**Opportunity Title:** Organic Capillary Electrophoresis Analysis System (OCEANS) Protocol Development and Validation on Astrobiology Analog Samples
**Opportunity Reference Code:** 0157-NPP-NOV23-JPL-Astrobio

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

**Reference Code** 0157-NPP-NOV23-JPL-Astrobio

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

**Description** A postdoctoral position is available in microscale chemical analysis in the Microdevices Laboratory at JPL. This research will involve the development and validation of separation protocols for biomarker compounds using capillary electrophoresis-mass spectrometry (CE-MS). The ultimate goal of this effort is to lay the foundation for a life detection mission to an ocean world such as Europa or Enceladus seeking chemical signatures of life. Primary chemical targets of interest are amino acids, carboxylic acids, and polycyclic aromatic hydrocarbons. The first stage of the fellowship will involve development of methods for chiral analysis of amino acids using CE-MS, and optimization of limits of detection. This initial research will utilize a newly installed SCIEX CESI 8000 capillary electrophoresis instrument coupled to a Thermo Fleet LCQ mass spectrometer. Following this, methods for carboxylic acid and PAH analysis will also be developed. The final phases of the research project will involve the use of methods developed for the analysis of ocean world analog samples collected from sites such as Lake Vostok, Taylor glacier, or deep ocean water.

Candidates should have a recent Ph.D. in chemistry or a chemistry-related discipline with a strong background in analytical chemistry, capillary electrophoresis, electrospray ionization, and mass spectrometry. Experience analyzing complex real-world environmental samples is also a significant asset.

**Location:**
Jet Propulsion Laboratory
Pasadena, California

**Field of Science:**Astrobiology

**Advisors:**
Peter Willis
Peter.A.Willis@jpl.nasa.gov
818-354-1297

**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.

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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

***This opportunity may require the following: 1- Mandatory drug testing; 2-Random drug testing; 3- Testing prior to initiation of fellowship appointment.***

**Eligibility Requirements**

- **Degree:** Doctoral Degree.