CHEM 380 - Professional Ethics for Chemists
Spring 2013

Instructor:
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Office hours: Tues 11:30-12:30 in my office, please email in advance

CR/NC only. Prerequisite: CHEM 274 (or concurrent) or instructor's consent. This class satisfies the Contemporary Ethical Issues Focus (E) requirement.

This class introduces contemporary ethical issues in scientific research and practice, with particular focus on chemistry. This class will be discussion based with emphasis on student presentations. We will discuss case studies and additional examples from the media. Topics covered include policy, plagiarism, authorship, fraud, accountability, conflicts of interest, intellectual property, and interpersonal conflicts. Student teams will present readings each week and lead discussions. The final three weeks of the class will be devoted to student presentations of their own chosen topics dealing with scientific research ethics.

Student learning objectives

1. Recognize the relevance of ethics to scientific practice.
2. Identify potential ethical issues in their careers.
3. Discern and avoid potential conflicts of interest.
4. Learn about institutional mechanisms for avoiding and dealing with ethical problems.
5. Improve oral and written communication skills.

Readings

1. "On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition". http://www.nap.edu/catalog.php?record_id=12192
2. Additional readings may be assigned weekly.
3. www.onlineethics.org (OE). Treasure trove of sources for student presentations.

Grading

Grades will be determined according to the following scheme:

Class participation: 40%
Oral presentations: 30%
Final paper: 30%

Late papers will not be accepted.

Absences

Unexcused absences will result in the assignment of ZERO points for participation for that day. Excused absences require documentation. You will not earn a passing grade if you miss more than two classes.

Academic Misconduct

The grade in a course is intended to be a reflection of what you have learned in the course. Any instances of plagiarism (presenting someone else's work as your own) will be dealt with through university procedures for academic dishonesty. Academic misconduct in this ethics class will give the student a failing grade.

Special accommodations

Students with disabilities that might hinder their ability to participate in the full range of class activities should contact the instructor as soon as possible.

Schedule

Week	Topics	Readings
1	Introduction	1. "On Being a Scientist" 2. Goodstein, "Conduct and Misconduct in Science"
2	Professional research in academia and industry. The importance of ethics.	"On Being a Scientist"
3	Scientific fraud. Case of Hwang Woo-Suk.	1. "Rise and Fall", Nature 2. "Disgraced Cloning Expert Convicted in South Korea", NY Times
4	Scientific fraud. Case of Jan Hendrik Schon	"Big trouble in the world of Big Physics", Salon
5	Plagiarism. Assignment of credit. Case of Rosalind Franklin	1. "Avoiding Misconduct in Your Scientific Research", Chronicle Higher Educ. 2. "The Search for the Structure of DNA", Online Ethics Center 3. "Bad Chemistry", OE
6	Conflicts of interest. Case of EPA and Deborah Rice.	1. "Conflicts of interest at Federal agencies", The Scientist 2. "Outspoken scientist dismissed from panel on chemical safety", LA Times 3. "The Case of Deborah Rice: Who Is the Environmental Protection Agency Protecting?" PLOS Biology
7	Conflicts of interest. Cases of UC Berkeley and BP, UC Berkeley and Syngenta	1. "UC Berkeley, BP finally sign contract for research project", SF Chronicle 2. "Review of tenure refusal uncovers conflicts of interest", Nature 3. "Barking Up the Wrong Tree? Industry Funding of Academic Research", OE

8	Student-advisor relationships	1. “The Slave Driver vs. the Lazy Student”, Online Ethics Center 2. “The Infinite Thesis”, OE 3. “A Puzzle Named Bengü Sezen”, Chem & Eng News
9	Intellectual property. Patents.	1. “General Information Concerning Patents”, USPTO 2. “Are Patents Impeding Medical Care and Innovation?” PLOS Medicine
10	Intellectual property. Bayh-Dole Act. Case of Stanford vs Roche	1. “Bayh-Dole Act: A Failure?”, BIOtechNOW 2. “Supreme Court Rules for Drug Firm in a Patent Dispute”, NY Times
11	Accountability and institutional practices	“Best Practices for Ensuring Scientific Integrity and Preventing Misconduct”, OECD
12	Research misconduct and society	1. “Research integrity in China”, Dev World Bioeth. 2. “Publish or perish in China”, Nature 3. “Chinese law aims to quell fear of failure”, Nature
13	Student presentations	
14	Student presentations	
15	Student presentations	
16	Final paper due. Summarization.	