

Short Project for NOAA CREST High School students

Nearshore environments are among the most vulnerable yet economically valuable ecosystems on Earth. Estuaries and coastal oceans are critically important as essential habitat for marine life, as highly productive ecosystems, as a strong economic driver for coastal communities, and as a highly dynamic interface between land and ocean biogeochemical cycles. Still, our present capabilities to observe inland and coastal water dynamics from space are limited in their temporal, spatial, and spectral resolution. These limitations, in turn, constrain our ability to monitor and understand physical and biogeochemical processes in nearshore environments, or predict the response and resilience of nearshore ecosystems to current and future pressures including sea level rise, coastal urbanization, and anthropogenic pollution.

The NOAA CREST HIRES students will be involved in research focusing on assessing optical spatiotemporal variability of coastal waters adjacent to tidal wetland ecosystems, and linking optical measurements to changes in water quality and composition. Areas with extensive tidal wetlands will be identified, and optical properties will be studied using both existing field observations and satellite remote sensing products from medium and high resolution sensors.

The students will learn how to use various tools and software of varying levels of complexity to analyze, process, and visualize satellite ocean color datasets. They will also gain skills in processing and analysis of field observations collected as part of previous field campaigns in complex estuarine waters.

Advisors:

Dr. Fang Cao (Postdoctoral Research Associate)

Ms. Myrna Harna (Undergraduate Student)

Dr. Maria Tzortziou (Associate Professor)