

**Opportunity Title:** Advances in Satellite Remote Sensing of Ocean Phytoplankton and Biogeochemistry

**Opportunity Reference Code:** 0266-NPP-NOV23-GSFC-EarthSci

**Organization** National Aeronautics and Space Administration (NASA)

**Reference Code** 0266-NPP-NOV23-GSFC-EarthSci

**How to Apply** All applications must be submitted in [Zintellect](#)

**Application Deadline** 11/1/2023 6:00:59 PM Eastern Time Zone

**Description Description:**

The objectives of this research are to develop advanced ocean color algorithms that take advantage of hyperspectral and ultraviolet capabilities on NASA's upcoming ocean color satellite missions, PACE, GLIMR and SBG, to infer biological and biogeochemical constituents from the derived optical properties. Specifically, the aims are to develop algorithms to retrieve from PACE, GLIMR, and/or SBG remote sensing reflectance, (1) ocean phytoplankton community composition targeting the major taxonomic groups, (2) dissolved and particulate organic carbon concentrations in coastal ocean and estuarine systems, (3) global ocean particulate inorganic carbon, and (4) global ocean suspended particulate matter. Other critical component of this research include determining uncertainties of these ocean remote sensing data products and derived geophysical trends. Prime considerations include the role of marine primary production and dissolved/particulate organic matter in coastal and global carbon budgets and the couplings between physical and biogeochemical processes. Global and regional time-series data are used for investigating the coupling between physical and biogeochemical processes in time scales of days to years. Potential research areas include ship- and laboratory-based sample analysis for development of in situ bio-optical algorithms for ocean color satellite retrieval of surface layer dissolved and particulate organic carbon constituents including chromophoric dissolved organic matter (CDOM), terrigenous organic matter, black carbon, phytoplankton community composition, and productivity. Investigations focusing on polar regions are of particular interest including those relevant to the NASA OBB Arctic-COLORS planned field campaign.

**Field of Science:** Earth Science

**Advisors:**

Antonio Mannino  
antonio.mannino-1@nasa.gov  
(301) 286-0182

**Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States.**?A complete list of Designated Countries can be found at:

<https://www.nasa.gov/oiir/export-control>. ?

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a



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valid EAD card and 2) I-485 or I-589 forms in pending status

**Eligibility Requirements**

- **Degree:** Doctoral Degree.