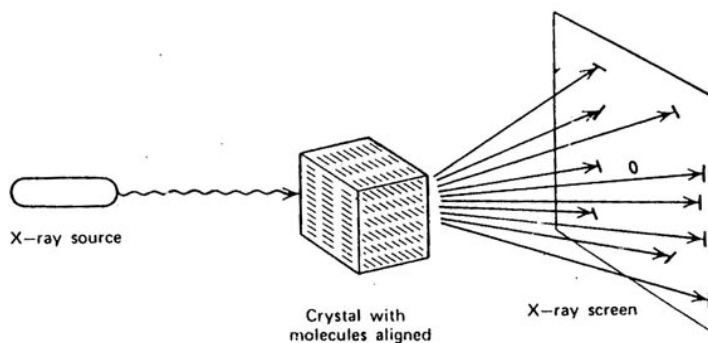


## Writing Assignments

Technology and Culture

Biotechnology and the  
Secret of Life

LBS 332



## The Assignments

You will write three papers.

The first two will revolve around a topic of current biotechnology policy chosen from the list below: a twelve- to fourteen-page (3,000 to 4000 word) research paper and a letter to a member of the U.S. Congress (500 words maximum).

The third paper is a five- to seven-page (1,250 to 1,750 word) book review.

## The Topics

Below is a list of twelve topics. Each has its own non-negotiable due dates for the three components of the assignment.

	<b>Research Paper</b>	<b>Letter to Congress</b>
Human embryonic stem cell research	February 19th	February 28th
Genetic privacy and nondiscrimination	February 26th	March 11th
Cloning	February 26th	March 11th
Human germline genetic engineering	March 18th	March 27th
Biodefense and bioterrorism	March 18th	March 27th
Gene therapy	March 25th	April 3rd
Biotechnology and biofuels	March 25th	April 3rd
Pandemic flu	April 1st	April 10th
Creation of synthetic life	April 8th	April 17th
Biotechnology and patent policy	April 8th	April 17th
The Bayh-Dole Act	April 15th	April 24th
The human tissues market	April 15th	April 24th

You must email me the topic you select by 5pm on Friday, January 25th.

### Creating your own topic

You are free to propose a biotechnology policy topic not on the list above. To do so, you must justify the new topic to me during my regular office hours or by appointment no later than January 22nd.

## **The Research Paper**

This is a standard college research paper. You will be evaluated on your ability to defend a coherent thesis with compelling evidence, logical analysis and clear writing. See the “Research Paper Criteria” handout for more information.

The paper *must* contain a central History, Philosophy and Sociology (HPS) component. This means that you need to address issues related to your topic beyond the technically scientific, such as historical development, philosophical underpinnings, political ramifications, public-policy significance, religious implications, etc.

### Narrowing your topic

A successful paper will narrow the topic down significantly. You will not be able to write a satisfying ten to twelve pages on any of the topics, broadly conceived. The first thing you must do is decide how to define the project more precisely.

Below are a few examples of how one could focus the broad topics above:

**Bad:** Cloning  
**Adequate:** Religious attitudes to cloning  
**Better:** The views of Pope John Paul II on human cloning

**Bad:** Cloning  
**Adequate:** Animal cloning  
**Better:** The public reaction to cloning Dolly, 1997-98

**Bad:** Cloning  
**Adequate:** Popular attitudes to cloning  
**Better:** Clones in movies and television

Inevitably, the broader your topic, the vaguer your paper. There are several advantages to narrowing your focus. It will make the process of selecting what to include in your paper easier, and the writing more manageable. You will have a better opportunity to express

your insights instead of falling back on generic arguments in order to cover impossibly broad terrain. The sharper the argument, the better. Reading an ill-defined paper is like ordering a beer and getting a pint glass full of foam.

### Thesis

A topic is not a thesis. A thesis is a specific argument made about a topic.

To write a successful paper, you *must* develop a thesis. The first step is reviewing what you know. When reading, look for interesting themes and issues, and *make notes as you go*. Your notes should resemble a tangled wad of string: all sorts of ideas, issues, perceptions jumbled loosely together. Your job is to untangle this muddle and pull out threads to work with. You do this by formulating a series of questions and problems to help you organize your notes.

You'll weave your threads together into a general proposition you'll discuss and prove. You enjoy wide latitude in constructing a thesis. What you do not want is a bland chronology or a pointless recitation of facts. A thesis statement must make a definite argument, one which answers a disputable question. Avoid a patently obvious thesis; papers which illustrate only an incredible grasp of the obvious tend not to be particularly successful. A good thesis is precise, focused and creative, something that demonstrates insight rather than merely regurgitates what you've read.

### Sources

Substantial original research is required for the research paper. No simple formula exists for what counts as adequate research—it depends on your topic and your approach. Your goal should be to find and use the best available sources to prove what you want to prove.

You will draw upon both primary and secondary sources. Primary sources are those produced during the period under investigation. Secondary sources are subsequent works of scholarship. Erwin Schrödinger's *What Is Life?* (1944) is a primary source. Robert Olby's *The Path to the Double Helix* (1974) is a secondary source. Some sources—like James Watson's *The Double Helix* (1968) can be either a secondary source or a primary source, depending on how they're used.

The most successful papers will make an original argument based on analyzing well chosen primary sources, rather than synthesizing the conclusions of other writers.

Sources like Wikipedia are almost never appropriate as a final source in a college-level research project.

Sandra Ordonez, a Wikipedia spokesperson, explains: "Wikipedia is the ideal place to start your research and get a global picture of a topic; however, it is not an authoritative source. In fact, we recommend that students check the facts they find in Wikipedia against other sources. Additionally, it is generally good research practice to cite an origi-

nal source when writing a paper, or completing an exam. It's usually not advisable, particularly at the university level, to cite an encyclopedia.”

I do not discourage you from turning to Wikipedia—it's wonderful for a quick-and-dirty overview of a topic and its entries routinely point to useful sources. But you should use it for preliminary background research and not as a final source of information. If something appears in a Wikipedia entry, it almost certainly appears in a more authoritative source.

Always think twice before you use *any* source—not just Wikipedia—in your paper. The better the sources, the better the paper. Research papers are never truly successful if they're written based on sources that happen to be handy. We'll talk further in class about what constitutes a good source for a given purpose. I'm also eager to address personally any questions you have about research.

### Format

The “scholarly apparatus” (notes and bibliography) provides the foundation for any piece of historical research. By meticulously and accurately citing information, you acknowledge intellectual debts and authenticate your evidence. The reader can track down your facts and ideas – sometimes to check up on you, but usually just to learn more.

You must follow a uniform citation style in order to achieve the overriding goals of consistency, intelligibility and appropriateness.

Consult the “Format Guidelines” handout.

*I will not accept any final draft that does not follow the format it sets out.* (This means, in effect, that you will have to resubmit a corrected draft and accept the late penalty). I will impose lesser penalties for sloppiness in format or clarity.

### Assigned length

The assigned page length for the research paper is more a general guideline than a strict requirement. I'm looking for a certain scope of analysis and density of supporting detail that is appropriate to a twelve- to fourteen-page paper. When grading a research paper I rarely notice its length—unless it is factually thin or analytically underdeveloped. But the problem is its thinness and lack of development, not the fact that it fell short of the assigned length. Your overriding goal is to write the best paper you can; inevitably the length will take care of itself. The last thing you want to do is pad a paper with verbiage or irrelevancy to drag it to the assigned length.

## **The Letter to a Member of Congress**

You will write a letter to a member of Congress requesting action on a scientific policy issue related to your broad topic (but not necessarily your research paper). The member

should represent the state or district where you are registered to vote (or live, if not registered). For example, if you are registered in East Lansing, you would write to: Sen. Carl Levin (D-MI), Sen. Debbie Stabenow (D-MI) or Congressman Mike Rogers (R-MI-8).

For this component of the assignment, length does matter. The text of the letter (excluding addresses, salutations, etc.) *must not exceed 500 words*. This means you need to set out your points in a highly disciplined as well as clearly written manner.

The letter should set out the importance of your issue and specific action you would like to see on it. Frame the discussion in rational and factual terms; don't be overly personal or emotional. Cite a specific bill under consideration, when appropriate. For example, if you're writing on gene patents, you should refer to the Patent Reform Act of 2007 (H.R.1908 and S.1145).

Above all, be concise but informative, polite and constructive.

(It's up to you whether you actually mail the letter).

## **The Book Review**

You will review one or more of the books assigned in this class—Daniel Charles's *Lords of the Harvest*, Stephen Hall's *Merchants of Immortality* and Michael Crichton's *Next*. The review does not have to be connected to the broad topic of your research paper and letter to a member of Congress.

This is not a book report: you will advance an argument and provide critical evaluation, rather than merely describe contents of the book(s). The majority of the review therefore will explain how convincing you found the book's argument and what contribution you think it makes to understanding key issues in the twentieth-century biology and biotechnology.

The book report is due on April 22nd.

## **Deadlines and late penalties**

Your grade on the paper will be docked fifteen points if handed in late. You must hand in all papers within two weeks of the original due date or you will fail the project—and therefore the course—automatically.

Sometimes, emergencies make it impossible to meet a deadline. If such a situation develops, contact me immediately. Documentation (of serious illness, family crisis, etc.) will be required for any extension.

Your paper will be docked 5 points if you forget to submit it to turnitin.com (if you're using that service) or email it to me as an attachment (if you're not) before the class period in which it is due. I will not record a grade for a paper until it has been submitted to turnitin.com or submitted to me electronically. See the "Turnitin.com" handout for more information.

### **Consultation**

I encourage you to discuss every aspect of the writing and research process with me—particularly the narrowing of your research-paper topic. I'm happy to read rough drafts.