

Opportunity Title: Data scientist for new missions in the NASA GSFC Ocean

Ecology Laboratory

Opportunity Reference Code: 0210-NPP-NOV23-GSFC-EarthSci

Organization National Aeronautics and Space Administration (NASA)

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

Description The NASA Plankton, Aerosol, Cloud, and ocean Ecosystem (PACE) mission, slated for launch in 2022, will extend and improve NASA's 20+ year record of satellite observations of global ocean biology, aerosols, and clouds. Designed and built at the NASA Goddard Space Flight Center (GSFC), PACE will include the Ocean Color Instrument (OCI), an imaging spectrometer with sensitivity from the ultraviolet (UV) to near infrared (NIR), plus several discrete shortwave infrared bands. PACE will also have two contributed multi-angle polarimeters (MAPs), which maximize observed information about the earth's atmosphere and ocean. Another upcoming mission is the Geostationary Littoral Imaging and Monitoring Radiometer (GLIMR), a NASA Earth Venture class hyperspectral imager devoted to coastal remote sensing from geostationary orbit.

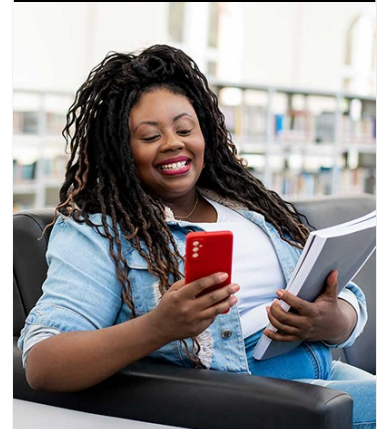
Scientific data processing for these instruments will be performed in the NASA GSFC Ocean Ecology Laboratory (OEL), which has a long history of ocean color science data processing for instruments such as the Sea-Viewing Wide Field-of-View Sensor (SeaWiFS), the Moderate Resolution Imaging Spectroradiometer (MODIS) and the Suomi National Polar-orbiting Partnership (Suomi NPP). However, the hyperspectral, multi-angle, polarimetric and geostationary nature of the PACE and GLIMR missions means that the data volume will be significantly larger than in the past, and more sophisticated data analysis approaches will likely be needed in order to fully exploit these new datasets. In recognition of this challenge, NASA seeks a post-doctoral fellow with the appropriate data science skills to develop new methods of analysis, processing or otherwise.

Examples of areas of interest include:

- deep learning for forward/inverse modeling
- probabilistic programming
- statistical analysis and inference methods
- cloud computing
- data reduction and mining methods
- problem solving and algorithm design of complex systems using optimization methods

Candidates need not have a strong background in oceanography or atmospheric science to apply, although an interest in, and ability to understand the underlying problems is important. The role of the candidate is to seek new solutions to established problems in close collaboration with PACE domain specialists and implement them at scale. Candidates must have experience or training in one or more of the following skill sets as they apply to large datasets:

- data science
- computer science



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- statistics
- artificial intelligence

For more details, please see:

<https://oceancolor.gsfc.nasa.gov>

<https://pace.oceansciences.org>

<https://science.gsfc.nasa.gov/earth/oceanecology>

Location:

Goddard Space Flight Center
Greenbelt, Maryland

Field of Science:Earth Science

Advisors:

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

Eligibility Requirements

- **Degree:** Doctoral Degree.