MAP17

LEVERAGING RISK ANALYSIS TO INFORM THREAT CHARACTERIZATION RESEARCH INVESTMENTS

Barrett Richter, Erin Hawks, Chris Dibble
Battelle Memorial Institute, Columbus, Ohio, USA

Abstract

The Probabilistic Analysis of National Threats, Hazards, and Risk (PANTHR) program within the Department of Homeland Security Science & Technology Directorate (DHS S&T) strategically employs Chemical and Biological Risk Analyses to inform decisions across the homeland security enterprise. This quantitative risk analysis framework utilizes data-driven models and tools to evaluate risk from millions of potential exposure scenarios. These analyses are crucial for identifying potential threats and vulnerabilities to the homeland and are used to prioritize preparedness, response, and mitigation efforts. One such effort is biological and chemical hazard research, which is a foundational capability of PANTHR that addresses current national security concerns by filling critical data gaps through laboratory characterization studies. To optimize resource allocation—balancing limited personnel and financial resources—PANTHR draws on input from its risk analysis and modeling capabilities through the Research Prioritization Matrix software tool. PANTHR's ability to refine and improve its risk models through continuous feedback from characterization studies exemplifies a dynamic and responsive approach to risk analysis. This cyclical process enhances the accuracy of risk predictions and ensures that hazard characterization research remains aligned with evolving national security threats. By focusing on critical research areas and continuously updating risk analysis tools, PANTHR maximizes the impact of limited resources, strengthening the nation's preparedness and response capabilities against biological and chemical threats.

Conference Track

Military Applications