

Postdoctoral Researchers

The Air Quality Forecasting (AQF) Lab within Department of Marine, Earth, Atmospheric Sciences, North Carolina State University (NCSU) is accepting applications for two post-doctoral research positions.

Position 1- Regional Hydrology and Forest Ecosystem Modeler

The position will involve the development, application, and evaluation of hydrology and ecosystem models such as USDA's Water Supply Stress Index model (WaSSI). The study will focus on integrating climate (e.g., WRF) and air quality models and hydrology, water quality, carbon and nitrogen cycling processes of forest ecosystems at multiple temporal and spatial scales. Example model applications include decadal long simulations under current and future year emission/energy/climate scenarios to study the impacts of technology, climate, land use, and population changes on water supply and demand, sediment and nutrient loading to river systems, forest productivity, and carbon sequestration. The incumbent will be co-supervised by regional eco-hydrologists at the Southern Research Station, USDA Forest Service located on NCSU campus and atmospheric scientists at NCSU.

The successful candidate will have a recent PhD degree in landscape hydrology/ecosystem modeling or physical geography with a strong quantitative, interdisciplinary background in regional modeling of water, carbon, and nitrogen cycles by coupling climate and terrestrial ecosystems. Training and experiences with coupling climate change models and biogeochemical models are required. He/she must be very familiar with Linux/FORTRAN 90, large database manipulations, and Geographic Information Systems. Excellent oral and written communication skills are essential.

Position 2- Atmospheric Chemistry/Aerosol Modeler

The position will involve the development, application, and evaluation of 3-D atmospheric models such as the NOAA's Weather Research and Forecast Model with Chemistry (WRF/Chem) and 3-D earth system models such as the NCAR's Community Earth System Model (CESM). The model development will focus on gas-phase, aqueous-phase, and heterogeneous chemistry, secondary organic aerosol formation, and aerosol dynamics such as new particle formation and early growth. Example model applications include short-term real-time air quality forecasting and decadal long climate/aerosol simulations under current and future year emission/energy/climate scenarios to study the impacts of global climate changes on air quality and impact of changed air quality on regional and global climate changes.

The successful candidate will have a recent PhD degree in atmospheric sciences and chemical/environmental engineering with a strong background in atmospheric chemistry and cloud/aerosol chemistry and microphysics. Experience in 3-D air quality/climate modeling using air quality models such as WRF/Chem, CMAQ, and CAMx and climate/Earth system models such as the NCAR's CCSM and CESM as well as handling large datasets for surface networks and satellites for model evaluation is required. He/she must be very familiar with FORTRAN 90 and UNIX/Linux systems and parallel computing. Excellent oral and written communication skills are essential.

The incumbents for the two positions will have opportunities to collaborate experts from various disciplines including energy, emissions, air quality, climate, hydrology and biology at NCSU, Argonne national laboratory, and Southern Research

Station, USDA Forest Service. The initial appointment for the two positions will be for 1 year period, with a possibility for extension of 1 year depending on satisfactory performance and the availability of funding. Salary is commensurate with qualification and experience. Qualified candidates should submit application materials via NCSU's online job site: <https://jobs.ncsu.edu/postings>. Refer to position number: 00102074 and 00102075 for positions 1 and 2, respectively. Required materials include cover letter containing contact address and visa status (if any), complete curriculum vitae, official copies of transcripts, statement of research interests, and names and contact information for three references and 2-5 sample publications. Review of the applications will begin immediately and will continue until the position is filled. More information on the AQF lab at NCSU can be found at <http://www.meas.ncsu.edu/aqforecasting/>. For technical questions regarding these positions, please contact Dr. Yang Zhang at yang_zhang@ncsu.edu.

NC State University is an equal opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to race, color, national origin, religion, sex, age, veteran status, or disability. In addition, NC State welcomes all persons without regard to sexual orientation. Persons with disabilities requiring accommodations in the application and interview process please call (919) 515-3148. Final candidates are subject to criminal & sex offender background checks. Some vacancies also require credit or motor vehicle checks. If highest degree is from an institution outside of the U.S., final candidates are required to have their degree verified at www.wes.org. Degree must be obtained prior to start date. NC State University participates in E-Verify. Federal law requires all employers to verify the identity and employment eligibility of all persons hired to work in the United States.