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Opportunity Title: Responses of Crops to the Space Environment
Opportunity Reference Code: 0005-NPP-JUL25-KSC-BioSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0005-NPP-JUL25-KSC-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:

In space, crop plants and their associated microbiomes are exposed to a combination of multiple space environmental factors, such as altered gravity, elevated space radiation levels, lack of magnetic field, reduced air pressure that may cause stress and impact plant growth. Furthermore, the space radiation environment may further impair the ability of seeds and plants to adapt to these environmental challenges during long-duration missions. To support successful integration of fresh food production systems in future spaceflight missions, more studies need to be conducted to understand radiation impacts on the ability of space crop candidates including plant microbiomes to respond to space multi-stressors utilizing ground-based simulations. Developing and validating ground┐based multi-stressor capabilities for space research through comparison experiments are also part of the goals of this opportunity. Candidate model "space crops" to be studied may include red romaine lettuce, mizuna, 'Red Robin' dwarf tomatoes, and/or other B.rapa cultivars. Suspension cultures of Duckweed and crop plant cells are good candidates as well to test ground-based multi-stressor space simulation capabilities. The study selected by this opportunity will be performed in the Microgravity Simulation Support Facility (MSSF) at KSC utilizing a combination of ground-based simulation devices.

Field of Science: Biological Sciences

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Advisors:

Ye Zhang
Ye.Zhang-1@nasa.gov
(321) 861-3253

Aubrie Orourke
aubrie.e.orourke@nasa.gov
(321) 749-7654

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

Point of Contact Mikeala

Eligibility Requirements

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