Opportunity Title: Computational Science and Technology Advanced Research Studies (C-STARS) - Life Sciences Database
Opportunity Reference Code: ORNL_C-STARS_DB

Organization	Oak Ridge National Laboratory (ORNL)	**ORISE**
Reference Code	ORNL_C-STARS_DB	
Application Deadline	10/1/2019 12:00:00 AM Eastern Time Zone	
Description	Graduate researchers will focus on designing, developing, and deploying scalable and high-performance data-management systems. These systems will store, process, and analyze numerous high-impact, national-scale research, medical, operational, and clinical activities related to managing and analyzing genomic and phenotype data, electronic health records, and managing and processing natural text and imaging data, with appropriate data privacy and security. Researchers will work closely with teams of scientists and engineers to build these systems from the ground up, as well as contribute to the evolution of systems that already exist. There are five key learning objectives: (1) gain proficiency in next-generation database technologies and associated "big data" processing techniques; (2) acquire a broad understanding of the methods and theory behind high-performance, high volume-database systems in general, and in particular as they relate to medical and life sciences-related analysis; (3) develop skills in the area of high performance computing--specifically hybrid parallelism schemes and hardware acceleration; (4) become familiar with and adopt enterprise-level best practices for software development; and (5) collaborate on publishing research results to top-ranked conferences and journals.	

The C-STARS program is administered by the STEM Workforce Development Unit of the Oak Ridge Institute for Science and Education (ORISE), which is managed by Oak Ridge Associated Universities (ORAU) for the U.S. Department of Energy.

Contingencies

All contingencies of an appointment offer must be met before the applicant can begin an appointment.

Participants who are foreign nationals must receive approval and clearance from the U.S. Department of Energy. This process is initiated by ORNL and could take more than ten weeks. Foreign nationals must also show proof that they have a valid immigration status, which allows them to receive a stipend. Once an offer has been made, the ORISE Immigration Office can assist with obtaining and filing immigration documents.

We also must have, for all participants:

1. **Official English-language verification of your graduate education history and status -- all of the following that apply:**
   - **Previous official transcript showing enrollment in previous graduate program if left without degree completion**
   - **Current official transcript showing enrollment in graduate program when appointment begins OR Proof of current enrollment when appointment begins if not shown on official transcript**
   - **Verification of MS degree completion** (official transcript or degree certificate) -- *NOTE: if you have previously completed a Master's degree or equivalency, we require proof of that degree even if you're currently enrolled in another graduate program*
2. **Three letters of recommendation**
3. **Current resume**
4. **Abstract/reprint -- at least one of the following:**
   1. **a reprint of a journal article you have authored**
   2. **an abstract of a journal article you have authored**
   3. **an abstract of a conference presentation you have authored**
   4. **an abstract of your current research, even if unpublished**

Appointment Period and Renewals

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Appointments are available in all current research and development programs at the laboratory. There are no citizenship requirements for the C-STARS program, although specific research projects may have additional restrictions. The program accepts applications at any time. Appointments are for a minimum of three months or for as long as twelve months, with possibility for extensions.

Stipend

Participants receive a competitive biweekly stipend based on their educational level, research area, and experience. The stipend is taxable.

For more information, visit Science Education Programs at ORNL or contact ORNLedu@orau.org.

Qualifications

Applicants must be enrolled in a master's or doctoral degree program at an accredited institution, or hold a recent (within the past 12 months) Master's degree, or have a Master's equivalency, in a science, technology, engineering or mathematics (STEM) area. Applications may be submitted at any time during the year, and appointments may begin at any time. Applicants also must be at least 18 years old before starting the program. The C-STARS program does not have citizenship requirements, but if the applicant is not a U.S. citizen, they must have a valid visa status allowing us to pay them a stipend.

Appointments involve a full-time commitment to the research program at ORNL, and the C-STARS participant must be in residence at ORNL during the entire period of the appointment. The participant's research must be conducted in a manner and according to a time schedule that meets the overall research needs of ORNL. To document the effectiveness of the program, participants are required to submit to ORISE a report when they renew or end their program tenure. These reports should summarize their research and include a copy of any publications resulting from their appointment. If future papers are published as a result of research they performed at ORNL, copies should be sent to ORISE.

C-STARS participants are required to have coverage under a health insurance plan and must provide proof of such coverage. It is your responsibility to secure insurance coverage before arriving at the appointment site.

Additional recommended qualifications:

• Experience with parallel and system programming
• Excellent communication skills (written and oral)
• Demonstrably strong understanding of modern data and database management architectures
• Expertise with C/C++, Python and/or Java

Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree received within the last 12 months or currently pursuing.
- **Overall GPA:** 3.50
- **Discipline(s):**
    ○ **Computer, Information, and Data Sciences** (16 👁)
    ○ **Earth and Geosciences** (21 👁)
    ○ **Engineering** (14 👁)
    ○ **Environmental and Marine Sciences** (14 👁)
    ○ **Life Health and Medical Sciences** (45 👁)
    ○ **Physics** (1 👁)

Affirmation

I certify that I have completed coursework towards a degree in science, technology, engineering, mathematics, or a related field.