

Opportunity Title: Nonlinear Dynamical Approach to the Study of Algorithm Development in Computational Fluid Dynamics

Opportunity Reference Code: 0013-NPP-MAR26-ARC-Aero

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0013-NPP-MAR26-ARC-Aero

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 3/1/2026 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:

Long-term basic research focuses on integrating nonlinear dynamics, bifurcation theory, and chaotic dynamics with computational physics and computational sciences. We are particularly interested in improving the understanding of numerical uncertainties and constructing advanced algorithms for practical aerospace and astrobiology computations. This includes using concepts from nonlinear dynamical systems theory to guide the development of temporally and spatially adaptive numerical schemes that can improve the reliability, nonlinear stability, accuracy, convergence, and efficiency over existing algorithms for steady and unsteady fluid-flow equations that display strong nonlinearity and multiscale physical processes. The nonhomogeneous partial differential governing equations are both hyperbolic and parabolic, with application to flow problems in the NASA Access to Space program, Deep Space Exploration, High Performance Computing and Communications, Planetary and Atmospheric Sciences, and the Computational Astrobiology Initiative. Specific topics include combustion, nonequilibrium reacting flow, high-speed shock-boundary-layer interactions, and direct numerical simulation of turbulent flows.

Location:

Ames Research Center



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Opportunity Reference Code: 0013-NPP-MAR26-ARC-Aero

Moffet Field, California

Field of Science: Aeronautics

Advisors:

Helen M.C. Yee

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650-604-4769

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

Point of Contact [Mikeala](#)

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