Arguably, “science” is the dominant discourse of our time. Whether we are focused on technology, medicine, the environment, or public policy, science affects all our lives in profound ways, and it does this through writing. This course focuses on understanding how the writing done in science works in a variety of different contexts.

**How This Course is Organized**

This course is an introduction to the rhetorical, historical and social analysis of science as a discursive and material practice. At least since Descartes in the seventeenth century, science grounded itself on the belief in objectivity and a corresponding belief in the transparency and neutrality of language, what Richard Bernstein calls the “Cartesian Anxiety.” With the rise of postmodern theory and social constructionist positions in the human sciences, this faith in objectivity and a value free, non-rhetorical language has been widely rejected—at least in the humanities. Within rhetorical studies, scientific discourse is now understood as a discursive practice shaped by disciplinary and genre conventions, material conditions, and ideological commitments as well as a disciplined relationship to “external reality.” To argue in a facile way that science is nothing but a social construction usually ignores the fact that science and the scientific method have been extraordinarily powerful and productive. But to take that power and productivity at face value ignores questions of culture, of social power, of material practice, of discursive restrictions and exclusions, of language as the fundamental medium of scientific work. We might ask this as the question of how science “hooks up” with a material world through language and how it authorizes and understands these procedures. Or we might reverse DesCartes positivism and consider science as a remarkably successful, though not perfect, strategy for understanding and managing uncertainty. My own definition of science is “the management of uncertainty,” partly because of my particular interests.

The course is organized by four topics:

1) **Defining rhetoric of science.** What are its traditions? What kind of scholarship goes on in the field? And why?

2) **Scientific controversy and disciplinary change.** How do scientific disputes get resolved? How does science change? How do scientific “facts” get established and defended? How does science communicate and cooperate across disciplinary and theoretical difference?
3) **Science as a social, material semiotic.** How can we understand science as a cultural practice? How are science and materiality interconnected in ways that supersed postmodern critique of language? How might the rhetoric of science intersect with contemporary Science Studies?

4) **Science and Citizenship.** How can rhetorical study help us understand the ways science might or might not participate in social change? How can science affect policy? How can science cooperate with citizens to evaluate technology and manage controversy or crisis? How can rhetoricians participate in the complex work of engaged science?

**Your work**

You have three assignments in this course:

1. **keep up with the reading and participate in class discussion:** As you will see below, there is a lot of reading in the course. Your first, largest and ongoing responsibility is to keep up with the reading and come to class prepared to discuss it at a fairly detailed level. I will lecture when necessary, but the classes will generally be open discussions of the readings driven by your questions and interests and by my own sense of what’s disciplinarily important. **I do not assign “A’s” to students who do not participate substantially and regularly.** Participation is the “jacks or better” to open the betting in the course. And, obviously, if you are not in class, you aren’t participating. Anyone with more than three unexcused absences will be dropped or receive a failing grade for the course.

2. **Complete the collaborative “Journal Survey Assignment”** and make a brief 5 to 10 minute group presentation to the class on Thursday September 27. A longer and quite detailed description of this assignment is attached to the end of this syllabus.

3. **complete a writing contract:** I am open to any reasonable proposal for what you write in this course. You should decide what kind of writing best suits your individual scholarly situation and interests. And I encourage you to come talk with me about your interests and your ideas for a course writing project. I want an informal written proposal (a page at most) from each of you laying out what you plan to write, why and when I’ll get it no later than October 4. I encourage you, however, to decide what you want to write and to submit the proposal as early as possible, the sooner, the better. The latest date you can turn in written assignments is the day scheduled for the final exam.

Here are a few suggestions for the kind of thing you might decide to do for this assignment:
You might write part of a dissertation or thesis chapter, or part of a dissertation proposal that is in the general field of the rhetoric of science.

You might identify an ongoing scientific dispute (e.g. intelligent design, climate change, etc.), gather materials, and analyze the rhetorical activity involved using some of the conceptual apparatus from the course, e.g. Gieryn’s notion of boundary work.

If the field of rhetoric of science is completely new to you, you might choose to write some form of analytic reading log that synthesizes and organizes your understanding of some of the important theoretical issues we will take up, e.g. incommensurability, hybrids, reference, technoscience, public spheres, science policy. That might be a series of relatively short (5-6 page, double spaced) entries.

You might write a review of a new book or books in the area using your class readings as the basis for the review, and then send the review to the appropriate journal (this last would be required if you write a review).

You might use some of the readings in addition to outside reading to develop a thesis of your own or a new position on a controversial topic.

I encourage you to develop proposals and papers for conferences.

You might draft material on a specific case study that lends itself to the material and ideas in the readings.

You might even write collaboratively or prepare a hypertext file.

Ph.D. students should aim at 15+ pages for a continuous argument; MA Students 10+ pages. Since reading logs are not continuous or new argument, they should be longer (in total). For reading logs Ph.D. students 20+ pages, MA 15+ pages. One Caveat: all papers and logs have to be about the materials and topics in this class. One piece of advice: the more you link the reading logs to other readings in rhetorical theory or rhetoric of science, the better sense of the field you’ll have.

Your final grade will be determined by your participation in the class discussions (and this includes your presentations) and your written work in equal proportions. I’ll give you feedback on presentations and the associated handouts as soon after you do them as possible.

An unusual aspect of this course

I am teaching the seminar in collaboration with two colleagues, Prof. Greg Wilson (Iowa State University) and Prof Scott Graham (Univ. Wisconsin, Milwaukee) who are also teaching Rhetoric of Science this semester at their respective universities. The three of us are developing a proposal for a textbook in Rhetoric of Science, Technology and Medicine (RTSM). Unfortunately, no overview and introduction to the field exists. The last similar book was Randy Harris’ Landmark Essays in Rhetoric of Science published in 1997. The “Journal Survey Assignment” is part of the bibliographic work associated with this project. Prof. Graham has set up a website where all three classes can upload their contributions to the bibliography and Prof. Wilson has established a Moodle site (Iowa State’s version of Black Board)
where everyone can upload full PDF files of the articles they locate. The students in all three classes will have access to all these materials. Also, each group in each course will make a brief presentation of their findings during the week of September 24 to 28, and these will be video recorded and posted on the communal website. Unfortunately Prof. Wilson teaches on Monday nights, Prof. Graham teaches on Wednesday nights, and we meet on Thursdays. We will try to connect the three course as much as is reasonable as we go; Greg and Scott may Skype in to our class during the semester.

As you will notice on the schedule of readings below, I have left four weeks in the semester open for reading the best or most interesting or most important of the articles unearthed by the three-class survey project. We, collectively, will select what 12 to 16 articles these will be as we go along. I trust the benefit and excitement outweighs the uncertainty this entails.

**Texts**


**Schedule**

**Thursday 8/30: Rhetoric of Science’s Past and Future**


Keith, William and William Regh. ‘Argumentation in Science: The Cross-Fertilization of Argument Theory and Science Studies.” *The Handbook of Science and
Thursday 9/6  Philosophical and Rhetorical Positioning: Science as the “Management of Uncertainty”
(Total pages = 146)

Thursday 9/13
(Total pages = 135)

Thursday 9/20  Controversy and Disciplinary (ex)change
Kuhn Structure of Scientific Revolutions: “Introduction” (9) and “Postscript” (34)
Harris. Rhetoric and Incommensurability “Introduction” (3-121)
(Total pages = 159)

Thursday 9/27
(Total pages = 100)

Student bibliography project reports
Thursday 10/4
3 to 5 articles from class survey TBA

Thursday 10/11
3 to 5 articles from class survey TBA

Thursday 10/18  **Material/Semiotics and New Materialism**
(total pages = 145)

Thursday 10/25
(Total pages = 118)

Thursday 11/1
(Total = 128 pages)

Thursday 11/8
(Total pages = approx. 140)

Thursday 11/15  **Science and Citizenship**
Bennett, Jane. *Vibrant Matter: A Political Ecology of Things*. "Prologue" (vii-xix) and “Political Ecologies” (94-110)
(Total Pages = 118)

Thursday 11/22  **Thanksgiving Holiday**
Eat, sleep, wake, repeat.
**Thursday 11/29**
3 to 5 articles from class survey TBA

**Thursday 12/6**
3 to 5 articles from class survey TBA

**Final exam:** brief 5 to 8 minute informal presentation of your written project for the course.

---

**Journal Survey Assignment**

Our class is responsible for the following journals in RTSM:
- *Argumentation*
- *Technical Communication Quarterly*
- *Social Epistemology*
- *POROI* (online journal of the Rhetoric of Inquiry series)

1. Working in a group of 3 look through the issues of your assigned journals that have been published starting in the year 2000. Identify 25 articles that best represent scholarship in the rhetoric of science, technology, and medicine that your journal has published in this area.
2. Create a bibliography and obtain a PDF of the articles.
3. Each member of your group should write a 200-500 word summary/annotation for three articles. Select the best or most interesting articles to annotate (Your professor is happy to consult on “bestness.”). Each group produces six to nine annotations total, depending on the number of people in the group.
4. Upload your citations and your annotations to the wordpress site [http://rstm.sscottgraham.com/](http://rstm.sscottgraham.com/)
5. Upload your PDFs to the moodle article repository [http://courses.isucomm.iastate.edu/course/](http://courses.isucomm.iastate.edu/course/)
6. Prepare a 5 minute class presentation for September 24th that summarizes your general findings. For example, what are the issues or topics taken up in the journal? what are the best articles? what do these articles say/do? How has the discussion changed over time? Presentations will be videotaped and posted on the website shared by the three classes. If you would rather make your own 5 minute video about your findings instead of making an in-class presentation to be taped, that would be stellar.

---

**Additional Details**

- **How firm are these assignment specifics?** This is our best guess as to how many articles you’ll find in the 12 year period. Give us feedback if things seem out of proportion for your journal. If you are finding too few or too
many, we can equalize the workload across a group with the opposite problem.

- **How do I log on to the wordpress site?** Download the ROSTM Website User guide from our class Black Board site. Use the web address above in #4.

- **How do I log on to the moodle PDF repository?** There is a moodle page for uploading PDFs that is separate from our class moodle page. Go to courses.isucom.iastate.edu/course/ and look under miscellaneous courses for the Rhetoric of Science Book Project link. The access key for that page is “ROSbook”. Upload details will be provided later when the guts of that page are worked out.

- **What counts as ROS scholarship? What kind of articles should we be looking for?** The boundaries of ROSTM are a serious question we are going to be exploring for most of the semester. As you look for articles, please check in frequently with your professor if you have questions, and keep some notes of the type of distinctions you’re making in your list building. At the beginning of each class, we’ll talk about what you have found and how, share tips such as useful keywords, and answer any questions about the ongoing project.

  o If you are looking in a rhetoric journal, look for articles that have case studies or examples related to science, technology, or medicine: e.g., scientific texts, physics, laboratories, cancer treatments, vaccines, engineering, climate change, sustainability etc. You should also look for articles related to the themes of the class: What is the ROS? Scientific controversy and disciplinary change, Science as social/material semiotic, Science and citizenship.

  o If you are looking in a communication studies journal, remember that most people who do communication research do not consider themselves to be rhetoricians or use rhetorical methods. Prefer those texts that examine persuasive activity or the construction of meaning while focusing on the type of topic areas and themes we want including articles on controversy or arguments about climate change and sustainability.

  o If you are looking at a journal outside of rhetoric and communication, look for articles that focus on the topic areas and class themes. Articles that focus on language, persuasion, construction of meaning, and “texts” are of particular interest, but you might also include articles on citizen participation, science policy studies, and sustainability issues.

- **Grey Areas**: You might see articles on professional communication that relate to technical communication or medical communication that address technical topics, but those are not what we are looking for. An article that talks about how to design a better patient interface to convey information about patient care is of less interest than an article that examines how rhetoric shapes the interactions of doctors and patients. You might also see
articles related to computers and writing, digital media, or rhetoric in digital environments. For this project, we are not classifying articles that discuss a technological medium as ROS.

List of Important Journals in the field of RTSM

Primary Venues for Rhetoric of Science

1. **Argumentation and Advocacy** (UWM)
2. **Argumentation** (USF)
3. **Technical Communication Quarterly** (USF)
4. **Journal of Business and Technical Communication** (ISU)
5. **Written Communication** (UWM)
6. **Quarterly Journal of Speech** (ISU)
7. **Rhetoric Society Quarterly** (UWM)
8. **Rhetoric and Public Affairs** (UWM)
9. **Social Epistemology** (USF)
10. **POROI** (USF)
11. **Science Communication** (ISU)

STS and Content-Area Specific Journals

1. **Social Study of Science**
2. **Science Technology and Human Values**
3. **Philosophy and Public Policy Quarterly**
4. **Science and Public Policy**
5. **Environmental Science and Policy**
6. **Environmental Communication**
7. **Policy Sciences**
8. **Journal of Medical Humanities**
9. **Social Studies of Medicine**
10. **Journal of Agricultural Ethics**

Peripheral Rhetoric and Related Journals

1. **College Composition and Communication**
2. **College English**
3. **Rhetoric Review**
4. **Philosophy and Rhetoric**
5. **Western Journal of Communication**
6. **Southern Communication Journal**