

Chemical Sensor Development, Deployment, and Response

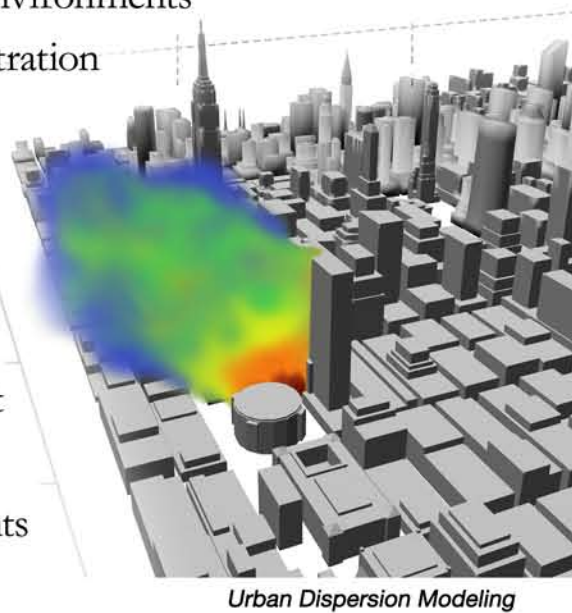
Assess vulnerability to protect against chemical threats and assess impact of response actions.

Implement and improve sensor systems for the simultaneous detection of multi-chemical threats in near-real time.

Investigate threats using information gained from forensics methods and techniques.

National Laboratory Contributions

- Understanding spread of chemical release in urban environments
- Chemical restoration operational technology demonstration for transportation facility (airport)
- Aerosol decontamination of facilities and sensitive equipment
- Cleanup assessment and worker exposure evaluation
- Response training
- Fate and persistence of chemicals in the environment
- Development of air purification systems
- Deployable chemical defense systems for special events
- Improved wide-area and point chemical detectors



Collaborations

- DOE National Laboratories
- Universities (e.g., Washington State University, Arizona State University, University of Washington)
- Industry (e.g., Maxion Technologies, Eigenvector Research)

Capabilities

ASSESS AND PLAN

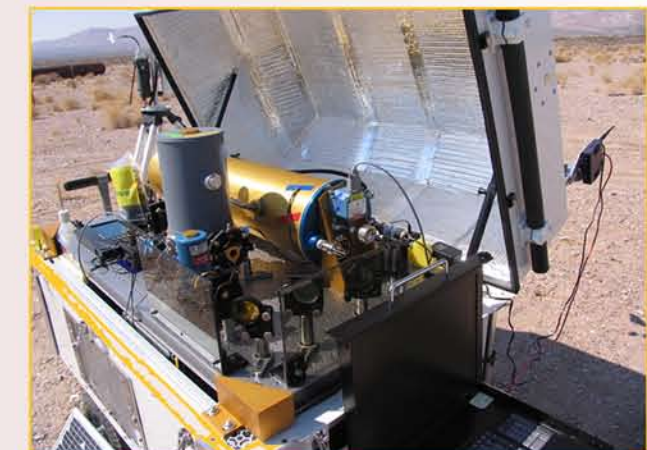
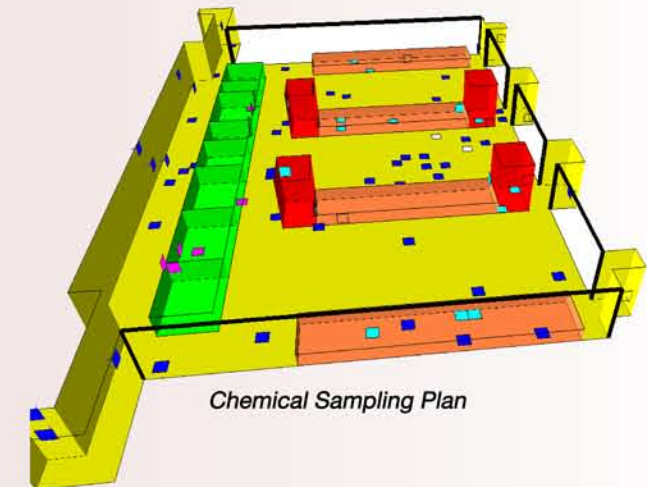
- Measurement of urban atmosphere
- Dispersion modeling
- Statistical methodologies for sampling and detection to generate high-confidence data

DETECT DISPERSION

- Northwest spectral signature database
- Optical sensor development and design
- Materials development for improved sensor selectivity and sensitivity
- Environmental aerosol testing chambers
- Field testing and deployment
- Autonomous robotics for sampling and mapping hazard areas
- Aerosol intermediate-scale test bed

INVESTIGATE SOURCE

- Dedicated laboratory for excise tax forensics
- Low-level chemical agent and toxic industrial chemical handling
- State-of-the-art analytical instruments
- Understanding chemical signatures
- Trace organic analytes from complex matrices



For more information, contact:
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Science-Based Solutions for Homeland Security

