Opportunity Title: Global Climate Model Diagnostics and Evaluation: At the Intersection of Models and Satellite Data
Opportunity Reference Code: 0014-NPP-NOV23-LRC-EarthSci

Organization	National Aeronautics and Space Administration (NASA)
Reference Code	0014-NPP-NOV23-LRC-EarthSci
Application Deadline	11/1/2023 6:00:59 PM Eastern Time Zone

Description

Understanding the complex interactions that comprise Earth's climate system is an urgent problem whose answer has significant implications on human life, economics, and geo-politics. The most comprehensive tool available to study climate system evolution is the general circulation model (GCM), which is an amalgamation of physical processes involving the atmosphere, ocean, cryosphere, biosphere, and their interactions that produce Earth's climate. Our understanding of these processes is incomplete; therefore, GCMs are imperfect making the evaluation, diagnosis, and attribution of GCM deficiencies is an important area of research.

This opportunity is motivated by the need to evaluate, diagnose, and understand critical physical processes using models and observations to improve GCMs. This goal of this group is to evaluate, diagnose, and attribute model errors to physical processes through innovative approaches using NASA satellite data (e.g., CERES, CALIPSO, CloudSAT, and MODIS). The research being conducted evaluates GCMs on timescales from the diurnal cycle to interannual variability and on spatial scales from local to global. Specific focuses within this opportunity include interactions between polar clouds, sea ice, and poleward heat transport, the representation of extratropical cyclones and mid-latitude cloud feedbacks, and evaluating GCM diurnal cycle representation and the "knock-on" effects to the climate state and its evolution.

Location:
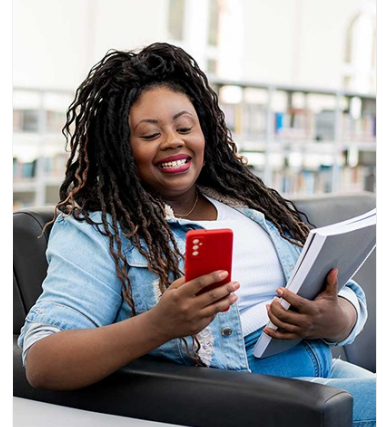Langley Research Center
Hampton, Virginia

Field of Science: Earth Science

Advisors:
Patrick Charles Taylor
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757-864-7581

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,

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- 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.