

Opportunity Title: Airborne In Situ Trace Gas Analysis of Earth's Atmosphere

Opportunity Reference Code: 0035-NPP-NOV23-LRC-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 Concentrations of trace gases provide insight into a broad array of atmospheric and environmental science questions, such as those concerning regional air quality and global climate. Trace gas analysis is a vital tool in understanding how not only where pollutants are emitted, but also how they chemically evolve and distribute throughout the atmosphere and affect both urban and remote regions. The NASA Langley in situ Trace Gases group provides state-of-the-art airborne and ground-based measurements of a variety of gases relevant to air quality, climate, and atmospheric dynamics and transport, including water vapor, carbon dioxide, carbon monoxide, nitrous oxide, methane, and other VOCs. Our measurements are collected using a variety of both modified commercial and custom instruments using various forms of spectroscopy and mass spectrometry. We collect these measurements in support of a variety of globally-ranging field projects and develop new technologies that push forward the envelope of in situ gas phase measurement technology. Upcoming major projects include ACCLIP (East Asian monsoon upper atmosphere transport), SABRE (upper atmospheric composition), ASIA-AQ (East Asian pollution and transport), and ARCSIX (polar aerosol/cloud interactions). Postdoctoral work in our group will include working on cutting-edge atmospheric research questions, gaining experience with state-of-the-art trace gas measurement technology, participation in major NASA airborne science projects, and interacting in the world-class airborne science community within the NASA Langley Science Directorate.

Potential research pathways include experimental and/or analytical work in the following areas:

- Pollution production and chemical evolution
- Chemical emissions and transport
- Carbon cycle exchange
- Upper atmospheric humidity, dynamics, and composition

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.