

Opportunity Title: Microbial Diversity of Spacecraft and Associated Surfaces

Opportunity Reference Code: 0063-NPP-NOV23-JPL-BioSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0063-NPP-NOV23-JPL-BioSci

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

Description Preventing forward contamination of extraterrestrial environments with earth borne microbes is essential in achieving NASA's strategic sub-goal 3C, the advancement of scientific knowledge of the origin and history of the solar system, and the potential for life elsewhere. By isolating and identifying organisms with the potential to survive Martian conditions, and by elucidating the microbial community structures from which such organisms arise, our research on planetary protection technology (La Duc et al., 2007) facilitates NASA's science objective 3C.3 of progressing in identifying and investigating past or present habitable environments on Mars and other worlds, and determining if there is or ever has been life elsewhere in the solar system. Furthermore, our research responds directly to the development or adaptation of modern molecular analytical methods to rapidly detect, classify, and/or enumerate the widest possible spectrum of Earth microbes carried by s/c before, during, and after assembly and launch processing (Moissi et al., 2007).

La Duc, M. T., Dekas, A. E., Osman, S., Moissi, C., Newcombe, D. & Venkateswaran, K. (2007). Isolation and characterization of bacteria capable of tolerating the extreme conditions of clean-room environments. *Appl Environ Microbiol* **73**, 2600-2611.

Moissi, C., La Duc, M. T., Osman, S., Dekas, A. E. & Venkateswaran, K. (2007). Molecular bacterial community analysis of clean rooms where spacecraft are assembled. *FEMS Microbiol Ecol* **61**, 509-521.

Location:

Jet Propulsion Laboratory
Pasadena, California

Field of Science: Biological Sciences

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);



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- 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

Eligibility Requirements

- **Degree:** Doctoral Degree.