

Opportunity Title: DEVCOM-CBC Biomanufacturing Process Development for Specialty Chemicals and Materials

Opportunity Reference Code: CCDC-CBC-2021-0010

Organization U.S. Department of Defense (DOD)

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How to Apply Click on *Apply* now at the bottom of the opportunity to start your application.

Description The Department of Defense (DoD) is offering a post-graduate internship at the U.S. Army Combat Capabilities Development Command - Chemical Biological Center (DEVCOM-CBC) within The Research and Technology (R&T) Directorate.

As an ORISE participant, you will join a community of scientists and researchers in an effort to support The Research and Technology (R&T) Directorate within CCDC Chemical Biological Center, with a mission to provide integrated science and technology solutions to identify and mitigate novel and emerging chemical and biological threats.

Why should I apply?

Under the guidance of a mentor, you will gain hands-on experience to complement your education and support your academic and professional goals. During your appointment, you will participate in the configuration and operation of DEVCOM-CBC's Biomanufacturing process development pilot plant. You will also have an opportunity to gain experience in fermentation, downstream processing, and biochemical analysis of the products of organisms modified using the techniques of synthetic biology at varying stages of purification and manufacture.

Along the way, you will collaborate with team personnel to design and implement biological and chemical engineering strategies for production of critical chemicals and precursors, gaining exposure to production techniques including but not limited to medium- and large-scale fermentation, centrifugation, tangential-flow filtration, chromatography, distillation, and/or extraction. Under the mentorship of DEVCOM-CBC senior scientists, you will learn analytical techniques which will include HPLC, LC-MS, and GC-MS.

In addition, you will learn and engage in activities which include but are not limited to:

- Technoeconomic analyses
- Process safety analysis
- Risk assessment
- Hazard mitigation in large-scale process development

Where will I be located?

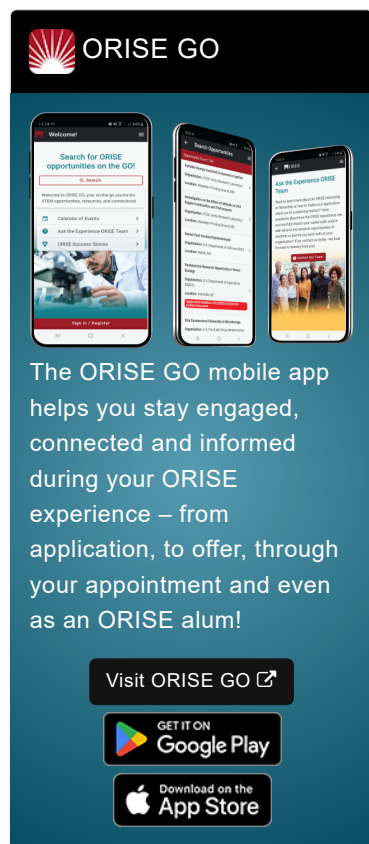
- Aberdeen Proving Ground, Maryland

What is the anticipated start date?

The DEVCOM-CBC is ready to make appointments immediately. Exact start dates will be determined at the time of selection and in coordination with the selected candidate. Applications are reviewed on an ongoing basis and internships will be filled as qualified candidates are identified.


Appointment Length

This appointment is a twelve month research appointment, with the possibility to be renewed for additional research periods. Appointments may be extended depending on funding availability,



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project assignment, program rules, and availability of the participant.

What are the benefits?

You will receive a stipend to be determined by DEVCOM-CBC. Stipends are typically based on a 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

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

About DEVCOM-CBC

U.S. Army Combat Capabilities Development Command Chemical Biological Center (DEVCOM-CBC) conducts applied research and development for the detection and identification of chemical, biological, and explosive materials to provide next-generation detection capabilities to the Warfighter. The Research and Technology (R&T) Directorate operates within CCDC Chemical Biological Center, with a mission to provide integrated science and technology solutions to identify and mitigate novel and emerging chemical and biological threats. The R&T Directorate specializes in the research and development of innovative technological solutions to solve chemical and biological defense threats to our nation—both abroad and in the homeland.

Beginning in 2021, DEVCOM-CBC's Biotechnology Branch begins a 2-year modernization and expansion effort of its 25,000 square-foot biomanufacturing research and development laboratory. Currently, the facility houses its bioproduction operations, featuring fermentation vessels up to 1000 liters capacity and downstream processing capability for bacterial and phage-based products. In the coming years, the facility will expand its capabilities to include downstream processing of critical specialty chemicals, precursor molecules, advanced bio-inspired polymer materials, and other military-relevant biologically derived products. At the completion of the modernization effort, the Biotechnology branch will serve the DoD as a pilot-scale biomanufacturing research and process development facility.

Qualifications Ideal candidates will have a Bachelor's or Master's degree in Chemical Engineering with coursework and/or internship experience in process design.

Particular areas of interest include the separation and purification of biologically derived products from fermentation broth or from other related bioproduction processes. Experience in environments with rigorous regulatory, process, and/or safety controls is also desirable.

A complete application consists of:

- Zintellect Profile
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - For this opportunity, an unofficial transcript or copy of the

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student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. [Click here for detailed information about acceptable transcripts.](#)




- Letter of Recommendation: While a letter of recommendation is not required to be considered, applicants are required to provide contact information for one recommendation in order to submit the application. Applicants are encouraged to request a letter of recommendation before submission as this may help reviewers have a better understanding of the applicant's qualifications and interests. If selected, a letter of recommendation must be submitted on your behalf upon acceptance of the appointment.

Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blanked out, blackened out, made illegible, etc.) prior to uploading into the application system. All documents must be in English or include an official English translation.

If you have questions, send an email to ARMY-REDCOM@orise.orau.gov. Please list the reference code of this opportunity [CCDC-CBC-2021-0010] in the subject line of the email.

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- Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree or Master's Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([4](#) )
 - **Engineering** ([2](#) )
 - **Life Health and Medical Sciences** ([3](#) )