



# Awareness & Localization of Explosives-Related Threats (ALERT)

*A DHS Center of Excellence*

The Center of Excellence for Awareness & Localization of Explosives-Related Threats (ALERT) will develop new means and methods to protect the nation from explosives-related threats. ALERT focuses on challenges such as detecting leave-behind Improvised Explosive Devices, enhancing aviation cargo security, providing next-generation baggage screening, detecting liquid explosives, and enhancing suspicious passenger identification. ALERT is led by Northeastern University in Boston, MA, and the University of Rhode Island in Kingston, RI.

## MISSION

ALERT's mission is to conduct transformational research, technology development and educational development for effective characterization, detection, mitigation and response to the explosives-related threats facing the country and the world.

## RESEARCH

The ALERT research program is derived from a top-down understanding of societal issues related to explosives characterization, detection, mitigation, and response. These issues have been crystallized by considering a set of inspiring challenges, such as ultra-reliable screening, explosives detection at a distance, and unequivocal pre- and post-blast mitigation. These challenges have defined the core research thrusts: Explosives Characterization, Explosives Detection



The ALERT experimental facility at RPI allows simulation of human-scale environments for video analytics. Above, students replicate an airport security screening checkpoint.

Sensors, Explosives Detection Sensor Systems and Blast Mitigation. ALERT's vision for research ties the real-world grand challenges and fundamental research together, keeping them synchronized but able to adapt as societal and DHS needs change.

## EDUCATION

The development of the ALERT education program was guided by the need to provide a meaningful impact on the communities of university students, K-14 students and their teachers, first responders and career

Envision a world protected from the catastrophic consequences of explosives-related threats.

professionals who will be important contributors to DHS and to the success of its critical mission. In addition to developing the next generation of fundamental research advances, the ALERT team of educational institutions will address the strong and continuing need for personnel trained in areas relating to counterterrorism and homeland security. The ALERT educational program also recognizes the value of diversity in the development of an effective workplace, and emphasizes successful strategies to draw underrepresented minorities and women into majors related to DHS and ALERT areas of interest.

## PARTNERS

The ALERT partnership is made up of national and international academic, industrial and government partners. In addition to ALERT co-leaders Northeastern University and the University of Rhode Island, core partners include: Ben-Gurion University, Boston University, California Institute of Technology, Hebrew University of Jerusalem, Massachusetts General Hospital, Missouri University of Science & Technology, Morehouse College, New Mexico State University, Rensselaer Polytechnic Institute, Spelman College, Texas Tech University, Tufts University, University of Puerto Rico at Mayagüez, Washington State University, and Woods Hole Oceanographic Institution. ALERT's industrial and government affiliates are: Analogic, American Science & Engineering, John Adams Innovation Institute, Idaho National Laboratory, Lawrence Livermore National Laboratory, Lockheed Martin, Los Alamos National Laboratory, Pacific Northwest National Laboratory, Raytheon, Sandia National Laboratory, Siemens Corporate Research, Textron Systems.

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