

# Responsible Conduct of Research: Ethics and Policy

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# Today's talk

- The EMBO Science Policy Programme
- Responsible conduct of research/  
research integrity
- At and beyond the bench (or computer!)
- What would you find useful in addition?

# EMBO Science Policy Programme

- Newest EMBO Programme (April 2011)
- Motivated by the work of Members and the broader EMBO community
- Two areas of work
  - Service
  - Research

# EMBO Science Policy Programme

- Service
  - Interactions with policymakers
    - Horizon 2020
    - Open access
    - Mobility
  - Represent EMBO in other professional bodies
  - In development: RCR materials and training

# EMBO Science Policy Programme

- Policy research
  - Biotechnology
  - Scientific publishing
  - Responsible conduct of research

# Responsible Conduct of Research

- Ethics
  - Moral principles
  - Human subjects and animal research (though not exclusively)
- Policy
  - Everything else

# Responsible Conduct of Research

- History
  - Human subjects
  - Public funding
- Theory
  - Freedoms, rights, responsibilities
  - Responsible research is better research

# Responsible Conduct of Research

- This is about processes
  - Proposing, performing, evaluating
  - Reporting
  - Codes and norms
- Checklists
- Responsible parties
  - Seek out your institutional responsible officials
  - Positive obligation

# Basics

- Training
  - Requirements
  - Beyond the requirements
- EMBO resources
  - Epigeum online training course available soon
  - Staff

# Research misconduct

- Fabrication
- Falsification
- Plagiarism
  - Self plagiarism

# Research misconduct

- Fabrication
- Falsification
- Plagiarism
  - Self plagiarism

*In short: don't lie, cheat, or steal*

# Research misconduct definitions

- *Fabrication* is making up data or results and recording or reporting them
- *Falsification* is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record

# Research misconduct definitions

- *Plagiarism* is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.
- These concepts apply in virtually all aspects of research from conception to publication

# Human subjects research

- Belmont report (1979)
  - Respect for persons (autonomy)
  - Beneficence
    - Harms
  - Justice
    - Taking advantage of classes of people, or exclusion from research

# Human subjects research

- Informed consent
- Data
- Code of Federal Regulations, Title 45 Public Welfare, Department of Health and Human Services, Part 46, Protection of Human Subjects (45 CFR Part 46, aka Common Rule)

# Research with animals

- Institutional Animal Care and Use Committee (IACUC)
- Invertebrates
- Vertebrates

# Life science research

- Institutional biosafety committees (IBCs)
- Established in the mid-1970s

# Asilomar 1975

ROLLING STONE, JUNE 19, 1975

## THE PANDORA'S BOX CONGRESS

By Michael Rogers

**140 Scientists Ask: Now that We Can Rewrite the Genetic Code, What Are We Going To Say?**

# Life sciences research

- Institutional biosafety committees (IBCs)
- Established in the mid-1970s
- Effectively all work at all research institutions requires IBC approval or exemption
  - Exceptions
- Coordinated Framework for Biotechnology

# Publishing

- Authors
- Reviewers
- Editors
- Publishers
- Readers
  - Scientists
  - Others

# Biosecurity

- Not a uniquely American problem, but more emphasis here than anywhere else
- Dual use research
- Fink report 2004 *Biotechnology Research in an Age of Bioterrorism*
  - Dual use research of concern should be reviewed

# Experiments of concern

- Render a vaccine ineffective
- Confer resistance to antibiotics or antivirals
- Enhance pathogen virulence or render a non-pathogen virulent
- Increase pathogen transmissibility
- Alter pathogen host range
- Evade detection by diagnostics
- Weaponization

# When things go wrong

- Responsible officials
  - Listening post
  - Whistleblowing
- 
- Tort law

# More expansively

- Resources are limited, needs seem limitless
- What is responsible research?
- Who decides?

# Final thoughts

- Irresponsible conduct hurts science
- Responsibility is ultimately about good citizenship, within science and for your larger community

# Your thoughts