Instructor: Professor Mark A. Arnold  
230 IATL, Department of Chemistry  
Phone: 335-1368  
E-mail: mark-arnold@uiowa.edu

Lectures: 7:30 – 8:20 am Tuesday and Thursday; C29 PC

Office Hours: 1:30 – 2:30 pm Tuesday or by appointment

Course Materials:


American Chemical Society, Ethical Guidelines to Publication of Chemical Research, 2006.

Resources:

Online Ethics Center, the National Academy of Engineering: http://www.onlineethics.org/

The Office of Research Integrity (ORI), U.S. Department of Health and Human Services (HHS): http://ori.dhhs.gov/

American Chemical Society, Ethical and Professional Guidelines: http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_TRANSITIONMAIN&node_id=1095&use_see=false&see_url_var=region1&uuid=516ddd0e-7872-4b70-bf5a-d8f0016a0b17

Course Objectives:

The objective of this course is to discuss the principles of ethics in chemical sciences. The first year graduate students enrolled in this course will be trained on scholarly integrity for being a responsible chemist as they embark on graduate research at the University of Iowa. The infrastructure of scientific scholarship is introduced with an emphasis on interacting with peers, funding agencies, and industrial entities. Responsible conduct in research will be discussed in the context of creation of knowledge, dissemination of scientific findings, intellectual property, and conflict of interest. Workshops will be conducted to study cases in chemical research to illustrate the principles of scholarly integrity.

Grading: The course will be graded as S/U based on class attendance and participation.

Course Web Site: All course materials are available on the 004:192 ICON site. Course syllabus, schedule, lecture notes, announcements, and grades are posted on this site.
Course Organization:

The course will be conducted during the first half of the Spring semester. The first set of lecture periods will be devoted to lectures on the basic principles of scholarly integrity. Guest lecturers will be invited to speak on specific issues related to the course. For example, the University Ombudsperson could lecture on the procedures in misconduct reporting and in conflict resolution; specialist from the University of Iowa Research Foundation could speak on intellectual properties.

Subsequent class meetings will include workshop discussions of prominent cases in the natural sciences. Students in the class will be divided into small groups with discussion leaders, each in charge of one week’s workshop. They will present the background information for the case to the class, and lead class discussion on the scientific, ethical and societal impacts of the case.

Student attendance will be taken and class participation is enforced. Students MUST attend and participate in ALL class periods. Excused absences are only accepted for professional travel (e.g., conferences), illness, or death in the family. Students must meet all course requirements, in particular meet the mandate set by the Office of the Vice President for Research.
# Course Topics

1. Introduction, Definitions and Rationale
2. Data Acquisition, Management, Sharing and Ownership
3. Conflicts of Interest (COI) and/or Commitment (COC)
4. Research Involving Human Subjects
5. Animal Welfare in Research
6. Research Misconduct
7. Publication Practices and Responsible Authorship
8. Mentor / Trainee Responsibilities
9. Peer Review
10. Collaborative Science
11. Financial Management
12. Research Safety
13. Responsibility to Society
Administrative Home
The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Student Academic Handbook.

Electronic Communication
University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (Operations Manual, III.15.2. Scroll down to k.11.)

Accommodations for Disabilities
A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/~sds/ for more information.

Academic Fraud
Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Undergraduate Programs and Curriculum. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. See the CLAS Academic Fraud section of the Student Academic Handbook.

CLAS Final Examination Policies
Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

Making a Suggestion or a Complaint
Students with a suggestion or complaint should first visit the instructor, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS Student Academic Handbook.

Understanding Sexual Harassment
Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather
In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site.
The Chemical Professional’s Code of Conduct

American Chemical Society

Chemical Professionals Acknowledge Their Responsibilities

To the Public

Chemical professionals have a responsibility to serve the public interest and safety and to further advance the knowledge of science. They should actively be concerned with the health and safety of co-workers, consumers and the community. Public comments on scientific matters should be made with care and accuracy, without unsubstantiated, exaggerated, or premature statements.

To the Science of Chemistry

Chemical professionals should seek to advance chemical science, understand the limitations of their knowledge, and respect the truth. They should ensure that their scientific contributions, and those of their collaborators, are thorough, accurate, and unbiased in design, implementation, and presentation.

To the Profession

Chemical professionals should strive to remain current with developments in their field, share ideas and information, keep accurate and complete laboratory records, maintain integrity in all conduct and publications, and give due credit to the contributions of others. Conflicts of interest and scientific misconduct, such as fabrication, falsification, and plagiarism, are incompatible with this Code.

To Their Employer

Chemical professionals should promote and protect the legitimate interests of their employers, perform work honestly and competently, fulfill obligations, and safeguard proprietary and confidential business information.

To Their Employees

Chemical professionals, as employers, should treat subordinates with respect for their professionalism and concern for their well-being, without bias. Employers should provide them with a safe, congenial working environment, fair compensation, opportunities for advancement, and proper acknowledgment of their scientific contributions.

To Students

Chemical professionals should regard the tutelage of students as a trust conferred by society for the promotion of the students’ learning and professional development. Each student should be treated fairly, respectfully, and without exploitation.
To Associates

Chemical professionals should treat associates with respect, regardless of the level of their formal education, encourage them, learn with them, share ideas honestly, and give credit for their contributions.

To Their Clients

Chemical professionals should serve clients faithfully and incorruptibly, respect confidentiality, advise honestly, and charge fairly.

To the Environment

Chemical professionals should strive to understand and anticipate the environmental consequences of their work. They have a responsibility to minimize pollution and to protect the environment.