PROJECT BACKGROUND

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) Probabilistic Analysis of National Threats, Hazards and Risks (PANTHR) strategic program supports the national chemical, biological, radiological, nuclear, and explosive (CBRNE) defense mission. PANTHR provides accurate, useful, and technically defensible knowledge products and tools to stakeholders to enable risk-informed decision making for defense against weapon of mass destruction (WMD) threats to the homeland. PANTHR enables decision-makers to address CBRNE threats more effectively through three strategic capabilities: risk assessment, characterization, and knowledge management.

GAUGING BIOLOGICAL THREATS

DHS is the primary federal agency responsible for conducting threat characterization and risk assessments for biological agents that may be used in a terrorist attack against the U.S. Since 2004, S&T has fulfilled this mission through the Biological Threat Characterization (BTC) project.

BTC develops and maintains scientifically robust capabilities across the biodefense spectrum. These capabilities inform national homeland defense activities to prevent, respond to, and recover from a biological attack on the homeland.

The most important aspects of the BTC mission are to improve understanding of biothreat agents and generate information to fill critical homeland security enterprise (HSE) knowledge gaps for decision-makers, operators, and interagency stakeholders. BTC leverages the National Biodefense Analysis and Countermeasures Center (NBACC) as a unique capability for conducting high-impact, high-quality experiments with biological agents and technologies across the attack pathway.

STRATEGIC GOALS

BTC's work revolves around three main strategic goals:

- Maintain and expand critical BTC capabilities to rapidly execute national security priority initiatives
- Produce technical reports that are accurate, credible, and technically defensible to support HSE decision-makers
- Maximize impact of biological characterization research
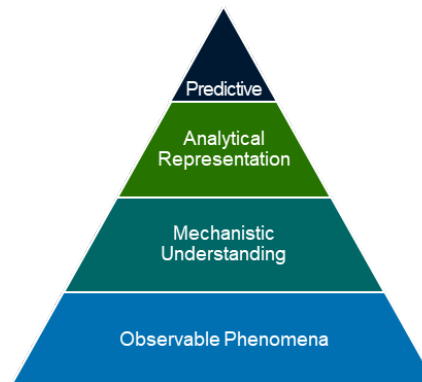
The above image is a pictorial representation of the characterization hierarchy followed by BTC to identify and develop an understanding of various biological threat agents and technologies identified to date.

IMPACT

BTC establishes and leverages innovative science-based capabilities to provide expertise, data, and knowledge surrounding biological threats. This work seeks to increase awareness, improve understanding, and provide more effective decision making regarding current and future biological hazards. This is achieved by pursuing the following capability objectives:

- Expand biothreat characterization capabilities to rapidly execute national security priority initiatives
- Provide technical reports that are accurate, credible, and technically defensible to support HSE decision makers
- Improve understanding of biological threat agents and technologies across the threat pathway
- Improve prioritization of national investments to mitigate risk of a biological attack on the homeland