Research Integrity

presentation prepared by
Grace Fisher-Adams, Ph.D., J.D.
Chief Research Policy Officer
California Institute of Technology
x2907
www.researchcompliance.caltech.edu
“Caltech researchers are expected to adhere to the highest professional standards in the conduct of research.”
What is Research Integrity?

Research Integrity Requires:

- the **use of honest and verifiable methods** in proposing, performing, and evaluating research, without bias
- Conducting and reporting research results with particular attention to **adherence to rules, regulations, guidelines, and policies**
- **following commonly accepted professional codes or norms**; and
- **treating colleagues fairly and with respect**.
Use Honest and Verifiable Methods: Responsible Conduct of Research

• Using/Practicing the Scientific Method as it Applies to Your Field of Research: Rigor
• Transparency in Reporting & Integrity in Reviewing Research
• Generating Sound and Reproducible Data
• Avoiding Research Misconduct
• Avoiding Conflicts of Interest and Conflicts of Commitment
• Education:
  – Responsible Conduct of Research (RCR)
  – In person, BI252
Research Misconduct:

42 CFR Part 93 §93.103: Research misconduct means fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results.

a) **Fabrication** is making up data or results and recording or reporting them.

b) **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.

c) **Plagiarism** is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

* Authorship (Planning, Disputes)

d) *Research misconduct does not include* honest error or differences of opinion.
Use Honest and Verifiable Methods: Avoid Conflicts of Interest (and/or Commitment)

- Caltech has a Conflict of Interest Policy, Specific Policy for Federally-Funded Research, and PD Handbook
- What sorts of things could constitute conflict?
  - Paid and Non-Paid Activities
  - Consulting
  - Entrepreneurial Activity
  - Equity Holdings
- Priority Commitment to Caltech/Research
- Problem: Outside interests can result in bias in research or otherwise significantly affect the design, conduct, or reporting of research; compromise IP, lead to other unethical research behaviors
- TRANSPARENCY/DISCLOSURE
  - Foreign Government Talent Programs
Adherence to Rules, Regulations, and Policies: Compliance

- Animal Research
- Biosafety/Dual Use/Recombinant DNA Research
- Reporting Conflicts of Interest and Commitment
- Cost Sharing
- Data Management/Sharing
- Effort Allocation
- Export Control/Foreign Engagement
- Human Subjects Research
- Intellectual Property (Patents, Copyrights)
- Privacy
- Publication/Authorship
- Radiation Use
- Research Misconduct
- **Research Security**
  - Responsible Conduct of Research
  - Salary Caps
  - Stem Cell Research
  - Sub-Award Monitoring
  - Use of Controlled Substances and Chemical Precursors

https://researchcompliance.caltech.edu/  https://researchadministration.caltech.edu/osr
Following Commonly Accepted Professional Codes or Norms

**SHARED VALUES IN SCIENTIFIC RESEARCH**

**HONESTY**
convey information truthfully and honoring commitments

**ACCURACY**
report findings precisely and take care to avoid errors

**EFFICIENCY**
use resources wisely and avoid waste

**OBJECTIVITY**
let the facts speak for themselves and avoid improper bias

---

*STENECK, N. H. 2007. ORI - Introduction to the Responsible Conduct of Research*  

- **Ethical Codes:** Caltech Honor Code; Caltech Code of Conduct
- **Professional Codes:** Generally, subject matter specific, but there are some overarching similarities:
  - Common Values
  - Data Management/Sharing
  - Documentation
  - Publication/Responsible Authorship
Responsible Authorship

Who determines authorship?

• The PI is responsible for determining authorship in the lab.

• The co-authors of a paper should be all those persons who have made significant scientific contributions to the work reported and who share responsibility and accountability for the results.

• NIH has a reference table that provides various scenarios:

Caltech Guidance and Authorship Dispute Process:
The climate and culture in the laboratory should provide an environment that is productive and collaborative.
What if I Have Questions or Need Help with Research Integrity or Compliance Issues?

- Office of Research Compliance
- Office of Technology Transfer and Corporate Partnerships
- Office of Sponsored Research
- Office of Export Control
- Research Compliance Committees (IRB, IACUC, IBC, Radiation, HESC)
- Environmental Health and Safety
- Postdoc Office

There are links to all of these offices/organizations at:

www.researchcompliance.caltech.edu
Thanks!