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Diagnosics, Detection, and Disease Surveillance

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About Us



The Defense Threat Reduction Agency (DTRA) is a combat support agency of the U.S. Department of Defense, founded in 1998, headquartered at Fort Belvoir, Virginia. DTRA includes 2,000 military and civilian personnel located around the world.



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DTRA mission

“To safeguard the US and its Allies from Weapons of Mass Destruction (Chemical, Biological, Radiological, and Nuclear) and High-Yield Explosives by providing capabilities to reduce, eliminate and counter the threat, and mitigate its consequences”

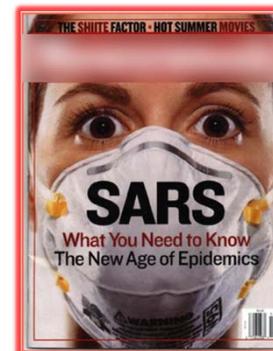
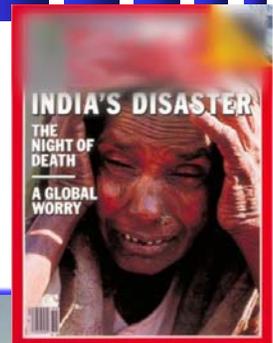




Chemical and biological threats

- **Chemical**
 - **Traditional chemical warfare agents**
 - (e.g., nerve agents, vesicants)
 - **Toxic industrial materials and toxic industrial chemicals**
 - **Emerging and non-traditional agents**

- **Biological**
 - **Traditional biological threat agents**
 - (e.g., anthrax and ebola)
 - **Emerging diseases**
 - (e.g., pandemic flu, SARS)
 - **Enhanced threats**
 - (genetically engineered or especially virulent)





CBA S&T Strategy

Vision: Comprehensive awareness to reduce biological and chemical threats.

Mission: Finding and fostering Science and Technology that provides ubiquitous sensing, and shapes CB threat awareness.

SHAPE

SENSE

**Medical
Surveillance**

**Medical
Diagnostics**

**Chemical &
Biological
Detection**

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Framing research as a function of tough problems

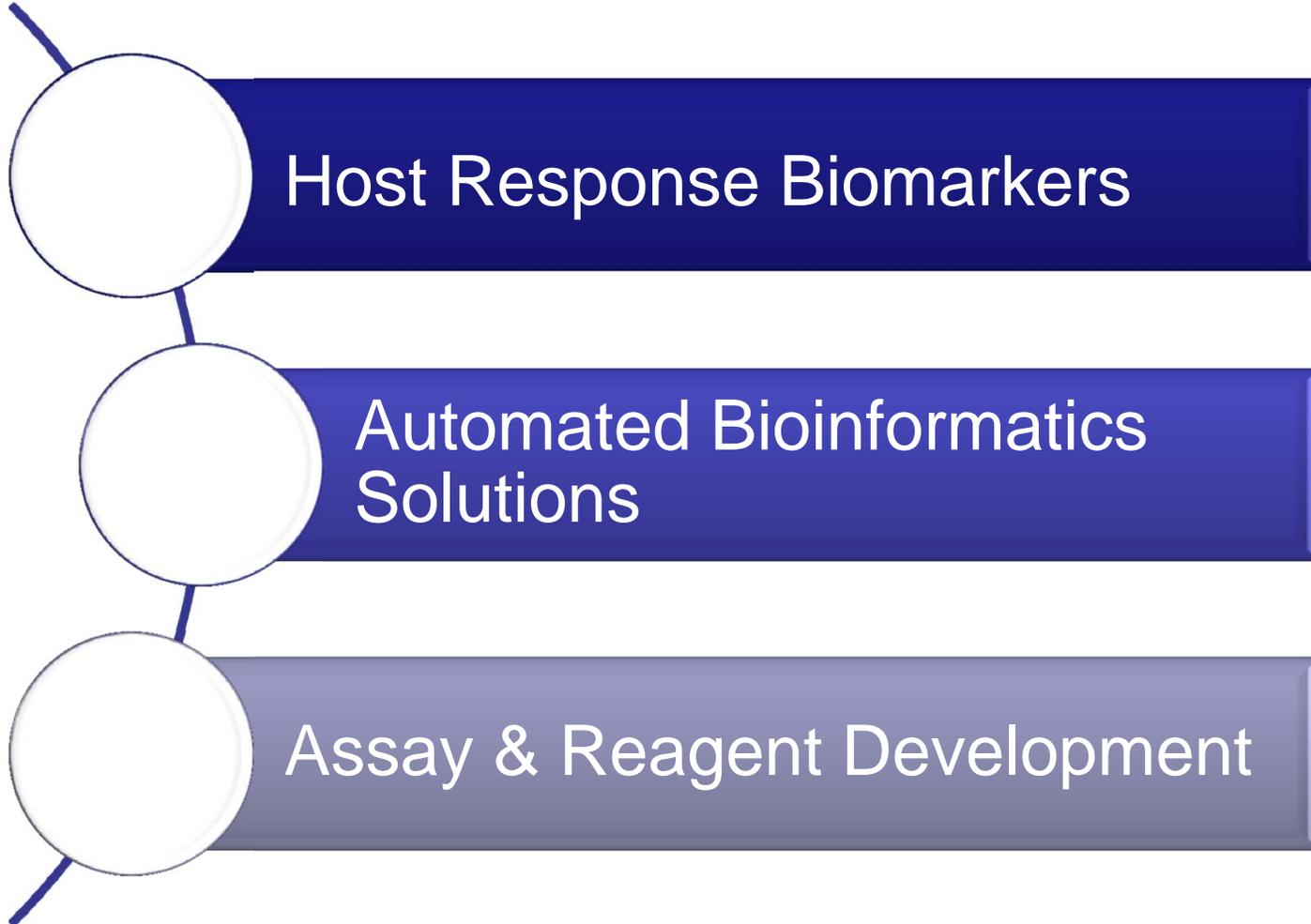
- Biological/chemical sciences
 - Exploitable characteristics shared among threat agents
 - Differentiating harmful from non-harmful environmental factors
 - Biological signatures that can be interrogated at a distance and retain their diagnostic value
 - Regent production, stabilization
 - Low resource Dx
- Mathematics/Physics/Computing
 - Signal to noise enhancing algorithms
 - Exploitation and/or cancellation of stochastic factors
 - Electromagnetic interrogation and readout
- Environmental
 - Environmental anomaly detection
- Nano- and Material Sciences
 - Interaction of biological agents with materials at various size scales
 - Materials that have intrinsic detection and mitigation capability
- (continued)



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Assays & Biomarkers Branch Focus Areas



Host Response Biomarkers



Automated Bioinformatics Solutions



Assay & Reagent Development



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Diagnostic & Detection Devices Branch Focus Areas



Next Generation of Chemical Detectors

Low Burden Diagnostic Platforms

Emerging Threat Analysis

Beyond the Fence-line Threat Detection

Sensor Data Analysis



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Threat Surveillance Branch Focus Areas



Biosurveillance Ecosystem

Point of Care Dx
Demonstration

Device to Cloud

Data and Analytics



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Why do we do what we do?

Focus on the customer



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