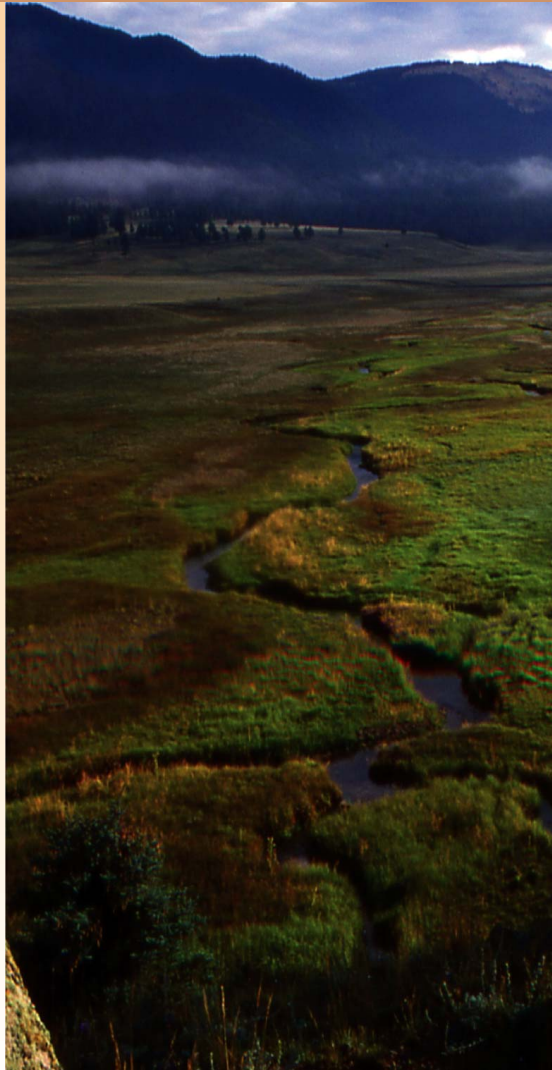




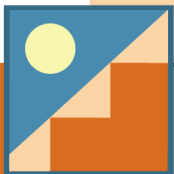
New Mexico
EPSCoR



Research and Professional Ethics

Case study 1: Fraudulent activity ?

- You are an untenured faculty member, well-liked and trusted by colleagues, graduate students and undergraduate students
- Two graduate students and three upper-level undergrads (all who work in Dr. Smith's lab) collectively approach you and describe in sufficient detail their observations that Dr. Smith is falsifying lab experiment results for an NIH-funded research project.
- What do you do with this information?



Case study 2: Plagiarism ?

- You are an untenured faculty member working on your first NSF grant. As a strong advocate for open science and open data, all of your experimental results and observations are published daily in your Open Lab Notebook (easily accessible by all via the web).
- It has come to your attention that conclusions based on data and observations recorded in your Open Lab Notebook have been published in *Science* by a Professor from another institution who included no mention of your work in the paper.
- What do you do?



Lessons Learned:



Ethics

1. a system of moral principles: the ethics of a culture.
2. the rules of conduct recognized in respect to a particular class of human actions or a particular group, culture, etc.: medical ethics; Christian ethics.
3. that branch of philosophy dealing with values relating to human conduct, with respect to the rightness and wrongness of certain actions and to the goodness and badness of the motives and ends of such actions.



Research and Professional Ethics

- Applying ethical/moral principles to scientific research and professional activities.
 - Research conduct
 - Publication
 - Data sharing
 - Data acquisition
 - Treatment of students, post-docs, colleagues
 -



ACM Code of Ethics

I. General moral imperatives:

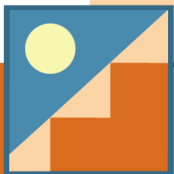
- 1) Contribute to society and human well-being.
- 2) Avoid harm to others.
- 3) Be honest and trustworthy.
- 4) Be fair and take action not to discriminate.
- 5) Honor property rights including copyrights and patent.
- 6) Give proper credit for intellectual property.
- 7) Respect the privacy of others.
- 8) Honor confidentiality.



ACM Code of Ethics

II. More specific professional responsibilities:

- 1) Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work.
- 2) Acquire and maintain professional competence.
- 3) Know and respect existing laws pertaining to professional work.
- 4) Accept and provide appropriate professional review.
- 5) Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.
- 6) Honor contracts, agreements, and assigned responsibilities.
- 7) Improve public understanding of computing and its consequences.
- 8) Access computing and communication resources only when authorized to do so.



In practice ...

- Research and professional ethics involve considerations and decisions that often are not black and white.
 - Sexual, racial, and ethnic harassment
 - Conflict of interest
 - Intellectual property rights
 - Falsification of data and results
 - Plagiarism
 - Activism
 - Theft
 - Alcohol and drug use



Resources

- <http://www.onlineethics.org>
- National Academy of Sciences. 2009. On Being a Scientist: Third Edition. Washington, DC: The National Academies Press. Available at: http://www.nap.edu/catalog.php?record_id=12192
- AIAA (2007). *Publication Ethical Standards: Guidelines and Procedures*. AIAA JI, Vol. 45, No. 8, Editorial, No. 8, p. 1794 (DOI: 10.2514/1.32639).

