Politics and Biological Weapons: The Example of Biosecurity Education for Life Scientists

Professor Malcolm Dando
Article IV of the BTWC

“Each State Party to the Convention shall, in accordance with its constitutional processes, take any necessary measures to prohibit and prevent the development, production, stockpiling, acquisition or retention of the agents, toxins, weapons. Equipment and means of delivery specified in Article I of the Convention…”
What is the problem?

90 biosecurity seminars in 13 different countries around the world found “a pervasive lack of awareness”

Dando and Rappert (2006)
Why is there a problem?

Lack of:

• Space in the existing curricula,
• Time and resources to develop new curricula,
• Expertise and available literature on biosecurity education
• International/national requirement
Final Document of the Meeting of States Parties 2008

Topic considered by MSP/2008 –

- National, regional and international measures to improve biosafety and biosecurity, including laboratory safety and security of pathogens and toxins

- In addition “States Parties agreed on the value of education and awareness programmes” [that]

- Explain “the risks associated with the potential misuse of the biological sciences and biotechnology”
- Covers “the moral and ethical obligations incumbent on those using the biological sciences”
- Provides “guidance on the types of activities which could be contrary to the aims of the Convention and relevant national laws and regulations and international law”
How can biosecurity education be delivered?

Biosecurity Education Module Resource (EMR)

A free (open-source/shareware) on-line educational resource

- Threats of BW and terrorism (Lectures 1-Intro, 2-10)
- Responsibilities of life scientists (Lectures 11-18)
- National implementation of the BTWC (Lectures 19-20)
- Building web of preventive policies (Lecture 21)
Next Step 1:
Applied Dual-Use Biosecurity Online Distance Learning Course

Train the Trainers Biosecurity Programme

- Virtual classroom (PPTs, Webcam, Audio equipment),
- 20 Credit Course (UK Higher Education Master’s level credit): 12 Lectures and 12 seminars in 12 weeks (3 hours weekly);
- Certificate Course: 6 lectures in 6 weeks
Next Step 2: National Series: Former Soviet States and The Middle East

Immediate introduction of short biosecurity educational courses in specific countries

1. Developing Country-specific educational material,
2. Organising seminar with local contacts,
3. Facilitating biosecurity experts network,
4. Monitoring and evidencing course implementation, and
5. Report progress to the BTWC
Next Step 3: Combing Strategy with Contents

Team-Based Learning

• A special form of **active learning** in which the focus is shifted from conveying concepts by the instructor to **the application of concepts by student teams**.

• A small suite of **Team-Based Learning Exercises** could be used in many different contexts.
International and national level leadership and direction are needed for a real change.
Final Document of the 7th Review Conference 2011

Standing Agenda Items

• Review of Science and Technology (Standing Agenda Item)
  • (d) voluntary codes of conduct and other measures to encourage responsible conduct by scientists, academia and industry;
  • (e) education and awareness-raising about risks and benefits of life sciences and biotechnology.

• Strengthening National Implementation (Standing Agenda Item)
  • (d) national, regional and international measures to improve laboratory biosafety and security of pathogens and toxins.

- The IAEA: The International Nuclear Security Education Network (INSEN)
- The OPCW: the SAB TWG on Education
- Role of the BTWC/ISU on education (requiring capacity and resource)
  - IBSEN, SAB/TWG on education, SAI/ISP, decisions at the 8th RevCon 2016