

Brookhaven National Laboratory is managed for the U.S. Department of Energy by Brookhaven Science Associates, a not-for-profit research management company founded by Stony Brook University and Battelle.

Brookhaven's Regional Counterterror Activities

New York City (NYC) has been, and continues to be, a major target of terrorism for many economic, psychological and technical reasons. As neighbors, Brookhaven Lab and NYC share many engineering (mass transit systems, electric power, gas/oil distribution networks, communication), social (housing, business, and news networks) natural (resources such as drinking water and weather), and political (State and Congressional delegations) infrastructures. As a result, Brookhaven is an important regional counterterror resource.



Brookhaven Lab's proximity to New York City makes it a natural counterterrorism resource.

Management, and the U.S. Merchant Marine Academy

- A Brookhaven-led study on "Security of Radioactive Materials at Non-Reactor Sites in New York State" for the New York State Governor's Office of Public Security

- A Brookhaven/EML co-sponsored Urban Atmospheric Observatory workshop for NYC
- A major DOE-funded study, co-led by Brookhaven, on the vulnerability of New York State infrastructure (bridges, tunnels, energy control systems, oil/gas pipelines, water supplies, telecommunication systems) to terrorism.

In addition, the Laboratory is working with both the State of New Jersey's Governor's Office for Counterterrorism and the NY Attorney General's Office on threats presented by toxic and compressed gases. Also, in cooperation with the NNSA, the Transportation Security Administration and the Port Authority of New York/New Jersey, Brookhaven will help test radiation detection equipment planned for installation at facilities in NY and NJ.

Local Relationships

Through these efforts, Brookhaven has developed close working relationships with key regional authorities including:

- New York Congressional representatives
- NYC Office of Emergency Management
- NYS Governor's Office of Public Security
- Port Authority of NY/NJ
- Metropolitan Transportation Authority

(continued)

Local Collaborations

Brookhaven and NYC have worked together for many years on issues of common interest, including spent nuclear fuel transport, air and water pollution, and emergency services. The relationships among NYC, the NY metropolitan region and Brookhaven Lab have continued to grow and strengthen since September 11, 2001. Examples of collaborative efforts include:

- Brookhaven Lab co-sponsorship of a January 2002 conference on "Implications for Security for the Built Environment in New York City"
- An April 2002 workshop on "New York Metropolitan Region: Counterterrorism and Infrastructure Assurance Technology Needs" co-sponsored with the Department of Energy's National Nuclear Security Administration (NNSA), the Environmental Measurement Laboratory (EML), New York City Office of Emergency

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Port security is a primary focus of Brookhaven's counterterror programs.

- NYC Police Department
- NJ Governor's Office of Counterterrorism
- NY regional energy companies (Keyspan, LIPA, Con Edison)
- Nassau County Office of Emergency Management

Brookhaven also has established partnerships/relationships with four major Department of Homeland Security Laboratories: Lawrence Livermore National Laboratory in California; EML in NYC; the Federal Aviation Administration R&D Center in Atlantic City; and Plum Island in Long Island, NY.

Emergency Response Capabilities

In terms of emergency response capabilities, Brookhaven is also home to a regional DOE Radiological Assistance Program (RAP) team composed of both on-site DOE and Laboratory personnel. Upon request from federal, state, and local authorities, the RAP team responds to radiological events in the Northeast. Brookhaven's firefighters are Emergency Medical Technicians trained in hazardous materials response and certified confined space rescuers.

The Laboratory also has approximately 50 additional technicians, supervisors, and health physicists who could be

used in emergencies of a radiological nature. Brookhaven's emergency response staff were mobilized and participated in the NYC World Trade Center search, rescue, and recovery operations.

Key Institutional Partnerships

Brookhaven maintains close working relationships with many private sector and academic entities within the NY region and throughout the world. Following the events of September 11, special emphasis was placed on the area of homeland security. Based on existing and new dialog, proposals with private sector and academic partners have been submitted to NNSA and other agencies. These proposals build on Brookhaven's science and technology capabilities and on the unique resources that our partners possess, including the private-sector defense capabilities that exist on Long Island.

Brookhaven's interaction with the academic community grows from its historic relationship with Stony Brook University, combined with Stony Brook's new role as a managing partner of the Laboratory. Other interactions include port security work with the U.S. Merchant Marine Academy in such areas as intermodal transport.

Private Sector Partners and Technologies (partial list)

- **Northrop Grumman** – Development/deployment of sensor platforms, monitoring networks and "battlefield" management software.
- **Symbol Technologies** – Application of barcode technology and wireless communication systems.
- **EDO** – Radiation detectors
- **Telephonics** – Radar systems
- **Radiation Monitoring Devices** – Development of solid-state radiation detectors
- **Radiant Technologies** – Advanced systems to image radioactive sources
- **Petersburg Nuclear Physics Institute** – Development of cadmium-zinc-telluride (CZT) based instrumentation to safeguard stored nuclear materials
- **Photon Imaging** – Unipolar semiconductor radiation detectors
- **Aerodyne** – Molecular fingerprinting
- **Constellation Technology Corporation** – Xenon-based radiation detectors
- **Fermionics** – Crystal growth of wide bandgap semiconductors for radiation detection
- **ITT Industries** – Portable laser-based system to identify chemical releases and spills

Academic Partners and Technologies (partial list)

- **Stony Brook University** – Modeling of behavior of weapons of mass destruction components in urban settings, medical intervention, sensors, sensor networks, and advanced scientific computing techniques.
- **U.S. Merchant Marine Academy** – Intramodal transport and port security. Instrumentation in NYC.
- **Carnegie Mellon University** – Characterization of CZT radiation detectors.
- **Fisk University** – Growth of semiconductors and scintillators for advanced radiation detectors.
- **Virginia Commonwealth University** – Chemical detectors from imprinted nanocrystalline films.
- **University of Freiburg** – Vapor-phase growth of semiconductor radiation detectors.
- **UCLA** – Measurements of carrier trapping in semiconductor radiation detectors.

