

# **There Is More to Detection Systems Than Detecting**

**by**

**Raymond A. Zilinskas, Ph.D.**

**Director of the Chemical and Biological Weapons  
Nonproliferation Program**

**Center for Nonproliferation Studies  
Monterey Institute of International Studies**

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# **Two-part Presentation**

- 1. Observations and Lessons from the UNSCOM Experience**
- 2. Added Observations from Experience Dealing with First Responders**

# **Two General Approaches**

- 1. Point (or multiple points) detection**
- 2. Stand-off detection**
  - i. LIDAR (Light Detection and Ranging) - cannot distinguish between biological and non-biological aerosols**
  - ii. Hybrid LIDAR - able to identify biological component of aerosol clouds (not fieldable)**

# **UNSCOM Approaches**

**Point (or multiple points) detection:**

- ◆ **Off-site sampling - environmental**
- ◆ **On-site sampling – equipment**
- ◆ **Air sampling using impingers and others**

**[Wanted to do medical detection but refused by Iraqis]**

# **Observations on UNSCOM Approaches 1**

- ◆ **Off-site sampling – environmental  
(culturing and PCR)**
  - ◆ **If negative, it could be site specific  
and should not be generalized**
  - ◆ **If positive, it might be site specific  
and could be natural**

# **Observations on UNSCOM Approaches 2**

- ◆ **On-site sampling - equipment**
  - ◆ **If negative, it could be site specific and should not be generalized**
  - ◆ **If positive; what does one positive mean?**

# **Observations on UNSCOM**

## **Approaches 3**

- ◆ **Air sampling – impingers and others (only for nuclear and chemicals). All negative; could be:**
  - ◆ **For chemicals, equipment failure – almost universal**
  - ◆ **Nothing there to detect**

# Lessons From UNSCOM

- ◆ Kits and devices developed in laboratories always failed in the cruel field.
- ◆ Often when had a positive detection; did not know what to do with the information.
- ◆ Often when had no detection; did not know what to do with the information.

# **Observations from Experience with First Responders**

- 1. If the first responders are ill prepared to handle a public health crisis like an anthrax or smallpox outbreak, then a detection system would not have much impact in terms of saving lives regardless of how sensitive and specific it is.**
- 2. No surveillance/detection system I know of is set up to help decision-makers do something in response to either a negative or positive.**