

**Opportunity Title:** Improving the Use of Sea Ice Observations for GEOS  
Subseasonal-to-Seasonal Prediction

**Opportunity Reference Code:** 0341-NPP-NOV26-GSFC-EarthSci

**Organization** National Aeronautics and Space Administration (NASA)

**Reference Code** 0341-NPP-NOV26-GSFC-EarthSci

**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** 11/1/2026 6:00:59 PM Eastern Time Zone

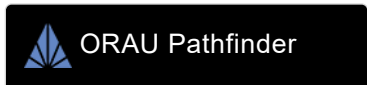
**Description** About the [NASA Postdoctoral Program](#)

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:**

The transition in the Arctic from multi-year ice to first year ice raises the urgency of process understanding and modeling of sea ice formation/melt processes, including the interaction with the high latitude ocean. A tool for both understanding and prediction of these processes is the next generation of the NASA Global Modeling and Assimilation Office (GMAO) Goddard Earth Observing System (GEOS) subseasonal-to-seasonal (GEOS-S2S) prediction system using MOM6, CICE6, and JEDI/SOCA. Continuing sea ice development within the GEOS-S2S framework seeks to improve process understanding and substantially increase the use of NASA satellite and other observations in high-latitude regions to improve the initial ocean-sea-ice state and subseasonal-to-seasonal prediction.

This project will focus on improving how sea ice observations are assimilated into the multi-category CICE6 model. In particular, the research will investigate methods for translating observed changes in sea ice concentration and thickness into physically consistent changes in the model's thickness distribution while respecting the constraints to the sea ice state. The methods will be evaluated in spatial CICE6 configurations and within the coupled MOM6/CICE6 system using JEDI/SOCA. The assimilation results will be used to articulate critical processes missing in



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the current model configuration.

The research will also examine how sea-ice analysis updates interact with the upper ocean, including how more physically consistent ocean-sea-ice initialization can improve the use of observations in ice covered and marginal ice regions. The impact of improved sea ice state estimation on coupled initial conditions and GEOS-S2S forecasts will be evaluated. Assimilation of satellite derived sea ice thickness observations including observations from NASA missions, such as ICESat-2, may be investigated as a subsequent extension.

Candidates should have a strong background in data assimilation, applied mathematics, sea ice modeling, or a related field. Experience with ensemble or non-Gaussian data assimilation, CICE/Icepack, satellite observations, or JEDI would be valuable.

**Field of Science:** Earth Science

**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);
- 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](mailto:npp@orau.org)

**Point of Contact** [Mikeala](#)

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