

Independent Study

Science Communication: Science Writing

The field of Science Writing and Science Journalism has expanded greatly over the last decade. Hospitals, universities, pharmaceutical and biotech companies, and newspapers and magazines are just some of the institutions now employing both full-time and freelance science writers to translate their work to the public. Individuals without any formal science education are often asked to donate to fundraisers or vote on issues involving science-based topics. In addition, perhaps in an effort to lead healthier lives or to make the planet better for future generations, the public is relying on science communicators to gather facts and relay complicated scientific information to them in an unbiased manner that highlights key issues involved in order for them to make educated decisions.

This course is designed as an **Independent Study** course. In the portion of the course outlined below, students will complete assignments that will guide them in exploring one form of science communication – science writing. The Learning Goals for this portion of the course are as follows:

1. To analyze different types of science writing designed for various readers or audiences (ie: fellow scientists vs. the general public).
2. Research scientific topics or questions of interest via online searches, personal interviews, and perhaps attendance at relevant conferences.
3. Communicate their findings by writing in an impartial and unbiased manner presenting all relevant data and viewpoints available on a topic.

There will be one semester-long writing assignment that will be completed over several weeks to simulate a long-form magazine feature and several smaller weekly writing assignments.

Week 1: Introduction - Class format discussion, expectations.

What makes a certain scientific topic newsworthy? Why should non-scientists or the public care? What might be the best way to describe a scientific topic to a person without any science background vs. when writing specifically for fellow scientists?

Week 2: Review different types of science writing (there is currently a job market for each type):

- Science writing for fellow scientists
- Science writing for the public (individuals without formal science background)
- Educational science writing (ie: for a museum exhibit)
- Technical Writing

Pre-class assignment: Find articles that all focus on the same topic or subject, but that are presented differently based on the target reader as outlined above.

In-class Discussion: Describing the differences in writing format that you found between each of the articles and how you would plan to focus your research and writing differently if you were preparing each. When is the “Upside down pyramid” style of writing used?

Week 3:

Pre-class assignment: Choose an article that you are interested in from a recent, reputable journal (ie: Nature). Spend some time thinking about how you would summarize this article when speaking to a fellow scientist vs. a family member or friend.

Prepare 2 drafts: 1. Write a 2-3 page summary of the study for your instructors, and 2. Write a 1-2 page summary for someone without formal science training.

In-class Discussion: Report on your findings. Swap drafts with your classmate to perform peer-editing of each others articles over the next week (you will be given an outline of the criteria used for constructive peer-editing).

Post-class Assignment:

1. Peer-edit articles using the outline provided.
 2. Begin your semester-long writing project: This will be an in-depth article focused on research being done in the lab of a faculty researcher here at Adelphi. This will simulate a long-form magazine feature (an example of such features will be provided as reference).
- This project will include a thorough review of the background literature, investigation into the techniques being used in their research and the impact of the study within their field of interest. You are required to set up an in-person interview with the investigator at some point so you will need to be well-prepared with thoughtful questions before meeting.

Week 4:

In-class Assignment: Report on the peer-editing exercise you completed and your plan so far for the semester-long writing assignment.

Post-class Assignment: Make the edited revisions to your articles & continue planning the in-depth article on a faculty's research.

Week 5: *Pre-class Assignment:* Pick a specific science-related question that you are interested in and write a 2-3 page article on the topic aimed toward the general public/mass media.

In-class Discussion: Report on assignments

Week 6: Press releases.

Pre-class Assignment: Research the steps in writing a press release (these are typically restricted to 300-400 words). Pick an example of a good press release and one that you feel could use some work. Pick an exciting and new event, product, or study result and write a press release. Some ideas could be something interesting going on at Adelphi (scientific) – it could be an event being held by a science club (chemistry, biology, physics, tri-beta, etc) or a new finding discovered by one of our research faculty, etc.

In-class Discussion: Report on your work.

Week 7: If you end up working as a Freelance Science Writer, the creativity and relevance of your “pitches” will determine your livelihood. You should have a passion for what you are proposing to investigate and write up because if you are not excited about your ideas, others won't be either.

Pre-class Assignment: Come up with 3 “pitches” for newsworthy questions that you are interested in researching.

In-class Discussion: “Pitch” your 3 ideas to the class.

Post-class Assignment: Conduct research on one of your three ideas and write an article using quotes from at least 2-4 people that have knowledge, experience, or opinions on the topic. Your writing should be non-biased so ideally you will gather information that includes opposing view points.

Week 8: Statistics in science writing.

Including some degree of statistical analysis within your writing highlights the impact of the findings. The results of a research study submitted for publication in a peer-reviewed journal certainly must

include statistical significance, but some basic statistics is also very useful in many other types of science writing.

Pre-class Assignment: See the description on Moodle of some basic statistical analyses used in science writing. Pick a question you are interested in that could be easily answered by conducting an informal survey – ie: answered by questioning family, friends, co-workers, etc. Write a summary of the study using the relevant statistical analyses.

Week 9: Envision a current issue that could be the topic of a large science museum collection or exhibit. Pick one specific contributing factor or question that could be addressed within the exhibit and write a paragraph that explains that display.

Week 10 – or as indicated by Conference meeting date: Conference – select topic(s) you find newsworthy from the conference and report on it by writing up a summary of the work.

Ideas for additional assignments if time permits:

Week 11: Makeup week or if time permits, select a scientist that has played a significant role in their field over a long period of time and write a 2-3 page article describing their impact on the field.