

**Opportunity Title:** Decision Support Software for Air Quality Management

**Opportunity Reference Code:** EPA-ORD-NERL-SED-2019-02

**Organization** U.S. Environmental Protection Agency (EPA)

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**How to Apply** A complete application consists of:

- An application
- Transcripts – [Click here for detailed information about acceptable transcripts](#)
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations

All documents must be in English or include an official English translation.

If you have questions, send an email to [EPArpp@ornl.gov](mailto:EPArpp@ornl.gov). Please include the reference code for this opportunity in your email.

**Application Deadline** 8/30/2019 3:00:00 PM Eastern Time Zone

**Description** A research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), National Exposure Research Laboratory (NERL), Systems Exposure Division (SED) in Research Triangle Park, North Carolina.

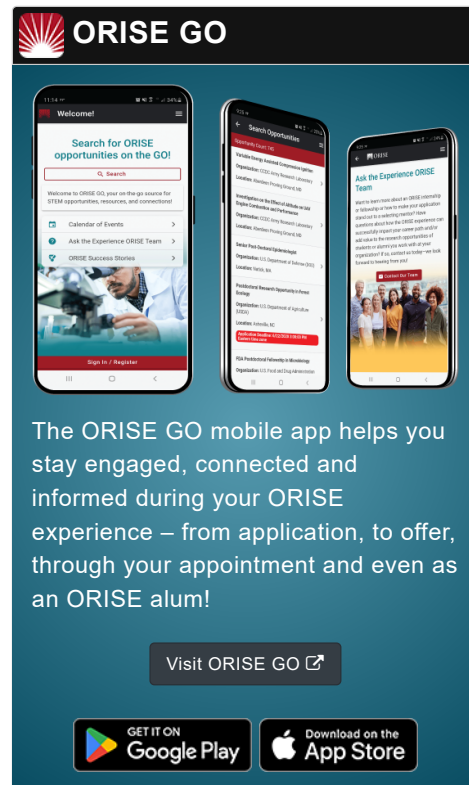
Despite the dramatic improvements in air quality over the past several decades, approximately 40% of the U.S. population live in areas that are classified as having poor air quality. While states are charged with developing air quality management plans, they also have energy efficiency, climate, and job and economic growth goals to consider. Given these competing objectives, states could benefit from a decision support system (DSS) that would assist in developing cost-effective and robust management strategies.

EPA has developed the GCAM Long-term Interactive Multi-Pollutant Scenario Evaluator (GLIMPSE), a prototype DSS. The prototype was developed rapidly, with the goal of evaluating design and functionality options. A next step in the project is to improve the software engineering and maintainability of the existing code, as well as update the software's documentation. Also, we are in the process of identifying new "policy levers" to include in GLIMPSE. The participant will have the opportunity to assist in integrating these new levers into the GLIMPSE graphical user interface.

Under the guidance of a mentor, the research participant will have the opportunity to further the development of the Java-based GLIMPSE air quality management decision support software, including improving software engineering and adding features to address user needs.

The research participant will be involved with the multidisciplinary GLIMPSE research team and interact with EPA scientists and regulatory staff. Research activities may include: (i) applying best practice software engineering and software development approaches to improve GLIMPSE, (ii) communicating with EPA staff to identify and implement those features into the GLIMPSE graphical user interface.

The research participant may also learn about the GCAM-USA Human-Earth

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Systems Model and become proficient in its application in climate and air quality management. Furthermore, the participant may gain software development skills, including the design and implementation of decision support systems and graphical user interfaces.

The research participant will also have the opportunity to communicate progress and findings to a diverse scientific and technical audience.

**\*Although the application deadline is August 30, 2019, applications will be reviewed on a rolling-basis.**









This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and EPA. The initial appointment is for three months, but may be renewed upon recommendation of EPA and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at EPA in the Research Triangle Park, North Carolina, area. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.

## Qualifications

The qualified candidate should be currently pursuing or have received a bachelor's or master's degree in a field involving software engineering, computational science or quantitative analysis (e.g., engineering, operations research, computational economics, decision analysis or statistics). Degree must have been received within five years of the appointment start date. Alternatively, if the applicant does not have a degree in one of these areas, work or research experience in applying quantitative techniques may suffice.

Experience with Java programming (or similar object-oriented language) and graphical interface design is highly desirable.

## Eligibility Requirements

- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or currently pursuing.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 )
  - **Computer, Information, and Data Sciences** (16 )
  - **Earth and Geosciences** (21 )
  - **Engineering** (27 )
  - **Environmental and Marine Sciences** (2 )
  - **Mathematics and Statistics** (10 )
  - **Other Non-Science & Engineering** (1 )
  - **Social and Behavioral Sciences** (1 )