

**Opportunity Title:** Inertial Vehicle Barrier Calculator - Faculty **Opportunity Reference Code:** AFCEC-2021-0010

Organization U.S. Department of Defense (DOD)

Reference Code AFCEC-2021-0010

How to Apply A complete application consists of:

- Zintellect Profile
- · Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- 1 Recommendation

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 <u>AIRFORCE@orise.orau.gov</u>. Please list the reference code of this opportunity (AFCEC-2021-0010) in the subject line of the email.

**Description** The Air Force Civil Engineer Center is offering a faculty level fellowship at Auburn University.

#### What will I be doing?

You will join a community of scientists and researchers in an effort to update the analytical inertial vehicle barrier calculator. As the selected participant, you will collaborate with AFCEC to further analyze the analytical Inertial Vehicle Barrier Calculator developed during Phase 1. Further dynamic analysis is required to validate and improve the confidence level for non-rigid barriersand rigid barriers with pinned and cabled connections. You will guide and assist the student as necessary with the development of new FE models capable of analyzing the complex interaction of multiple connected rigid barriers and the displacement of small sand particles making up non-rigid barriers. In addition, you will review processes, and analyze outcomes used as the basis to update the analytical inertial vehicle barrier calculator. Additional research components will include designing projects, the application of engineering knowledge, the collection and evaluation of data and other published reports, and the interpretation of results along with student participants to provide meaningful conclusions relevant to the performance of engineering materials and their dynamic response during collision.

#### Why should I apply?

Under the guidance of a mentor, you will gain hands-on experience to

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complement your education and support your academic and professional goals. Along the way, you will engage in activities and research in several areas. These include, but are not limited to:

- · development of new FE models
- apply engineering knowledge
- collect and analyze data and other published reports

Where will I be located? Auburn, Alabama

### What is the anticipated start date?

The Air Force Civil Engineer Center 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.

## What is the appointment length?

This appointment is a ten month research appointment, with the possibility to be renewed for additional research periods. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

### What are the benefits?

You will receive a stipend to be determined by **AFCEC.** 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.

The Air Force Civil Engineer Center (AFCEC) focuses on technologies applied to the civil engineer mission encompassing, among others, materials, soils, facility design, construction, security systems and components, infrastructure protection and operations, system control, and energy.



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Qualifications	Faculty participant shall be tenure-track (or full tenure) faculty member of Auburn University and have access to university resources and facilities.
Eligibility	Citizenship: U.S. Citizen Only
Requirements	Degree: Any degree .
	Academic Level(s): Faculty.
	<ul> <li>Discipline(s):</li> </ul>
	<ul> <li>Chemistry and Materials Sciences (<u>12</u> <sup>(*)</sup>)</li> </ul>
	<ul> <li>Communications and Graphics Design (<u>2</u> (2))</li> </ul>

- Computer, Information, and Data Sciences (17. 1)
- Earth and Geosciences (21 (19)
- Engineering (<u>27</u> <sup>●</sup>)
- Environmental and Marine Sciences (14 (1)
- Life Health and Medical Sciences (46.)
- Mathematics and Statistics (<u>10</u>)
- Physics (<u>16</u> <sup>●</sup>)
- Science & Engineering-related (1.)
- Social and Behavioral Sciences (28 )