



Pacific Northwest Research Station
USDA Forest Service



**PACIFIC NORTHWEST RESEARCH STATION
USDA FOREST SERVICE**

RESEARCH AIR QUALITY ENGINEER

OUTREACH NOTICE

Summary

The AirFire Team of the U.S. Forest Service seeks a research air quality engineer interested in wildland fire smoke and air quality issues. Early-career through established scientists are encouraged to apply. The position is located in Seattle.

Air Quality Engineer

The AirFire Team of the USDA Forest Service Pacific Northwest Research Station, Pacific Wildfire Sciences Laboratory in Seattle, Washington seeks to fill a permanent, full time air quality engineer research position. The position falls within the range of GS-12 through GS-14 pay grades (\$73,420 - \$134,118) with final grade determination based in part on the applicant's qualifications.

The AirFire Team's research program includes climate dynamics, synoptic and mesoscale meteorology, and air quality issues related to forestry, with particular emphasis on forest fires (<http://www.airfire.org>). As a key member of the Team, the scientist in this position performs research related to smoke dispersion and transport from forest fires, and forest fire impact on regional haze. The goals of the work are improved understanding of the physical and chemical atmospheric processes unique to forest fires, and development of tools or training that convey both existing and new technology to fire and smoke managers, land management agency administrators, and policy makers for decision support.

The major duties of this position are:

- Improving Forest Service ability to respond to new and existing regional haze rules, the National Ambient Air Quality Standards (NAAQS), and the impacts on air quality and visibility from biomass smoke. The work includes basic research on factors controlling emission variability, terrain interactions, non-convective transport, and plume dynamics, as well as applied research in the form of model development and testing, assessing air quality impacts from multiple sources at a variety of scales, developing realistic emission scenarios under a variety of climate and burning conditions, and developing ways to use monitoring networks and remote sensing for quantifying impacts from fire.



- Perform research to increase our understanding of the role of fire in air quality issues, including real-time prediction of smoke impacts; regional haze; climate interactions with emissions and dispersion, atmospheric impacts on particle and gas emissions and resulting concentrations. This work includes, among other things, coupling Lagrangian with Eulerian models, and developing methods that help reduce negative impacts of smoke from wildland fire.
- Leading work on development, testing and evaluation of the BlueSky smoke modeling framework (<http://blueskyframework.org>). This aspect of the position involves design and creation of new models and tools to better predict smoke impacts, and leading new field experiments to collect data for evaluation and development work. Field work can require flying, driving, and short-notice deployment in wildfire rapid response situations.

The candidate must have a Doctorate degree in air quality engineering or a related field. Candidates with excellent writing, speaking, and teaching skills are sought since they must be able to communicate their work to both the scientific and land management communities. Leadership roles on past projects, including a proven ability to obtain research funding are important. Experience with meteorological and air quality computer models such as WRF, HYSPLIT, FLEXPART, SciPuff, and/or CMAQ is necessary. Familiarity with current wildland fire consumption and emission models (such as CONSUME, FOFEM, FINN, or equivalents) is highly desirable, as is experience with the BlueSky smoke modeling framework. Strong skills using LINUX-based operating systems; programming in languages such as C/C++, Fortran, and Python; and operating particulate monitoring instruments is essential.

FURTHER INFORMATION

For more information on the nature of the position and research program, or to be notified when the vacancy announcement for this position opens, please send your name, phone number and email address to :

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WORK AREA INFORMATION

The position is located at the Pacific Wildland Fire Sciences Laboratory in Seattle, Washington. The lab is located in the Fremont District of Seattle along the Ship Canal connecting Lake Union with Puget Sound approximately two miles from the University of Washington's main campus. Fremont is a social hub, with a range of amenities. Coffee shops are abundant, and there are over a dozen restaurants within a 2-block radius of the Lab. The Burke-Gilman trail, between the office and the Ship Canal, offers miles of biking and walking; boats of all sizes cruise by; and Seattle Pacific University and the University of Washington are minutes away. With the Cascade Mountains to the east, the Olympic Mountains across the Puget Sound to the west, Mt. Baker to the north and Mt. Rainier to the south, there are plenty of hiking, skiing and rock climbing opportunities. Seattle is home of the Mariners, the Seahawks, and Sonics teams, Woodland Park Zoo, Pike Street Market, and Northwest Trek. Music opportunities range from alternative to classical and there are numerous small to major theaters to visit. There are a number of transportation options from van pools & buses to ferries and trains.

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