

**Opportunity Title:** Integrating Satellite, Surface, and Model Data into Machine Learning Algorithms

**Opportunity Reference Code:** 0269-NPP-NOV23-GSFC-EarthSci

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

**Reference Code** 0269-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:**

NASA and other agencies worldwide have been observing atmospheric aerosols from space and ground platforms for more than three decades. In addition, there are model outputs in the form of forecasts and reanalysis. There is a suite of aerosol retrievals from sensors such as MODISs, VIIRSs, OMI, MISR, ABIs, AHI, and similarly ground measurement records such as AirNow, AERONET, and others. The climate and air quality research and operational community worldwide have extensively used these datasets independently or in combination. The use of satellite observations for air quality monitoring is emerging and advancing quickly. The global air quality community is moving towards a hybrid system where regulatory, low-cost sensors and satellite observations play their role. Thus, there is a huge demand for integrated datasets to support traditional research and application and the modern cloud and machine learning community.

In this project, we intend to develop tools using commercial cloud computing services to accelerate the use of earth observations in particulate matter air quality research and applications to enable science in the cloud. To facilitate this objective, we will generate invaluable high-quality training and validation data sets labeled and ready to use in machine learning algorithms that will benefit current and future satellite missions (TEMPO, MAIA). This project will take a fleet of satellites, ground-based, and model output, fuse them at appropriate spatial and temporal scales and enable science and decision making in the cloud using new machine learning techniques. This effort will develop science on the cloud and improve and expand the use of NASA satellite data to a broader community.

**Field of Science:** Earth Science

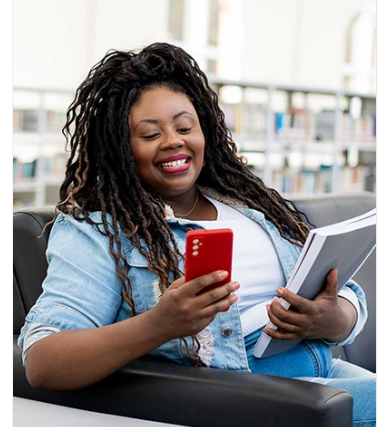
**Advisors:**

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(256) 468-7651

**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:



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- 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.