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## GESTAR II MORGAN STATE UNIVERSITY UNDERGRADUATE FELLOWSHIP

### Four (4) full-time paid summer internship opportunities.

#### **Project 1: Support Development of a Framework for Open Training Dataset Assembly**

Researchers with the Ocean Ecology Lab at NASA/GSFC are seeking a computer science or data science intern to support development of a framework for open training dataset assembly for NASA PACE ([Plankton, Aerosol, Cloud, ocean Ecosystem](#)) Mission.

**Skill required:** Fluency in the Python programming language; familiarity with version control using git; literacy with software and API documentation; interest in open science and open data workflows; independence in work style; commitment to frequent and clear communication

#### **Project 2: Estimating cloud top height from advanced spaceborne multi-angle Earth imagery**

We are seeking an undergraduate research assistant to adapt a simple cloud top height algorithm, developed on aircraft instrument data, to HARP2 cloud data from space (Sinclair et al. 2017; Atmos. Meas. Tech., doi.org/10.5194/amt-10-2361-2017). The student researcher will work alongside scientists at the University of Maryland Baltimore County (UMBC), NASA Goddard Space Flight Center (GSFC), and the Netherlands Institute for Space Research (SRON).

**Skill required:** The applicant should have interest in Earth science, satellite instruments, statistics, demonstrated experience with programming (Python preferred), and fluency in English.

#### **Project 3: Aerosol Backscatter Analysis and Evaluation Using Python Code**

This project will focus on updating the python code for offline calculation of aerosol optical properties to compute the attenuated total backscatter coefficient from GEOS output that is akin to the data provided by CALIOP. The code will then be used to generate total backscatter from the MERRA-21C reanalysis and perform an evaluation of aerosol vertical profiles compared to the satellite data.

**Skill required:** Candidates should be proficient in python and understand aerosol optics.

#### **Project 4: Solar Absorption Spectrometer Data Collection and Analysis**

The student will be responsible for operating and maintaining spectrometers and other instruments at Morgan State University's Lake Clifton High School Site, together with basic data analysis and scientific interpretation of the data.

**Skill required:** Responsible, basic electronic instrument knowledge, basic data analysis using spreadsheet and Python Language.

For more information and apply, visit

<https://gestar2.umbc.edu/student-opportunities/gestar-ii-msu-undergraduate-fellowship/> and fill out application form under "Application Information"

For Questions, contact Dr. Xiaowen Li ([Xiaowen.Li@morgan.edu](mailto:Xiaowen.Li@morgan.edu))