Opportunity Title: Geostationary ocean color satellite investigation of coastal biogeochemical fluxes and rates
Opportunity Reference Code: 0267-NPP-NOV23-GSFC-EarthSci

Organization	National Aeronautics and Space Administration (NASA)
Reference Code	0267-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 opportunity are to apply high-frequency sequential geostationary ocean color images using the Korean GOCI and GOCI-II satellite sensor data (from hourly daytime observations to multiple day image sequences) as proxies for NASA's upcoming Geostationary Littoral Imaging and Monitoring Radiometer (GLIMR) mission, (1) to quantify surface water velocities and trajectories of materials (a) to quantify the fluxes of suspended sediments and colored dissolved organic matter from river outflows to coastal ocean and beyond, (b) to track the formation and evolution of phytoplankton including harmful algal blooms, (c) to quantify fluxes of carbon pools and suspended sediments from event-based processes such as hurricanes and (2) to discern changes in ocean color properties to quantify biogeochemical processes such as phytoplankton production, photochemistry, microbial degradation of organic matter. The GLIMR science investigation with its hyperspectral radiometer in geostationary orbit will enable broad-scale quantification of rapid changes in phytoplankton growth rate and community composition, fluxes of materials from land to ocean and also enable tracking the progression of oil spills and harmful algal blooms to mitigate their impacts on human health, coastal ecosystem health, and economy. GLIMR will collect multiple frames (each 300 m x 300 m across a length of 920 km north to south) over 0.76 seconds of integration time to produce a Field of View scene (~300 m x ~300 m across a length of 920 km north to south). These frames will overlap as GLIMR scans across various regions such as the Gulf of Mexico. An additional objective entails development of approaches to sharpen GLIMR's image quality to support the two primary science objectives. To accomplish this additional objective, development and evaluation of image processing algorithms are sought to sharpen the spatial resolution of GLIMR's spectrometer observations.
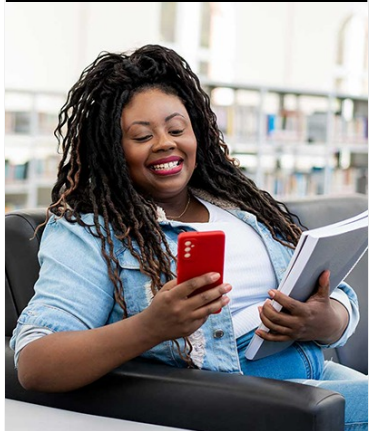
Field of Science: Earth Science

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Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents;

Eligibility Requirements	• **Citizenship:** LPR or U.S. Citizen • **Degree:** Doctoral Degree.