

**Research Participation Program
U.S. Environmental Protection Agency
Office of Research and Development
National Risk Management Research Laboratory
Research Triangle park, North Carolina**

Project No #: EPA-ORD/NRMRL-APPCD-2009-02

A postdoctoral research project training opportunity is currently available at the U.S. Environmental Protection Agency (EPA) National Risk Management Research Laboratory (NRMRL) Air Pollution Prevention and Control Division (APPCD) in Research Triangle Park, North Carolina.

Project Description: The U.S. Environmental Protection Agency's Energy and Climate Assessment (ECA) team, a multidisciplinary group of researchers in Research Triangle Park, NC, supports EPA's mission by providing "bottom-up" energy systems analyses that consider the drivers of technology change and their implications on air pollutant and greenhouse gas emissions. This is done via a systems perspective that moves beyond traditional lifecycle assessment to consider important economic, social, and technological interactions.

ECA team researchers are using the MARKAL energy system model to estimate future-year technology penetrations and their associated emissions. MARKAL maps the energy economy from primary energy sources through their refining and transformation processes to the point at which a variety of technologies service end-use energy demands across economic sectors. MARKAL enables the investigation of a wide range of scenarios, including different assumptions about future technology characteristics, fuel costs, energy policies, and air quality and climate policies. The MARKAL framework also allows assessments related to specific technologies, such as the cost or efficiency needed for a new technology to be competitive with conventional technologies. The ECA team has assembled a database to represent the nine Census Divisions of the U.S. energy system within the MARKAL modeling framework. Development of the database requires gathering detailed cost and performance data on hundreds of energy-related technologies, translating these data into defensible model assumptions, and mapping out the structure of the U.S. energy economy as it might evolve over the next fifty years.

Specific Tasks: The ECA team is currently looking for a postdoctoral research participant to help expand the team's integrated assessment (IA) research capabilities. Specific tasks include interfacing with the IA community, linking MARKAL with "top-down" computational general equilibrium (CGE) models like MiniCAM, and exploring the global impact of energy technologies choices made in the U.S. using this linked modeling framework.

Qualifications and Skills: Applicants need to have completed a doctoral degree in environmental or resource economics, environmental science, or a related engineering field within five years of the desired starting date. Applicants should possess strong quantitative

modeling skills; and be able to perform effectively in a team environment. Experience with IA and CGE modeling is preferred.

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 appointment will be full-time for one year and may be renewed for up to two additional years upon recommendation of ECA and subject to availability of funds. The participant will receive a monthly stipend up to \$5,808. The participant must show proof of health and medical insurance. **The participant does not become an EPA employee.** Funding may be made available to reimburse the participant's travel expenses to present the results of his/her research at scientific conferences. No funding will be made available to cover travel costs for interviews, relocation costs, costs of tuition/school fees, or a participant's health insurance.

The Research Participation Program for EPA is administered by the Oak Ridge Institute for Science and Education. ***Please reference Project # EPA-ORD/NRMRL-APPCD-2009-02 when calling or writing for information.*** For additional information and application materials contact: Research Participation Program/EPA, Attn: Betty Bowling, Oak Ridge Institute for Science and Education, P.O. Box 117, Oak Ridge, Tennessee 37831-0117, Phone: (865) 576-8503 FAX: (865) 241-5219 e-mail: betty.bowling@ornl.gov.

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