WEBINAR BRIEF

MID-AMERICA TRANSPORTATION CENTER

Expedient Passive Protection from Vehicle-Borne Improvised Explosive Devices

Presentation Topic

The U.S. Army Engineer Research and Development Center (ERDC) helps solve our Nation's most challenging problems in civil and military engineering, geospatial sciences, water resources, and environmental sciences for the Army, Department of Defense, civilian agencies, and our Nation's public good. One area of research within ERDC's core competencies is Expedient Passive Protection. This presentation will discuss two efforts that aim to provide expedient protection from vehicle-borne improvised explosive devices (VBIEDs).

Dr. Stephens will discuss the development of the Barrier Damage Assessment Module which aims to predict the effects of a VBIED on common protective barriers including precast concrete and soil-filled barriers.

Mr. Woodson will discuss the development of the Field Expedient Non-lethal Vehicle Arresting Barrier (FENVAB) including the design, modeling, and experimentation. Opportunities at ERDC including scholarships, internships, and jobs will also be discussed.

About the Speakers

Dr. Catherine Stephens is a Research Civil Engineer in the Survivability Engineering Branch in the Geotechnical and Structures Laboratory of the U.S. Army Engineer Research and Development Center in Vicksburg, Mississippi. Dr. Stephens is a supervisor and research project lead. As supervisor, Dr. Stephens is the rater for 10 Survivability Engineering Branch employees. As project lead, Dr. Stephens is responsible for over $7 million in science and technology funding per year and manages research projects from over 10 different principle investigators. Dr. Stephens is a subject matter expert in the areas of force protection, perimeter security, protective structures, materials characterization, weapons' effects on structures, blast and ballistic threat mitigation, advanced material applications in protective construction, and reach-back for support to forward deployed forces.

Mr. Bowen G. Woodson is a Research Civil Engineer (Structural) in the Structural Mechanics Branch within the Geotechnical and Structures Laboratory of the U.S. Army Engineer Research and Development Center. Mr. Woodson's research focuses primarily on hostile vehicle mitigation, structural dynamics, and high-strength concrete. Mr. Woodson is the principle investigator of a study regarding the design and analysis of protective structures with UHPC materials to develop a fast-running tool that provides the behavior of UHPC slabs subjected to blast loads.

Furthermore, Mr. Woodson is the principle investigator of a large research effort to develop and demonstrate friction-based, expedient vehicle barriers to resist the penetration of large vehicles in urban environments. In his 5 years at ERDC, Mr. Woodson has led and worked in large teams on multiple projects to research weapon effects on hardened structures. These projects include the development of innovative, cost-effective materials to resist advanced blast and fragment loads and experimental studies of blast mitigation schemes to protect critical infrastructure. Mr. Woodson has also performed innovative non-destructive testing to characterize the structural behavior of critical infrastructure.

Join us via livestream:

April 24, 2020
1:00 p.m. CST

Connect at:
https://unl.zoom.us/j/94939898404

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