

**ATS 693, Spring 2020**  
**Research in Atmospheric Science**  
Fridays 10:00 – 10:50 PM  
ATS West 121

Instructor: Prof. Sonia Kreidenweis  
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**Objectives:**

The intent of this seminar-style course is to introduce graduate students and early career postdocs to the research process, the responsible conduct of research, and the MS and PhD degree processes in the Department of Atmospheric Science. Research topics will range from conceptual (developing research questions, time management) to practical (keeping research notebooks, laboratory safety) and ethical (data manipulation, intellectual property) considerations. This course is designed to satisfy federal agency requirements for face-to-face training in responsible conduct of research.

**Texts:**

*For reading, distributed electronically:*

Muriel J Bebeau, Kenneth D Pimple, Karen MT Muskavitch, Sandra L Borden, David H Smith, Moral reasoning in scientific research: Cases for teaching and assessment. Bloomington, IN: Poynter Center for the Study of Ethics and Assessment, 1995.

Miguel Roig, Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing, 2015 update. US Department of Health and Human Services, Office of Research Integrity, <https://ori.hhs.gov/avoiding-plagiarism-self-plagiarism-and-otherquestionable-writing-practices-guide-ethical-writing>

AGU Professional Development website:  
<https://webinars.agu.org/categories/professionaldevelopment/>

*Weekly PowerPoints and reading and discussion materials are posted in Dropbox:*

<https://www.dropbox.com/sh/sb2wri46vk1qzac/AADAqypWpsu4WEb15KcNEkMla?dl=0>

**Course Structure, Expectations, and Grading Criteria:**

**IMPORTANT:**

*All students are expected to have completed the online RCR training course and the associated Mastery Quiz, at <http://rcr.colostate.edu/training.html>, prior to attending the first class.*

Course material will be delivered in a lecture / discussion format, meeting for one 50-minute period each week. Lectures (.pptx or .pdf format) are posted on the class website. At least 2 hours of effort (2 hours per each hour of class time) outside of class each week are expected to complete readings and homework assignments. In particular, all students are expected to read assigned materials prior to the class time in which it will be discussed.

This class is graded on a satisfactory/unsatisfactory (S/U) basis. This is a discussion-based class and satisfies CSU and federal agency requirements for face-to-face training. As such, students will be graded based on their (mandatory) attendance and participation in class discussions. Students may have up to two excused absences from class, and should make arrangements with the instructor to make up any assignments and to ensure they are prepared for the next class.

### **Academic Integrity:**

All students are subject to the policies regarding academic integrity found in Section 1.6 of the 2010 – 2011 General Catalog, found at <http://www.catalog.colostate.edu/Content/files/2012/FrontPDF/1.6POLICIES.pdf>, and the student conduct code (<http://www.conflictresolution.colostate.edu/conduct-code>). Other information on academic integrity can be found on the Learning@CSU website (<http://learning.colostate.edu/integrity/index.cfm>). Examples of academic dishonesty can be found in these sources. At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

### **Special Needs:**

Please see the instructor during the first two weeks of the semester, if you have special learning needs that should be accommodated in this class, and refer to <http://rds.colostate.edu/csuinto/accommodations.asp> for more information.

## **ATS 693, Spring 2020**

### **Responsible Conduct of Research in Atmospheric Science**

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<b>Week</b>	<b>Discussion Topic</b>	<b>Accompanying Reading Assignment</b>
Jan 24	Course overview Roles and responsibilities in academia	Bebeau et al., Developing a Well-Reasoned Response to a Moral Problem in Scientific Research
Jan 31	Data and IP ownership and storage	
Feb 7*	Lab notebooks	Bring to class: your notebook / record
Feb 14	Plagiarism	Charlie West case; Roig article
Feb 21	Research Misconduct	Marty Brown case

Feb 28*	Whistleblowing	Bob Bailey case
Mar 6	Publishing Your Work	Diane Archer case; <a href="https://webinars.agu.org/webinar/tips-successful-manuscript-submission/">https://webinars.agu.org/webinar/tips-successful-manuscript-submission/</a>
Mar 13	Effective Oral Presentations (presented by Prof. Emily Fischer) <sup>#</sup>	Bring to class: a hard copy of a slide you want to improve
Mar 20	<i>Spring Break</i>	
Mar 27	Developing a Proposal / Prospectus	Bring to class: a research idea / outline
Apr 3	Conflict Resolution and Effective Communication (presented by Melissa Emerson, Student Resolution Center) <sup>#</sup>	
Apr 10	Preparing Research Budgets Financial Management & Fiscal Responsibility (presented with Shannon Irely, ATS) <sup>#</sup>	Bring to class: your laptop, with the budget spreadsheet uploaded
Apr 17*	Export Controls and Related Issues <sup>#</sup>	
Apr 24	Considering the World of Entrepreneurship (presented by Dr. Steve Albers, CSU Ventures) <sup>#</sup>	
May 1	Working with Industry (presented by Prof. Jeffrey Collett, ATS) <sup>#</sup>	
May 8	Special topic <sup>#</sup>	

\*may be rescheduled #presenter to be confirmed