Postgraduate Research Program
U.S. Environmental Protection Agency
National Risk Management Research Laboratory
Air Pollution Prevention And Control Division
Research Triangle Park, North Carolina, U.S.A.

Project # NRMRL/APPCD–2008–02

Research Chemist/Chemical Engineer/Mechanical Engineer/Environmental Engineer

A postdoctoral appointment is available at the U.S. Environmental Protection Agency (EPA), National Risk Management Research Laboratory (NRMRL). The appointment will be served in the Air Pollution Prevention and Control Division (APPCD) in Research Triangle Park, North Carolina.

Background: NRMRL/APPCD is currently seeking to place a postdoctoral researcher in a program that is examining the formation of fine particles from combustion processes. This program seeks to understand high temperature organic and inorganic ash transformation processes in order to characterize combustion particle emissions from a variety of sources as well as gain an understanding of properties that influence adverse health effects associated with particle exposure. The research involves applied experiments using a variety of laboratory, pilot-scale, and full-scale combustion systems and includes the use of animal exposure facilities to test hypothesis of PM toxicity using various animal models. This research integrates particle formation, sampling, and advanced analytical methods using the ATOFMS and other techniques with in-vitro and in-vivo health effect analyses through collaborative efforts with EPA's National Health and Environmental Effects Research Laboratory (NHEERL). It is hoped that the results of this research will be transferred to the public and private sectors by publications in the peer reviewed literature and conference presentations.

The postdoctoral fellow will have the opportunity to be involved in:

- Developing capabilities and applications for the use of a new state-of-the-art ATOFMS to characterize source and ambient fine particles especially in urban and near-road environments.

- Collaborating with a team of environmental chemists, engineers, toxicologists, and technicians that are investigating relationships between the size, composition, and toxicity of combustion particle emissions and urban ambient particles.

The research participant will have the opportunity to expand the application of the ATOFMS to studies examining ambient particles and exposures in urban environments. The researcher will be strongly encouraged to publish the results of his/her work in peer review journals and present data at national and international conferences.

The participant will have the opportunity to propose, develop, and conduct applied research using a newly procured aerosol time of flight mass spectrometer (ATOFMS) as part of a comprehensive

program within NRMRL/APPCD to characterize the size dependent composition of source and ambient fine particles.

Applicants should have received a doctoral degree in chemistry, chemical engineering, mechanical engineering, environmental engineering or a closely related field within three years of the desired starting date, or completion of all requirements for the degree should be expected prior to the starting date. Applicants should have an interest in and experience in studies that characterize the formation, chemical composition, and size distribution of particles formed directly or indirectly by combustion processes. This may include direct source emission characterization and/or characterization of ambient particles associated with specific sources. Also helpful would be a background in flame chemistry, soot formation, aerosol dynamics, aerosol sampling, and organic and inorganic analytical methods including mass spectrometry.

This appointment is full time at NRMRL/APPCD in Research Triangle Park, North Carolina, for one year and may be renewed upon recommendation of NRMRL/APPCD and subject to availability of funds.

The participant will receive a monthly stipend ranging from $4,000 to $5,000 determined by experience. Limited inbound travel and moving expenses may be reimbursed according to established policies. The participant must show proof of health and medical insurance. **The participant does not become an EPA employee.**

The program is open to all qualified individuals without regard to race, sex, religion, color, age, physical or mental disability, national origin, or status as a Vietnam era or disabled veteran. U.S. citizenship or lawful permanent resident status is preferred (but can also hold an appropriate visa status - however, an H1B visa is not appropriate).

The participant will be selected based on academic records, recommendations, research interests, compatibility of background and interests with research programs and projects, and the availability of funds, staff, programs, and equipment.

The Postdoctoral Research Program for NRMRL is administered by the Oak Ridge Institute for Science and Education. ***Please reference Project # NRMRL/APPCD-2008-02 when calling or writing for information.*** For additional information and application materials contact: Postdoctoral Research Program/NRMRL, Attn: Betty Bowling, MS 36, Oak Ridge Institute for Science and Education, P.O. Box 117, Oak Ridge, Tennessee 37831-0117, Phone: (865) 576-8503 FAX: (865) 241-5219 or e-mail**: betty.bowling@orau.org.**

An application can be found at www.orau.gov/orise/edu/EPA/app-gugrgpd.pdf