The Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU) seeks to fill one or two Postdoctoral Fellowships in satellite infrared sounding and assimilation of such data into Numerical Weather Prediction (NWP) models. These Postdoctoral Fellowships are 1-year positions with a possibility of extension for an additional year. The individual(s) in these fellowship(s) will be members of the CIRA Meteorological Satellite Applications team supporting NOAA’s Regional and Mesoscale Meteorology Branch (RAMMB) located in Ft. Collins, CO, and will report to the project team lead. Specifically, the individual(s) in these fellowship(s) will research, develop, and create synthetic hyper-spectral mid-wave infrared datasets utilizing the Community Radiative Transfer Model (CRTM) that will be tested and demonstrated within the Gridpoint Statistical Interpolation (GSI) data analysis and assimilation framework for NOAA/NWS NWP models. The goal of this project is to evaluate and demonstrate the extent to which future small satellite observations can be quickly and robustly assimilated within operational weather models during the short life span of the resource. The individual(s) in these fellowship(s) will have latitude to conduct their research, including use of physical or artificial intelligence-based methodologies, and will be expected to establish strong partnerships with both CIRA research staff and sponsors.

Decision Making:
The individual(s) in these fellowship(s) will execute a plan of research that resonates with the underpinning science objectives of the supporting project. The decisions they make and the approaches they take will be determined by the individuals’ own scientific acumen and in consultation with the Principal Investigator. Successful execution of the proposed research, i.e. supporting the deliverables mentioned in the project’s statement of work, will hinge on the definition of a scientifically-sound plan and its execution. This decision-making process will lay a foundation that will be critical for success in future proposals and will build an independent and self-sufficient research program. Similarly, the individual(s) in these fellowship(s) will conduct their research with an eye toward establishing strong partnerships with both CIRA research staff and sponsors.

Essential Job Duties:
Applied Research 60%
• conduct research and develop synthetic datasets for proposed future satellite hyper-spectral infrared sounder instruments;
• coordinate with data assimilation, numerical weather modelling scientists to develop a forward operator software utilizing the CRTM for incorporation into the GSI data analysis and assimilation framework.

Independent Research 25%
• contribute to and lead scientific studies that serve the CIRA mission;
• develop future proposals that may lead to an independent research program.

Collaborative Research 15%
• travel to scientific conferences to present results;
• collaborate with operational partners and product end users;
• collaborate with other CIRA/RAMMB scientists working on similar research projects.

Required Qualifications:
Note: Please detail each of these six items in your cover letter.
• Ph.D. in meteorology, atmospheric sciences, computer science, or related science, technology, engineering or math (STEM) field;
• at least 1 year of experience working with radiative transfer theory and application;
• background in satellite-based environmental remote sensing;
• background in retrieval theory, using either physical inversion methods or machine learning equivalents;
• demonstrated oral and written communication skills;
• demonstrated experience working in team environments.
**Desired Qualifications:**

**Note:** Please highlight any applicable items in your cover letter.

- demonstrated experience with satellite hyper-spectral infrared sounder data (e.g., AIRS, IASI, CrIS);
- experience with the CRTM or similar radiative transfer model packages;
- experience with NOAA/NWS GSI analysis and data assimilation system or similar operational analysis and data assimilation systems;
- experience with NOAA NWS NWP models (e.g. GFS, FV3, HWRF, RAP, HRRR);
- experience with scientific programming in languages/tools such as Python, Fortran, Matlab, IDL;
- experience working on Linux or Unix operating systems;
- experience with artificial intelligence techniques, machine/deep learning, neural networks, etc.

**Salary:** $51,000 per year

**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.

**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.

**Application Deadline:**

Applications will be accepted until the position is filled; however, to ensure full consideration, applications should be submitted by 11:59 PM MDT on November 25, 2018. References may be contacted immediately and without further notification to the candidate. Apply electronically by clicking “Apply to this Job” at the following website: [https://jobs.colostate.edu/postings/62128](https://jobs.colostate.edu/postings/62128). **NOTE:** In your cover letter, please specifically address the required and preferred qualifications of this position. A cover letter that fails to address the required and preferred qualifications of this position may not be further considered after review by the search committee.

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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.