



Winter 2017

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Moodle2 code: story17

Science as storytelling

Course Description and Goals

This course will introduce us to the scientific enterprise and challenge us to reflect on the ways scientific information is produced, disseminated, and consumed. By the end of the course, we should feel empowered to engage more critically with scientific evidence, to recognize the competing motivations that underlie scientific debate, and to identify how the scientific process and scientific communication are mediated by diverse social, cultural, and personal factors. In doing so, we will work towards building a holistic “scientific literacy” that enriches our scholarship, professional practice, civic engagement, and ethical decision making.

We will approach these broad goals within a framework that recognizes science as “storytelling.” Part of this strategy will involve learning the tools of rhetoric and narrative analysis and applying them to a diverse array of scientific texts, ranging from scholarly primary literature to popular journalism. We will also use the tools of science to construct our own stories – that is, we will ask interesting questions and answer them through research, analysis, and presentation. With these dual approaches, we will aim to locate ourselves along the continuum of participants in the scientific process, as well as uncover the ways in which science shapes our society and ourselves.

Expectations and Grading

This course will be graded as “Satisfactory” or “Unsatisfactory” according to the following criteria:

- 1) **Attend every class session.** Attendance at every class session is a requirement for satisfactory completion of this course. Absence in the case of serious illness or family emergency can be excused only with documentation from a medical professional and/or approval from our director, Dr. Savage. Make up assignments will be required for any classes for which you are absent. More than one late arrival (>5 minutes) to class will be considered an unexcused absence. Unexcused absences of any kind will place you at risk of receiving an “Unsatisfactory” score in the class.
- 2) **Thoughtfully complete all assignments.** This course will feature daily reading and written reflection assignments, in addition to a final project. All readings and assignments must be completed in order to receive a “Satisfactory” grade in the course. Individual assignments will be scored using a check (satisfactory), check-plus

(exceptional), or check-minus (needs improvement) scale. A check/satisfactory grade can be earned by demonstrating effort, thoroughness, and thoughtfulness in your work. Simple completion of assignments without demonstration of these qualities will not be considered satisfactory. More than one occurrence of turning in an assignment late will place you at risk of receiving an “Unsatisfactory” score in the course.

- 3) **Actively participate in class activities.** Your engagement with the course material will require an active exchange of ideas with the instructor and with your classmates. Therefore, you will be expected to participate in all classroom/laboratory activities and group discussions. If you come to class but do not actively participate in course activities, you may be considered absent for that class session.

Assignments

- 1) **Nightly reading and reflections:** For each day of class, I will post one or two homework readings along with a set of reflection questions on Moodle. You should complete the readings and thoughtfully respond to each question on this document. Please follow the provided guidelines for answer length. All written reflections should be uploaded to Moodle.
- 2) **In-class activities:** We will be using a variety of in-class activities that will require you or your group to produce some evidence of your participation and learning. I will give detailed instructions before each of these activities.
- 3) **Final project:** Either alone or in groups of up to 3 students, you will create a final project that explores the impact of a scientific “story” beyond the laboratory. This project should be creative, and may involve an analysis of personal, social, cultural, economic, or other concerns. Importantly, your project should illuminate how a particular scientific topic is communicated and perceived by relevant audiences. Whatever form your project takes, you should be prepared to share it with the class during a short presentation at the end of the course. More information will be provided in a separate document.

Feedback on Assignments

You will receive written feedback from me on your nightly reflections. I will use this feedback to highlight particularly strong or insightful reflections on your part, as well as identify areas where you can improve in your thinking or writing. I will also provide you with a more formal evaluation of your progress on the midterm and final crite sheets. Beyond these structured channels for feedback, please feel free to email and or meet with me to discuss any matters related to your performance in the class.

Communication with the instructor

I will strive to maintain open lines of communication with you throughout the course. I am happy to meet with individuals or groups outside of class time in order to answer questions or provide help with challenging assignments. Always feel free to email me with questions and concerns. I will do my best to respond promptly between the hours of 8AM-10PM.

Lab safety

During the second module, we will be in the laboratory. Please observe the following safety procedures for our afternoon lab sessions. Additional safety training will occur during our first laboratory session.

- 1) No open-toed shoes, including sandals and flip-flops
- 2) No eating or drinking of any kind in laboratory spaces
- 3) No loose clothing, including scarves
- 4) Long hair should be tied back
- 5) Book bags should be left in hallway
- 6) If you wear contact lenses, consider wearing glasses instead, if possible.

Bard College Academic Integrity Policy

Citizen Science adheres to Bard's policies on academic dishonesty and plagiarism, which can be found in the student handbook, and online at:

<http://www.bard.edu/undergraduate/requirements/>. All students are bound by these policies, and are expected to always act in an ethical and honest manner with regard to their academic work. The work done in Citizen Science should be your own. Any ideas or work that you use which are not your own should be clearly attributed to the source. If you are unsure if you are providing appropriate or sufficient citation, you should contact the professor before submitting the final draft of the assignment.

Bard College Title IX Policy

Bard College is committed to fostering a safe, productive learning environment. Title IX and our school policy prohibit discrimination on the basis of sex regarding gender-misconduct — including harassment, domestic and dating violence, sexual assault, and stalking. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. A complete list of confidential and non-confidential resources can be found at www.bard.edu/titleix. Alleged violations can be non-confidentially reported to the Office for Gender Equity at TitleIX@bard.edu or [845-758-7542](tel:845-758-7542).

Course Schedule:

Date	Time	Location	Topic/Activity
PBL Module			
Sunday 1/8/17	4-6PM	Sosnoff	Introductions;
Monday 1/9/17	10:00AM- 12:00PM	Olin 309	Narratives and storytelling; Dialogues and discourse
	1:30PM- 4:00PM	Olin 309	The nature of science; Experimentation and inference
Tuesday 1/10/17	10:00AM- 12:00PM	Olin 309	Objectivities and subjectivities
	1:30PM- 4:00PM	Olin 309	Scientific storytelling and scientific texts; Civic Engagement Training (1:30-2:30)
Wednesday 1/11/17	10:00AM- 12:00PM	Olin 309	Scientific publishing; Civic Engagement (11:00-2:30)
	1:30PM- 4:00PM	Olin 309	Civic Engagement (11:00-2:30) Post-truth and new media
Thursday 1/12/17	10:00AM- 12:00PM	Olin 309	Scientific controversy and the construction of debate
	1:30PM- 4:00PM	Olin 309	Bioethics and narratives of progress
Laboratory Module			
Friday 1/13/17	9:00AM- 12:00PM	RKC 112	Introduction to the laboratory; Pipetting and environmental isolates (Part 1)
	1:30PM- 3:00PM	RKC 101	Thinking quantitatively, Part I Randomness and probability
Monday 1/16/17		Olin	Faculty Lectures
Tuesday 1/17/17	9:00AM- 12:00PM	RKC 112	Plaque assay and environmental isolates (Part 2)
	1:30PM- 3:00PM	RKC 101	Uses and abuses of statistics.
Wednesday 1/18/17	9:00AM- 12:00PM	RKC 112	Transformation and environmental isolates (Part 3)
	1:30PM- 3:00PM	RKC 101	Microbiome Antibiotic resistance
Thursday 1/19/17	9:00AM- 12:00PM	RKC 112	DNA extraction and environmental isolates (Part 4)
	1:30PM- 3:00PM	RKC 101	HIV Infectious disease models

Computation Module

Friday 1/20/17	9:30AM- 11:30AM	Olin 204	Allergy and hypersensitivity The hygiene hypothesis
	1:00PM- 3:30PM	Olin 204	Thinking quantitatively, Part II
Monday 1/23/17	9:30AM- 11:30AM	Olin 204	Visualizing data Visual argumentation
	1:00PM- 3:30PM	Olin 204	Predictions, outcomes, and impact, Part I
Tuesday 1/24/17	9:30AM- 11:30AM	Olin 204	Predictions, outcomes, and impact, Part II
	1:00PM- 3:30PM	Olin	Faculty Lectures
Wednesday 1/25/17	9:30AM- 11:30AM	Olin 204	Metanarratives: the story that our stories tell
	1:00PM- 3:30PM	Olin 204	Presentation of final projects Closing thoughts