

Opportunity Title: Engineering, Physics, or Chemistry: Additive Construction - Structural

Opportunity Reference Code: ERDC-CERL-2021-0003

Organization U.S. Department of Defense (DOD)

Reference Code ERDC-CERL-2021-0003

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](#)
- References

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 usace@orise.ora.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 Corps of Engineers (USACE), Engineer Research and Development Center (ERDC), Construction Engineering Research Laboratory (CERL) develops and infuses innovative technologies to provide excellent facilities and realistic training lands for the Department of Defense (DOD). Products and services from CERL research enhance the Army's ability to design, build, operate and maintain its installations and contingency bases and to ensure environmental quality at the lowest life-cycle cost. These premier facilities support the Army's training, readiness, mobilization and sustainability missions while providing an infrastructure and realistic training lands that are critical assets to installations in carrying out their military mission. ERDC-CERL develops additive construction (large scale 3D printing) technology that utilizes deployable 3D printers to produce infrastructure components on-demand, in the field, using locally available materials. The CERL Additive Construction team is a multi-disciplinary, agile group of engineers and scientists dedicated to modernizing construction practices and developing materials by design to improve placement, thermal, and structural performance.

Under the guidance of a mentor, the participant will have the opportunity to participate executing cutting-edge research in structural testing, construction, or additive manufacturing/construction. The internship opportunity will include exposure to laboratory and of additively constructed (large-scale 3D printed elements), assisting the set-up and performing laboratory testing of structural components, analyzing results, and proper report writing.

Length of Appointment


This ORISE appointment is for a twelve month period. 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 ERDC-CERL. 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 The successful candidate will have at least a Bachelor of Science in engineering, physics, or chemistry with experience using structural design codes (e.g. ACI 318, TMS 402/602, AISC, AWC NDS, AASHTO LRFD) and will have experience in structural testing, construction, or additive manufacturing/construction. Desired skills include understanding of mechanical and rheological properties, structural design, structural evaluation, variable control during sample preparation and curing, report writing, data acquisition and analysis, and computer aided design (CAD).

Candidate must demonstrate the ability to lift 50 pounds, use powered hand tools, a self starter, strong communication skills, ability to participate in a team setting, and strong organizational skills.

- Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#) )
 - **Communications and Graphics Design** ([6](#) )
 - **Computer, Information, and Data Sciences** ([17](#) )
 - **Earth and Geosciences** ([21](#) )
 - **Engineering** ([27](#) )
 - **Environmental and Marine Sciences** ([14](#) )
 - **Life Health and Medical Sciences** ([46](#) )
 - **Mathematics and Statistics** ([10](#) )
 - **Physics** ([16](#) )
 - **Science & Engineering-related** ([1](#) )
 - **Social and Behavioral Sciences** ([29](#) )
 - **Age:** Must be 18 years of age