

# Bioethics Debate and Case Studies in the Teaching Laboratory

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The cloning of human stem cells; a new prenatal diagnostic method; the safety of genetically modified foods—these are just a few of the topics considered by students in a sophomore level genetics and molecular biology laboratory at Purdue University. Students research bioethics topics and prepare case studies to debate. Presenting bioethics in the biology laboratory is important to show students applications and significance of exercises they do. Bioethics cases stimulate students' interest and help students develop critical thinking skills. We discussed how case studies can be developed. An overview of the literature on bioethics and case studies was given.

**Keywords:** bioethics, debate, student discussions, cloning, genetically modified organisms, critical thinking skills, ethical issues

## Introduction

The objectives of teaching bioethics include stimulating the imagination of students, helping students learn to recognize moral issues, helping students learn to analyze moral concepts and principles, and helping students recognize and learn to deal with moral ambiguity and disagreement.

The reference list of this paper lists a number of excellent sources for bioethical case studies, including those from Bioethics Research Library of Georgetown University, Bioethics Case Studies from Iowa State University, the National Institutes of Health case studies, and BioethicsBytes Multimedia Sources for Teaching Bioethics from the University of Leicester. BioethicsBytes include access to information

about the British Broadcasting Corporation (BBC) The Big Questions 2009 program. Episodes of The Big Questions cover a wide range of interesting topics including: Experiments on animals, Designer babies, Assisting the terminally ill to die, Issues about surrogacy, Should great apes have rights? Should disabilities be irradiated? Choosing our children, and In vitro fertilization: IVF A child against all odds.

Unless the college student had formal debate in high school, the student does not have prior experience with debate or with ethics. In the material for students, some sources for the students to delve into this further are given.

## Student Outline

This is the material that is given to students at the start of the course. When students have “down time” in lab—such as when they are waiting for a gel to run, they can work on their bioethics topics. The first lab class the students select a topic of interest from the following: stem cell research, genetically modified foods, human cloning, genetic screening, prenatal diagnosis, other specific topic of student’s choice that meets with instructor’s approval. Students are paired with other students, so that one student will present one side of an issue, another student the opposite side of an issue.

### Bioethics Debate and Paper

*Week X & Y Debate in lab section and Final Debate paper due in lab section*

The bioethics debate will be week X & Y of class. You will debate one side of the topic in your lab section. Be sure that you know who is debating with you or against you on which side of the topic.

The following bioethics paper will be due in you lab section in week Z.

**Note: The bioethics paper must be typed. The bioethics paper will not be returned to you, so if you want a copy, please make a copy to keep.**

### Format for Bioethics Paper Due week Z

1. You will indicate the question you debated, the stance (pro or con) you took.
2. Then in 2 to 4 typed pages, you will summarize your arguments. The type should be single-spaced, font times 12 point.
3. Then you will list the citations for the sources you used.
4. You will attach a photocopy the two articles you found most useful.
5. You will attach the bioethics questionnaire.

### References for Your Bioethics Debate

You must use a minimum of 5 current references (2009 or more recent; some exceptions may be appropriate for historical aspects of the topic.) These 5 references cannot be web sites. You may include interesting, useful web sites, but they must be in addition to the 5 published, refereed references.

### For an Overview of Ethics

Applied ethics: Internet Encyclopedia of Philosophy, James Fieser and Bradley Dowden, editors, <http://www.iep.utm.edu/e/ethics.htm>

Bioethics: Access Excellence Resource Center, <http://www.accessexcellence.org/RC/AB/IE/>

Introduction to Bioethics: Elias Baumgarten, <http://www-personal.umich.edu/~elias/full%20primer.htm>

A primer on normative ethical principles: <http://faculty.stedwards.edu/ursery/norm.htm>

Four Basic Principles of Biomedical Ethics: [http://www.uq.edu.au/oppe/PDFS/Ethics\\_primer.pdf](http://www.uq.edu.au/oppe/PDFS/Ethics_primer.pdf)

### Bioethics Questionnaire

Answer the following questions. Be sure to turn this in with your bioethics paper.

1. What data bases did you use to find papers on your topic?
2. What key words did you use for your searches?

3. Print out and attach the complete citations (including the data base used and the key words used for the searches) for 5 papers that were very useful for your case.
4. Do you know the rules of a formal debate?
5. Where did you learn about debate?
6. What do you know about the philosophy of ethics?
7. Where did you learn about the philosophy of ethics?

### Format for Bioethics Debates

The debate will consist of 2 teams, affirmative and negative, for each issue. Each team will have from 1-3 debaters. Each debater will deliver a prepared constructive speech and an extemporaneous rebuttal speech. The constructive speech should be between 2 and 3 minutes long. The rebuttal speech should be between 1 and 2 minutes long. After all the speeches are done, the remaining time will be allotted to the audience asking questions of the debaters.

### Speaking Schedule:

- #1 Affirmative Debater's Constructive Speech
- #2 Affirmative Debater's Constructive Speech
- #1 Negative Debater's Constructive Speech
- #2 Negative Debater's Constructive Speech
- #3 Affirmative Debater's Constructive Speech
- #3 Negative Debater's Constructive Speech
  
- #2 Negative Debater's Rebuttal Speech
- #2 Affirmative Debater's Rebuttal Speech
- #1 Negative Debater's Rebuttal Speech
- #1 Affirmative Debater's Rebuttal Speech
- #3 Negative Debater's Rebuttal Speech
- #3 Affirmative Debater's Rebuttal Speech
- \*\* Audience Questioning \*\***

### General Attitude of Participants

You may feel very strongly about some of the issues that we will discuss. Remember to treat all people with respect, even those who do not agree with your point of view. Remember to focus on facts, and logical statements following from facts.

**Enjoy!**

### Bioethics Debate Reference List

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- Willmott, C. and D. Willis. 2008. The increasing significance of ethics in the bioscience curriculum. *Journal Biological Education*, 42: 99-102.

### Web Sites

- Bioethical Decision-Making Model. (2005). University of Utah. <http://gslc.genetics.utah.edu/teachers>
- Iowa State University Case Studies for the Classroom [http://www.bioethics.iastate.edu/classroom/case\\_studies.html](http://www.bioethics.iastate.edu/classroom/case_studies.html)
- Bioethics and public since 1969 nonpartisan research institute <http://www.thehastingscenter.org/>
- 1992 Woodrow Wilson institute for high school curriculum <http://www.accessexcellence.org/AE/AEPC/WWC/1992/>
- NIH Sources tutorials and case studies <http://bioethics.od.nih.gov/>
- BioethicsBytes: Multimedia Sources for Teaching Bioethics University of Leicester Chris Willmott  
<http://bioethicsbytes.wordpress.com/about/>
- Bioethics in the Classroom <http://bioethicsbytes.wordpress.com/about/>
- Bioethics Research Library Georgetown University <http://bioethics.georgetown.edu/>

## About the Author

Susan Karcher is a professor in biological sciences at Purdue University where she teaches laboratories in genetics and molecular biology for sophomores and for seniors, and lectures on human genetics. Susan has been an active member of ABLE since 1992. She has presented major workshops, edited the ABLE proceedings, and hosted ABLE at Purdue in 1995 and in 2006.

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