

Biology 7: Fact or Fiction? Politicized Topics in Biology

Winter 2020

Location: Class of 1978 Life Science Center, Rm. 205

Class Meeting times: MWF 11:30-12:35

Instructor: Assist. Prof. Carey Nadell
Office Location: LSC 326
Email: carey.d.nadell@dartmouth.edu
Office Hours: (M-F by appointment via e-mail communication)
X-hours: Tues 12:15-1:05

Course Description

This course will explore the fact and fiction underlying politically contentious topics that have biology at their core. The majority of the course will consist of written and oral debates on topics including climate change, genetic engineering, stem cell research, vaccine policy, and antibiotic resistance mitigation. One short essay (800 words) will be assigned for each of these topics, and feedback will be provided through peer review and professor input. Students will also compose a final 2000-word essay on a topic of their choice.

Course Goals

Students will hone their ability to think critically, construct well-written and effective arguments, and to separate fact from fiction when controversies relating to biology arise in public forums.

Learning Objectives

By the end of this course, students will be adept at writing and speaking critically about controversial issues in biology. In addition, students will be able to identify appropriate literature for the support of scientific arguments, and to distinguish scientific fact from opinion. Students will research, write, and debate about scientific questions while respecting the opinions and philosophies of their peers. You can also find the Institute for Writing and Rhetoric FYS outcomes [here](#).

Pre-Requisites

Humanities 1
Writing 2 and 3, or Writing 5

Helpful Preparation

Students should 1) be prepared to learn how to research science-based arguments and articulate them clearly, 2) have a curiosity for the natural world and the role of scientific research in politics, 3) have a basic facility with interpreting quantitative information via graphs.

Teaching Philosophy

We will spend four class periods exploring each scientific topic listed on the syllabus. For each topic, students will 1) discuss assigned readings from both sides of the debate, 2) debate the topic in groups, and 3) write short essays defending their view on the topic. This format is intended to promote critical thinking through a continuous dialogue with the instructor and your peers.

Expectations

Attendance and participation - Because this is a discussion-intensive course, attendance and participation are mandatory. Any unexcused absence will result in a loss of course points. Late arrival (after 11:40) will count as an absence without reasonable explanation. As students, you will drive the atmosphere and direction of the course. Your participation is essential to creating a strong debate environment. Students are expected to arrive prepared for class (i.e. having read and mentally digested assigned readings).

Computers in class - Open computers are allowed for course work in class, for example, to reference reading material. Any instance of a computer in use for other purposes will count as an unexcused absence from class.

Conduct – Students are expected to adhere to the Dartmouth College Honor Code. All writing assignments (and the opinions formed therein) will be composed independently and not contain plagiarized statements in any form. *All written arguments gleaned from primary or secondary literature should be summarized in the student's own words and appropriately cited.*

Grading

60% - Short essays

20% - Final essay

20% - Group discussion engagement

Final essay - The final assignment for the class will be a 2000 word essay on a topic of your choice.

Short essays - Students will write a short essay (800 words) for each of the 5 main topics we cover in class.

Discussion engagement - A significant fraction of the course grade will be determined by your participation in class and group debates, including the effort you invest in finding good references for your debate arguments, and your clarity of presentation to the rest of class. Generally speaking, I am looking for whether you have thought carefully and critically about the material. **Active contribution to group discussion is very important.** Contributing once per class and then disengaging from the room during group discussion is not substantially different from an absence.

Debate groups will be assigned for each new topic. The class will work together after each topic reading set to agree on an important debate question within the topic. I will assign each group a side of the argument, and you will then assign each student in your group a sub-topic from your debate outline to research. You will have a full class period and your free time outside of class to outline your debate in groups. Each student will be responsible for bringing 3 literature citations from their research to class.

Late policy - Late assignments received within 24 hours of the due date/time will be eligible for 50% credit. Late assignments will not be accepted more than 24 hours after the due date/time.

Student needs

Students with disabilities who may need disability-related academic adjustments and services for this course are encouraged to see me privately as early in the term as possible. Students requiring disability-related academic adjustments and services must consult the Student Accessibility Services office (205 Collis Student Center, 646-9900, Student.Accessibility.Services@Dartmouth.edu). Once SAS has authorized services, students must show the originally signed SAS Services and Consent Form and/or a letter on SAS letterhead to their professor. As a first step, if students have questions about whether they qualify to receive academic adjustments and services, they should contact the SAS office. All inquiries and discussions will remain confidential. If you need to miss class for a religious observance, please contact me in advance to make the appropriate accommodations.

Additional support for your learning

The Student Center for Research, Writing, and Information Technology (RWiT) is a place where you can meet with an undergraduate tutor to discuss a paper, research project, or multi-media assignment. The RWiT tutors are trained to help you at any phase of your process. Whether you are brainstorming or planning, drafting or structuring, tweaking or polishing, the RWiT tutors can provide helpful feedback.

Academic Honor Principle

The Dartmouth College Student Handbook states “Fundamental to the principle of independent learning are the requirements of honesty and integrity in the performance of academic assignments, both in the classroom and outside. Dartmouth operates on the principle of academic honor, without proctoring of examinations. Students who submit work which is not their own or who commit other acts of academic dishonesty forfeit the opportunity to continue at Dartmouth.”

Sexual Misconduct and Title IX

At Dartmouth, we value integrity, responsibility, and respect for the rights and interests of others, all central to our Principles of Community. We are dedicated to establishing and maintaining a safe and inclusive campus where all have equal access to the educational and employment opportunities Dartmouth offers. We strive to promote an environment of sexual respect, safety, and well-being. In its policies and standards, Dartmouth demonstrates unequivocally that sexual assault, gender-based harassment, domestic violence, dating violence, and stalking are not tolerated in our community.

The Sexual Respect Website (sexual-respect.dartmouth.edu) at Dartmouth provides a wealth of information on your rights with regard to sexual respect and resources that are available to all in our community.

Please note that faculty members are obligated to share disclosures regarding conduct under Title IX with Dartmouth's Title IX Coordinator. Confidential resources are also available, and include licensed medical or counseling professionals (e.g., a licensed psychologist), staff members of organizations recognized as rape crisis centers under state law (such as WISE), and ordained clergy (see <https://sexual-respect.dartmouth.edu/reporting-support/all-resources/confidential-resources>). Should you have any questions, please feel free to contact Dartmouth's Title IX Coordinator (Kristi.Clemens@Dartmouth.edu) or Title IX Office (TitleIX@Dartmouth.edu).

Tentative Course Schedule:

| Date | Day | Topic/Activity | Assignment due in class |
|--|------------|--|---|
| 1-6 | Mon | Course introduction | N/A |
| 1-8 | Wed | Expectations for writing and discussion | N/A |
| 1-10 | Fri | 0. Scientific Process; Science in the Media | - Read papers under [Topic 0. Scientific Process], pdf files provided on Canvas |
| 1-13 | Mon | 1. Climate Change Intro | |
| 1-15 | Wed | - Discussion of assigned readings - Assign debate/sub-discussion topics | - Read papers under [Topic 1: Climate Change], pdf files provided on Canvas |
| 1-17 | Fri | Group presentation research and coordination | |
| 1-21, re-assigned to x-hours for MLK Jr. Day | Tues | Group debate/discussion | - Essay 1 due following day at midnight |
| 1-22 | Wed | 2. Genetic Modification Intro | |
| 1-24 | Fri | - Discussion of assigned readings - Assign debate/sub-discussion topics | - Read papers under [Topic 2: Genetic Modification], pdf files provided on Canvas |
| 1-27 | Mon | Group presentation research and coordination | |
| 1-29 | Wed | Group debate/discussion | - Essay 2 due following day at midnight |
| 1-31 | Fri | 3. Vaccination Intro | |
| 2-3 | Mon | - Discussion of assigned readings - Assign debate/sub-discussion topics | - Print out and read papers under [Topic 3: Stem Cell Research], pdf files provided on Canvas |
| 2-5 | Wed | Group presentation research and coordination | |

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| 2-7 | Fri | Group debate/discussion | - Essay 3 due following day at midnight |
| 2-10 | Mon | 4. Stem Cell Research | |
| 2-12 | Wed | - Discussion of assigned readings - Assign debate/sub-discussion topics | - Print out and read papers under [Topic 4: Human Evolution], pdf files provided on Canvas |
| 2-14 | Fri | Group presentation research and coordination | |
| 2-17 | Mon | Group debate/discussion | - Essay 4 due following day at midnight |
| 2-19 | Wed | 5. Antibiotic Resistance Intro | |
| 2-21 | Fri | - Discussion of assigned readings - Assign debate/sub-discussion topics | - Print out and read papers under [Topic 5: Vaccination], pdf files provided on Canvas |
| 2-24 | Mon | Group presentation research and coordination | |
| 2-26 | Wed | Group debate/discussion | - Essay 5 due following day at midnight |
| 2-28 | Fri | Pick and discuss final paper topics | - Bring a list of potential topics for final papers |
| 3-2 | Mon | Individual student meetings to review draft work for final paper | |
| 3-4 | Wed | Individual student meetings to review draft work for final paper | |
| 3-6 | Fri | Individual student meetings to review draft work for final paper | |

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Honesty is the foundation of the academic pursuit of knowledge. In recognition of this, the faculty and staff of Biology 7 will not overlook any violations of the Academic Honor Principle. Indeed, the Faculty Handbook of Dartmouth College states explicitly that College Faculty is obligated to report potential violations of the Academic Honor Principle to the Dartmouth College Committee on Standards.

NOTE:

Students with disabilities who are taking this course and may need disability-related classroom accommodations are encouraged to make an appointment to see Professor Guerinot as soon as possible.

We also encourage you to stop by the Academic Skills Center in Collis Center to register for support services.

We realize that some students may wish to take part in religious observances that fall during this academic term. Should you have a religious observance that conflicts with your participation in the course, please come speak with Professor Nadell before the end of the second week of the term to discuss appropriate accommodations.

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