



Code of conduct: A Bottom-up Approach to Address the Misuse Potential in Biological Research?

Workshops with representatives of Swiss Academic Institutions, 2016

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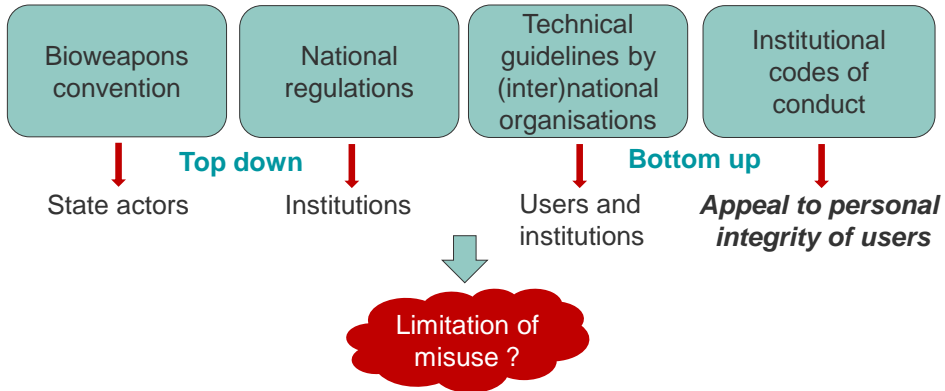
Aim of the project

- to **develop a code of conduct** related to the misuse potential in biological research that is phrased with and supported by the scientific community

Aim of the code of conduct

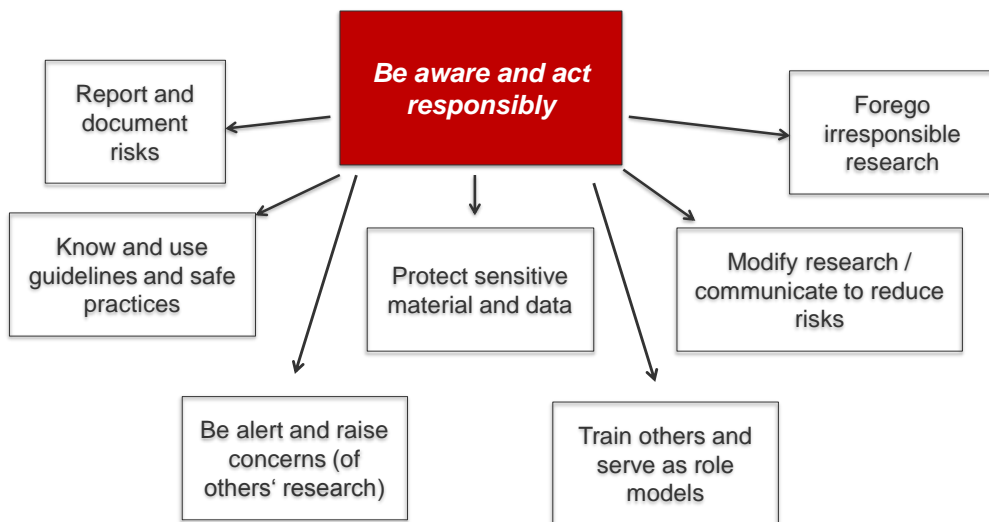
- to **raise awareness** among scientists, specifically also students
- to broaden the **discussion**
- to serve as an incentive
 - for **assuming responsibility** for own research
 - for **reflection on the issue** to become a matter of course
- to foster the **confidence of the public**

How to prevent misuse?



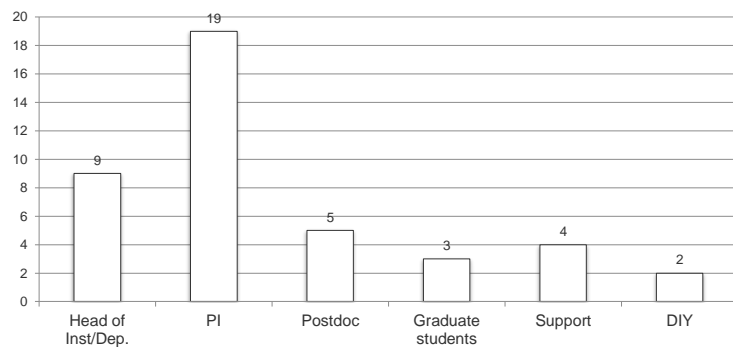
A new approach: Contributing to BWC Compliance via Biosafety, Biosecurity, and Biorisk Management
Philippe Stroot and Ursula Jenal, Nonproliferation Review, Vol. 18, No. 3, November 2011,
www.tandfonline.co.uk/r/NonproliferationReviewSI

Common elements of CoCs



Workshops

- Discussion on misuse issues and draft CoC
- 3 workshops: Zürich, Lausanne, Bern
- 42 participants (invited: 150+)
Geneva, Lausanne, Fribourg, Bern, Neuchâtel, Basel, Zürich



Questions for discussion

- What is your **conception** on misuse of biological research?
- Which **cases** of misuse related to biological material in your field of research are you aware of?
- Have you been discussing **misuse possibilities** among colleagues in research?
- Do you **assess** the misuse potential of your research? How do you exclude misuse in your research?
- What kind of **institutional rules** do you have for ethical behaviour in research, that is, to prevent misuse of biological material in research?
- Do you or does your institute **train** young scientists in biosecurity?
- Do you consider biosecurity issues when you **hire** personnel?
- Do you think a **code of conduct** the appropriate means of addressing the misuse potential of biological research?

Awareness

It's the awareness that is important [...]. Once everybody is aware, you will get some self-regulation installed; if everybody is aware of the possibility that something could go wrong, then people would say: did you think about your experiment? That is something we should aim for.

Responsibility

We as scientists cannot hide behind the regulation! The regulation will always lag behind 5 to 10 years. We have to be ahead of them.

Assessment

It's impossible [to prove that your research has no misuse potential] but it's still worthwhile for a researcher to think about it and weigh the pros and cons [...] Even if there is no definite answer, it would be worthwhile to explore this possibility.

Training

Biosafety is well taken care of but no one is aware of biosecurity. I have never heard of any discussion at any level about biosecurity.

In the synbio community, we've tried to foster the discussion on biosafety and biosecurity from the beginning. It's always been one of the elements of the proceedings when you design and propose a synbio project [...].

Publication

The value of publication is much higher than the risk because then the community can jointly think about potential threats. We shouldn't exclude our brightest minds from this because that might be hindering our chances of fighting future threats.

Responsibility towards the public

'I pledge that I spend 3% of my time to go to the public'. Unless we continue to talk to the public, there will always be this mistrust. You can't just do it within the research community.

Request to the Forum

- **Phrase a positive statement on self-responsibility comparable to a „Hippocratic oath“**
- **Develop a guidance document in place of a Code of Conduct**

Corner stones of the guidance document

1. *Be aware that life science research can be misused*
2. *Assess the misuse potential*
3. *Design and follow safe and secure strategies*
4. *Treat unexpected findings carefully*
5. *Communicate results responsibly*
6. *Educate and oversee*

<https://naturalsciences.ch/service/publications/89034-misuse-potential-and-biosecurity-in-life-sciences-research>

Conclusions: *the human factor*

Ethical questions regarding science are usually not discussed [as part of the university curriculum]. We had some courses during my master's [studies], but there was very little and there was no general course. We need more education – a lot of students are not aware of this dual use problem.

We have students from 23 different nations in our institute with very different educations and cultural background. They are very young and not aware of these issues; as PIs, we have to be the role models.

It's important to create a nice atmosphere so that students feel comfortable to come and tell us if something goes wrong; we try to create a lab where people collaborate rather than compete.

- **Establish systematic training on misuse potential and biosecurity**



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