Opportunity Title: Solar System Exploration: Mars Organic Analysis and Curiosity's SAM Instrument
Opportunity Reference Code: 0002-NPP-MAR26-GSFC-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

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How to Apply All applications must be submitted in Zintellect

Please visit the NASA Postdoctoral Program website for application instructions and requirements: How to Apply | NASA Postdoctoral Program (orau.org)

A complete application to the NASA Postdoctoral Program includes:

1. Research proposal
2. Three letters of recommendation
3. Official doctoral transcript documents

Application Deadline 3/1/2026 6:00:59 PM Eastern Time Zone

Description **About the NASA Postdoctoral Program**

The NASA Postdoctoral Program (NPP) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems, and astrobiology.

Description:

The Sample Analysis at Mars (SAM) instrument on the Curiosity rover incorporates a multi-column gas chromatograph mass spectrometer (GCMS) that is used to analyze the composition of organic compounds released from rocks. In addition to GCMS experiments on compounds thermally released using evolved gas analysis (EGA) from powdered rocks and soils, SAM utilizes chemical derivatization and thermochemolysis techniques based on solvents and reagents sealed in several SAM cups.

The objective is to conduct pyrolysis, GCMS, and derivatization and thermochemolysis studies on terrestrial analogues and Mars mineral and organic simulants using commercial GCMS systems, SAM breadboards, and a high fidelity SAM testbed. In addition, characterization is needed for a range of calibrants using the specific columns and experiment conditions used by the SAM experiment on Mars. These studies will extend the groundbreaking discoveries of SAM of organics on Mars and contribute to the interpretation of existing data and future data to be secured as the Curiosity rover moves further up Mount Sharp in Gale crater.

Location:
Goddard Space Flight Center
Greenbelt, Maryland

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Field of Science: Planetary Science

Advisors:

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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:

- 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

Questions about this opportunity? Please email npp@orau.org

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.