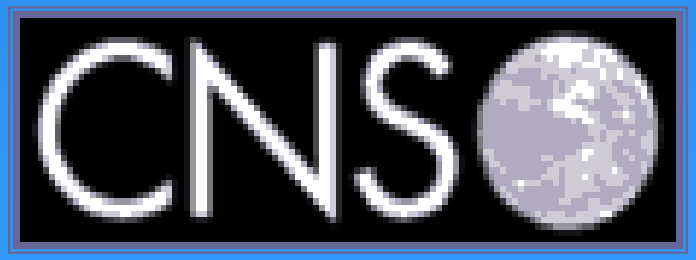
Science & Responsibility

Amy E. Smithson, PhD
Senior Fellow



Misconduct in Science

Dr. Joseph Mengele, Dr. Shiro Ishii: Conducted inhumane experiments on WWII prisoners

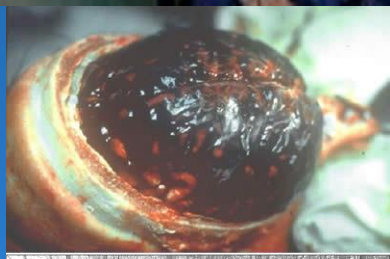
Dr. Geoffrey Chamberlin, editor of *British Journal of Obstetrics and Gynaecology*: Accepted "gift authorship" of Malcolm Pierce's paper on ectopic pregnancy

Dr. Andrew Wakefield: Article in *Lancet* linked MMR vaccine to autism; fiscal conflict of interest, highly selective use of data

Dr. Hwang Woo-Suk: 2 papers in *Science* reported production of human embryonic stem cells; data fabricated and falsified

Biosafety but. . . .

- Measures to reduce risks of accidents => physical containment + laboratory practices
- WHO: voluntary standards
- Prominent accidents:
  - Anthrax leak at Sverdlovsk (1979)
  - Ebola death at VECTOR (2004)
  - Anthrax exposures at Children's Hospital, California (2004)
  - SARS exposures at Beijing Institute of Virology (2004)



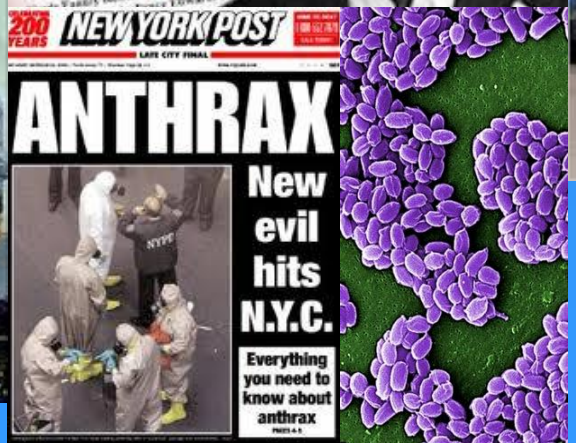
Indicators of More Biosafety Problems

	Middle East	Asia	Latin America	Eastern Europe
Number of scientists surveyed	154	200	165	146
% unaware of their lab's biosafety level	44%	21%	19%	31%
% who would perform experiment without proper biosafety equipment	45%	50%	20%	30%

Gaudioso et al., "Understanding Current Laboratory Biosafety and Biosecurity Practices Around the World, presentation at the 50th Annual Biosafety Conference, Nashville, TN, October 2007.

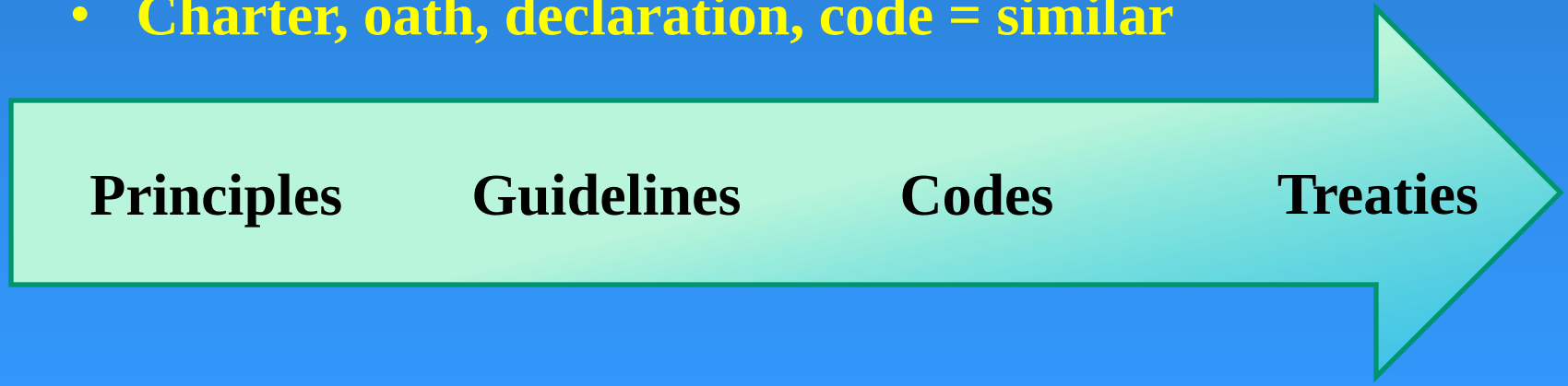
The Insider Threat

- Deliberate misbehavior that causes harm to co-workers and/or to the public



What Is a Code?

- A set of conventional principles and expectations considered binding on any person who is a member of a particular group
- ≠ Treaty, guideline, principle
- Charter, oath, declaration, code = similar



Less Binding

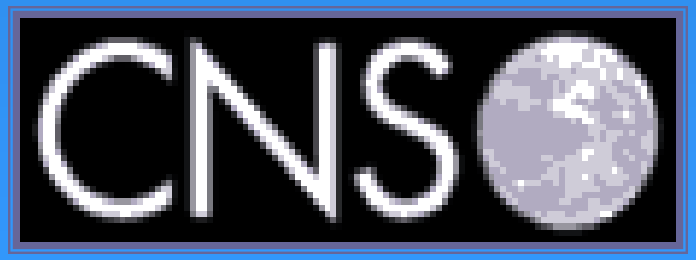
More Binding

Types of Codes

- **Aspirational (codes of ethics) = set out ideals that practitioners should uphold**
- **Educational/Advisory (codes of conduct) = implements ethical ideals with guidelines about how to act appropriately (best practices)**
- **Enforceable (codes of practice) = Are embedded within wider systems of professional and legal regulations to further codify what is acceptable practice**

Science & Responsibility

Amy E. Smithson, PhD
Senior Fellow



Advantages of Codes: I

- Promotes responsible, ethical, desirable behavior in relevant communities
  - Underlying educational programs establish and promote awareness
    - Best practices
- Deters misbehavior
- Creates uniformity, universality
- Demonstrates responsibility to the public, policy makers, media
- Serves as a guidepost during controversial events, revisions to code set the new standard

Advantages of Codes: II

- Facilitates discussion about the implications of research, new developments, and what controls might be prudent
- Some best practices may deter/prevent accidents, terrorism
- Establishes conditions attractive to investment, trade, and cooperation
- Compared to government intervention, often creates standards more fitting to the relevant facilities/activities
- Can be made enforceable if the code complements legislation