University of Rhode Island **CHM 500**
Chemical Safety and Research Ethics **Spring 2017**

Instructor Information: Professor Mindy Levine; 251 Pastore Hall; 401-874-4243; mlevine@chm.uri.edu. Office hours by appointment.

Time/date: Monday 1-1:50 PM; Beaupre Center Room 215

Prerequisite: Graduate standing or permission of instructor

Course Description: Essential skills for success as a professional chemist. Topics will include chemical hygiene and safety, research ethics, and scientific misconduct.

Course Goals and Student Learning Objectives: The goal of this course will be to prepare students for their graduate and postgraduate careers by teaching them how to safely work in a research laboratory containing a variety of physical and chemical hazards, how to responsibly and ethically perform research, and how to recognize and avoid all forms of plagiarism.

Course Content Learning Outcomes
Upon successful completion of this course, students will be able to:
LO1 – Develop and implement a chemical hygiene and safety plan for a research laboratory.
LO2 – Recognize and avoid all forms of plagiarism.
LO3 – Recognize their ethical responsibilities as students, chemists, and scientific professionals, and provide particular examples of such responsibility.

Strongly Suggested Texts/Readings
Scientific Integrity: Text and Cases in Responsible Conduct of Research, Macrina, F. L., 3rd Ed., ASM Press, 2005; ISBN: 1555813186, ISBN-13: 978-1555813185

Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards (Updated Version), 2011, National Research Council; ISBN: 0309138647, ISBN-13: 978-0309138642

Other Readings
Ethical and Professional Guidelines. Available at www.chemistry.org.

Kovac, J. *The Ethical Chemist: Text and Cases in Responsible Conduct of Research*

D'Angelo, J. *Ethics in Science: Ethical Misconduct in Scientific Research*

Suggested readings about scientific ethics will be distributed by the instructor and posted to the course website. Doing these readings before class will greatly facilitate class discussion.

Academic Integrity: Academic dishonesty will not be tolerated. It is an unforgivable offense. Students who have been caught cheating or misrepresenting their work will be subject to the disciplinary actions contained in the URI University Manual including failure of the assignment/exam and potentially culminating with expulsion from the University. **Every instance of academic dishonesty will be reported promptly to the Dean's office. There are absolutely no exceptions to this policy under any circumstances.**

Assignments and Grading Policy
The grading for the course will be based the safety exam, a presentation on a case study in research ethics, and class participation during the ethics component of the course.

Group presentation on chemical safety		**150 points**
Short Presentation in Case Studies in Scientific Ethics		**150 points**
Class participation in ethics discussions ; short responsa		**100 points**
	Total	**400 points**

Course Schedule: CHM 500, Chemical Safety and Research Ethics, Spring 2015

A tentative course schedule is shown below. This schedule is subject to change with fair notice.

Date	Topics, Readings, Assignments, Deadlines
1/23/17	Course Introduction; Professionalism and Ethics in Chemistry
1/30/17	Data Acquisition, Management, and Sharing; Sloppiness vs. Fabrication
2/6/17	Bad Ethics vs. Bad Science; Bengu Sezen and Columbia University
2/13/17	Peer Review Process; Funding
2/20/17	Plagiarism in all Forms
2/27/17	Safety and the Laboratory: Patrick Harran and UCLA
3/6/17	Laboratory Safety: Chemical Storage, Handling, and Waste Disposal
3/20/17	Laboratory Safety: Electrical and Laser Safety
3/27/17	Laboratory Safety: Fire Training
4/3/17	Laboratory Safety: Nanoparticle Safety; Green Chemistry
4/10/17	Case Studies in Unethical Research
4/24/17	Case Studies in Unethical Research