Ethics  
(system of morality, values)

Ethics in PHSCS 416  
(Don’t cheat, abide by the honor code!)

Ethics in physics writing  
(Don’t waste your time writing trivialities)

Ethics in physics publishing  
(Yes, that’s what it’s about!)

Ethics in physics research  
(it’s hard to write ethically about unethical research!)

Ethics in physics profession  
(there is more to the profession than research!)

Ethics in science  
(science itself is a-moral, but not what we do with it!)
There are some BIG ISSUES … … …

Hwang Woo Suk (“human cloning” in South Korea)
Jan Hendrik Schön at AT&T (“semi conducting in single molecules”)
Victor Ninov at LBL (“elements 116 & 118”)
Einstein and the atomic bomb
Heisenberg in the third Reich

… … … … … and then there are some mundane issues:

Ranking authors on your paper
Inability to reproduce previously obtained data
Whether to include outliers
Quoting papers you only know from quotes

… … … … …

You are much more likely to encounter the latter!
We tend to think of ethics in **negative** terms:

- Fraud (fabricated data)
- Misconduct (no intentional bad behavior)

It is better to think **positively** about ethics!

Remember:
- Why do I search?
- Why do I communicate your results?
- How is this done most effectively?
- What are the long-term benefits?
- How do I maximize my chances of leaving a positive mark on my field?
- Why do I welcome criticism?
- Why do I welcome competition?
- …
Sources on ethics:

1. APS statements: http://www.aps.org/statements/

In particular: guidelines for professional conduct

Including supplementary guidelines on:

- Responsibilities of Coauthors and Collaborators
- Research Results
- References in Publications


- 04.1 Statement on Treatment of Subordinates

2. ACS & ACS Style Guide
(The chemist’s code of conduct & ethical guide lines)

http://www.chemistry.org/portal/a/c/s/1/home.html

3. APS News. Column: Ask the ethicist

http://www.aps.org/apsnews/archives.cfm

2004: June & November
2005: April & July
4. Physics Today, November 2004 issue: three articles:

1. Ethics and the Welfare of the Physics Profession by Kate Kirby and Frances A. Houle pp.42-46 (A survey of younger members)
2. Trust and the Future of Research by Caroline Whitbeck pp.48-53 (Lessons from history help foster research integrity)
3. The Scientist’s Code of Ethics by Wayne A.R. Leys (reprinted from Physics Today March 1952: the fact that a spends a good deal of his time in studies from which he tries to exclude moral judgments, does not mean that the scientist and his activities will not be subject to moral judgment)

5. Make Your Mark in Science by Claus Ascheron and Angela Kickuth, Wiley-Interscience 2005
**Science:**

All claims can be tested, falsified, duplicated in principle

The validity of the claims is independent of the identity (authority) of the author

Bad science, fraudulent science will not last

So why is fraud or misconduct such a big deal?

**Citations: why?**

To give credit

To allow the progression (the chain of testable claims and results) to continue

To protect you

To allow the citation index to work!

...

**Why do we publish? Why should we publish?**

*(See code of conduct)*
ACS Code of conduct:

A responsibility towards:

The public

The science of chemistry

The profession

The employer

Employees

Students

Associates

Clients

The environment
Ethical Guidelines to Publication of (Chemical) Research

Ethical Obligations of Editors of Scientific Journals

Ethical Obligations of Authors:

1. An obligation to present an accurate account of result as well as an objective discussion of its significance
2. An obligation to use precious journal space wisely and economically
3. An obligation to include sufficient detail and reference to permit peers to repeat the work
4. An obligation to cite publications that have been influential in determining the nature of the reported work
5. An obligation to report any unusual hazards inherent in the equipment or procedures
6. An obligation to avoid fragmentation
7. An obligation to inform the editor of related manuscripts under editorial consideration or in press
8. An obligation to avoid duplication
9. An obligation to identify the source of all information quoted or offered except that which is common knowledge
10. An obligation to abstain from personal criticism
11. An obligation to include all significant contributors but only significant contributors as co-authors
12. An obligation to reveal potential conflict of interest

Ethical Obligations of Reviewers of Manuscripts

Ethical Obligations of Scientists Publishing Outside the Scientific Literature