Opportunity Title: Energy Emissions Modeling
Opportunity Reference Code: EPA-NSSC-0007-51-7-12-21

Organization	U.S. Environmental Protection Agency (EPA)
Reference Code	EPA-NSSC-0007-51-7-12-21
How to Apply	Click HERE to Apply

Description The EPA National Student Services Contract has an immediate opening for a full time Energy Emissions Modeling position with the Office of Research and Development at the EPA facility in Research Triangle Park, NC.

The Office of Research and Development at the EPA supports high-quality research to improve the scientific basis for decisions on national environmental issues and help EPA achieve its environmental goals. Research is conducted in a broad range of environmental areas by scientists in EPA laboratories and at universities across the country.

What the EPA project is about

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The opportunity is available at the U.S. Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Measurements and Modeling Division (CEMM). The appointment is with the Atmospheric and Environmental Systems Modeling Division (AESMD), Emissions Systems Analysis Branch (ESAB) in Research Triangle Park (RTP), North Carolina.

ORD/CEMM/AESMD helps provide the basis for the formulation of EPA's environmental policies and programs by playing a vital role in the scientific research mission of the Agency. ORD/CEMM/AESMD helps develop and evaluate solutions to environmental problems faced by EPA, local and state agencies, and the public, and seeks to provide information and tools that enable the Agency to develop the cost effective and sustainable approaches to protecting human health and the environment. CEMM/AESMD supports EPA's environmental protection goals by providing direct support to Agency's regulatory and voluntary programs. Part of this mission, the team is developing and applying projections of future year energy consumption and emissions inventories resulting from residential, commercial and industrial activities with both national and regional focus in the U.S. These projections are conducted through energy modeling frameworks developed at EPA including MARKAL/TIMES models for the U.S. energy system as well as City-based Optimization Model for Energy Technologies (COMET) applied to New York City and surrounding region.

What experience and skills will you gain?

As a team member you will collect and update technology data in the energy systems modeling frameworks. You will become familiar with other publicly available sources to harness and process data needed to update

EPA's energy modeling frameworks and conduct analysis to support emission projections. Where needed, you will come up with innovative methods to streamline data from multiple sources and develop ad-hoc tools for visualization of model results. There will be a specific emphasis on the industrial sector energy and emission projections, but all sectors of the energy system with various geographical scope shall be a part of the work to be done. As a team member, you will work with an energy system model investigating the linkages between energy, climate, and air quality, and identify strategies for effectively meeting future energy demands and emission goals. You will learn to navigate multiple datasets and models informing energy technology characterizations, emission inventories, industrial and building energy consumption patterns. You will organize and interpret data and present and communicate scientific findings.

How you will apply your skills

Data Development and Analysis responsibilities:

- Literature review;

- Data collection, data analysis, modeling and scenario design;

- Using R, Python and other software development platforms such as GitHub, streamline data updating processes;

- Generate tools for visualization of model results;

- Gain experience with energy system modeling, application of tools such as optimization, simulation, and/or system dynamics modeling; and

- Run the models and able to present and interpret the results.

Communications-related responsibilities:

- Participating as a member of a multi-disciplinary research team;

- Interacting with other members of the development team as well as EPA scientists;

- Documenting code and methods;

- Contributing to preparation and writing of research outputs, such as reports, manuscripts and conference papers; and

- Presenting work performed at a scientific conference as required.

Required Knowledge, Skills, Work Experience, and Education

- Experience with air pollution control technologies, energy efficiency concepts, the economics of pollution reduction, lifecycle analysis, and environmental system analysis;

- Knowledge of and some experience with energy systems modeling frameworks including at least one of the following MARKAL, TIMES, GCAM, LEAP, NEMS or OSeMOSYS;

- Strong written, oral and electronic communication skills; and

- Experience programming in Python and R or other scripting languages.

Desired Knowledge, Skills, Work Experience, and Education

- Experience using GitHub.

Location: This job will be located EPA's facility in Research Triangle Park, NC.

Salary: Selected applicant will become a temporary employee of ORAU and will receive an hourly wage of $30.16 for hours worked.

Hours: Full-time.

Travel: Occasional overnight travel may be required.

Expected start date: The position is full time and expected to begin September 2021. The selected applicant will become a temporary employee of ORAU working as a contractor to EPA. The initial project is expected to be a minimum of one year in duration with up to a potential longevity of May 14, 2025.

For more information, contact EPAjobs@orau.org. *Do not contact EPA directly.*

Qualifications	- Be at least 18 years of age **and**
	- Have earned at least a Masters degree in a STEM discipline (Science, Technology, Engineering or Mathematics) or a closely related field of study from an accredited university or college within the last 24 months **and**
	- Be a citizen of the United States of America or a Legal Permanent Resident.

EPA ORD employees, their spouses, and children are not eligible to participate in this program.

Eligibility Requirements	- **Citizenship:** LPR or U.S. Citizen
	- **Degree:** Master's Degree received within the last 24 month(s).
	- **Overall GPA:** 2.00
	- **Discipline(s):**
	◦ **Chemistry and Materials Sciences** (12 👁)
	◦ **Computer, Information, and Data Sciences** (17 👁)
	◦ **Earth and Geosciences** (21 👁)
	◦ **Engineering** (27 👁)
	◦ **Environmental and Marine Sciences** (14 👁)
	◦ **Life Health and Medical Sciences** (46 👁)
	◦ **Mathematics and Statistics** (10 👁)
	◦ **Physics** (16 👁)
	◦ **Science & Engineering-related** (1 👁)

Affirmation	I certify that I am at least 18 years of age; a recent graduate with at least a

Masters degree in a STEM discipline (Science, Technology, Engineering or Mathematics), or a closely related field of study from an accredited university or college within the last 24 months; a citizen or a Legal Permanent Resident of the United States of America; and not a current employee of EPA ORD or the spouse or child of an EPA ORD employee.

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