

VIBS 310—Biomedical Writing

Annotated Reading List for Spring 2019

Compared to other writing classes I teach, the assigned read for VIBS 310 is light. I structure it this way because, as part of their capstone project, students engage on their own with a lot of primary literature as they research their topics, and that's the kind of writing I want them, for the most part, to emulate.

That said, I do have students do some reading, some of it assigned to be read before coming to class, and some if it reading to be done as part of group activities in class. Below are the things I have students read, when I have them read them, and the rationale for each piece.

Week 2 (2019-01-22)

Students are expected to read the following primer before coming to class.

Hartberg Y. Writing Abstracts. Texas A&M University; 2017.

<http://hdl.handle.net/1969.1/175370>

This is a short primer I wrote as part of my manuals for biochemistry labs years ago. In it, I describe what abstracts are, why they're important, and how they're written. Having students read this before coming to class the second week helps set the stage for my lecture on this topic in preparation for their first writing project, which is to craft an abstract from a published article. For an example of my writing prompt for this assignment, see <http://hdl.handle.net/1969.1/175371>.

Week 3 (2019-01-29)

Students are supposed to read both of the following pieces before coming to class.

Rosenthal E. The Forgotten Female. In: Anton T, McCourt R, eds. *The New Science Journalists*. New York: Ballentine Books; 1995:297-310.

This is an engaging tale about a primatologist, Barbara Smuts, who studies the role of female mate choice in evolution. I've chosen it as a means to introduce my technical writing students to the structure of story. "The Forgotten Female" has a sympathetic character, Barbara Smuts, who encounters a clear complication (no one at the time knew much about female mate choice and the role it plays in evolution), and, through action, overcomes a series of obstacles, both practical and scientific, in order to resolve the complication (she discovers many important roles of female mate choice that the scientific work knew nothing about prior to her research).

After a discussion about how this piece reflects the structure of story, I segue into the next reading below.

Gastel B, Day RA. What Is a Scientific Paper? *How to Write and Publish a Scientific Paper*. Eighth ed. Santa Barbara, CA: Greenwood; 2016:18-23.

As the title suggests, this book chapter introduces students to the genre of primary research articles. It's exceptionally clear, with a focus on the structure of scientific papers. After a group discussion of the structure of scientific papers, I return to the structure of story, explaining that scientific papers are just elaborate stories that scientists share with one another. The introduction section of a journal article introduces readers to some model of the way the world works (sympathetic character) that is flawed or incomplete in some way (complication). The methods (action) then explain what the authors did (series of obstacles) in order to improve this model, while the results and discussion tell readers what the study discovered and what it means (resolution).

Week 4 (2019-02-05)

I hand the first couple of pages of this article out to students during class as part of an exercise in identifying the core, scientific question a study attempts to address.

Kelly JR, Borre Y, O' Brien C, et al. Transferring the blues: Depression-associated gut microbiota induces neurobehavioural changes in the rat. *J Psychiatr Res*. 2016;82:109-118.

This is a reasonably accessible primary research article that explores the connection between gut microbiota and depression. After a lengthy discussion about the purpose and structure of literature reviews, I have students read the introduction to this paper in class, identifying the topic of the paper and the "unknown" the authors were attempting to address. I do this as a think/pair/share exercise.

Week 12 (2019-04-02)

I pass out the following news articles in class as part of an elaborate think/pair/share exercise. The goal of the exercise is to help students make the transition from writing formal scientific discourse to writing about science for a lay audience. Every few semesters I rotate out some items on this list for more recent articles.

- Garisto D. Birds get their internal compass from this newly ID'd eye protein. *ScienceNews* 2018.
- Milius S. How honeybees' royal jelly might be baby glue, too. *ScienceNews* 2018.
- Saplakoglu Y. This woman doesn't feel pain. A tiny mutation may be to thank. *Live Science* 2019.
- Thompson H. A new coronavirus is killing pigs in China. *ScienceNews* 2018.
- The University of Montana. New discoveries on bacterial viruses. *ScienceDaily* 2019.

Week 13 (2019-04-09)

Before coming to class, students are expected to read the following:

Gastel B. Communicating with the public: some basics. *Presenting Science to the Public*. Philadelphia: ISI Press; 1983:3-20.

Although dated, this book chapter is still a great introduction to writing science news for the public and it helps to reinforce the lessons about communicating to a lay audience from the previous lecture. At this point, most students have already wrangled with trying to write their own news story from a journal article. This turns out to be a far more challenging task than most students anticipate, so this reading comes at a good time, just as they've run into problems trying their hand at this kind of writing.

Pike A, Dong Y, Dizaji NB, Gacita A, Mongodin EF, Dimopoulos G. Changes in the microbiota cause genetically modified *Anopheles* to spread in a population. *Science*. 2017;357:1396–1399.

This is a short and relatively accessible journal article that reports on an interesting finding that could become useful in the fight against malaria. Namely, the researchers found that, at least in the laboratory, mosquitos that had been genetically modified to resist the malaria parasite were at a selective advantage against wildtype mosquitos. This suggests that releasing genetically modified mosquitos into the wild could be a viable way to reduce malaria infections in humans.

Aside from its length and accessibility, I chose this article for VIBS 310 students because it received some attention in the popular press. I ask students to read one of those news articles (see below) and, in class, I have students compare and contrast the two articles in a think/pair/share exercise.

The bacteria in a mosquito's gut may rid us of malaria. *New York Post*. Sept. 29, 2017.

This is one of many news articles that followed the release of the Pike et al. study discussed above. As part of the think/pair/share exercise, I have students trace information shared in the news article to its location in the original research article. This allows us to discuss different strategies for communicating complex, scientific information to the public.

Week 14 (2019-04-16)

At this point in the semester, students have written a rough draft of a news story based on a journal article of their own choosing. A common problem with these rough drafts is that students structure news stories more like abstracts than news stories. My lecture for this day, then, addresses how structure of news stories and journal articles can be quite different. To demonstrate this, I pass out the following news articles as part of a think/pair/share exercise. Note that I rotate these articles out ever few semesters for more recent news stories.

- Cancer treatments may affect cognitive function by accelerating biological aging. *ScienceDaily*: Wiley; 2018.
- Luntz S. In huge shock, mitochondrial DNA can be inherited from fathers. *IFL Science* 2018.
- Neergaard L. The scoop on how your cat's sandpapery tongue deep cleans. *US News and World Report* 2018.