

**LAS 693 RESPONSIBLE CONDUCT OF RESEARCH (2 CREDITS)
SPRING SEMESTER 2010,**

CLASS MEETING DAY TBD TIME TBD, BLDG/RM TBD

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I. INTRODUCTION

Maintaining the public trust and the respect of your fellow scientists requires a clear understanding of the basic principles under which research is conducted and reported. We trust that researchers behave properly, are objective, and that they will clearly report the facts and their interpretation of the underlying "truth". Researchers behaving badly erode our trust and raise questions about the integrity of the research record. To succeed in today's increasingly complex research environment every new researcher needs to develop their skill in ethical decision making. This course introduces students to the basic principles and expectations that form the foundation of research integrity. Students will learn to recognize and address ethical dilemmas in research scenarios (case studies) thus preparing them for situations that will invariably arise during their career. The following short case study is a brief example of what might be used to start a discussion:

Dr. Jones was recently appointed associate dean for the College of Education. One of his first tasks was to put together a proposal to develop a new learning center on campus. A couple of weeks earlier he read a funded proposal written by Dr. Stevens, a CoE faculty member, that contained some great tables with student data, funding sources, and some narrative on educational goals. Dr. Jones viewed this as general departmental information so he copied it into his proposal. Dr. Stevens heard about this after Dr. Jones's proposal was submitted and is furious – he has accused Dr. Jones of plagiarism. Is it?

Follow-up questions from the instructors will help guide a general discussion into how such issues are handled, how they can be prevented, and what should be done in response to a finding of plagiarism (research misconduct).

Enrollment is open to all interested individuals with senior undergraduate or graduate student standing. Interested post-doctoral fellows and others with terminal degrees are also invited to enroll. This course fulfills National Science Foundation and National Institutes of Health requirements that funded trainees receive formal instruction in the Responsible Conduct of Research.

II. PREREQUISITES

Students must have senior undergraduate or graduate student standing in order to register for this course. No specific courses are required, however it is expected that all students are interested in some aspect of scientific or inquiry based research.

III. TEXTS

Required Textbooks:

Macrina FL (2005): Scientific Integrity: Text and Cases in Responsible Conduct of Research. 3rd edition. American Society for Microbiology Press, Washington, D.C.

Committee on Science, Engineering, and Public Policy (2008): [On Being a Scientist: Responsible Conduct in Research](#), 2nd edition. National Academy Press, Washington, D.C. (This text will be provided to all enrolled students by the UAF Office of Research Integrity.)

On-line training and resources:

UAF Web-based Responsible Conduct of Research course <http://www.uaf.edu/ori/responsible-conduct/>

Federal Office of Research Integrity website <http://ori.dhhs.gov/>

Other resources:

Students will be directed to relevant publications, university policies and regulations, research committee documents and resources as needed throughout the course.

IV. GRADING

Each student is expected to complete the following assignments:

- Complete the UAF Web-based training program in the Responsible Conduct of Research http://www.uaf.edu/ori/RCR_Course/about.html. Quizzes are available through Blackboard. 25% of the final grade.
- Working individually or in small groups (to be determined based on student enrollment), students will prepare and lead an in-class discussion of a case study, notable experiment with questionable ethics, or a key paper addressing research integrity. Topic requires pre-approval by instructor. 25% of the final grade.
- Class participation (includes attendance, discussion and completion of ungraded assignments), counting for 50% of the final grade. *Class attendance is mandatory as part of your class participation. Any student missing more than three class-days without prior excused absence may, at the discretion of the instructor, forfeit all class participation points.*
- *Total Points for Semester: 100 points, Final Grade Distributed as Follows:*
 - A+ (100-98); A (97-94); A- (93-90)
 - B+ (89-87); B (86-84); B- (83-80)
 - C+ (79-77); C (76-74); C- (73-70)
 - D+ (69-67); D (66-64); D- (63-60)
 - <60=F

COURSE GOALS AND STUDENT LEARNING OUTCOMES

The purpose of this course is to engage researchers and research trainees in reading about, considering, and discussing the responsible conduct of science. The primary goal is to instill a fundamental understanding of the expectations associated with the conduct of research and to promote best ethical practices that will ensure the integrity of the research record. Readings, case studies, and scenarios will be used to stimulate discussion on the following topics associated with the responsible conduct of research: animal welfare, protection of human subjects in research, data management, mentoring, peer review, research misconduct, publishing, authorship, collaboration, and conflicts of interest. Additional topics may be added to address timely issues.

DISABILITIES SERVICES

You should be aware that the UAF Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. The instructors will work with the Office of Disabilities staff (located at 203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.

SUPPORT SERVICES

Students having difficulties with the course content, concepts, materials or assignments are encouraged to contact the instructor(s) for additional assistance.

Students having difficulties of a personal nature that interfere with normal completion of course requirements may speak with an instructor as warranted, consult a Faculty Advisor at the UAF Academic Advising Center (Gruening Building, 5th floor), or see a counselor at the UAF Center for Health and Counseling (Whitaker Building). You are advised to engage one or more of these resources as needed so as to assure personal problems do not cause academic problems leading to probation, etc.

COURSE POLICIES

- A. **Attendance:** Students are expected to be on time for class, attend class regularly, and actively participate in discussion of the assigned readings, case studies, and scenarios. Students having more than three unexcused absences may, at the discretion of the instructor, forfeit all class participation points. Students who are tardy will lose participation points for that day based on how much class time they miss.
- B. **Withdrawal:** As established by the university this semester, the last day for student-initiated and faculty-initiated withdrawals (W grade appears on academic record) is Friday, October 30. Students whose participation is determined by the instructor to be less than required by assignments due and attendance will be withdrawn from the course.
- C. **Incomplete Grades:** Students should consult with the course instructor and/or their faculty advisor well in advance of final examination week to establish that an incomplete grade for the course is warranted. Students must have been performing minimally at "C" level, completed more than 50% of the required coursework, and have mitigating circumstances to warrant a request for an incomplete.
- D. **Late Assignments:** Assignments are to be submitted when due unless previous arrangement has been made with the instructor. Due dates may be extended when there are justified/mitigating circumstances.
- E. **Academic Integrity:** UAF students are expected to comply with the Student Code of Conduct (see *Class Schedule*, "Campus Policies"). Students are to avoid committing, attempting to commit, or intentionally assisting in prohibited forms of academic dishonesty, including cheating and plagiarism in the completion of course assignments. Reported violations that result in finding of academic dishonesty according to the university investigative process are subject to disciplinary sanction including warning, probation, denial of benefits, restitution, discretionary sanction, restricted access, suspension, expulsion, or revocation of a degree.
- F. **Academic Integrity and On-line Training:** The content of each on-line module should be reviewed prior to attempting the associated quiz. It is permissible to view the quizzes and use them as a learning tool while you review module content. After review of module content you may retake quizzes until you achieve a passing score. However, it is inappropriate to repeatedly retake quizzes without reviewing the module content first. The purposeful subversion of the intent of the on-line course, providing quiz answers to colleagues and/or "gaming" the software is unethical and qualifies as academic dishonesty.

SESSION STRUCTURE

- Each session is 2 hours long
- You are expected to have completed the assigned readings and relevant part of the on-line training prior to each session.
- Session will typically consist of an instructor lecture or general discussion of concepts followed by case studies, scenarios, or mock review activities to stimulate student participation and learning.
- The last two class sessions have been reserved for student led discussions on topics approved by the instructors.

Tentative Course Calendar

Week #	Date*	Topic	Assignment due
1	1/21	Mentor / Trainee Responsibilities: Discussion & Case Studies	<i>Professional Association Code of Ethics/Conduct Assignment</i> Macrina: pp. 39-54 Online: Collaboration & Mentoring
2	1/28	Managing Data: Discussion & Case Studies	Macrina: pp. 211-237 & 269-289 Online: Data Management
3	2/4	Collaboration: Discussion & Case Studies	<i>Student led discussion topics finalized</i> Macrina: pp. 187-203
4	2/11	Authorship: Discussion & Case Studies	<i>Instructions to Authors Assignment</i> Macrina: pp. 61-84 Online: Authorship
5	2/18	Animal Welfare, Rules & Regulations: Discussion & Case Studies	Macrina: pp. 127-152 Online: Use of Animal Subjects
6	2/25	Animal Welfare: Mock IACUC Review	
7	3/4	Access to unique models, cell lines, software, tissues, etc. & issues associated with Material Transfers: Case Studies	
8	3/11	SPRING BREAK	
9	3/18	Human Subject Protections, Rules & Regulations: Discussion & Case Studies	Macrina: pp.91-114 Online: Use of Human Subjects
10	3/25	Human Subject Protections: Mock IRB Review	
11	4/1	Conflict of Interest and Commitment: Discussion & Case Studies	Macrina: pp. 159-180 Online: Conflicts of Interest
12	4/8	Peer Review & Publication: Discussion & Case Studies	<i>Funding Agency & Journal Instructions to Reviewers Assignment</i> Online: Publication & Peer Review
13	4/15	Publication: Discussion & Case Studies	
14	4/22	Research Misconduct: Discussion & Case Studies	<i>Retractions Assignment</i> Macrina: pp. 1-16 & 19-31 Online: Research Misconduct
15	4/29	Student Led Discussions	
16	5/6	Student Led Discussions	

* Dates are tentative, based a Thursday meeting day.