Postdoctoral Research Associate - Ice Sheet Modeling and Sea-Level Projections

University of Wisconsin-Madison | Center for Climatic Research
Duration: 2 years | **Start Date:** Fall/Winter 2025 | **Supervisor:** Dr. Feng He/Dr. Marianne Haseloff

Position Overview

UW-Madison seeks a Postdoctoral Research Associate to advance ice sheet modeling and sea-level rise projections as part of a UW-Madison funded Research Forward project. This project aims to investigate climate-ice sheet coupling in Earth System Models with interactive ice sheets while engaging stakeholders throughout the research process. The position will contribute to both fundamental scientific understanding towards this goal and practical coastal risk applications.

Project Description

Our multidisciplinary team addresses a critical challenge in Earth system science: accurately projecting future sea-level rise amid deep uncertainties in ice sheet dynamics. Current atmosphere-ocean climate models lack full coupling to ice sheet models, limiting our ability to capture feedbacks that could alter climate and ice sheet trajectories. This project lays groundwork for a revolutionary fully coupled atmosphere-ocean-ice sheet-solid Earth model.

Key Responsibilities

Ice-Ocean Modeling & Analysis
- Configure and run a coupled ice-ocean model or a stand-alone ice sheet model with parameterized ice-ocean interactions
- Conduct sensitivity analyses and compare to offline ice sheet modeling using climate outputs
- Analyze paleoclimate scenarios to understand past ice sheet behavior

Model Coupling Development
- Explore coupling methodologies between ice sheet and atmosphere-ocean models
- Develop and test coupling interfaces between model components

Research & Collaboration
- Investigate rapid warming intervals to understand ice sheet responses
- Interface with stakeholders to understand technical information needs
- Participate in workshops with diverse stakeholder groups
- Contribute to grant proposals and publish findings in high-impact journals

Required Qualifications

- **Ph.D.** in Atmospheric Sciences, Oceanography, Glaciology, Climate Science, or related field
- **Strong numerical modeling background**, preferably ice sheet or climate models
- **Programming proficiency** (Python, Fortran, C/C++)
- **High-performance computing experience**
- **Knowledge of ice sheet dynamics** and climate system interactions
- **Excellent communication skills** and ability to work in interdisciplinary teams

Preferred Qualifications

- Experience with PISM, CESM, or other ice sheet and Earth system models
- Paleoclimate reconstruction or modeling background
- Knowledge of ice-ocean interactions and uncertainty quantification
- Publication record in glaciology or climate modeling
- Stakeholder engagement or applied research experience

Career Development

- **Major grant development** for NSF, NASA, NOAA, DOE funding calls
- **Publication opportunities** in multiple high-impact studies
- **Conference participation** with travel support
- **Interdisciplinary experience** in stakeholder engagement

Compensation

Competitive postdoctoral salary with comprehensive benefits and professional development funding.

Application Instructions

Submit by October 31, 2025:

1. Cover letter detailing research experience and modeling interests
2. CV with publication list
3. Names and contact information for three professional references
4. Research statement (2-3 pages) on advancing ice sheet modeling and stakeholder engagement
5. Representative publication demonstrating modeling expertise

Submit as a single pdf file at: https://www.dropbox.com/request/kzjWzeLacbvnoDrajbkR

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