



# Postdoctoral Research Associate – Phased Array Weather Radar Algorithm Development

## Position Description

The Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO) is seeking a Postdoctoral Research Associate to work in the Precipitation and Advanced Radar Studies (PARS) team at the NOAA National Severe Storms Laboratory (NSSL) in Norman, Oklahoma (<https://www.ou.edu/nwc>). This role provides an exciting opportunity to lead and participate in cutting-edge research designed to investigate potential operational benefits provided by phased array weather radars. The primary duties of the position will be to lead research efforts to investigate how rapidly- and adaptively-scanned phased array radar data might be used to develop and/or improve severe weather detection and warning algorithms.

## Overview

In collaboration with NSSL research scientists and engineers, CIWRO scientists have been working to collect and analyze data from the Advanced Technology Demonstrator (ATD), a S-band, dual-polarization phased array weather radar that was designed to evaluate the operational potential of both rapid- and adaptive-scanning capabilities. Over the past 3 years, nearly 500 hours of meteorological data have been collected by the ATD, primarily using scanning strategies that emphasized collecting data with both a higher temporal resolution and more dense vertical coverage than are currently possible WSR-88D radars, as well as unique datasets that leverage the flexible transmission modes and inertia-free beam steering afforded by phased array weather radars. These data are therefore ideally suited for investigating how dual-polarization phased array radar data might be used to not only improve existing severe weather detection and warning algorithms, but to also develop new algorithms that demonstrate operational potential.

## Key Responsibilities

- Lead efforts to analyze dual-polarization data from the ATD with the goal of investigating how radar data collected with a higher temporal resolution might be used to improve existing severe weather algorithms.
- Lead and provide regular summaries of work accomplished through peer-reviewed publications and contributions to reports, as needed.
- Lead efforts to analyze dual-polarization data from the ATD with the goal of investigating how radar data collected with more dense vertical coverage might be used to improve existing severe weather algorithms
- Collaborate with other PARS scientists on the design of scanning strategies and collection of ATD data.
- Lead efforts to analyze data collected from the ATD utilizing non-conventional scanning strategies with the goal of investigating how radar data collected in ways not possible with the WSR-88D radars might be used to improve existing severe weather algorithms.

- Attend meetings and professional conferences to present research results and interact with collaborators.

## Qualifications

- Ph.D. in Meteorology, Atmospheric Science, or related area.
- Demonstrates expertise in weather radar systems, conventional and polarimetric radar products, and severe local storm research.
- Experience with scientific programming in UNIX/Linux systems using high-level programming languages such as Python, Matlab, C++, etc.
- Experience working with large datasets.
- Working knowledge of radar-based severe weather algorithms.
- Excellent oral and written communication skills.
- Ability to work independently and collaboratively and communicate effectively in a team environment.

## Benefits and Work–Life Balance

Joining our team comes with numerous benefits, including:

- Competitive salary based on experience and comprehensive university benefits (<http://hr.ou.edu/>).
- Generous paid leave, encompassing 14 paid holidays and 22 hours of accrued paid time off per month.
- Reduced membership at the University of Oklahoma's state-of-the-art fitness and aquatic center (<https://www.ou.edu/far>).

More details about working at the University of Oklahoma, benefits packages, as well as living in Norman, Oklahoma are provided on our website: <https://jobs.ou.edu/Discover-OU>.

We are dedicated to promoting a healthy work–life balance by championing a flexible work culture, offering adaptable work hours and a hybrid work arrangement. This framework enables team members to navigate personal commitments while effectively contributing to their professional responsibilities.

## How to Apply

Applications should be emailed to [ciwro-careers@ou.edu](mailto:ciwro-careers@ou.edu), Attn: PARS, and include:

- A cover letter highlighting your interest in the position and describing how you meet the position qualifications,
- The names and contact information for three references
- Your résumé/CV

Applications will be accepted until the position is filled. The starting date is negotiable.

*The University of Oklahoma is an Equal Opportunity/Affirmative Action employer.*