jun 1–Jul 3, 2017
UD WATER Field Sampling, <i>water quality testing, EPA bioassessment, forest survey</i>	Feb–Apr 2017
St. Jones Reserve Tidal Salt Marsh Field Campaign, <i>porewater sampling</i>	Jun–Aug 2016

SELECTED PRESENTATIONS

[INVITED] Gangrade, S. (2025). Disentangling the biological and physical drivers of finescale oceanic plankton patchiness *University of Massachusetts Dartmouth School for Marine Science & Technology Seminar, September 2025*.

Gangrade, S., Forsch, K.O., Barbeau, K. A., & Franks, P. J. S. (2024). Salinity predicts maximum potential phytoplankton biomass and community structure in the California Current System. *Ocean Observing in California Meeting (poster), 2024*.

Gangrade, S., Forsch, K. O., Barbeau, K. A., & Franks, P. J. S. (2023). Constraints on potential phytoplankton biomass and community structure: physical, hydrographic, and biogeochemical drivers in the California Current System. *Eastern Pacific Ocean Conference (talk), 2023*.

Gangrade, S., Mangolte, I., & Franks, P. J. S. (2023). Trust in Transport? The Journey of Plankton in Coastal Upwelling Filaments & Fronts. *Gordon Research Conference: Coastal Ocean Dynamics (talk & poster), 2023*.

Gangrade, S. & Franks, P. J. S. (2022). Pulsed inputs of upwelled waters at a front challenge assumptions of along-front uniformity. *Ocean Sciences Meeting (talk), 2022*.

FELLOWSHIPS & AWARDS

Best Poster, Ocean Observing in California Meeting	2024
Best Student Oral Presentation, Eastern Pacific Ocean Conference	2023
National Science Foundation Graduate Research Fellowship	2019 – 2024
Civil & Environmental Engineering Alumni Award, University of Delaware	2019
Outstanding Senior Award, University of Delaware	2019
Scripps Undergraduate Research Fellowship, Scripps Institution of Oceanography	2018
Academic Excellence in Environmental Engineering Award, University of Delaware	2018
Honors Enrichment Award, University of Delaware	2017
VanDemark & Lynch Sophomore Award, University of Delaware	2017
Summer Undergraduate Research Fellowship, University of Delaware	2016
Eugene du Pont Memorial Scholarship, University of Delaware	2015 – 2019

SERVICE

Field Research Safety Committee (chair), SIO Community Anti-Bullying Task Force	2022 – 2024
Women & Minorities in Science (coordinator), Scripps Institution of Oceanography	2021 – 2023
Diversity Advisory Committee (member), Scripps Institution of Oceanography	2020 – 2021