

**Third Meeting
Geneva, 5-9 December 2005**

**Meeting of Experts
Geneva, 13-24 June 2005**

Item 5 of the agenda

**Consideration of the content, promulgation, and
adoption of codes of conduct for scientists**

ELEMENTS FOR USE IN DEVELOPING CODES OF CONDUCT FOR SCIENTISTS

Prepared by Australia

1. Codes of conduct can be useful tools to educate scientists about their responsibilities to ensure that their science is used to benefit mankind and not misused for the development of biological weapons (BW¹). However, it is widely acknowledged that requiring all scientists the world over to adhere to a single, universal code is unlikely to be successful. Scientists represent a diverse group of individuals, working across many different fields and within vastly differing cultural contexts. Therefore, rather than trying to draft a universal code to be adopted by all, a more productive approach may be to encourage States, organisations or societies to adopt their own codes, developed internally to address their own unique needs and circumstances.

2. While each code will be unique, certain themes or principles will recur frequently in codes designed to address the possibility of diversion to a weapons programme arising from the dual-use nature of biological sciences. These are:

- (i) Raising awareness of the possibility amongst scientists, to ensure that they do not inadvertently assist in a biological weapons programme;
- (ii) Raising awareness of relevant legislation to ensure that scientists do not fail to comply through ignorance of the existence or scope of the legislation;
- (iii) Introducing biosecurity measures appropriate to the level of risk associated with a particular line of scientific work.

¹ BW may be expanded to refer to other weapons of mass destruction where relevant to the objective of the particular code.

3. In the lead-up to this meeting, Australia has consulted with scientists from a range of disciplines and scientific organisations, on what a code of conduct for scientists might usefully encompass. Here we propose some key elements that might be included in a Code designed to address the issue of the potential for scientific expertise and materials to be diverted to assist a biological weapons programme. While recognising that much of the responsibility falls on the individual, nevertheless some issues can only be dealt with at the national or organisational level. Therefore the paper has been divided into elements that might be considered at each of the various levels of responsibility. Also included are some complementary activities that might assist in the implementation of such a code.

4. It is envisaged that States or institutions developing a Code could draw on the individual elements below as a resource in devising a Code appropriate to their needs and circumstances. Elements could also be inserted into existing codes to broaden their purpose to cover the issues surrounding dual-use research. The elements are presented as a guide only; individual elements may or may not be included in a specific Code, depending on the intended purpose and audience for that Code. Similarly, the elements are meant to be used as concepts only: appropriate wording would be drafted by the authors of the specific Code under development.

Preamble

- Affirm the importance of preventing the proliferation of weapons of mass destruction;
- Affirm the responsibility of all scientists to act ethically and with consideration to the welfare of all mankind.

National-level

5. States should work to promote awareness amongst research institutions, the biotechnology sector and other scientific institutions of their obligations under international conventions and treaties, of relevant national legislation, and of the existence of the Code and its implication for their work.

6. States may also wish to consider establishing a national body to consider and advise on particularly difficult issues in respect of the potential misuse of scientific knowledge, materials or equipment by terrorists or States for biological weapons applications. It may also be helpful to establish procedures at the national level whereby those concerned about possible dual-use applications can seek guidance and report any concerns, including whistle-blowing on suspicious activities.

Educational and Research Funding Bodies

7. Committees already in place to evaluate research projects on their scientific quality could be expanded to provide a vehicle to consider ethical aspects of research, including the potential for the results to be misused by terrorists or States in the development of BW.

8. Educational institutions should be encouraged to include components addressing ethical issues in scientific study programmes.

Institutions or companies

- (i) Promote awareness amongst scientific staff of the existence of the Code and their obligations under it;
- (ii) Ensure that materials, equipment and data that have a potential BW application are securely stored and transported. This would include ensuring that scientists have adequate facilities for safe handling and storage of hazardous materials and that staff are trained in the appropriate safety and security procedures;
- (iii) Raise awareness amongst staff of relevant code(s) of conduct and relevant national legislation, including import and export control regulations, and of international conventions governing materials and equipment with BW applications;
- (iv) Utilise mechanisms already in place for maintaining oversight of safety aspects of scientific work within the institution to also monitor biosecurity aspects of the work;
- (v) Consider the risk that a particular line of research might be misused in BW applications. In many organisations, institutional review bodies already exist for assessing research proposals and the role of these could be expanded to also consider any risks arising from the dual-use nature of the work. In order to take into account changes in research direction or the emergence of unexpected results, risk assessment of research projects should ideally be undertaken both prior to the commencement of a project, and at regular intervals throughout the life of a project.
- (vi) Where such risks are identified, the risks should be adequately managed to minimise the potential for misuse. In order to avoid being unduly onerous, security measures would need to be proportional to the level of risk. For the most sensitive research, measures to enhance biosecurity might include:
 - Scientists involved in the work undergo security checks and clearances;
 - Restrict access to materials, data or equipment only to suitably cleared and qualified staff with a need to know.
- (vii) Include in undergraduate and/or postgraduate training programmes an element addressing ethical issues in science.

9. In addition to any avenue available at a national level, institutions may wish to establish internal procedures whereby those concerned about possible dual-use applications can seek guidance and report any concerns, including whistle-blowing on suspicious activities.

Responsibilities of scientists

- (i) Not to knowingly participate in or provide assistance to the development of biological weapons;
- (ii) Consider the potential for their work to be misused in a BW programme;

- (iii) Ensure that materials, equipment and data that have a clear potential BW application are stored and transported securely;
 - (iv) Ensure that in transferring materials or knowledge to scientists in other institutions, appropriate consideration is given to the use to which the materials or knowledge will be put;
 - (v) Comply with relevant code(s) of conduct and relevant national legislation and international conventions;
 - (vi) For overseas transfers, comply with import or export control legislation where applicable;
 - (vii) Ensure that only suitably cleared and qualified staff have access to materials, equipment or data that are assessed as being of high risk of diversion to a BW programme;
 - (viii) Ensure that only staff who are trained in the necessary safety procedures are allowed to handle hazardous materials;
 - (ix) Submit research proposals for risk assessment by the institutional review body, where such exists;
 - (x) Where risks of diversion are identified, ensure that the risks are adequately managed to minimise the potential for misuse;
 - (xi) Periodically reassess the potential applications and implications of their research to a BW programme. Where research throws up unexpected results leading to the appearance of previously unidentified risks of misuse, and that risk is deemed to be significant, the relevant authorities should be informed;
 - (xii) Notify the appropriate authorities if they become aware of suspicious activities undertaken by other scientists.
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