

Recent Undergraduate Research Projects and Advisors

Applied Ocean Physics and Engineering Department

Advancing Marine Chemical Sensing Technology for Deep Sea and Shallow Estuary Applications (advisor: Anna Michel)

Autonomous Greenhouse Gas Analyzing with a Jetyak (advisors: Anna Michel and David Nicholson)

Design and Development of a Pixhawk-based Robotic Vehicle for the Surf Zone (advisors: Peter Traykovski and Hanumant Singh)

Design and Testing of a Thermal Regulator for an AUV Gravimeter (advisor: James Kinsey)

Design of an Imaging System for a Glider (advisors: James Kinsey and Brian Claus)

Identifying the nature of a strong pervasive acoustic scattering layer in the northeast Pacific (advisor: Andone Lavery)

Lightweight REMUS 6000 (advisor: Mike Purcell)

Sediment transport in Katama Bay and inlet, Martha's Vineyard, Massachusetts (advisor: Britt Raubenheimer)

Subsurface transport of shelf water at the Mid-Atlantic Bight shelf-break (advisor: Gordon Zhang)

Wind wave production on a gently sloping tidal flat (advisor: Britt Raubenheimer)

Biology Department

A method for determining phytoplankton community structure from ocean color at the Martha's Vineyard Coastal Observatory (advisor: Heidi Sosik)

Effect of Hypoxia on DNA Methylation during Embryonic Development in Fish Embryos (advisor: Neel Aluru)

*Exploring the Effects of Turbulent Spin Up on Larval Swimming Behavior in the Eastern Oyster (*Crassostrea virginica*)* (advisor: Lauren Mullineaux)

*Effects of ocean acidification on the swimming behavior of paralarval longfin inshore squid (*Doryteuthis pealeii*)* (advisor: Aran Mooney)

Spatial and Temporal Variation in the Diets of Northwest Atlantic Forage Fish (advisor: Joel Llopiz)

The vertical distribution of coral reef fish larvae and the implications for population connectivity (advisor: Joel Llopiz)

Tracking ocean productivity through stable carbon isotope analysis in meso- and bathy-pelagic fishes of the North Atlantic (advisor: Simon Thorrold)

Two invasive invertebrates: understanding their range limits in Northeast North America with relative thermal tolerance (advisor: Carolyn Tepolt)

Geology and Geophysics Department

Bahamian Storm Sediment: Analyzing Hurricane Deposits in Marine Blue Holes of South Andros, Bahamas (advisor: Jeff Donnelly)

Drivers of Seasonal and Interannual Variations in Waquoit Bay Carbonate Chemistry (advisors: Dan McCorkle and Scott Doney)

Observing the Atlantic Meridional Mode (AMM) in simulations of North Atlantic hurricanes (advisor: Jeff Donnelly)

Oysters as a Sustainable Solution: Geochemistry and microbial community analysis at aquaculture sites in Little Pond, MA (advisor: Virginia Edgcomb)

Porous Flow and Focused Flow Experiments using Chloride Schist and Peridotite: An Experimental Analysis of Mélange Diapirs (advisor: Veronique LeRoux)

Reconstructing Tropical Atlantic Sea Surface Temperatures during the Last Interglacial (Anne Cohen)

Thallium isotopes tracking Mn-oxide burial – a proxy for deoxygenation during Oceanic Anoxic Event 2 (advisor: Sune Nielsen)

Western Tropical Atlantic hydrology changes during abrupt climate events in the last glacial interval (advisor: Delia Oppo)

Marine Chemistry and Geochemistry Department

Assessing the Annual Biogeochemical Dynamics of the Lower Mississippi River and its Tributaries (advisor: Bernhard Peucker-Ehrenbrink)

How manipulations to microbial communities and lability of marsh grass detritus alter nutrient cycling dynamics in tidal creek sediments (advisor: Amanda Spivak)

Ice Rafted Debris Exceeds Proglacial River Sediment as a Source of Potentially Bioavailable Iron to Coastal Waters in Greenland (advisors: Matt Charette and Fiamma Straneo)

Investigating reaction kinetics, products and isotope signatures during abiotic reduction of nitrate and nitrite by amorphous iron sulfide (advisor: Scott Wankel)

Localized impact of aquaculture effluent on Red Sea coral reef water nutrients and microorganisms (advisor: Amy Apprill)

Microbial Colonization of Metal Sulfides at a Hydrothermal Vent (advisors: Colleen Hansel and Stefan Sievert)

*Reactive Oxygen Species production in the holobiont of the Northern Star Coral (*Astrangia poculata*)* (advisors: Amy Apprill and Colleen Hansel)

Timescales and Efficiency of Salt Marsh Restoration (advisor: Amanda Spivak)

Physical Oceanography Department

Drivers of Submesoscale Dynamics in the Coastal Ocean: A Study Using High-Frequency Radar Observations (advisors: Amala Mahadevan and Anthony Kirincich)

Global salinity predictors of western United States rainfall (Raymond Schmitt)

Interannual to Decadal Temperature Variability in the Northwest Atlantic: Observations from the M/V Oleander XBT Line (advisors: Glen Gawarkiewicz and Magdalena Andres)

Intraseasonal SST-precipitation coupling during the Indian Summer Monsoon and its modulation by the Indian Ocean Dipole (advisors: Hyodae Seo and Caroline Ummenhofer)

Storms and Stratification on the Middle Atlantic Bight Shelf (advisor: Robert Todd)

Winter Rainfall in Southwest Western Australia and Its Spatial and Temporal Relationships with Oceanic and Atmospheric Conditions (advisor: Caroline Ummenhofer)