

Opportunity Title: Toxicology Researcher

Opportunity Reference Code: CCDC-CBC-2020-0006

Organization U.S. Department of Defense (DOD)

Reference Code CCDC-CBC-2020-0006

How to Apply Components of the online application are as follows:

- Profile Information
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - [Click here for detailed information about acceptable transcripts](#)
- Recommendation

Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blacked out, blackened out, made illegible, etc.) prior to uploading into the application system. If you have questions, send an email to ARMY-RDECOM@orise.orau.gov. Please list the reference code of this opportunity in the subject line of the email. All documents must be in English or include an official English translation.

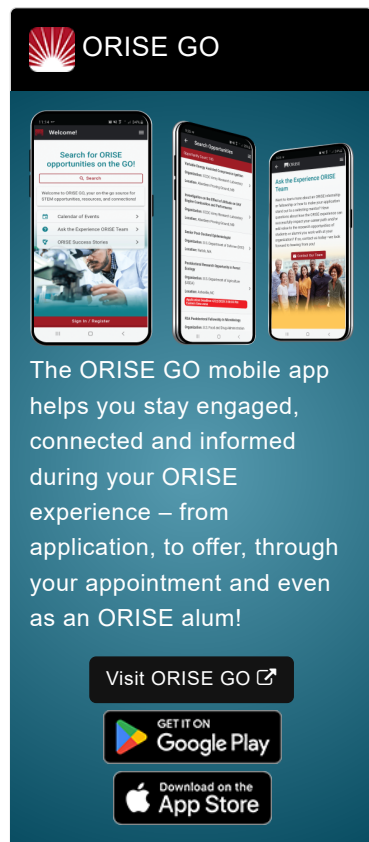
Description The U.S. Army Combat Capabilities Development Command's Chemical Biological Center (CCDC-CBC) serves as the Department of Defense's primary technical organization for non-medical chemical and biological defense capabilities for the U.S. Military. The directorate specializes in engineering, technical and acquisition capabilities that bring solutions from concept to development —through design, prototyping, and experimentation to full-service chemical and biological testing, fielding, training, and sustainment. This research opportunity will be located within the CBC's Engineering Directorate, which supports the U.S. Army and the U.S. Chemical and Biological Defense Program.

The Toxicology and Obscurants Division at CCDC-CBC supports the Chemical and Biological Defense Enterprise by characterizing the toxicity of emerging chemical threats. As an ORISE participant, this opportunity would provide knowledge to you in multiple project areas. The first is in the field of tactical disablement of chemical munitions. One critical step in this project area is determining the products of chemical reactions that destroy the chemical agents. This opportunity will allow you to learn more about using NMR to identify the products of chemical reactions. During your appointment, you will study the uses of NMR in this process, and learn how to use proton, carbon, and phosphorus NMR experiments to analyze complex mixtures and identify the projects. Additionally, you will also learn to use GC-MS to investigate the nature of the volatile components in the reactions. The second project area of investigation involves studies on enzyme aging (dealkylation) of the acetylcholinesterase enzyme in the presence of GD (Soman). Within this project area, you will investigate new approaches to this problem by developing models systems and studying them using NMR spectroscopy.

For more information about the U.S. Army Combat Capabilities Development Command's Chemical Biological Center, please visit us at <https://www.ecbc.army.mil/about-us/>.

Appointment Length

An ORISE appointment period can be a short-term (less than 2 weeks), summer (10-12 weeks), or yearlong appointment. This is a short-term 20-week full-time appointment. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.



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Participant Benefits

Participants will receive a stipend to be determined by USACCBC. Stipends are typically based on the participant's academic standing, discipline, experience, and research facility location. Other benefits may include the following:

- Health Insurance Supplement. *Participants are eligible to purchase health insurance through ORISE.*
- Relocation Allowance
- Training and Travel Allowance

Nature of Appointment

The Participant will not enter into an employee/employer relationship with ORISE, ORAU, DOD, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

Qualifications Degree received or expected: Bachelors degree in Biology.

This opportunity calls for the ability to:

Operate an NMR spectrometer, and obtain spectra for proton, carbon-13 and phosphorus-31 nuclei using the Delta software package. Analyze NMR spectra to obtain structural proofs and to provide quantitative analytical information on samples. Prepare samples for analysis. Maintain the NMR instrument, including performing nitrogen and helium cryogen fills. Perform modeling simulations to predict NMR spectra.

Operate a Biotage liquid chromatograph. Perform separations and isolate materials for structural analysis.

Successfully pass a National Agency Check with Inquiries (NACI), and obtained a favorable T1 rating.

Demonstrate the ability to perform safely in a laboratory where operations include handling toxic materials.

Perform literature searches, analyze and summarize research.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Environmental and Marine Sciences** ([1](#) )
 - **Life Health and Medical Sciences** ([45](#) )
 - **Age:** Must be 18 years of age