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Opportunity Title: Spacecraft Microbial Cleanliness and Risk Assessment using Bioinformatics Tools
Opportunity Reference Code: 0302-NPP-JUL25-JPL-BioSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0302-NPP-JUL25-JPL-BioSci

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 7/1/2025 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 U.S. and non-U.S. 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:

We are excited to announce an opportunity for a highly motivated Postdoctoral Fellow with expertise in molecular biology or bioinformatics to join our team and contribute to a groundbreaking project focused on low-biomass microbial burden quantification, sequencing technologies, and bioburden assessment. This fellowship focuses on developing protocols for low-biomass samples, including optimizing digital PCR (dPCR) assays with universal bacterial primers and probes to quantify microbial burden and evaluate risks based on the target body of exploration. The candidate will collect and analyze cleanroom samples to compare traditional NASA Standard Assays with molecular approaches, while also refining nanopore-based sequencing technology for low-biomass samples and benchmarking its performance against industry-standard sequencing methods. This opportunity allows for collaboration with leading institutions to validate protocols and create open-access tools for data reporting and visualization. If you are passionate about advancing microbial detection technologies and driving innovation in bioburden assessment, we encourage you to apply and join us in this pioneering effort.

Field of Science: Biological 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

Qualifications

Required Qualifications:

Ph.D. in Molecular Biology, Bioinformatics, Microbiology, or a related field.
Expertise in digital PCR (dPCR), 16S-based bacterial detection, and sequencing technologies.
Hands-on experience with low-biomass sample preparation and analysis.
Strong background in protocol development and assay validation.
Proficiency in bioinformatics tools and statistical analysis.

Preferred Qualifications:

Experience with nanopore sequencing technology.
Track record of scientific publications.

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.