

**Woods Hole Oceanographic Institution**  
**2020 Summer Student Fellows**  
**Research Projects**

**Kela Bakari**, Howard University

*Population Genetics of the Invasive Mud Crab *Rhithropanopeus harrisi**

Advisor: Carolyn Tepolt, Biology

**Colin Brennan**, United States Naval Academy

*AUV Image Perception for Use in Kelp Aquaculture*

Advisor: Erin Fischell, Applied Ocean Physics and Engineering

**Cassia Cai**, Northwestern University

*Long-term changes in the mixed layer depth on the Northeast U.S. continental shelf*

Advisor: Young-Oh Kwon, Physical Oceanography

**Zaibeth Carlo-Frontera**, University of Puerto Rico-Mayagüez

*Self-sustained Oscillations in 2D Thermohaline Convection*

Advisor: Olivier Marchal, Geology & Geophysics, and John Whitehead, Physical Oceanography

**Natalie Davis**, Middlebury College

*Exploring the Taxonomic Diversity and Functional Capabilities of Microorganisms in the Kolumbo Hydrothermal Vent System*

Advisor: Maria Pachiadaki, Biology

**Alexa Davy**, Stanford University

*Geophone and Hydrophone Data Analysis*

Advisor: Erin Fischell, Applied Ocean Physics and Engineering

**David Feagins**, St. Mary's University

*The Acidification of Coral Reefs: Controls on the Carbonate Chemistry of a Coral Reef Lagoon*

Advisors: Weifu Guo and Anne Cohen, Geology & Geophysics

**Mark Goldwater**, Olin College of Engineering

*Classification of Dispersive Whale Calls using a Convolutional Neural Network*

Advisors: Julien Bonnel and Dan Zitterbart, Applied Ocean Physics and Engineering

**Yoana Guzman Hernandez**, California State University Chico

*Mathematical Modeling of Phytoplankton Community Structure as Affected by Biological and Physical Processes*

Advisor: Amala Mahadevan, Physical Oceanography

**Daniel Hill**, Oberlin College

*Volume Weighted  $p\text{CO}_2$  and Calcium Carbonate Saturation State Distributions in the Global Ocean*

Advisor: Adam Subhas, Marine Chemistry & Geochemistry

**Sophie Kuhl**, Brown University

*Tidal Exports of Dissolved Organic Carbon from a Coastal Salt Marsh Complex*

Advisors: Meagan Eagle Gonnea and Kevin Kroeger, US Geological Survey

**Jialin Li**, Binghamton University

*Spatial and Temporal Near-shore Bar Dynamics Associated with White Shark Habitat*

Advisor: Chris Sherwood, US Geological Survey

**Michael Meneses**, University of California, Santa Barbara

*Differences in Faunal Composition between Active and Inactive Vents on the East Pacific Rise*

Advisor: Lauren Mullineaux, Biology

**Thanda Newkirk**, Wellesley College

*Exploring Abyssal Pathways in the Madagascar Basin*

Advisors: Alison Macdonald, Heather Furey and Viviane Meneses, Physical Oceanography

**Evan Paris**, Vassar College

*The Impact of Seawater on Polymetallic Nodule Biogeochemistry*

Advisor: Tristan Horner, Marine Chemistry & Geochemistry

**Elena Perez**, Rensselaer Polytechnic Institute

*Marine Heat Waves in the Northwest Atlantic*

Advisors: Glen Gawarkiewicz and Magdalena Andres, Physical Oceanography

**Jonathan Pfeifer**, Flathead Valley Community College

*Electrochemical Acidification for Dissolved Inorganic Carbon (DIC) Measurements*

Advisors: Zhaohui Aleck Wang, Marine Chemistry & Geochemistry, and Jason Kapit, Applied Ocean Physics and Engineering

**Amy Phung**, Olin College of Engineering

*Online, In-Situ Calibration of Underwater Hydraulic Manipulators Using a Wrist-Mounted Camera*

Advisor: Richard Camilli, Applied Ocean Physics and Engineering

**Adrian Reed**, Texas A&M University at Galveston

*Suitability Index for Oyster Farming in Galveston Bay*

Advisor: Hauke Kite-Powell, Marine Policy Center

**Kinga Santha**, University of Novi Sad

*Linking macro- and microdiversity at the Jardines de la Reina reef system, Cuba*

Advisor: Amy Apprill, Marine Chemistry & Geochemistry

**Isabel Schaal**, Franklin & Marshall College

*Source-to-sink micronutrient cycling between seawater, sediment, and nodules in the South Pacific Ocean*

Advisor: Ann Dunlea, Marine Chemistry & Geochemistry

**Zoe Screwvalla**, University of South Carolina

*Coastal Ice Dynamics on the Antarctic Continental Shelf*

Advisor: Catherine Walker, Applied Ocean Physics and Engineering

**Leena Sen**, Cornell University

*Do Freshwater Foraminifera Disturb Stromatolite Layers?*

Advisors: Joan Bernhard and Veronique LeRoux, Geology & Geophysics

**Amelia Smith**, Hobart and William Smith Colleges

*Larval Development of Stalked Crinoids*

Advisor: Kirstin Meyer-Kaiser, Biology

**Oreoluwa Solanke**, Columbia University

*Quantifying the biogeochemical role of marine microbes in the Sargasso Sea*

Advisor: Hyewon Heather Kim, Marine Chemistry & Geochemistry

**Joshua Zahner**, University of Miami

*Impacts of Changing Environmental Conditions on Larval Fish Dispersal and Population Connectivity*

Advisors: Rubao Ji and Joel Llopiz, Biology