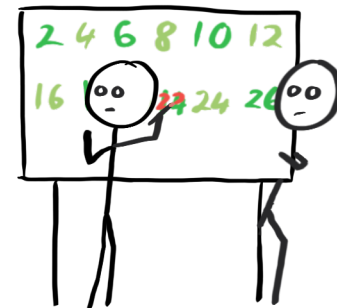
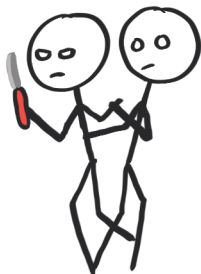


AI 4 Scientific  
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# Introduction to Ethics of Research

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This series has been co-created by the AI 4 Scientific Discovery Network & The Physical Sciences Data-Science Service

# Structure of Talk

- What is Ethics
- What ought I do?
  - What ought I do as a researcher – From individual project to more widely
    - Research Ethics Review – Your individual project
    - Research Integrity – Your project within wider good research practice
    - Responsible (Research and) Innovation. – Your work within the world
- THIS IS JUST A BRIEF INTRODUCTION, not Training
  - You will need to find out more in relation to your work, from your university and be trained accordingly.



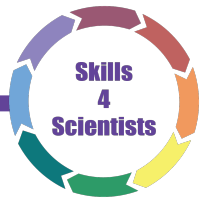
# What is Ethics?

- Good and Bad, and Right or Wrong – morals
- 'The codes of conduct or moral principles recognized in a particular profession, sphere of activity, relationship, or other context or aspect of human life.' Oxford English Dictionary 'Ethics' definition 2c <https://www.oed.com/view/Entry/355823?rskey=jXqoN2&result=2#eid>
- 'Well-founded standards of right and wrong that prescribe what humans ought to do.' Markkula Center for Applied Ethics. <https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/what-is-ethics/>
- **What ought I do? How should I act? Why did you do it like that?**
  - Central question – not going to give you an answer but briefly introduce a number of ways of thinking about this
  - Think more widely – away from the lab or computer screen.
- Each research area has its own challenges and importance – cannot cover them here will give a general introduction.



# Deciding What I Ought to do- Approaches to Ethics

- Meta Ethics and Moral Philosophy
- Normative Ethics – norms of behaviour – what should I do?
- Applied Ethics – What should I do in certain circumstances?
  - eg Bioethics, Medical Ethics, Ethics of Research



# What ought I do? Applied Ethics

- Medical Ethics, Business Ethics etc
- Bioethics – Application of ethics to medicine healthcare and biology. Closely related to Ethics of Research.
  - Principlism – Prima Facie values – non absolute values taken at face value until proven otherwise.
    - Beneficence – e.g Do good
    - Non –maleficence – e.g Do no harm
    - Autonomy – e.g Respect freedom of choice
    - Fairness – e.g treat all fairly
  - ( see O Rauprich – ‘Principlism’ *Encyclopedia of Applied Ethics* 2012 p590-598)
- **Ethics of Research – What ought I do as a researcher?**
  - Research Ethics Review
  - Research Integrity
  - Responsible (Research and) Innovation.
  - Responsibilities include to yourself, your institution and funders. They also have responsibilities to you as a researcher.



# What ought I do? - Code of Conduct



## Code of Research Conduct and Research Ethics

### Foreword by Pro-Vice Chancellor Research and Knowledge Exchange

The University of Nottingham's *Code of Research Conduct and Research Ethics* provides a comprehensive framework for good research conduct and the governance of all research carried out across the University, including the University's international campuses. The Code underpins the University's commitment to maintaining the highest standards of integrity, rigour and excellence in all aspects of our research and for all research to be conducted according to the appropriate ethical, legal and professional frameworks and standards. The Code is a fundamental component of the research environment, which is characterised by our culture of research integrity, good research practice, and the development and training of researchers at all stages of their careers. The Code outlines the duty of researchers including their responsibilities towards all participants of research including humans, animals, the environment and cultural materials, and it provides a basis for the transparent and appropriate communication and dissemination of research findings. The University welcomes the national framework for good research conduct and governance published as the *Concordat to Support Research Integrity* and endorses the Concordat as a recipient of public funding for research. This Code has been reviewed to be consistent with the commitments and aims of the Concordat and is the basis for applying research integrity across the University, including the University's international campuses in China and Malaysia. We will monitor and, where necessary, improve the Code in order to further strengthen the integrity of research carried out across the University.

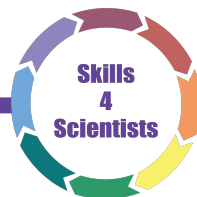
Professor Dame Jessica Corner  
Pro-Vice Chancellor Research and Knowledge Exchange

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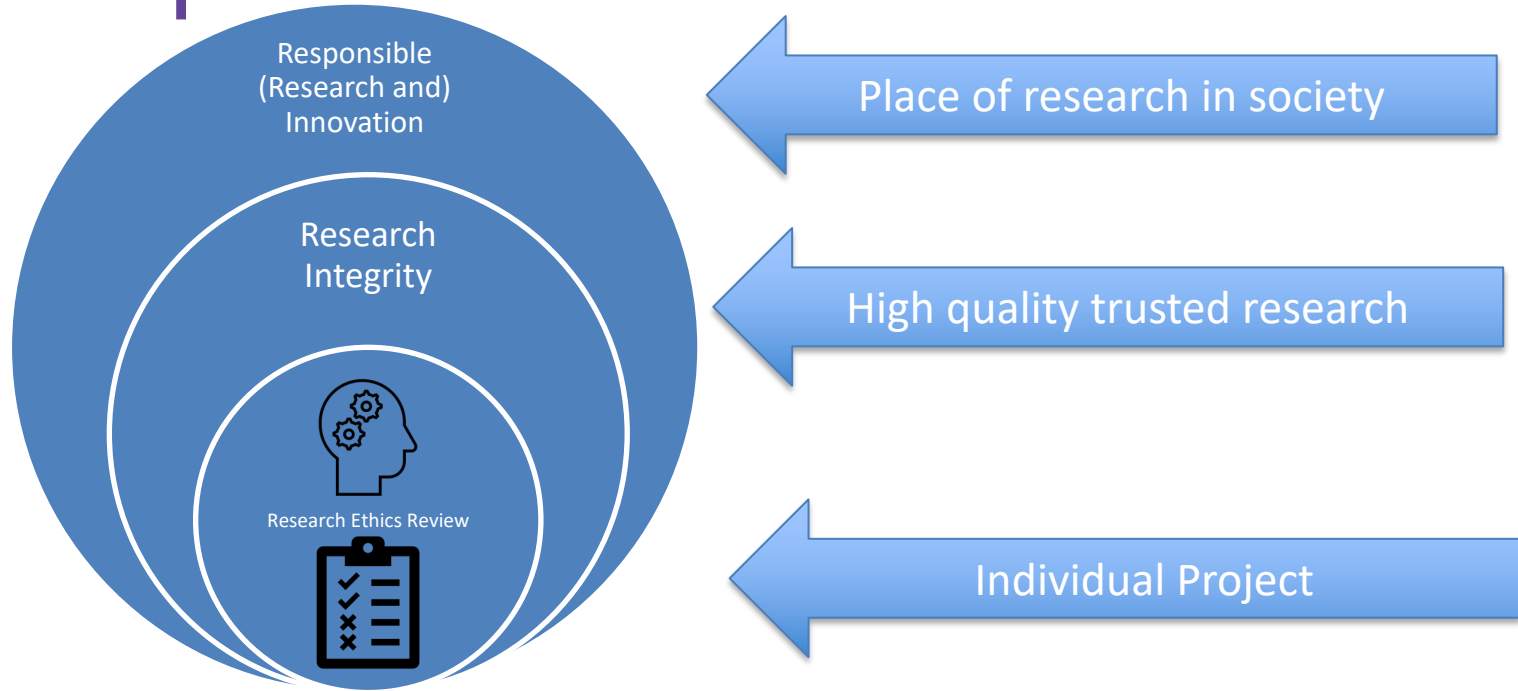
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- <https://www.nottingham.ac.uk/research/resources/documents/code-of-research-conduct-and-research-ethics-v7.0-june-2020.pdf>
- Your institution will have similar document(s)



# What ought I do? – 3 interlinked concepts



# What ought I do? -Research Ethics Review

- Submitting the plan for your research to an independent panel to be ethically reviewed.
  - At department or faculty level but also University level, or for other bodies, eg NHS, Charities.
  - Independent, Competent, Facilitation, Transparency and Accountability
  - Human Participants – including data, tissue etc
  - Animal Participants – eg Animal Welfare Ethical Review Board (AWERB)
- Sami will talk more about the pragmatics of this

## Some Key elements

- Avoidance of Harm (anyone affected eg participants and researchers)
  - Voluntary informed consent of participants.
  - Research Planning, data management and protection.
  - Risk Assessment
  - Favourable ethical opinion
- 
- See UK Research Integrity Office website and guidance see checklists and guidance
    - <https://ukrio.org/research-ethics-support-and-review/>





# What ought I do? - Research Integrity

- **High quality trusted research**
- **The Concordat to Support Research Integrity**
  - Signed up to by Universities UK
  - Responsibilities for Researchers, Employers and Funders of Research.
- Commitments
  1. We are committed to upholding the **highest standards of rigour and integrity** in all aspects of research.
    - Core elements of Integrity are:
      - Honesty
      - Rigour
      - Transparency and Open Communication
      - Care and Respect
      - Accountability
  2. We are committed to ensuring that research is conducted according to appropriate **ethical, legal and professional frameworks, obligations and standards**.
  3. We are committed to supporting a research environment that is underpinned by a **culture of integrity and based on good governance, best practice and support for the development of researchers**.
  4. We are committed to using transparent, timely, robust and fair processes to deal with allegations of **research misconduct** when they arise. Includes:
    - **Fabrication** – making things up
    - **Falsification** – Inappropriately manipulating research processes
    - **Plagiarism** – Using others work without permission
    - Failure to meet obligations
    - NOT Honest errors or differences in research methodology
  5. We are committed to working together to strengthen the integrity of research and to **reviewing progress regularly and openly**

<https://ukrio.org/our-work/the-concordat-to-support-research-integrity/>



# What ought I do? - Research Integrity

## Singapore Statement on Research Integrity

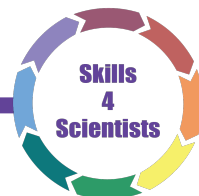
- **PRINCIPLES**

- Honesty in all aspects of research
- Accountability in the conduct of research
- Professional Courtesy and Fairness in working with others
- Good Stewardship of research on behalf of others.

- **RESPONSIBILITIES**

- Integrity
- Adherence to Regulations
- Research Methods
- Research Records
- Research Findings
- Authorship
- Publication Acknowledgement
- Peer Review
- Conflict of Interest
- Public Communication
- Reporting Irresponsible Research Practice
- Responding to Irresponsible Research Practices
- Research Environments
- Societal Considerations

Singapore Statement on Research Integrity  
<https://wcrif.org/guidance/singapore-statement>



# What ought I do? – Responsible (Research and) Innovation

- Place of Research in Society – taking care of society.
- 'Taking care of the future through collective stewardship of science and innovation in the present.'

Stilgoe J, Owen R, Macnaghten P. Developing a framework for responsible innovation. *Res Policy*. 2013 Nov;42(9):1568–80 p1570

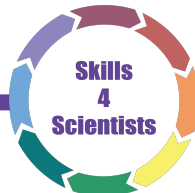
- Interactive process to make Research and Innovation that is
  - Societally Desirable – Eg Public Engagement
  - Ethically Acceptable – Ethical Assessment
  - Sustainable – Social, Economic, Environmental

– Von Schomberg, R. (Ed.). (2011). *Towards Responsible Research and Innovation in the Information and Communication Technologies and Security Technologies Fields*. Luxembourg: Publication Office of the European Union p9.



# What ought I do? – Responsible (Research and) Innovation

- RRI – RRI tools website <https://rri-tools.eu/> – Governance, Open Science, Science Education, Gender, Public Engagement, Ethics.
- Responsible Innovation UKRI <https://www.ukri.org/about-us/policies-standards-and-data/good-research-resource-hub/>
  - Eg Adopted by the Engineering and Physical Sciences Research Council (EPSRC) through AREA framework <https://epsrc.ukri.org/research/framework/>
    - Anticipate
    - Reflect
    - Engage
    - Act
- Values – UN Sustainable Development Goals <https://sdgs.un.org/goals>



# Conclusion -What ought I do?

- Ethics Review
- Research with Integrity
- Responsible Research
- Find out what this means in practice in your particular research context.
  - This is as varied so requires dialogue and discussion, with colleagues, supervisors etc.
  - Lots of resources and help available, eg codes of conduct, training courses
  - From universities and more widely eg UKRIO
- This is just a starting point and a very brief introduction to some of the issues



# Resources and Links

- UKRI Good Research Resource Hub  
<https://www.ukri.org/about-us/policies-standards-and-data/good-research-resource-hub/>
- UK Research Integrity Office <https://ukrio.org/>
- Markkula Centre for Applied Ethics  
<https://www.scu.edu/ethics/>
- RRI tools <https://rri-tools.eu/en/homepage>
- Sustainable Development Goals -  
<https://sdgs.un.org/goals>



# Skills4Scientists!

