



**Opportunity Title:** Scientific Software Developer  
**Opportunity Reference Code:** EPA-SSP-0007-21



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| <b>Organization</b>   | U.S. Environmental Protection Agency (EPA)  |
| <b>Reference Code</b> | EPA-SSP-0007-21   |
| <b>How to Apply</b>   | <p><b>Ready to send share your interest with EPA scientists?</b></p> <ul style="list-style-type: none"> <li>• Submit application and supporting documents by clicking on Apply Now button.</li> <li>• <i>For more information, contact</i> EPAjobs@orau.org. Do not contact EPA directly.</li> <li>• Check out our website at: <a href="http://orau.org/epa/">http://orau.org/epa/</a></li> </ul>   |
| <b>Description</b>    | <p>The EPA National Student Services Contract has an immediate opening for a full-time Scientific Software Developer with the Office of Research and Development at the EPA facility in Raleigh, NC.</p> <p>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.</p> <p><b>What the EPA project is about</b></p> <p>EPA's Office of Research and Development (ORD) is a leader in the science of human health and ecological risk assessment, a process used to determine how pollutants or other stressors may impact human health and the environment.</p> <p>ORD addresses the needs of stakeholders by preparing technical reports and assessments that integrate and evaluate the most up-to-date research. These products serve as a major component of the scientific foundation supporting EPA's regulations and policies. ORD also conducts cutting-edge research to develop innovative quantitative risk assessment methods and tools that: help extrapolate between experimental data and real-world scenarios, improve our understanding of uncertainties, and facilitate careful weighing of evidence using approaches such as systematic review.</p> <p>The Health and Environmental Research Online (HERO) database provides an easy way to access and influence the scientific literature behind EPA science assessments. The database includes more than 2 million scientific references and data from the peer-reviewed literature used by EPA to develop its regulations for the following: Integrated Science Assessments (ISA) that feed into the NAAQS review, Provisional Peer Reviewed Toxicity Values (PPRTV) that represent human health toxicity values for the Superfund, and the Integrated Risk Information System (IRIS), a database that supports critical agency policymaking for chemical regulation. In addition, the</p> |


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Health Assessment Workspace Collaborative (HAWC) is an open source web-application used by scientists at EPA for extracting and visualizing data extracted from scientific literature to summarize evidence and key findings. Assessments supported by HERO and HAWC characterize the nature and magnitude of health risks to humans and the ecosystem from pollutants and chemicals in the environment.

### **What you will be doing**

As a team member, you will provide software development, data analysis, and data visualization support to the HERO and HAWC projects. The required skills include software development experience (Python, JavaScript, Java), data analysis using (Excel, Python, or R), and data visualization (Excel, Python, R, Tableau, etc.), and software version control (Git). The participant shall be a member of a team of and will be trained to support the development and maintenance of HERO and HAWC.

As part of the EPA scientific research team, you will receive adequate QA training from the EPA, including training on any existing QAPPs, as applicable to the work.

Students under ORAU involved with EPA's scientific research will receive adequate QA training from the EPA, including training on any existing QAPPs, as applicable to their work.

### **Required Knowledge, Skills, Work Experience, and Education**

- Demonstrated training and experience in computational skills;
- Proficiency in programming, including proficiency in one or more of the following languages: Python, JavaScript, R, Java, or SQL;
- A working knowledge of relational databases;
- Experience with scientific data in at least one of the following fields or closely related fields: ecology, toxicology, environmental science, and epidemiology;
- Strong written, oral and electronic communication skills; and
- Experience working well as a part of a team.

### **How you will apply your skills**

#### **Software development**

- Writing web-based application software, including designing server systems capable of querying a database of findings and summarizing findings in various formats, including but not limited to designing REST Application Programming Interfaces (APIs) in Python;
- Writing frontend web-application in JavaScript to dynamically display information;
- Using a database including querying large data tables or

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designing new schemas; and

- Designing unit-tests to ensure the software works as expected.

**Data analysis**

- Reviewing database exports or other external API systems to determine how existing data can be utilized with web-applications;
- Extracting, transforming, and loading (ETL) of data including creating data pipelines to reformat and analyze existing data; and
- Working with staff scientists to adapt analysis-specific scientific code to more generalizable solutions.

**Data visualization**

- Creating prototypical data visualizations using new or existing datasets;
- Building interactive visualization which allow scientists to explore datasets in novel ways; and
- Using software-development skills and expertise to translate prototypical charts and visuals into visuals in a production environment.

**Location:** This job will be located at EPA's facility in Raleigh, NC.

**Hours:** Full time.

**Salary:** Hourly wage for hours worked at a rate of \$21.59 per hour.

**Employer:** Selected applicant will become a temporary employee of ORAU working as a contractor at EPA.

**Travel:** No travel will be required.

**Working Conditions:** The selected candidate will be supervised by a mentor who will provide day-to-day direction, as well as coach, advise and counsel the candidate, and review the candidate's work. This position will involve work in an administrative setting and is not expected to involve exposure to hazardous elements.

**Expected Start Date:** The position is full-time and expected to begin in February 2020. The initial project is through May 14, 2020 with potential optional periods.

*For more information, contact [EPAjobs@orau.org](mailto:EPAjobs@orau.org). Do not contact EPA directly.*

**Qualifications**

- Be at least 18 years of age **and**
- Have earned at least a Bachelor's degree in a basic or






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applied science, computer science, information science, bioinformatics, mathematics, biology, chemistry, ecology 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.

**Eligibility  
Requirements**

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree received within the last 24 months or anticipated to be received by 12/31/2019 11:59:00 PM.
- **Overall GPA:** 2.00
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 )
  - **Computer, Information, and Data Sciences** (16 )
  - **Environmental and Marine Sciences** (1 )
  - **Life Health and Medical Sciences** (45 )
  - **Mathematics and Statistics** (10 )

**Affirmation**

I certify that I am at least 18 years of age; a recent graduate with at least a Bachelor's degree in a basic or applied science, computer science, information science, bioinformatics, mathematics, biology, chemistry, ecology 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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