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.”
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
Use Honest and Verifiable Methods: Avoid Research Misconduct

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

- 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

**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

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: https://oir.nih.gov/sites/default/files/uploads/sourcebook/documents/ethical_conduct/guidelines-authorship_contributions.pdf

The climate and culture in the laboratory should provide an environment that is productive and collaborative.

Mentoring and Being Mentored

Welcome to Career Advising and Experiential Learning!
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!