

Opportunity Title: Higher Education Research Experiences - Undergraduate

Internship in Scientific Software Engineering

Opportunity Reference Code: ORNL-HERE-UG-SSE

Organization Oak Ridge National Laboratory (ORNL)

Reference Code ORNL-HERE-UG-SSE

How to Apply Applicants must apply through www.Zintellect.com. All profile and application questions/requirements must be completed and submitted and references returned before application can be reviewed.

The profile and application will require:

1. Contact information
2. Education information (i.e. dates of attendance/graduation, GPAs, majors, etc.)
3. Awards and honors
4. Employment information and nature of work
5. Information on special skills, research, areas of interest and /or expertise
6. An updated resume
7. Contact information for references, including email addresses
8. Unofficial academic record showing name, school name, current/enrolled classes and GPA - official transcript is **not** required)
9. Availability dates (if applicable)

For questions, contact HERE@ornl.gov.

Description Higher Education Research Experiences Program at Oak Ridge National Laboratory (HERE at ORNL) provides research opportunities and associated activities for participants. The program is designed to complement academic programs by utilizing the unique resources of ORNL to enhance science, mathematics, engineering, and technology education; encourage careers in science and technology, and improve scientific literacy. At the same time, the program contributes to the Laboratory mission.

ORNL is the United States Department of Energy's largest science and energy laboratory tasked to provide the United States government agencies and departments with technology and expertise to support national and homeland security needs. The diverse capabilities at ORNL span a broad range of scientific and engineering disciplines, enabling the Laboratory to explore fundamental science challenges and to carry out the research needed to accelerate the delivery of solutions to the marketplace.

We invite applications for internships in software development within the Computer Science and Mathematics Division.

This is a continuous posting. Applications will be reviewed and selected as opportunities become available. The



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opportunity may be part time or full time depending on availability at time of selection. Appointment period may be 3 to 12 months.

As an intern, you will be part of ORNL's Scientific Software Initiative, which provides scientific software development expertise to the Laboratory, by providing software engineering and development services across the Laboratory in a broad range of areas and topics. This Initiative supports the mission of the Laboratory by creating a community for software professionals to connect people, projects, and interested parties; by providing software engineering expertise for development, evaluation, quality assurance or other needs; by providing training and continuing education opportunities; by providing fair performance evaluation criteria; by recruiting new software engineering talent; and by mentoring students and early career scientists and engineers.

The Initiative currently contributes to scientific computing projects in advanced materials, advanced manufacturing and 3D printing, astrophysics, batteries, neutron science, nuclear energy, and quantum computing. It also contributes to pure computer science projects. Initiative members are active in the open source community, including the Eclipse Foundation, and most Initiative projects are available on GitHub.com.

If selected, you will learn about and contribute under the direction of your mentor to the development of open source projects such as the Eclipse Advanced Visualization Project and the Eclipse Integrated Computational Environment; collaborate on software development on other Java, C++, and Python projects; and simultaneously contribute to software development activities and original research. You may be nominated for committer status on Eclipse projects. Further information on the project can be found at <https://www.eclipse.org/eavp> and <https://www.eclipse.org/ice>.

Benefits

- Stipend: \$500/week paid bi-weekly for full time; pro-rated if part time
- \$150/week housing allowance if permanent address is 50 miles or more from Oak Ridge - full time only; pro-rated if part-time
- One round trip (limited to \$500 total) for students whose permanent address is 50 miles or more from Oak Ridge

For more information, visit [Science Education Programs at ORNL](#) or contact HERE@ornl.gov.

Qualifications To be eligible, you must:

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- Be at least 18 years old
- Have a cumulative minimum grade point average of at least 2.5/4.0 - copy of academic record (**official transcript will not be required**) with name, school name, current classes and GPA required
- Be enrolled as a current undergraduate at an accredited U.S. college or university in Computer Science, Computational Science, or a related discipline - verification required
- Have medical insurance during appointment - verification required
- Submit two references - academic preferred

Preferred Qualifications:

- Experience with software development methodologies, such as version control systems like Git and Subversion and knowledge of UML
- Excellent communication and writing skills, and the ability to work on a team in a dynamic group environment as the team meets daily, practices Continuous Integration, collaborates on the source code and has regular deadlines
- Experience using multiple languages, including the following: C/C++, Java, JavaScript, Python
- Activity within the broader open-source software community

Eligibility Requirements

- **Degree:** Currently pursuing an Associate's Degree or Bachelor's Degree.
- **Overall GPA:** 2.50
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (12 )
 - **Communications and Graphics Design** (5 )
 - **Computer, Information, and Data Sciences** (16 )
 - **Earth and Geosciences** (21 )
 - **Engineering** (27 )
 - **Environmental and Marine Sciences** (14 )
 - **Life Health and Medical Sciences** (45 )
 - **Mathematics and Statistics** (10 )
 - **Physics** (16 )
 - **Science & Engineering-related** (1 )

Affirmation

I certify that I am at least 18 years old prior to the start of the appointment; have a cumulative GPA of 2.5/4.0 or higher; am enrolled as an undergraduate at an accredited U.S. college or university of higher education in a STEM field or related discipline.

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