Job Description

PLEASE NOTE: This is a new, full-time three-year term position with possibility of extension. Initial consideration will be given to applications received prior to 5:00 p.m. MDT on Friday, February 3, 2012. Thereafter, applications will be reviewed on an as-needed basis.

NCAR Earth System Laboratory (NESL)

Atmospheric Chemistry Division (ACD)

Partial relocation costs paid per UCARs relocation policy

BASIC JOB FUNCTION: Initiates and conducts original individual and group research developing and employing data assimilation techniques to analyze and integrate atmospheric observations, particularly from satellite experiments, within Earth system models in NESL/ACD and CISL/IMAGE. Develops frameworks for integrating models and observations for chemical weather prediction and observation system simulation experiments (OSSEs).

DUTIES INCLUDE:
Conducts independent original research into data assimilation techniques for integrating atmospheric composition observations in Earth system models. Collaborates in the development of a modeling framework for the prediction of chemical weather on both global and local scales. This will employ techniques of data assimilation utilizing a broad range of atmospheric observations. Collaborates in the development of future satellite remote sensing mission concepts for tropospheric air quality science and in the development of methodologies for performing chemical observation system simulation experiments (OSSEs). Communicates the results of the research through publication in peer-reviewed journals, book chapters, meeting proceedings, presentations at scientific meetings and contributions to scientific assessments.

Project Scientist II - additional duties include:

Takes a leadership role in the chemical weather modeling framework design, setting priorities and identifying the most efficient data assimilation techniques to be investigated. Takes a leadership role in designing OSSEs for future satellite remote sensing mission concepts and collaborates with university and NASA colleagues engaged in the same research for the development of community tools. Works safely in accordance with ACD and ESSL procedures, the Employee Safety Handbook and the UCAR Safety Manual. Reports injuries and unsafe conditions to supervisor and the Safety Office.

**Job Location:** Boulder, CO US

**Position Type:** Full-Time/Regular

**Appointment Type:** Term Full-Time (T1)

**Spend Your Time With Us**

Immerse yourself in an intriguing environment where you can push yourself to the limit, engage in thoughtful reflection, wrap your brain around great ideas, interact with the best and the brightest, develop your abilities to the max, and contribute to the betterment of science on earth. Consider a career at UCAR.

At the University Corporation for Atmospheric Research (UCAR) in Boulder, our employees go home at night knowing that they are supporting an important scientific mission. They work in a cutting-edge computing environment with congenial co-workers completing challenging assignments.

Our work environment has a way of energizing our employees and we're proud of that. A very low turnover rate is proof that when people begin working for us, they tend to stay for a long time.

UCAR manages the National Center for Atmospheric Research (NCAR), a consortium of 76 member universities that offer doctoral degrees in the atmospheric and related sciences. While we're serious about what we do, our work environment is relaxed and invigorating. We know we cant be everything to everybody. But if you're seeking a casual work environment where you can complete challenging assignments in an intellectually stimulating atmosphere, we'd like to hear from you.

**Job Requirements**

**REQUIREMENTS INCLUDE:**
Education and Experience:

- Ph.D. degree in physics, atmospheric science or equivalent; and
- three or more years of experience in geophysical data assimilation research; including
- or equivalent combination of education and experience.

Knowledge, Skills and Abilities:

- Expertise in data assimilation in Earth system models, chemistry transport models and inverse modeling.
- Familiarity with global and regional chemical transport models, so as to be able to run simulations and to customize the model code and inputs for specific studies, along with analyzing the results.
- Detailed knowledge of fundamental processes controlling atmospheric chemistry and transport.
- Knowledge of theory and measurement techniques for satellite remote sensing.
- Skill in the analysis and interpretation of experimental results.
- Ability to participate and interact productively in multidisciplinary research.
- Detailed knowledge of differential and integral equations, numerical and statistical methods and linear algebra.
- Skills in written and oral communication of research results and presentation of proposals.
- Skills in UNIX, FORTRAN and IDL.
- Demonstrated record of research and publication.

Project Scientist II - additional skills required:

- Demonstrated leadership in the application of data assimilation in Earth system models, chemistry transport models and inverse modeling.
- Ability to set priorities for research directions and lead these to successful execution.