Biology 1110 Library and Writing Assignment: Science in the News

PART I due: Friday Oct 6 at the beginning of class (2:30 p.m.) for Section 03
PART II due: Monday Nov. 6 at the beginning of class (12:30 p.m.) for Section 03

Science and technology are some of the primary sources of changes, challenges and controversies in our society. As you would expect for such an important area of human endeavour, the news media cover important scientific stories. Most issues of both print and broadcast news will carry at least one story on some aspect of science: a new disease or a new treatment, worries or hopes for biotechnology, ecological problems, advances in genetics, etc.

These stories are usually triggered by publication of a paper in a peer-reviewed scientific journal (the primary literature), where scientists publish their research. Since these papers are usually written and read by scientists, they can be rather technical in nature. A journalist will attempt to summarize these papers into a news story that will be more accessible to the average reader. As well as reading the scientific paper, the journalist will often interview the author or authors, and other experts in the field, to get their comments on the story. Although much science reporting is well done, some of it is quite poor, showing misunderstanding of the research, exaggerating risks or potentials, or focusing on some trivial aspect of the research to make the story “sexier”.

For this assignment, you are to find a recent (2017) newspaper or popular press story/article (not from a science newswire service/scientific magazine) that describes a scientific study published in 2017 or 2016 and assess how well you think it does this. To do this assignment, you will have to follow these four steps:

1. Find a science story that interests you in the generic popular press (e.g., in a newspaper, generic magazine or generic web-based e-news site like the CBC or BBC) that was publicized in 2017. Please do not use a news service for science specialists (e.g., do NOT use “Science Daily”), nor science magazines such as Discover or Scientific American, as these are not truly “popular” or generic press. The TRU library subscribes to several daily newspapers that are potential sources of articles. The Library also subscribes to the Canadian Newsstand Article Database, which allows you to search most major Canadian newspapers and smaller BC papers at once. We have also gathered a collection of stories written over the last year (available in the first year lab, S360) from which you may choose. Make sure that the story is based on a published scientific paper and that it gives you some clues about where to find the scientific paper/article. (If you can’t find the scientific paper, you will have to start again, with a new story).

2. Next, you will have to identify the peer-reviewed 2017 (or 2016) scientific paper/article on which the newspaper story is based. In rare cases, this will be relatively easy; in some newspaper stories, the journalist actually gives the citation (sometimes called the “reference”) for the scientific paper he or she is summarizing. (The citation for a paper tells you where to find it; it includes the author[s] of the scientific paper, the name of the journal it was published in, the date it was published, and the page numbers on which it is found). Usually, this task will be a bit more challenging: the journalist may only give tantalizing clues! He or she may mention the author or authors of the scientific paper and/or the journal that it is published in, and may say something like “published last week,” but will not give you ALL the information you need to find the scientific paper (i.e., not the complete citation). Typically, you will have to use your powers of deduction (and the online databases in the library) to find the full citation for the scientific paper.

3. Once you have the citation, you will have to actually retrieve the scientific paper itself (acquire a printout or photocopy). Many of these papers are published in scientific journals that the TRU Library has electronic subscriptions to; you’ll be able to find and download these articles using the Library’s Discovery Service and Article Databases. Occasionally, these papers can be found in the TRU Library, that is, TRU subscribes to the print version of the journal, and you can find the journal on the shelves. Science “Periodicals” are journals and magazines that are arranged in alphabetical order in the House of Learning library. Finally, in some cases, you will have to request a copy of the scientific paper through interlibrary loan. This can take a few days, so be sure not to leave this assignment to the last minute. Being able to use the article databases and other tools offered in the library are skills you would be wise to develop as soon as possible in your university career, since you will need them often.
4. Finally, you need to read your scientific paper and the popular press story carefully, reflect on them, and do some writing. Think about the following questions:

- What question is the scientific paper trying to answer, or what hypothesis is it addressing?
- How do the authors attempt to answer the question or test the hypothesis?
- What aspects of the scientific method have they employed?
- Are there any flaws in their use of the scientific method?
- What were the general results of the study and how did these results address the question or hypothesis?
- In your view, is the news story a good summary of the scientific study?
- Does it describe the most important conclusions of the paper or does it focus on less important aspects?
- Did the journalist appear to understand the science involved or was it misinterpreted?
- Did he or she explain the science adequately?

Include each question followed by its answer in your submission. Your comments should include the important details accompanied by their explanation. This way, we will have no doubt about your understanding.

The written part of your project should consist of no less than 250 and no more than 500 words (i.e. 2 pages, which should be typed and double spaced).

We have posted an example from last year to help you out with writing style, formatting and general presentation.

What constitutes an acceptable peer-reviewed scientific paper/article for this assignment?

First, some terminology. A journal is a scientific publication for the dissemination of research results. The term “journal” can refer to an individual issue (rather like a magazine) or to the whole collection of individual issues. An article or “paper” is an individual contribution (just like in a magazine) reporting on a specific experiment or set of experiments carried out by a researcher or a research group. Part of what makes a scientific journal different from other publications is the process of peer review. What does that mean?

You do your experiments, analyse the data and write a paper on what you’ve found. There’s usually a very specific format that is followed, which varies somewhat from discipline to discipline. You show your methods in detail, your results, your analysis and your conclusions. Any statements you make about assumptions based on the work of others is referenced so the reader can check your facts and assertions.

You then submit it to the editor of the journal. The editor will decide if the paper is appropriate for the journal and sends it to two or three independent reviewers. These will be scientists working in that field and who are intimately familiar with the subject material (and are thus considered to be “peers” of the author). They will review the manuscript and make a recommendation whether the article is suitable for publication or if the authors need to do more work to properly test their hypothesis. The reviewers have the last word.

In order to keep the system fair, the reviewers are anonymous. That way they can criticize a colleague without fear of social problems. They do this work voluntarily, as part of their duty to the scientific community. After all, someone else will have to review their papers. If the two reviewers disagree, then it may be sent out for further review. Once the reviewers are satisfied, the paper can be published. Peer-reviewed articles often list references at the end, have standard parts like “Introduction” and “Methods”, and have an Editor.

The kind of article described above is the kind of scientific paper/article you will need to find for this assignment. There are many other kinds of scientific publications that are not peer reviewed. These are not acceptable for this assignment.

Unacceptable sources for the ‘primary’ scientific papers are:

- Popular science magazines like Scientific American, New Scientist, Popular Science, Psychology Today, Discover, etc. are not acceptable for this assignment as the primary scientific paper, as they are not peer reviewed! (They are also not acceptable as popular press stories, either, as they are not generic!).
- Letters to scientific journals. These often look like scientific papers, but will be under the heading Letters or Communications. Too brief for what we are doing here, and are not peer reviewed!
- Review articles. These articles are summaries of the recent work in a particular field, usually written by an expert in the field. These are extremely valuable for other scientists to keep up with developments in an area, but don’t describe original work done by the author. Won’t work for this project!
- Science news items. Journals such as Science and Nature have news services and put out releases describing upcoming articles in their respective journals. These help draw the attention of journalists to new discoveries, but aren’t a complete reporting of the experimental work. Not good for this assignment!
We have split the assignment into two parts to “inspire” you to do the library work in time.
For PART I, worth 2% of your final grade (due Fri. Oct. 6, 2017), you need to turn in:

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<th>a) The popular press story (i.e., newspaper or newsmagazine story) you have found (in original or photocopied form). <strong>Remember, your popular press story must have been published in 2017.</strong></th>
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<td>b) A copy of the scientific paper (published in 2016 or 2017) that the story described in (a) is based on, or at least the first two pages of this paper (but not just the Abstract). You must read the entire original paper.</td>
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<td>c) References for both the popular press story/article and the scientific paper/article on a separate page titled “References”. Look at the TRU Library’s web page <a href="http://www.tru.ca/library/pdf/csecitationstyle.pdf">http://www.tru.ca/library/pdf/csecitationstyle.pdf</a> to learn how to list references (this document has also been posted in Moodle). In biology, we use the “Council of Science Editors” (CSE) “Name-Year” style. The popular press story reference should encompass the information someone would need to find both the newspaper story for themselves: headline or title, author (if given) newspaper or magazine name, date, page number if possible. The scientific paper reference should list the author(s), year of publication, title of the article, journal title, volume number, and page numbers.</td>
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<td>- <strong>If you do not turn your popular story article, scientific paper, and References in on Fri. Oct. 6, 2017 at the beginning of class, you will give up 2% of your final grade. There will be no opportunity to make up this 2%. In addition, by turning these in on time, you can be assured that they will be checked to see if they match so that you do not mess up Part II!!</strong></td>
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For PART II, worth 3% of your final grade (due Monday Nov. 6, 2017), you need to turn in:

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<th>Parts a), b) and c) from Part I (CORRECTED), and...</th>
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<td>d) <strong>Your comments</strong> on how the scientific method has been applied in the scientific study and how well the popular story/article summarizes the scientific one. Use the questions on the previous page (heading 4.) as headings and re-write the question followed by your answer. <strong>If you take information from either source and use them directly in your comments, you must cite the source in the text of your comments.</strong> Use CSE “Name-Year” style [PDF posted on Moodle]. Again, see <a href="http://www.tru.ca/library/pdf/csecitationstyle.pdf">http://www.tru.ca/library/pdf/csecitationstyle.pdf</a> to find out how to do this.</td>
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Remember that this assignment must be typed or printed from a computer. It will be worth a total of 5% of your grade in this course. You will be graded on the degree to which you follow these instructions, the quality of your writing and thoroughness of your discussion. **If you are late turning in Part II, you will lose 1% (from 3%) for each business “day” (24 hour period) past the beginning of class on Monday November 6.** That is, if Part II is more than 3 business days late, it will earn 0/3!

**A word about plagiarism**
You are all aware that you cannot use someone else's words or ideas and claim them as your own. However, many people are unaware that it is not enough to substitute a few different words, or change the order of a few sentences or words in a paragraph. Even when you are summarizing someone else's work, and clearly referencing your source, you must express your ideas in your own words. This can be difficult, but the better you understand the material you are dealing with, the easier it becomes. **Please read the material on plagiarism in your Lab Manual (or Moodle) carefully and use it to develop good writing habits.** Producing truly original work can be challenging, but you will find that by doing so, you get more out of your assignments, and are better prepared for exams.

**Library orientation sessions: “BIOL 1110 Library Survival”**
The library staff has kindly offered to provide assignment orientation sessions for you! Please go to [http://tru.ca.libcal.com/events](http://tru.ca.libcal.com/events) to register for a session (offered most weekdays starting Sept 19). This link has been placed in Moodle for you under “Library Assignment”. But please – do not ask the librarians to do the searching for you; their jobs are to help you to become more efficient and successful researchers yourselves, and what you learn completing this assignment will be of use in all future research assignments you do. 😊
Hints and Guidelines for the Biol 1110 Library Assignment

A few hints to ease your way through the Library Assignment. First, please include an introduction that explains what you are writing about. For example, “In this paper I will be comparing the scientific paper “The effect of global warming on 7-toed Peruvian wombats” published by J.P. Diblesworth in Science 55: 378-399 (2012) with the account of this research by Ima Doofus published in Scandalous Tabloid News on February 31, 2017.” This way the reader has some context for what follows, rather than just launching into a comparison before the reader knows what you’re comparing.

For your popular press article, make sure it really is a popular press article. General interest publications like Time, Macleans, Newsweek, cbc.ca, Wired News, etc. are good sources. Specialist publications like Scientific American, New Scientist, Nature Science News are not. Make sure your popular press article refers to a specific research publication. If it is a general survey of a topic, you won’t be able to find the research publication it refers to. If in doubt, ask your professor or a TRU librarian.

For your scientific article, be sure it is a research report and is peer-reviewed. Do not use Letters, Brief Reports, News, Announcements or Review papers. Your paper should include a detailed description of the work being reported. If it lacks that, it probably isn’t a research paper. If in doubt, ask me or a TRU librarian.

Include the complete citations for your two articles at the end of the assignment in your reference list.

For the scientific paper, use the following format (CSE Name/year style):
-the in-text citation for this reference is: (Author et al. 2012).

For the popular press article, use this format:

Be careful to use technical terms correctly. Always italicize genus/species names, with the genus capitalized and the species lower case (e.g., Allium sativa).

When you use a Latin expression or abbreviation, italicize it. For example, et al. Be aware that et al. is an abbreviation for et alia, so there must be a period after the al. You can use et al. in the text (e.g., Author et al. 2012), but in your references always write out the complete list of authors.

The TRU Library workshops “BIOL 1110 Library Survival” are specifically designed to help you with this assignment and are highly recommended. By attending one of these sessions, you can probably come away with the first part of the assignment completed!