Title: Combining measurements from surface and subsurface oceanographic platforms to understand controls on surface ocean variability

Description: In Spring 2022, we collected extensive oceanographic and meteorological measurements just north of the Gulf Stream with an underwater glider, a Saildrone autonomous surface platform, and aboard the Research Vessel Endeavor. All of these measurements can reveal how ocean circulation transports properties from the subsurface ocean towards the surface. Variability at the ocean's surface is of particular interest because this is where interactions with the atmosphere influence weather and gas exchange. In this project, the SURFO student researcher will examine data from the three platforms, visualizing them in ways that help us understand the connection between surface and subsurface ocean. The project is flexible to the student's interest in terms of which data sets and variables will be the focus. We expect signatures of upwelling influencing surface temperature, chlorophyll and carbon concentrations. So, examples of focal points may be in seeking an understanding of what sets the chlorophyll patchiness, or how we can use near-surface data to infer vertical mixing from below.

Residence: The project could be done remotely, but I have a strong preference for the student to be in residence.

The student should have a background in coding and plotting data in Matlab or Python.

Professor Jaime Palter

Sarah Nickford is the graduate student who may act as a mentor.

Prospective students may contact me.