Biological, Chemical & Radiological Terrorism: A Laboratory Overview for First Responders & Law Enforcement

2016 Schedule

October 19th

Program Location:

Hinton State Laboratory Institute
305 South Street
Boston, MA 02130

Limited parking is available.

Transportation and driving directions can be found at:

http://www.mass.gov/eohhs/gov/newsroom/dph/directions/state-laboratory-institute.html

Program Description

This program is designed for first responders and law enforcement who may respond to suspicious mail or substances and collect and submit these specimens for biological and chemical testing at the MA State Public Health Laboratory (MA SPHL). If a radiological component has been established, then a competent responder, such as a member of the Nuclear Incident Advisory Team (NIAT), may be called to perform an *in situ* field evaluation, to advise others of exposure considerations and to discuss the appropriateness of sample submission.

The course begins with an overview of the bioterrorism laboratory and is followed by presentations on the chemical threat and radiological laboratories. Some topics discussed are: the Laboratory Response Network (LRN), specimen submission and processing, laboratory testing capabilities and turnaround time for results. After the PowerPoint presentations, students will be divided into three groups. The first group will be brought to the bioterrorism training lab where they will watch a demonstration on how threat letters are processed, observe strains of bacteria such as *Bacillus anthracis* (anthrax) growing on agar plates, view bacteria under microscopes and learn about ricin toxin precursors and hoax powders.

The second group will be brought to the Chemical Threat Laboratory where they will be given a tour of the organic and inorganic laboratories. Students will gain an understanding of the instrumentation used for testing clinical samples for chemical warfare agents and metabolites. They also observe the analysis of unknown "white" powder or liquid samples by Fourier Transform Infrared Spectroscopy (FTIR), Gas Chromatography /Mass Spectrometry (GC/MS), Raman Spectroscopy, and X-ray fluorescence / X-ray diffraction (XRF/XRD). The complexities of sample matrices and interpretation of spectra in making an identification of a substance or mixture will also be discussed

The third group will watch a demonstration of how a NIAT team responder would survey and characterize a suspicious package or envelope in the field. Then the group will be brought into the Radiation Laboratory where they will be given a tour of the sample receipt room, radiochemistry laboratory and counting room. Students will be shown how a NIAT responder may use portable equipment to detect the presence of alpha, beta, gamma and/or neutron radiation and how an isotope identifier, or a low-background multichannel analyzer may discern whether the various emissions allow for a rapid or more gradual identification of the radioisotope.

Each group will spend approximately 1 hour at each laboratory. The training will conclude by 1:30 pm.

Program Objectives

At the completion of this program participants will be able to:

1. List the contact numbers to call when biological, chemical or radiological testing is warranted.
2. Describe chemical warfare agents and industrial chemicals of concern.
3. Describe the field screening requirements prior to specimen submission.
4. List the types of equipment utilized in the different laboratories and their uses.
5. Understand incubation and sample processing times and how they affect turnaround times for results.
6. Discern if a radiological component is part of the threat analysis and if a field assessment is warranted by NIAT.

Program Agenda

8:00	Welcome and Introductions
8:15	Bioterrorism Response Laboratory – Cheryl Gauthier
8:45	Chemical Threat Response Laboratory – Dr. Jennifer Jenner
9:15	Environmental Radiation Laboratory - Jack Priest
9:45	Break
10:00	Tours of Laboratories
1:15	Course evaluation
1:30	Adjourn

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Registration Form

There is no fee for this program. Pre-Registration is required. Please complete this registration form and fax, email or mail original as directed below.

Please Note: *There is a BSL-2 Laboratory workshop associated with this training.* ***Appropriate attire is required; no open toed or open heeled shoes or shorts, skirts or dresses.*** *Disposable lab coats and gloves will be provided. Respiratory protection is not required.*

In compliance with the Americans with Disabilities Act, individuals needing special accommodations should notify Cheryl Gauthier at least two weeks prior to the course. For more information call: 617-983-6266.

Name: _____

Facility: _____

Address: _____

_____

Phone: _____

Email (required): _____

☐ Wednesday, October 19th

Complete Registration Form and Fax, Email or Mail to:

Cheryl Gauthier

Hinton State Laboratory Institute

305 South Street, Room 454

Boston, MA 02130

Phone: 617-983-6266 / Fax: 617-983-6887

Cheryl.Gauthier@state.ma.us