

**Opportunity Title:** Ozone Lidar Data Analyses for Air Quality Applications

**Opportunity Reference Code:** 0024-NPP-NOV23-LRC-EarthSci

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

**Reference Code** 0024-NPP-NOV23-LRC-EarthSci

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

**Description** Tropospheric ozone is a key major pollutant in the continental US, and continues to pose challenges for populated regions along the East Coast. Measurements obtained by the Langley Mobile ozone Lidar (LMOL) system provides insights into the vertical distribution of ozone and its temporal dynamics. The LMOL system was deployed during the Ozone Water Land Environmental Transition Study in 2017, along the Chesapeake Bay Bridge Tunnel (CBBT) near the center of the Chesapeake Bay mouth. The following year LMOL was deployed to Hart-Miller Island ~ 20 km East of Baltimore in the northern Chesapeake Bay and then to the coast of Connecticut for the Long Island Sound Tropospheric Ozone Study. As a result, LMOL measurements represent a unique data set in coastal regions where sharp spatial transitions in O<sub>3</sub> are expected. Over 600 hours of LMOL observations have been obtained, offering the largest collection of O<sub>3</sub> profile data over water and at coastal boundaries from a mobile lidar known to date. Coastal regions can pose significant challenges for models and satellite retrievals due to the land-water boundary and related sea-breeze re-circulation effects. As a result, LMOL data can be used for air quality model improvement and analysis in understanding mechanisms leading O<sub>3</sub> exceedances. Research proposals are encouraged that will utilize LMOL data in conjunction with other data sources to better understand the development of O<sub>3</sub> events that can provide policy relevant science to interested state regulators, and evaluate observations in relation to air quality models and satellite retrievals. In addition, NASA anticipates the launch of the Tropospheric Emissions Monitoring of Pollution (TEMPO) satellite in the near future, a system in geostationary orbit that will provide continuous measurements of pollutants over the continental U.S. As a result, LMOL data analyses relevant to TEMPO observations are also of interest. Further deployment of the LMOL system is anticipated, providing additional data and opportunities to participate in field campaign work.

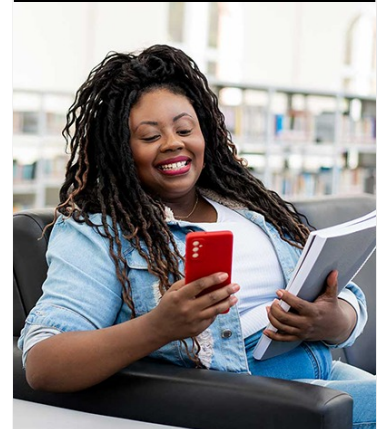
**Location:**

Langley Research Center  
Hampton, Virginia

**Field of Science:**Earth Science

**Advisors:**

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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.