

## **ARMY RESEARCH LABS**

<http://www.arl.army.mil/main/Main/default.cfm?Action=231>

*ARL's mission is to ... provide innovative science, technology, and analyses to enable full-spectrum operations.*

The U.S. Army Research Laboratory (ARL) of the Army Materiel Command is the Army's corporate, or central, laboratory for materiel technology. Its diverse assortment of unique facilities and its workforce of government engineers and scientists comprise the largest source of world-class integrated research and analysis in the Army. ARL's programs consist of basic and applied research and survivability/lethality analysis. ARL consists of six directorates and the Army Research Office. These organizations focus on technology areas critical to strategic dominance across the entire spectrum of operations:

**Computational and Information Sciences Directorate (CISD)** - conducts a broad spectrum of research focused on high bandwidth communication, advanced command and control techniques, battlefield visualization, weather decision aids, and defensive information operations;

**Human Research and Engineering Directorate (HRED)** - scientific research and technology directed toward optimizing Soldier performance and Soldier-machine interactions to maximize battlefield effectiveness, and to ensure that soldier performance requirements are adequately considered in technology development and system design;

**Sensors and Electron Devices Directorate (SEDD)** - vertically integrated research and technology for developing advanced solid-state components and state-of-the-art sensor systems;

**Survivability and Lethality Analysis Directorate (SLAD)** - integrated survivability and lethality analysis of Army systems and technologies across the full spectrum of battlefield threats and environments as well as analysis tools, techniques, and methodologies;

**Vehicle Technology Directorate (VTD)** - addresses propulsion and structural engineering technologies for both air and ground vehicles in a leveraged partnership with NASA;

**Weapons and Materials Research Directorate (WMRD)** - material and weapons research to develop the technologies for future land combat systems;

**Army Research Office (ARO)** - scientific and far-reaching technological discoveries in extramural organizations (educational institutions, nonprofit organizations, and private industry).

ARL has consistently provided the enabling technologies in many of the Army's most important weapons systems. Technology and analysis products are moved into Army Research, Development, and Engineering Centers (RDECs) and to other Army, Department of Defense (DOD), government, and industry customers. ARL's programs are focused on key underpinning science and technology underpinnings that will enable the transformation of the Army into a more versatile, agile, survivable, lethal, deployable, and sustainable force.

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The U.S. Army Research Laboratory (ARL) provides America's soldiers the technological edge through scientific research, technology development, and analysis. We provide scientific and technological innovation in a variety of technical disciplines, through direct in-house laboratory efforts and joint programs with government, industry, and academia. We also analyze the performance of existing developmental weapon systems, with emphasis on factors such as survivability, lethality, man-machine interface, and battlefield environmental effects. To remain at the cutting edge of technology, we must maintain a wide range of resources. Among the most important of these resources are our facilities. We are able to conduct highly advanced and specialized research at our facilities because of their unique and sometimes one-of-a-kind features.

#### **Facilities at Aberdeen:**

U.S. Army Research Laboratory (ARL) Major Shared Resource Center (Website: <http://www.arl.hpc.mil> )

Aerodynamics Experimentation Facility

Aircraft Vulnerability/Lethality Experimentation Facility (AVLEF)

Autoclaves for Composites Processing Research Blast Experimentation Facility

Cannon-Caliber Electromagnetic Launcher Experimentation Facility

Composites Processing Research Facilities

Computerized Mobility/Portability Course

Depleted Uranium Experimentation Facility

Electromagnetic Coupling Facility (ECF)

Explosive Mechanics Facility

Flame Research Facility

Indoor/Outdoor Robotics and Automation Research and Test Facility

Ion Implantation Facility

Large-Caliber Experimental Test Facility

Materials Characterization Facility

Simulation Computation Analysis Laboratory (SCAL)

Small Arms Firing Experimentation Facility

Transonic Projectile Experimentation Facility  
Tungsten Alloy Experimentation Facility

**Facilities at Adelphi:**

Acousto-Fluidic Test Facility  
Advanced Microanalysis Center  
Display Technology Center  
Frequency Control and Acoustic Signal Processing Facility  
High Energy Flash X-Ray (HIFX) Facility  
High-Power Microwave (HPM) Research Facility  
Nanoelectronic Fabrication Facility  
Pulse Power Center  
Radio Frequency (RF)/Microwave Test Station  
Scale Model Facility  
Thermal Desorption Mass Spectrometer  
Triaxis Vibrator  
Ultra Wideband (UWB) Synthetic Aperture Radar (SAR) Test Bed  
Ultralithography Center

**Facilities at Langley Research Center**

Anechoic Noise Facility  
Crashworthiness Test Facility  
Mechanics of Materials & Structures Laboratories  
Nondestructive Evaluation (NDE) Sciences Laboratory  
Transonic Dynamics Wind Tunnel