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Opportunity Title: Microgravity Science and Technology
Opportunity Reference Code: 0027-NPP-MAR25-GRC-Interdisc

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0027-NPP-MAR25-GRC-Interdisc

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 3/1/2025 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 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:

This opportunity pertains to the use of reduced gravity environments for the advancement of science and the enabling of technologies for space exploration in the areas of combustion science, fluid physics, and biological and medical systems research. NASA Glenn Research Center has a world-class and unique suite of ground-based microgravity research facilities that include: a 2.2-second drop tower, a 5-second zero- gravity facility, and access to reduced-gravity aircraft. These facilities are utilized for 1) developing longer-duration space flight experiments to be conducted on the International Space Station, 2) conducting enabling research for NASA' s missions to the Moon and Mars and 3) conducting experiments where a reduced gravitational environment may provide unique insights into physical phenomena of interest to NASA. Focused research investigations are in the specific areas of high-pressure combustion, spacecraft fire safety, advanced life support systems and space physiology. Research is conducted in the physical sciences with an emphasis on gravitational effects on fundamental processes in such diverse areas as high pressure combustion, supercritical phase transition, supercritical water oxidation, colloids, material flammability, flame spread, aerosol dynamics, smoke detection, boiling and heat transfer. In the research area of the biological and medical systems this would include the development of compact, robust, multi-function biomedical sensors to monitor astronaut health and reduce levels of risk in NASA's exploration missions. Computational modeling is used to research the effects of a space environment on human

physiology and to predict astronaut performance capabilities and medical needs. Well-equipped state-of-the-art laboratories are used to develop new diagnostic techniques/instruments especially suited for use in space and microgravity environments. The investigations provide new knowledge that is used to improve processes and equipment (energy, environment, manufacturing, and medical) used for the exploration of space both robotically and by long- duration manned missions.

Location:
Glenn Research Center
Cleveland, Ohio

Field of Science: Interdisciplinary/Other

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

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree.