

Opportunity Title: Genetic improvement of in-space microbial bioproduction

Opportunity Reference Code: 0118-NPP-NOV23-ARC-BioSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0118-NPP-NOV23-ARC-BioSci

How to Apply All applications must be submitted in [Zintellect](#)

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

Description Description:

The Space Synthetic Biology project at Ames Research Center is studying on-demand microbial production of valuable products in long-duration missions to the Moon or Mars. Identifying suitable microbial host species is critical for in-space biomanufacturing. Chassis organisms need to survive long-term storage in spacecraft with predictable yield of target products. This project focuses on understanding the genomic changes associated with long-term storage of microbes on the International Space Station. As part of the BioNutrients flight experiment, nine microbial species, including genome-wide knockout collections, are being stored to compare pre-treatments for improved tolerance to spacecraft storage conditions. Populations of surviving microbes have been collected in a time series over three years with two additional years of sample returns scheduled. The postdoctoral scholar will investigate the genetic changes that are associated with long-term storage with the goal of identifying variants that are adapted to in-space storage conditions. Applicants will design and execute genomics and bioinformatics experiments to identify useful variation as well as experimentally validate candidate species or genetic variation. The future goal is to identify or develop space-adapted microbial chassis organisms to enable robust bioproduction systems.

Field of Science: Biological Sciences

Advisors:

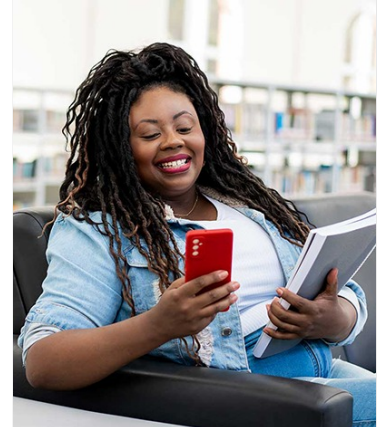
Andrew Settles
andrew.m.settles@nasa.gov
(650) 604-9493

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/oair/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



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Eligibility Requirements • **Degree:** Doctoral Degree.