Biological Security Education, Awareness, and Outreach as Essential Elements of Strengthening the Review of Science and Technology under the BTWC

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Outline

- Life science misuse and the risk of deliberate disease
- Communicating chemical and biological security issues through cartoons
- Education and awareness of the BTWC: practical implications

Disclaimer: The views expressed in this presentation are those of the authors alone.

BTWC General Purpose Criterion and Dual-Use Research

"Each State Party to this Convention undertakes never in any circumstances to develop, produce, stockpile or otherwise acquire or retain:

> (1) Microbial or other biological agents, or **toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes**." [emphases added]

"Dual use research of concern is life sciences research that, based on current understanding, has the **potential** to provide knowledge, information, products or technologies that could be **directly misapplied** to create a **significant threat** with potential consequences to public health and safety, agricultural species and other plants, animals, and the environment." (WHO 2020) [emphases added]

S&T Review under the BTWC

"In regard to the BTWC States Parties should:

- ✓ Ensure that the security implications of life sciences research are effectively assessed and managed in an agreed review process. The **development of a biological security code of conduct for life scientists** can strengthen the review process of relevant scientific and technological advances. […]

- ✓ Promote the implementation of an integrated approach to countering the threat of deliberate disease. Strengthening international coordination, cooperation, and **capacity building under the BTWC** can advance global health security and prevent the hostile misuse of life sciences." [emphases added]

L. Shang et al. *Biological and Chemical Security After COVID-19: Options for Strengthening the Chemical and Biological Disarmament and Non-Proliferation Regime*, January 2021, LMU, UK.

Active Learning for Biological and Chemical Security Education

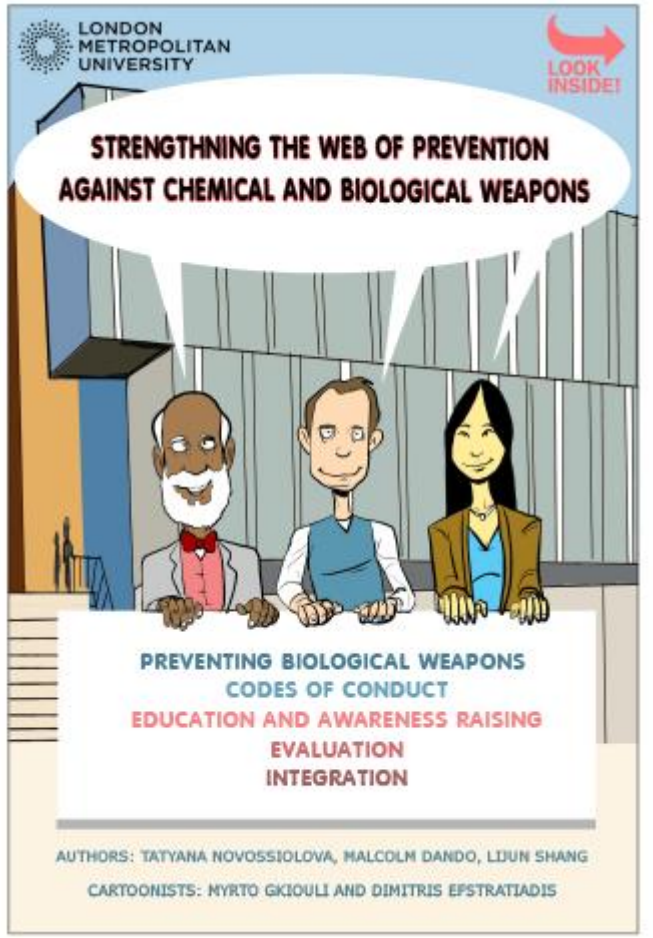
- "[…] 'active learning' methods, as opposed to traditional, lecture-based instruction in which students are passive recipients, produce better and longer lasting results. The results hold for factual information and for more fundamental concepts. The methods can be applied in many settings, including the classroom, the laboratory, or the field."

- "Learning is also enhanced when the learner perceives the relevance of the material. The need for relevance underscores the importance of making materials and activities adaptable to local settings and individual circumstances, for example, by providing instructors with a range of suggestions for adapting a common curriculum to their own settings, and supporting the translation of materials into local languages."

OPCW, *Report On The Role Of Education And Outreach in Preventing The Re-emergence of Chemical Weapons*, The Hague, 2018.

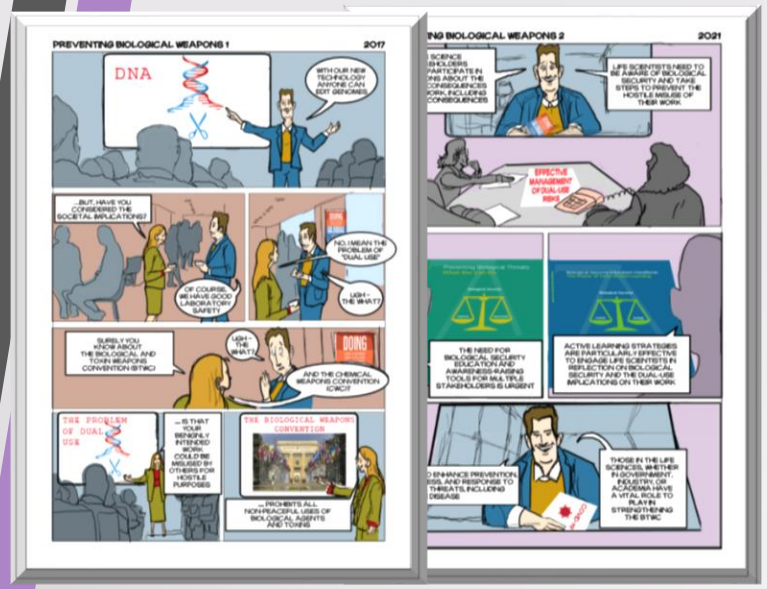
Cartoon Series for Biological and Chemical Security Education

- **Goal**: to promote awareness of biological and chemical security risks
- **Available in multiple languages**: Arabic, Armenian, Chinese, English, French, German, Greek, Italian, Japanese, Russian, Spanish, Ukrainian, and Urdu.
- **Funding**: UK Research and Innovation Strategic Priorities Fund and HEIF Rescaling Fund through London Metropolitan University (LMU)
- **Cartoon artists**: M. Gkiouli and D. Efstratiadis
- London Metropolitan University, Cartoon Series, 2021.



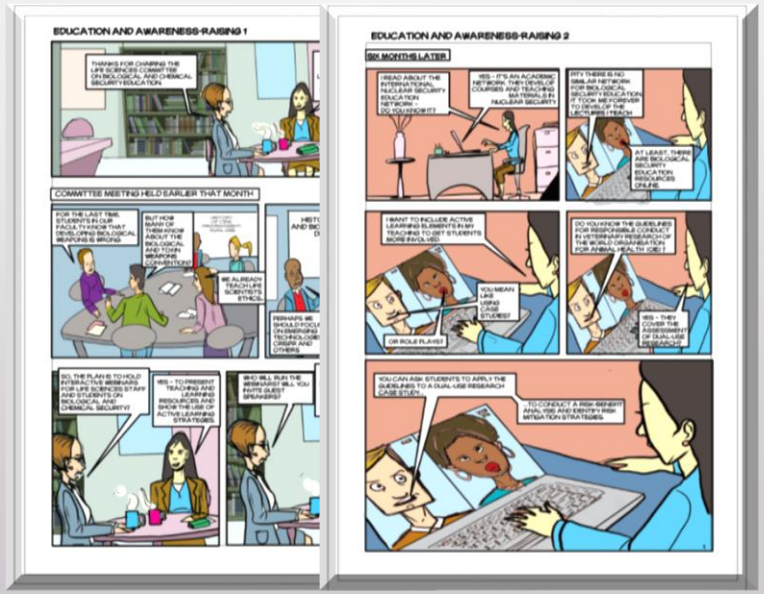
Strengthening the Web of Prevention against Chemical and Biological Weapons

1. Preventing biological weapons

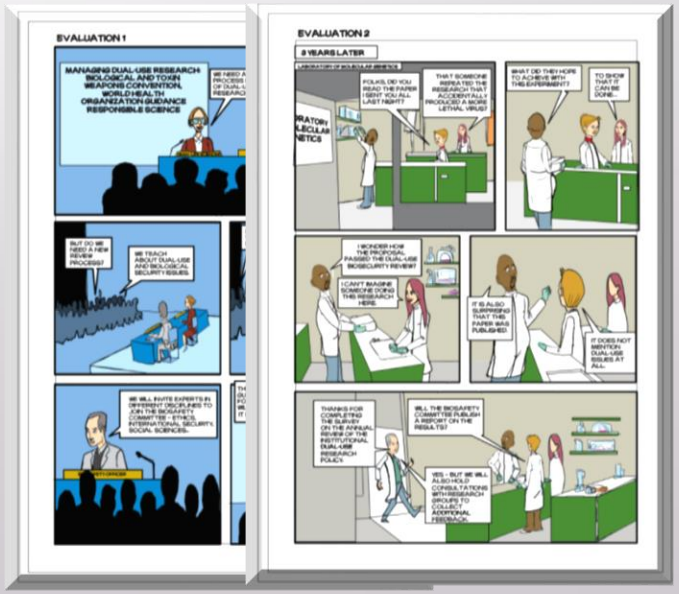


2. Codes of conduct

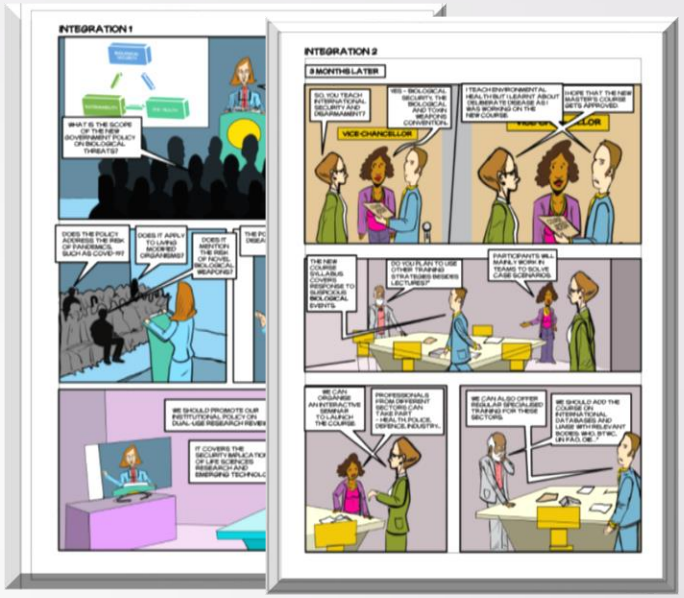
3. Education



4. Evaluation



5. Integration



Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists

Education and Training

"Scientists, along with their professional associations in industry and academia, should work to maintain a well-educated, fully trained scientific community that is well versed in relevant laws, regulations, international obligations and norms."

Public Engagement on Science and Technology

"Scientists and scientific organizations should play an active role in encouraging public understanding and interest in biological science and technology, including its potential benefits and risks. They should communicate scientific facts and address concerns, uncertainties and misunderstandings to maintain public trust."

Johns Hopkins Center for Public Health, Tianjin University, and IAP, The Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists, July 2021.

Thank you for the attention!

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