Promoting Biosecurity Education: Resources and Programmes

*IFBA Conference, Taking Action*
Bangkok Thailand, 2011

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Outline

Cathy Bollaert:
1. International Surveys on Biosecurity Education
2. Online Awareness-Raising and Education

Dr. Larbi Baassi:
3. Taking the Biosecurity online course from a student's perspective

Cathy Bollaert:
4. Further Developments
Biological Threats Spectrum

• Natural Disease
  – Public Health

• Accidental Disease
  – Biosafety

• Deliberate Disease
  – Biosecurity
    • Laboratory

• Wider
**Surveys of Biosecurity Awareness**

- Analysis of interactive seminars conclude that *there is little evidence that participants:*
  - a. regarded bioterrorism or bioweapons as a substantial threat;
  - b. considered that developments in life sciences research contributed to bio-threats;
  - c. were aware of the current debates and concerns about dual-use research; or
  - d. were familiar with the BTWC

- Lack of biosecurity awareness requires explanation: One possible explanation: it does not feature in their university education.
University Education Surveys

Results of biosecurity education in life science degree courses in Europe:

- Only 3 out of 57 Universities offered some form of specific biosecurity module (all optional modules)
- Similar results were found in Israel and in the Asia-Pacific Region
- Meetings in Bradford and Tokyo 2010/11
The Bradford Disarmament Research Centre along with the National Defence Medical College in Japan and the Landau Network Centro Volta in Italy have developed an Educational Module Resources (EMR) designed to support life scientists and educators in learning about biosecurity and dual-use issues but also in building educational material for teaching of students.

The EMR consists of 21 lectures, accompanying notes for the lecturer and direct links to the references and videos; it is intended to be a resource that can be used by a lecturer in order to develop one or more lectures, seminars, role-plays or other teaching aids suitable for the course he or she is presenting. We would like to emphasise that the educational module resource is not a Teaching Module rather it is a 'Module Resource'. Conscious that there is no one-size-fits-all approach, our educational module resource is designed to be 'modified and tailored in order to fit the requirements of different local educational contexts'. Please read ‘1. Introduction’ first.

For more details on the EMR, support or advice in using this resource contact dualusebioethics@bradford.ac.uk

### Statements and Presentations related to the Educational Module Resources (EMR)

For statements on the Educational Module Resources (EMR) at Biological and Toxin Weapons Convention meetings in Geneva and elsewhere, please see below:

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EMR 21 Lectures:

A. Introduction: Lecture: No. 1

A. The Threat of Biological Warfare (BW) and Biological Terrorism (BT) and the International Prohibition Regime: Lectures No. 2-10

A. The Dual-Use Dilemma and the Responsibilities of Life Scientists: Lectures No. 11-18
   – E.g. Bioethics methodology, Obligation of the BTWC, Dual-use examples.

B. National Implementation of the BTWC: Lectures 19-20

A. Building an Effective Web of Prevention to Ensure Benign Development: Lecture No. 21

http://www.brad.ac.uk/bioethics/EducationalModuleResource/
Basic Elements of the EMR

- Freely Available
- Essential content of the lecture
- Video links
- Sample essay questions
- References

Languages: Available in English, Russian Japanese and French. Soon to come Romanian and Urdu…all UN languages

http://www.brad.ac.uk/bioethics/EducationalModuleResource/
Applied Dual-Use Biosecurity Education: Online Distance Learning Train-the-Trainer
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<tr>
<th>Egypt</th>
<th>Disease Surveillance Research Laboratories (DSRL), Global Disease Detection &amp; Response Program</th>
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<td>Veterinary Serum and Vaccine Research Institute(VSVRI),</td>
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<td>Central Public Health Lab</td>
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<td>Indonesia</td>
<td>Department of Microbiology, Medical Faculty, University of Indonesia</td>
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<td>Eijkman Institute for Molecular Biology</td>
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<td>Jordan</td>
<td>Head, Dept. of Biological Sciences, Yarmouk university</td>
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<td>Kenya</td>
<td>Kenya Medical Research Institute/Centers for Disease Control and Prevention</td>
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<td>UNIVERSITY OF NAIROBI/ NATIONAL BIOLOGICAL AND TOXIN WEAPONS COMMITTEE</td>
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<td>Faculty of Sciences Dhar El Mahraz</td>
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<td>National Institute of Hygiene, Ministry of Health</td>
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<td>Nigeria</td>
<td>College of Peace and Social Sciences,Salem University</td>
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<td>Armed Forces Institute of Pathology, Combined Military Hospital</td>
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<td>Qatar</td>
<td>Consultant Medical Microbiologist, Hamad medical Corporation</td>
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<td>Qatar</td>
<td>National Commitee for the Prohibition Of Weapons</td>
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<td>I.I.Mechnikov Research Institute for Vaccines and Sera:</td>
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<td>UAE</td>
<td>Abu Dhabi University</td>
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<td>Uganda</td>
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<td>National Center for Public Health Laboratories</td>
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Learning Outcomes

To build capacity of participants to develop:

1. Knowledge & Understanding
   – Review and appraise ethical/biosecurity themes and methods relevant to dual-use
   – Ability to contribute to the practical development of biosecurity.

2. Discipline Skills
   – Ideas and questions relevant to assessing ethics, Organise and synthesise dilemmas in specific dual-use issues affecting humans, animals and plants
   – Integrate dual-use biosecurity issues and concerns into their training

3. Personal Transferable Skills
   – Communicate effectively in an online environment with their colleagues and students using a range of media
Key Themes of the Course

A. The Threat of Biological Warfare (BW) and Biological Terrorism (BT)
B. International Prohibition Regime
C. The Dual-Use Dilemma
D. Responsibilities of Life Scientists
E. National Implementation of the BTWC
F. Building an Effective Web of Prevention to Ensure Benign Development
Tools: Elluminate, NING and Blackboard

- **Elluminate**
  - Live platform for lectures and seminars,
  - Virtual classroom enabling the interaction amongst participants backed up by (PPTs, Webcam, Audio equipment),

- **NING**
  Induction and social networking platform outside of lectures

- **Blackboard**
  Archives of the course: lecture PPTs, videos, hand books
Dual-Use and Academic Freedom

- ‘Dual-use dilemma arises when well-intentioned scientific research has the potential to be misused by state and non-state actors for nefarious purposes.’ (Selgelid 2009)

- ‘Responsible scientists want to generate scientific knowledge that will benefit humankind; but, at the same time, they presumably want to avoid generation of scientific knowledge that would ultimately do more harm than good.’ (Ibid)
Welcome to the on-line community for Applied Dual-Use Biosecurity Education Train-the-Trainers course participants. As you are aware, the course is taught entirely online, offering a flexible approach for those wishing to develop their knowledge and understanding of dual-use biosecurity.

We will be using this Ning site as our social networking platform. Please use the ‘Forum’ tab to post any questions you may have. Being an active member of our online community is crucial to your success. Please take part in creating and adding to discussion forums and supporting fellow students in your learning set.

If you haven’t worked in this type of environment before there is no need to worry. There will be plenty of help and support available to get you started and to enable you to take a full and active part in the module. We also provide full support for anyone who may be concerned about returning to essay writing!

**When you first arrive on the site:**

1. Please take a few minutes to add a profile photo and update your members...
Teaching Applied Dual-Use Biosecurity Education

An Information Portal for Teaching in Applied Dual-Use Biosecurity Education

Cathy Bollaert created this Ning Network.

Create a Ning Network! »
Course Structure and Assessment

Two types of courses
1x 20 Credit Module (UK Higher Education Master’s level credits)
  ✔ 12 Lectures in 12 weeks
  ✔ 12 Real-Life Expert-Level Seminars (21 scenarios available)

1x Certificated 6 Week Short Course

Assessment: 20 Credit Module
1x Essay (3,500-4,000 words) 70%
1x Group Work 30%
  • 2,000 words report
  • Online presentation
Additional Questions for Action Plans

1. How is dual-use biosecurity distinct from biosafety and laboratory biosecurity?

2. What is your organisation? What advice do you receive regarding biosecurity? What is the wording of the advice?

3. Do you have a mechanism by which you could get help if you should encounter an issue or an experiment of dual-use concern?

4. Does your professional association require that you have an understanding of the international CBW prohibition regimes?

5. What is your professional association? Does your professional organisation require that you have an understanding of dual-use issues? And what mechanisms does your association have in place to consider such issues?
Dr. Larbi Baassi
Taking the Biosecurity online course from a student's perspective

Larbi BAASSI, PhD
Deputy Secretary General of
Moroccan Biological Safety Association (AMBS)

Web site: http://www.fsr.ac.ma/ambs
Email: ambs.rabat@gmail.com

Bangkok, February 15-18 2011

IFBA conference
Current literature

Few studies have detailed the learners’ perspectives of online learning.

Many points of view are coming from the faculty member teaching the course.
Advantages

1. Opportunity

2. Time flexibility & Convenience

3. More reflection & more deeply thinking
Dissemination of the information

AMBS Members

Caravane of Biosafety

Biosafety Biosecurity Educational program

Multisectorial Workshops

National Institute of Hygiene (NIH) Biosafety-Biosecurity coordination

NIH Office of Laboratories IHR coordination PHL Network

National Institute of Health administration (INAS) FELTP

Public Health structures AMBS
Promoting Biosafety

Sharing Biosafety and Biosecurity information

Among the objectives

Preventing of and fighting against the Dual-use of the biological products. Working for educating young students in Biosafety.

Educate researchers, practitioners, teachers and students on the importance of laboratory Biosafety.
Participation of AMBS members in this Online course on Biosecurity and dual use Delivered by Bradford university UK
Dissemination through AMBS

AMBS Biosafety Caravan activities

Objective

Raising awareness on Biosafety and Biosecurity through the 15 Moroccan universities

It includes:

- Three conferences given by Biosafety professionals and by AMBS members.
- A set of documents (Flyers, CDs, Brochures,....) about Biosafety, its challenges and its strategic importance for Morocco.
- A stand and Table debate about Biosafety and Biosecurity issue.
Biosecurity Education project

- Convention between AMBS and Landau Network-Centro Volta (LNCV) (Italy).

Dissemination through AMBS

Targets: Life scientists
Dissemination through AMBS

Multisectorial Workshops

- Regional workshops
- 3 days for each workshop
- Audience: multisectorial (Animal Health, industrial, Public Health, Agriculture ...)
- Goal: Building national capacities in terms of Biosafety and biosecurity
National Institute of Hygiene (NIH) Biosafety-Biosecurity coordination

Targets: Public Health lab workers
Targets: Public Health lab workers
Dissemination through INAS

Field Epidemiology Laboratory Training Program (FELTP)- Morocco

Targets : Future epidemiologists and lab specialists
Acknowledgements

US Biosecurity Engagement Program (BEP)

Cathy Bollaert & Simon M. Whitby
Bradford Disarmament Research Centre, University of Bradford, UK
What do Course Participants get?

They get:

• A qualification - 20 (transferable) Masters-level Credits from a UK HE institution
• Evidence of awareness and education on dual-use biosecurity
• Evidence that they can study at Masters Level
They also get....

A. An individual action plan

B. Membership of a supportive network that seeks to build sustainable capacity in dual-use biosecurity

Further Developments (work in progress)

C. Certificating Biosecurity Competency?

D. Register of Biosecurity Competence?
References


Thank you!

Facebook: http://tinyurl.com/bioseced

Twitter: http://twitter.com/#!/DualUseBioSec

Skype: dual.use.biosecurity

http://www.brad.ac.uk/bioethics/