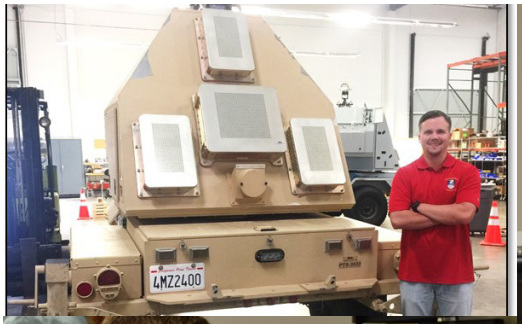
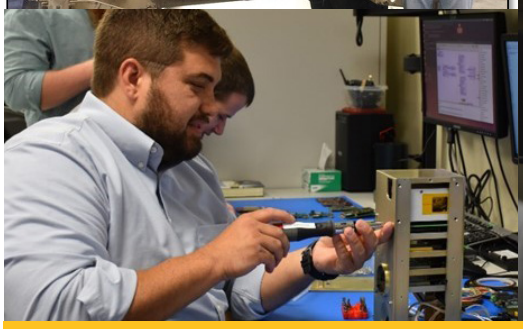
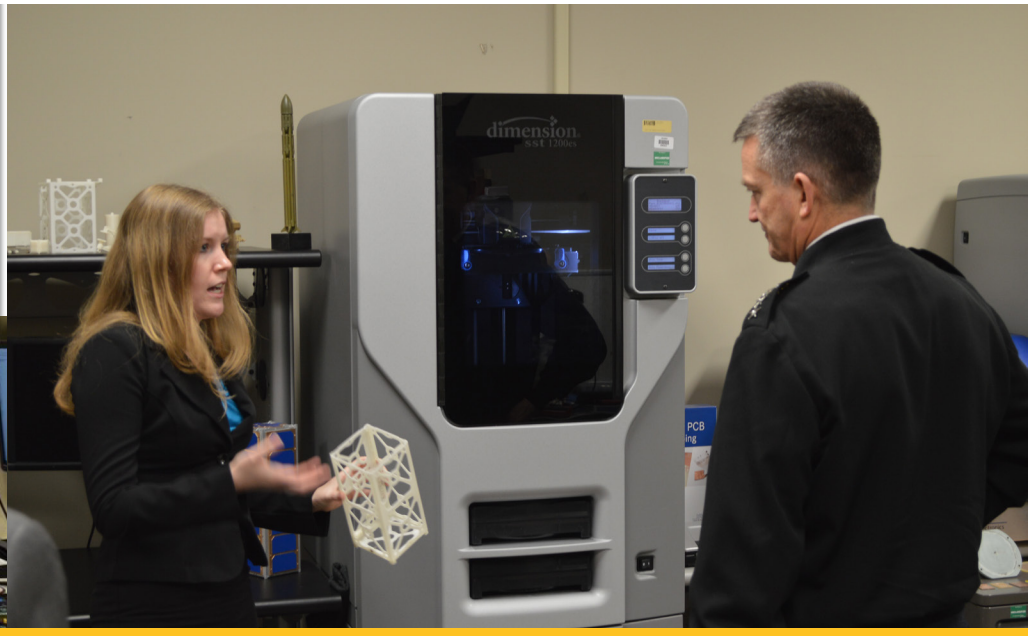
U.S. ARMY

CONCEPTS ANALYSIS DIVISION (CAD)







Performing research, advancing new technologies, and developing the science and technology leadership and workforce of the future

The Concepts Analysis Division was established by the Technical Center in 2004 to provide an in-house, unique, hands-on environment for the Technical Center's newly hired engineers, scientists and college interns. The Concepts Analysis Division develops new engineers and scientists by providing a state-of-the-art laboratory environment where interns can experience practical applications and develop skill sets needed for current and future U.S. Army Space and Missile Defense Command programs.

The Concepts Analysis Division exposes the interns to various types of engineering through assigned technical projects that support the Technical Center and other command programs. Each intern has the opportunity to work on technical projects across the Technical Center to develop a well-rounded view of what the Technical Center does and how it impacts the warfighter. This also enables each intern to develop an understanding of how they can best contribute to the Technical Center mission once they complete their internship. After their internship in the Concepts Analysis Division is complete, the interns are transitioned to specific technology programs within the Technical Center's directorates to continue their technical growth.

The goal of the Concepts Analysis Division is to provide well-rounded engineers and scientists to the Technical Center who can immediately make an impact in their area of work once they transition from intern to permanent government civilian.

- Supports programs across the Technical Center through computer aided design and modeling and simulation of electromagnetic systems, antennas, directed energy systems, high enthalpy wind tunnels, and vehicle weather encounter domains
- In-house prototyping capabilities: SolidWorks, 3D printing, printed circuit boards
- Provides truth sensor support to the counter-rocket, artillery, and mortar/counter-unmanned aerial system programs
- Recruit, train and mentor students and young professionals to develop a cadre of technically competent professionals

The Concepts Analysis Division was established in 2004 to provide a hands-on environment for the Technical Center's newly hired engineers, scientists and college interns.

Concepts Analysis Division employees provide support to the following efforts:

- Computer aided design & modeling and simulation of electromagnetic systems, antennas, directed energy systems, high enthalpy wind tunnels, and vehicle weather encounter domains.
- Operation of truth sensor for counter-rocket, artillery and mortar, and counter-unmanned aerial system testing at Yuma Proving Ground, Arizona
- Research, design and test for future laser weapon systems
- In-house prototyping capabilities – SolidWorks, 3D printing, printed circuit boards
- Digital signal processing/field programmable gate arrays – software defined radio, radar signal processing

The Concepts Analysis Division uses the Department of Defense's Science, Mathematics and Research for Transformation, or SMART, scholarship program and the Department of Army intern program to hire the best and brightest engineers and scientists from all over the country. Typically, the Concepts Analysis Division has graduates/students from universities across the United States, such as the University of Michigan, Georgia Institute of Technology, Arizona State University, University of Alabama in Huntsville, University of Arizona, University of Central Florida, University of Alabama, Auburn University, Tuskegee University, and Utah State University.

The SMART program provides for all of the students' educational expenses to allow them to pursue a bachelor's degree, master's degree or PhD in one of the science, technology, engineering or mathematics areas. While in school, students in the program receive full tuition, a monthly stipend for living expenses, health insurance and book allowances, as well as an internship in the Concepts Analysis Division during the summer that lasts from eight weeks to 12 weeks. When they graduate with their degree, scholars begin working in a permanent civilian position within the Technical Center.

Graduates are required to work at the U.S. Army Space and Missile Defense Command in Huntsville, Alabama, for a period at least equivalent to their SMART scholarship period. The SMART graduates and Department of the Army interns work in the Concepts Analysis Division for approximately two years on multiple projects in different Technical Center mission areas such as small satellites, high energy lasers, radars, optics, etc. This exposure to multiple mission areas allows the engineer and Technical Center leadership to determine which division is the best fit for the engineer to transition into permanently.

The Concepts Analysis Division facilities include a hardware lab area with laboratory benches, multiple 3D printers, a circuit board mill and pick and place machine, cleanroom, software in the loop and hardware in the loop testbed, collaborative office area and a large meeting/classroom with a state-of-the-art media wall.

With its unique mission and facilities, the Concepts Analysis Division is normally a must-visit location for high profile visitors and regularly receives and briefs national, state and local political leaders, as well as senior military leaders from across the Department of Defense.

The Concepts Analysis Division is also routinely asked to participate in outreach events such as Adventures in Engineering, Bring Your Child to Work Day and career days at area schools. The purpose of these outreach events is to encourage children to pursue degrees in the science, technology, engineering and mathematics areas to ensure that the U.S. has the leadership and workforce to meet the challenges of today and tomorrow.

For more information, please contact: USASMDC Public Affairs Office

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