The National Weather Service (NWS) National Centers for Environmental Prediction (NCEP) Environmental Modeling Center (EMC) works in close collaboration with their partners and stakeholders to maintain, enhance and transition to operations advanced numerical guidance systems for the Nation’s weather/water/climate enterprise and for the mission of the global community to protect life/property and enhance the economy. Within the EMC is the Verification, Post Processing and Product Generation Branch (VPPPGB). The Post Processing Group (PPG) within the VPPPGB leads the development, maintenance, implementation, and verification of numerical weather guidance computed for use by the World Area Forecast Centers (WAFC) and the World Area Forecast System (WAFS). Along with its WAFC partner, the Aviation Weather Center (AWC), guidance is created that predicts fields for Turbulence (GTG), In-flight Icing, Cumulonimbus Clouds, and Wind Speed, using NCEPs Unified Post Processor (UPP) software system. To unify and centralize aviation algorithms to support both global and regional aviation within UPP, UPP GTG modules will be updated to include convection induced turbulence and to tune to the new NOAA Unified Forecast System (UFS) short range regional application: Rapid Refresh Forecast System (RRFS).

The Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU) will support the research and development for the scientific and technological modernization of WAFS forecasts by stationing a CIRA meteorologist and computer programmer within the NWS NCEP/EMC PPG in College Park, Maryland or at the AWC in Kansas City, MO. The CIRA developer will provide computer programming expertise, and meteorological support for the PPG based at EMC. The Federal Advisor for the individual in this position is the Chief, Verification/Post-Processing/Product-Generation Branch at EMC and the supervisor will be the lead CIRA Meteorological Model Developer at EMC.

This individual will work closely with CIRA researchers at the AWC, scientists at the EMC, and external domain scientists and engineers. Additionally, the individual in this position will be expected to actively pursue the testing of new meteorological guidance and support tools. This project will entail activities focused on maximizing the forecast value of numerical model output, particularly activities centered on domestic and international aircraft operations to improve aviation forecast and warning services to the national and international airspace system. This position has the option to be located either in College Park at the EMC, or in Kansas City at the AWC depending on the candidate’s preference.

Decision Making:
The individual in this position works both independently and collaboratively with developers and stakeholders. Additionally, the individual in this position works collaboratively to implement yearly planning for relevant R2O tasks. Included in these tasks will be the active pursuit of testing new computer model hazard guidance. The individual will collaboratively decide on research concepts exploring development of numerical model output to improve forecasts of aviation weather hazards and associated threats to the national and international airspace, as well as determining the value of these forecasts for improving warning accuracy and impact-based decision support services. Additionally, they will contribute to science coordination within proving grounds, as well as through other types of operational forecaster training.

Essential Job Duties:
Independent Research (60%)

- Provide general support and development of regional aviation hazards as post-processed from NCEP’s operational numerical environmental prediction systems
● Implement numerical modeling code for developmental and operational regional aviation products
● Participate in routine experimental projects serving as the focal point for all regional aviation centered activities at the NWS/NCEP/EMC/PPG
● Perform related duties as assigned

Collaborative Research (30%)
● Interact with NWS/NCEP/EMC, CIRA, AWC and NCAR scientists and engineers
● Adhere to DOC/NOAA/NWS Information Technology policies and procedures
● Adhere to project-specific software development guidelines and practices
● Collaborate with other CIRA, AWC and EMC scientists working on similar research projects

Documentation and Reporting (10%)
● Complete scientific projects in a timely fashion according to internal and external schedules
● Prepare software and system documentation in collaboration with team members
● Prepare and contribute to monthly task status reports as required by the project sponsor and CIRA
● Prepare and deliver technical talks and presentations, as requested
● Report regularly to senior project managers on project task completion status

Required Qualifications:
● Bachelors Degree in atmospheric sciences, or meteorology, mathematics or a related physical science + 3 years related experience;
● Extensive experience with working in a UNIX environment with advanced scripting languages (e.g., PERL, ksh, Python, Ruby, etc.);
● Extensive experience with and knowledge of computing languages such as FORTRAN;
● Extensive experience with numerical environmental model testing and evaluation and/or knowledge of verification principles;
● Ability to analyze, plot, and verify prediction model output;
● Demonstrated skill in communicating effectively with scientists of diverse backgrounds on technical details or work plans, and in presenting results accurately and clearly in both oral and written form;
● Ability to pass a National Agency Check with Inquiries (NACI, federal background check);
● Willingness to abide by all federal COVID-19 vaccine mandate guidance stated for contractors/affiliates working within a federal facility;
● Applicants must be legally authorized to work in the United States by the start date. **CIRA will not sponsor a visa for this position now nor in the future**.

Preferred Qualifications:
● Masters Degree in atmospheric sciences, or meteorology, mathematics or a related physical science
● Familiarity with numerical environmental datasets, including observations and numerical environmental prediction model output;
● Experienced in MPI parallel programming;
● Expert Knowledge of working with NCEP’s Unified Post Processing System (UPP) software system;
● Expert knowledge in NOAA UFS;
● In depth knowledge of NCAR aviation algorithms, such as Graphical Turbulence Guidance (GTG) and Forecast Icing Potential (FIPs);
● Knowledge of using web-enabled technologies, such as HTML and JavaScript, to plot and display numerical environmental prediction systems;
● Knowledge of programs to display grib2 data;
● Ability to work independently and in a team environment on complex problems;
● Ability to work in a fast-paced environment;
● Demonstrated skill in performing tasks requiring organization and attention to detail;
- Knowledge of statistical principles and strong analytical skills;
- Familiarity with operational numerical environmental prediction systems.

**Background Check:**
Colorado State University (CSU) strives to provide a safe study, work, and living environment for its faculty, staff, volunteers and students. To support this environment and comply with applicable laws and regulations, CSU conducts background checks. The type of background check conducted varies by position and can include, but is not limited to, criminal (felony and misdemeanor) history, sex offender registry, motor vehicle history, financial history, and/or education verification. Background checks will be conducted when required by law or contract and when, in the discretion of the university, it is reasonable and prudent to do so. **This position is located in a federal facility and requires the ability to pass a National Agency Check with Inquiries (NACI, federal background check) for building access.**

**Commitment to Diversity and Inclusion:**
Reflecting departmental and institutional values, candidates are expected to have the ability to advance the Department’s commitment to diversity and inclusion.

Colorado State University is committed to providing an environment that is free from discrimination and harassment based on race, age, creed, color, religion, national origin or ancestry, sex, gender, disability, veteran status, genetic information, sexual orientation, gender identity or expression, or pregnancy and will not discharge or in any other manner discriminate against employees or applicants because they have inquired about, discussed, or disclosed their own pay or the pay of another employee or applicant. Colorado State University is an equal opportunity/equal access/affirmative action employer fully committed to achieving a diverse workforce and complies with all Federal and Colorado State laws, regulations, and executive orders regarding non-discrimination and affirmative action. The Office of Equal Opportunity is located in 101 Student Services. The Title IX Coordinator is the Executive Director of the Office of Support and Safety Assessment, 123 Student Services Building, Fort Collins, CO 80523 -2026, (970) 491-7407. The Section 504 and ADA Coordinator is the Executive Director of Human Resources and Equal Opportunity, Office of Equal Opportunity, 101 Student Services Building, Fort Collins, CO 80523-0160, (970) 491-5836.