

The Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists

Advances in the biological sciences bring about wellbeing for humanity, but the same advances could be misused, particularly for the development and proliferation of biological weapons. To promote a culture of responsibility and guard against such misuse, all scientists, research institutions, and governments are encouraged to incorporate elements from the **Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists** in their national and institutional practices, protocols, and regulations. The ultimate aim is to prevent misuse of bioscience research without hindering beneficial outcomes, in accordance with the articles and norms of the Biological and Toxin Weapons Convention (BWC), and in advancement of progress towards achieving the UN Sustainable Development Goals.

1. Ethical Standards

Scientists* should respect human life and relevant social ethics. They have a special responsibility to use biosciences for peaceful purposes that benefit humankind, to promote a culture of responsible conduct in biosciences and to guard against the misuse of science for malicious purposes, including harm to the environment.

2. Laws and Norms

Scientists should be aware of and observe applicable domestic laws and regulations, international legal instruments, and norms relating to biological research, including those on the prohibition of biological weapons. Scientists and their professional bodies are encouraged to contribute to the establishment and further development and strengthening of relevant legislation.

3. Responsible Conduct of Research

Scientists should promote scientific integrity and strive to prevent misconduct in research. They should be aware of the multiple applications of biological sciences, including their potential use for developing biological weapons. Measures should be taken to prevent the misuse and negative impacts of biological products, data, expertise, or equipment.

* For purposes of this document, “scientists” are practitioners engaged in work that includes biological science, including those involved in funding, education, and training; research and development (in the public and private sectors); project planning, management, dissemination, and oversight.

4. Respect for Research Participants

Scientists have a responsibility to protect the welfare of both human and non-human research participants and to apply the highest ethical standards in research conduct, with full respect for the subjects of research.

5. Research Process Management

Scientists should identify and manage potential risks when they pursue the benefits of biological research and processes. They should consider potential biosecurity concerns at all stages of scientific research. Scientists and scientific institutions should put in place oversight mechanisms and operational rules to prevent, mitigate, and respond to risks, and establish a culture of safety and security.

6. 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. Education and training of staff at all levels should consider the input of experts from multiple fields, including social and human sciences, to provide a more robust understanding of the implications of biological research. Scientists should receive ethical training on a regular basis.

7. Research Findings Dissemination

Scientists should be aware of potential biosecurity risks that might result from deliberate misuse of their research. Scientists and scientific journals should strike a balance when disseminating research findings between maximizing benefits and minimizing harm and communicate widely the beneficial aspects of research while minimizing potential risks that could result from such publication.

8. 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. Scientists should advocate for peaceful and ethical applications of the biosciences and work collectively to prevent misuse of biological knowledge, tools, and technologies.

9. Role of Institutions

Scientific institutions, including research, funding, and regulatory bodies, should be aware of the potential for misuse of bioscience research, and ensure that expertise, equipment, and facilities are not used for illegal, harmful, or malicious purposes at any stage of bioscience work. They should establish appropriate mechanisms and processes to monitor, assess, and mitigate potential vulnerabilities and risks in scientific activities and dissemination, and establish a training system for scientists.

10. International Cooperation

Scientists and scientific institutions are encouraged to cooperate internationally and to collaborate in the pursuit of peaceful innovations in and applications of the biosciences. They should promote learning and exchange opportunities to share best practices in biosecurity. They are encouraged to actively provide relevant expertise and assistance in response to potential biosecurity threats.

The **Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists** focus on the prevention of intentional misuse of bioscience research, as per the articles and norms of the BWC, though the prevention of unintentional harm is equally important and closely intertwined. With the inclusion and implementation of elements from the Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists, institutions, professional organizations, and all scientists can increase biosecurity and minimize risks of misuse and harm.