

## BIOL 1406 — LIBRARY ASSIGNMENTS

The ability to read and then summarize technical information is an essential skill for a student seeking an education in science. The ability to use the library and the Internet to find information is another critical skill. Therefore, you will be given several library and writing assignments to learn these skills. Your total score on these exercises will comprise one-sixth (100 out of 600 total points) of your grade. You will be graded on the use of proper format (following the instructions given), grammar (including spelling) and the overall quality of your writing. The grading will become stricter as the semester progresses, so you are to learn from your mistakes.

You are not expected to grasp every detail in the articles, so please do not feel intimidated if the reading is difficult. Science has its own vocabulary that is learned only from experience. These assignments are designed to help you gain some experience. You are encouraged to discuss your assignments with fellow students. However, each student must turn in his/her own work. Students working together should not choose the same articles.

All papers **MUST** be turned in by the deadline and are due at class time! There is a TWO point penalty for each day an assignment is late (*weekend days included*). Papers may be turned in early. All papers must be **TYPED** and multiple pages stapled together (do NOT place papers in a folder). For each assignment, your name, section and the date should be placed in the upper right hand corner. Most of the assignments have numbered parts, please number the answers in your paper to make it obvious what part of the assignment you are addressing. You are not restricted to the SPC library. Feel free to explore the holdings at Texas Tech and other libraries.

<b>DUE DATES:</b>	<b>ASSIGNMENT #1</b>	<b>MW class Sept. 17</b>	<b>TR class Sept. 18</b>
	<b>ASSIGNMENT #2</b>	<b>MW class Oct. 8</b>	<b>TR class Oct. 9</b>
	<b>ASSIGNMENT #3</b>	<b>MW class Oct. 29</b>	<b>TR class Oct. 30</b>
	<b>ASSIGNMENT #4</b>	<b>MW class Nov. 12</b>	<b>TR class Nov. 13</b>
	<b>ASSIGNMENT #5</b>	<b>MW class Dec. 10</b>	<b>TR class Dec. 11</b>

### **ASSIGNMENT #1 – 10 points**

**Objective:** To explore the scope of biology

Biology is the study of living organisms and includes many areas of study. List and define the names of fifteen sub-disciplines of biology (*excluding* botany, zoology and microbiology – these were given during class). For example, what is the study of reptiles? Of fungi? DO NOT include any disciplines that do not pertain to living organisms.

#### **Format for all citations (scientific style):**

- Citations are single-spaced.
- First line of citation is flush with left margin; then all remaining lines are indented five spaces or half-inch.
- Note the correct punctuation and sequence of information.
- Author names are given Last Name first with initials following (no comma or periods).
- No abbreviations or symbols are used for page numbers, volume or issue numbers.
- No italics for publication names or quotations marks around titles.

### **ASSIGNMENT #2 – 30 points (note – two parts due together!)**

**Objectives:** To have student compare the content and quality of articles found in peer-reviewed journals with those articles found in general publications that are not peer-reviewed. To have student learn the proper format for writing citations in the scientific style (CBE Name-Year format).

**Part One:** Find an article from a peer-reviewed journal that describes a scientific experiment and includes the following sections: Title, Abstract, Introduction, Materials & Methods, Results, Conclusions (or Discussion),

and Literature (References) Cited. Answer the following questions about the article. (NOTE: this assignment deals with the TYPE of information, not the specific details of the article)

1. Give the reference for the article in the proper format as example given. Also note format information given in the box above.
2. What type of information does the abstract contain? (Not the specific information given for this article, but the general kind of information given.)
3. How detailed is the Materials and Methods section? Do you think you could repeat the experiment with the information given, if you had the proper equipment and experience?
4. Did the author(s) use any type of visual aids in presenting the results (graphs, tables, etc.)? If so, what did they use and were they easy to understand?
5. Did the author(s) make obvious what hypothesis was being tested? Do they clearly state in the discussion section whether or not the hypothesis was supported? Do they make any recommendations for future experiments?
6. Does the references cited section follow exactly the same format as you were given in part one of this exercise? If not, give one example to show how it is different.

**Citation Format (scientific style) – Scholarly Journal:**

Author(s) name. Year of publication. Title of article. Journal name. Volume number (issue number optional): page numbers of article.

Green JS, Knowlton FF, Pitt WC. 2002. Reproduction in captive wild-caught coyotes (*Canis latrans*). Journal of Mammalogy. 83(2):501-504.

**Part Two:** Find an article from a magazine that is not peer-reviewed that makes some type of health claim – examples: extolling the virtues of large doses of a vitamin, a herbal medicine, quick weight-loss, or recommends some exotic form of alternative medicine. Any newsstand contains magazines with such articles. Answer the following questions:

1. Cite the reference using the format given – see examples below for periodical or database. Again, use all the proper style format given in box on first page.
2. Are the credentials of the author(s) evident? If so, what are they?
3. Is there a clearly stated hypothesis? If so, what is it?
4. Is there an experimental design (materials & methods) given? Could you repeat the work in your lab?
5. Were any experiments done, or is most of the evidence anecdotal?
6. Are the conclusions reached by the author(s) supported by a substantial evidence?
7. Are there any references citing work done in peer-reviewed journals, or do they primarily cite their own writings?
8. What is your overall impression of the article? How does the “science” compare to that contained in a peer-reviewed journal?

**Citation Format (scientific style) – Monthly Periodical:**

Author(s) name. Year Month of publication. Title of article. Journal name; Volume (issue number-*required*): page numbers of the article.

Fox C. 2001 June. Why Stem Cells will Transform Medicine. Fortune; 143(12):158-160.

**Article from Database:**

Author(s) name. Year of publication. Title of article. Journal name. Volume (issue optional): page numbers. [database retrieved from – Accessed DATE or Article/Accession Number].

Yost AC, Wright RG. 2001. Moose, Caribou, and Grizzly Bear Distribution in Relation to Road Traffic in Denali National Park, Alaska. Arctic; 54(1):41-46. [Expanded Academic ASAP – Article A76558504].

### **ASSIGNMENT #3 – 20 points**

**Objective:** To have student explore the Internet on a specific topic and assess whether the information given is of scientific value.

This assignment requires accessing the Internet on a specific biology topic of your choice. If you do not have access from another source, you may use the computers in the SPC library. (If you have no experience using the Internet and need help getting started, see your instructor or the assistants in the Learning Center.)

1. Select a single topic pertaining to biology, medicine, a particular animal/plant or a related field.
2. Using any search engine, find, visit and list 10 web sites (name & complete URL address) that provide information on your topic in which you would have reasonable confidence. List the name and URL address for each web site (you *do not* have to write a citation for each!). In general, what makes you confident about these sites? (you *do not* need to give a reason for each site)
3. Find, visit and list 5 web sites that provide information that you would be leery about accepting. What makes you have little confidence in these sites?
4. What search engine(s) did you use? (Yahoo, Lycos, HotBot, etc.)

### **ASSIGNMENT #4 – 20 points**

**Objective:** To have student read and understand an article pertaining to a topic in biology.

Find an article (of at least four pages) from a peer-reviewed journal that covers a topic in biology or a related biological field. Read and give a summary of the article.

1. Give the reference in the proper format.
2. In 3-4 paragraphs, describe the specifics of the article including background information, design of experiment (if appropriate), and results.
3. What conclusions do the authors make? Do you think the conclusions are justified, based on the results reported in the article?
4. List and give the definition for at least five terms from the article that were unfamiliar to you.

### **ASSIGNMENT #5 – 20 points**

**Objective:** To have student read and understand an article pertaining to a general topic of biology.

Find an article focusing on an overview of a current topic in science that has been published since 1997 from a respected science magazine. Suggested magazines would include *Scientific American*, *Natural History* or *Smithsonian*. The original research may or may not have been done by the author(s) themselves, although often these types of articles are written by researchers in the field and so they include their own contributions. Pick a topic concerning the life sciences; such as gene therapy, cell structure and function, human evolution, human genome project, etc. Obtain approval of the topic and magazine from your instructor before you begin.

1. Citation of article used.
2. How does the format of this article differ from the peer-reviewed journal articles you previously have read?
3. Write a 1-2 page summary of the article, including the following information:
  - a. State the general topic being reviewed.
  - b. The history of the topic as given in the article.
  - c. A summation of what you learned from the article.
  - d. What work is still being investigated?
  - e. Find one of the articles cited in the reference section and read it. Was the work in this article accurately portrayed in your original article? Why or why not?