

**Special Topics in Biological Sciences: Genetically Modified Organisms**  
**Fall 2007**

**Instructions for Development of Term Paper Topic and a Reference List**  
**40 points**

**I. Background Information About Your Term Paper**

Type of Paper A review paper is best suited to the term paper for this course. What is a review paper? A review paper synthesizes published research, rather than reports original findings. A review paper is not merely a "book report" --- a summary of the references. Instead, it demonstrates critical thought independent of what has already been said in the references.

There are several types of review papers. Pechenik (Chapter 8) also provides discussion of review papers. Three types of reviews are most easily adapted to this assignment are described here:

- A *state-of-the-art review* presents an up-to-date, interpretive synthesis of our knowledge of a subject or issue, emphasizing recent literature.
- A *comparison of perspectives review* critically examines two or more ways of see an issue
- A *synthesis of two fields review* provides new insights to one field of study by examining literature from another field of study.

Length of Text Your term paper will be 8 - 10 pages in length, not including the title page, references, or any tables or figures.

Audience You should write your paper to an audience of educated, scientifically literate professionals or students. (What is scientific literacy?) Consider yourself to be on equal ground to this audience, so that you are writing from a position of power.

Do not write your paper to the instructor or to experts in the field of genetic engineering. Why? It is unnatural to write an explanatory paper to a more educated audience.

Scope of Topic Your topic must meet the following criteria:

- It addresses one or more types of application of genetically modified organisms
- It addresses the risks and benefits of the application(s)
- It is neither too broad or narrow in scope

A major pitfall is choosing a topic of the wrong scope. Choose a topic that is an appropriate scope for an 8-10 page paper. A topic such as "The ethics of using genetic engineering" or "Genetically engineered livestock" are far too broad. On the other hand, a topic such as "The genetic engineering of dandelions (*Taraxacum officinale*) to have blue flowers" or "The ethics of genetically engineered luminescent tobacco (*Nicotiana tabacum*) are probably too narrow. Why does it matter whether your paper has a reasonable scope?

## How can you get ideas for a topic?

Write suggestions here:

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## **II. Your Topic and References**

Title and Topic Description The title for your paper should be both concise and informative. Readers can be confused by wordy or vague titles. Some other common problems in titles are listed on the last page of this handout, "A Key to Numbered Comments".

Write a half page summary of the scope and purposes of the paper. Your summary should make it apparent how you will address the risks and benefits of one or more GM application. Proofread your description for clear expression and grammatical errors.

References Using both the Campbell Library and WWW, locate references related to your topic. You need not find every reference you will ultimately use, but you do need to get a good start. Prepare a reference list (bibliography) that fits the following criteria:

- The reference list includes at 10 - 15 references
- One or more references are from the course reserve in the Campbell Library
- Two or more references are from printed materials in the Campbell Library that are not on course reserve
- Three or more references are from the world wide web (WWW)
- Ten references are peer-reviewed
- If the source is from a database via the WWW, the entire reference must be available (an abstract is not acceptable)
- References are not outdated (note the field of biotechnology has changed rapidly)
- References directly relate to your topic
- All citations are complete (see below)

Are links on the web peer-reviewed literature? It depends, but many links certainly are not. Articles or similar works electronically published by professional journals generally are peer-reviewed. You can generally expect that most links electronically published in commercial domains (.com) are not peer reviewed. Nor are most course web pages posted by educators, although some .edu domains may be reliable. It is important to be skeptical. Some questions you should ask include:

- What is the domain? What does it imply about the reliability of the posted information?
- Who wrote the information, and what is their professional affiliation?  
(Is the author a true authority on the subject, or relying on someone else's expertise?)
- Is there any evidence that the work has been evaluated or sponsored by a third party? Is the third party trustworthy and competent?

- Is the information carefully proofread and is the expression clear? (Beware of sloppy use of language, which calls into question accuracy of the information and whether it has been peer-reviewed)
- Is the web publication also available in print? (Many peer-reviewed professional journals have articles that are posted as .pdf files.)

For more discussion about evaluating the web, see Pechenik, p. 26.

### What is a complete citation?

If the reference is book or periodical article, it must include the author, date of publication and title. Periodical articles also include the periodical title, the volume or issue number and page numbers. Books must include the publisher. For example:

Plant, Ima. 1999. The origin of maize. *Scientific American* 47:121-134. [periodical article]

Plant, Ima. 1999. The origin of maize. Ten Speed Press, Berkeley, CA. [book]

Plant, Ima. 1999. The origin of maize. Pp. 121-134 in Anna People (ed.), *How We Use Plants*. Rowan University Press, Glassboro.  
[chapter or article from an edited book]

Note: the [bracketed] descriptions above do not belong in a complete citation; they are shown above to identify the type of publication.

Note: citations from library database searches are usually incomplete or incorrectly organized. You must not assume that they can be copied as in into your reference list.

If the reference is a world wide web address, it should at least include the author's name or the name of the organization, URL address (the "http:" address) and the date of access (in addition to posting) of the material. Please note that you should cite the home page that is *directly responsible* for posting the material used as a reference: do not cite a link from an outside website as a reference. For example:

Anonymous. 2004. The origin of maize. [www.storyofcorn.edu/origin.htm](http://www.storyofcorn.edu/origin.htm)  
January 16, 2006.

There is additional discussion of correct citation formats in Pechenik, pp. 76-82. Two commonly used citation formats that differ only slightly from the examples above are the CSE style, and the APA style. You may use one of these if you are familiar with them, or adopt the style described above or in Pechenik. Whichever you choose, be consistent.

Examples of common errors in the Reference section are listed in "A Key to Numbered Comments", on the last page of this handout.

### **III. Due September 18:**

- **Two printed copies** of your term paper proposal. The proposal includes both: 1) a concise title; and 2) a half page summary of the scope and purpose of the paper.
- **Two printed copies** of your reference list, including **complete citations** for **all** references. Clearly indicate which references are peer-reviewed references.

This page and the follow page are the evaluation sheets that the instructor will use. They are included here as a reference.

## Special Topics in Biological Sciences

### Evaluation of Topic and Bibliography 40 points

Name: \_\_\_\_\_

Title and Topic Description (20 points) \_\_\_\_\_

- Title is concise and informative
- Addresses risks and benefits of one or more GM application
- Scope of paper is clearly described
- Purpose of paper is clearly described
- Proofread for grammatical errors

Reference List (20) \_\_\_\_\_

- correctly cited
- consistent citation format
- arranged alphabetically by first author's last name
- sufficient number (at least 10)
- at least ten peer-reviewed references (these clearly marked with an asterisk \*)
- at least three WWW references
- one or more from course reserve
- two or more from other printed materials in the Campbell Library
- appropriate for your project
- not outdated

Correct number of copies (5 point penalty) \_\_\_\_\_

Late penalty (5 points deducted per day) \_\_\_\_\_

Total: \_\_\_\_\_

Your topic is:            approved                            not approved

**IMPORTANT:** If your topic has not been approved, a score of zero will be entered for this assignment until you complete the requested work. If your term paper is based on a topic that is not approved, the paper will also receive a score of zero.

Comments:

## **A Key to Numbered Comments**

(These are examples of common errors)

### **Title**

1. *Italicize* Latin names of species
2. Identify the organism(s) that are considered, unless it is obvious
3. Name the specific application of the GMO, or the trait of the GMO that is modified
4. If your paper focuses on issues, say so in the title
5. Put the most important aspect of your topic at the beginning of the title
6. Write concisely (including no commas)

### **Topic Description**

7. Don't restate the title
8. Proofread for spelling and punctuation
9. Run-on sentence
10. Sentence fragment
11. Use verb tenses correctly
12. Use singular and plural forms correctly
13. Colloquialism (should be avoided): use a more formal style
14. Repeats what has already been said
15. Expression should be direct and concise
16. Organize writing logically
17. Imprecise language
18. *Italicize* Latin words, including names of species

### **Reference List**

19. Write out all authors in the References (use *et al.* only in the text of the paper)
20. If the author is unknown, use Anonymous
21. List the last name first of the first author
22. Use the same format for first names in all of the references
23. Sort the reference list by first authors' last names
24. Indent the second and following lines of each reference citation
25. Indent each citation in the same way
26. Cite volume and page numbers of periodical articles
27. The type of reference (book, periodical, *etc.*) should not be included in reference citations
28. Proofread carefully for spacing, punctuation and format
29. Use the same format for each type of reference (journal articles have the same format)
30. *Italicize* Latin words, including names of species