

EDIT 383

Reporting Science and Health

Winter 2008

DONNA LEFF

d-leff@northwestern.edu

Office Hours Wednesdays 1-3 p.m.

Office: MTC 4-125

Phone: 312-503-0768 (o)

773-955-9555 (h)

COURSE DESCRIPTION:

Reporting science and health is a combination workshop and seminar to teach you basic techniques for finding, evaluating and writing about news of science, health and medicine. By the end of the quarter you will know how to sort out good science from bad, where to go for information, how to assess the reliability of a source and how to communicate technical material to ordinary readers with clarity and imagination. The class will do this by talking about science writing and reading lots of examples, while also writing a variety of mostly short pieces.

The range and complexity of science news makes it impossible to master any one field in a single quarter. Sources of information are proliferating, with a confusing array of web sites, each promising to be the definitive resource for a particular issue. Therefore this course concentrates on teaching you to be discerning, to master the art of finding and choosing an appropriate expert and asking the correct questions. The focus throughout the quarter will be on sorting out true claims from false, science from pseudo-science. You will learn to be skeptical (but not cynical). You will learn to investigate all reports, however plausible they appear, with unbiased thoroughness. You will learn to use cautiously words such as “hope,” “breakthrough,” “new” and “discovery.” Only when you have done enough reading, research and interviewing, when you understand the science and the story, will you be able to begin writing. If you can call up friends and explain the science in a short phone call in language they understand, then you probably have grasped the science.

Jim Dawson, senior news editor of *Physics Today* and former science writer for the *Minneapolis Star Tribune*, gets at the heart of the problem for science journalism. He writes:

“Science is increasingly important in our society, yet poorly understood and feared by most people. Newspapers, according to the surveys I have seen, are the primary source of scientific information for the vast majority of readers. Yet newspapers, with a few well-known exceptions, typically do a bad job covering science... There is also a type of anti-intellectualism at play in many newsrooms, especially among mid-level editors. If a story is complicated... readers won't understand it, so better not to run it.

Newspapers have historically tolerated science writing, not encouraged it. Health writing is fine, because everybody gets sick. But cosmology or paleontology: Only if you can relate the stories to the reader's lifestyles.¹”

¹ Jim Dawson, “The Devolution of a Science Page,” *Nieman Reports*, Special Issue 2004, 17-18.

The challenge of this course will be to teach you to avoid those pitfalls, to engage readers or viewers with significant science and health news, often finding a local angle, while writing stories that editors deem newsworthy and scientists deem substantive and accurate.

ASSIGNMENTS: You will have several writing assignments throughout the quarter, some in class, others take-home. The first graded assignment will be a rewrite of a science/health/medicine journal report, the bread-and-butter of science writers. A study is released with a time-delayed publication date, the reporter reads the study in advance and interviews researchers to produce clear, understandable, accurate prose that captures the news without inflating it. Where appropriate, you also will be looking for a local angle or local experts to make the story more engaging. This exercise will be done in class, with everyone working off the same article. Subsequently, students will choose their own pieces from *The New England Journal of Medicine*, *Journal of the American Medical Association*, *the Lancet* or any of a variety of peer-reviewed science publication and write short articles based on the research publications.

I have arranged access for us to embargoed material from various scientific publications, which will be explained in class. You will be asked at the beginning of the quarter to sign an agreement to honor the embargoes.

In other in-class exercises, students will write news briefs about science and science sidebars to breaking news (e.g. explaining the science of dangerous air quality from the southern California forest fires, explaining the three drugs used in lethal injections and how they work). Two other pieces will be written out of class: a short narrative piece telling a story that involves scientific concepts and a critique of science coverage of a particular issue in newspapers, magazines, television, radio or the Web.

To prepare you for the critique, each week for the next five weeks you will prepare a brief (one-page maximum) summary and critique of any science news you choose and to compare the coverage in two different media. For example, this week a California study confirming that autism is not linked to mercury in childhood vaccines received widespread media attention. You could have examined the coverage on say, CNN.com and in the *Chicago Tribune*, summarizing the two reports and stating which (if either) you thought was more effective. Was the science clear? Did you understand what was at issue? Were there any helpful graphics? Was the writing clear and free of unexplained technical terms or jargon? Was there any science in the piece or was it “dumbed down?” What might the writer have done to make the piece more accessible or more interesting?

All assignments may be done across platforms and visual journalism is encouraged as all of us think about presenting science more visually. Some examples would include charts, video infographics and photos.

Finally, students will pair off to participate in a debate. You will prepare an oral “white paper” arguing one side of a medical, environmental or science controversy and present

it in class on March 5. The class will be divided into pairs, with each of the people in the pair arguing the opposite side of an issue. The class will act as reporters and will ask questions of the debating pair. For example, one person might want to argue that second hand smoke from cigarettes is perfectly acceptable in the workplace, while a partner takes the position that it is dangerous. Other possible topics are the safety of treating produce with radiation, the safety of genetically altered food, the safety of injecting dairy cattle with hormones, medical use of marijuana, the safety of breast implants, determining what age to recommend mammography for women, including requiring insurance coverage for it, etc. You could reasonably ask whether the USDA should have lifted its ban on importing Canadian beef. You could ask whether Celebrex should be pulled from the market or whether Prozac should be prescribed to minors or whether "Plan B," the so-called morning after pill should be available to women without prescription. The possibilities are endless.

You may organize yourselves into pairs and choose your own topics or I will make suggestions. Topics and teams must be approved by Feb. 6.

Note: No written paper is required for this assignment; you should feel free to use any visual and audio material you choose (slides, video, tapes, etc.). You must, however, turn in a written SOURCE list, with references that include scientific literature and are not limited to journalism about science.

REQUIRED READING: Nieman Reports Special Issue 2004, The Nieman Foundation for Journalism at Harvard University. Distributed in our first class meeting.

Other reading will be posted on the blackboard or handed out during the previous class.

Grades: Five weekly mini-critiques =10%

Journal rewrite in-class exercise =10%

Journal rewrite homework=10%

In-class news update=10 %

Final media critique=15%

Debate=10%

First draft narrative piece=10%

Final draft narrative piece=25%

Class attendance and participation are mandatory and unexcused absences will result in a reduction in the final grade.

Schedule:

Jan. 9: Some rules for reporting science and health.

Discussion of science writing consulting examples distributed in class and on the Blackboard.

In-class (ungraded) writing assignment: Explaining the physiology and medicine in the three-drug lethal injection as discussed before the U.S. Supreme Court OR Explaining the weather – tornadoes in January?

Jan. 16: EUREKALERT! Embargoes and finding the news in medical and science journals. We'll discuss what is newsworthy, what information each piece should include, what journals are reputable. Where do you go to develop stories? How much reporting is required to get from science journal report to news story? How about local angles?

Discussion of embargoes and peer-review process.

In class rewrite of instructor-provided journal article.

Reading: Journal article to be posted on course website Monday morning at latest (depends on what is released in various embargoed journals).

Mini critique 1 due.

Jan. 23: How Do You Find A Source? Lets Search the Web. (Interactive workshop involving going to websites and evaluating content from instructor provided list). Search for definitions to answer instructor queries (Example: there's an outbreak of histoplasmosis and you're on deadline.... You have 40 minutes to) Be sure to think LOCAL – bring the story home by finding area residents with a disease or who are affected by the topic you're covering. Find local experts to comment on national studies or stories. Seek local labs to find researchers working on the topic.

Mini critique 2 due.

Jan. 30: What is Science? Using the evolution (science) versus Intelligent Design (Junk Science) case study, Prof. Teresa Horton of Northwestern's Program in Biological Sciences, will talk about what makes science science. What characterizes science, what is junk science.

Please go to <http://www.pbs.org/wgbh/nova/id/program.html> and view "Judgment Day, Intelligent Design on Trial," the PBS Nova documentary about Kitzmiller v. Dover, the story of a lawsuit challenging a Pennsylvania school district's right to teach intelligent design as part of its science curriculum.

Read: John R. Platt, "Strong Inference," *Science*, Oct. 16, 1964; Ben Goldacre, "Don't Dumb Me Down," *Guardian*, Sept. 8, 2005 and George D. Gopen and Judith A. Swan, "The Science of Science Writing," *American Scientist*, 78(6): 550-558. (These readings all are posted on the blackboard under course documents and labeled "What is Science?" readings 1, 2 and 3.

Mini critique 3 due.

Feb. 6: Lessons from a Science Writer: Chicago Tribune Reporter Jeremy Manier will be our guest. Please read a selection of his work, either stories of your choice or from the selection on the blackboard, posted under course documents and labeled with the Feb. 6 class date. We will talk about how to report science accurately and dispassionately and how to avoid the Objectivity and Balance traps. We will discuss the difference between science and politics and show how you can be fair without giving equal credence to both sides of a story. In class exercise: to be announced.

Proposals for narrative science story and Debate due.

Mini critique 4 due.

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Feb. 13: Calculating Risk and reporting it intelligently. Prof. Emeritus Barbara-Ann Lewis, NU Department of Civil and Environmental Engineering will discuss understanding toxicity and human health risks of chemicals in the environment. Readings will be distributed : “Calculated Risks (journal reprints) and and “The Mosquito Killer,” by Malcolm Gladwell (New Yorker Magazine piece on DDT.). Last date to turn in rewrite from Journal article.
Mini critique 5 due.

Feb. 20: The Scientific Basis for Global Warming: Prof. Bradley Sageman, Chairman of Northwestern’s Department of Earth and Planetary Sciences. Please read New Yorker pieces “The Climate of Man” by Elizabeth Kolbert or her book, *Field Notes from a Catastrophe*, optional. Explore www.realclimate.org the website of climate scientists and watch (required if you haven’t already seen it) *An Inconvenient Truth*, which is on the class website under external links.
Rough Draft of Final Story due.

Feb. 27: Understanding the science in science stories. Using his research as a frame, Northwestern Chemistry Prof. Mark Ratner or one of his advanced graduate students, will discuss his work in scientific terms then show you how to ask questions that help you to understand the work. You will learn how to understand the science in a story so thoroughly that you can explain it easily and write about it accurately and with clarity. Reading to be assigned. Please also explore <http://www.discovernano.northwestern.edu>.
Final Critique due.

March 5: Debates (See assignment, above).

March 12: Part I: Understanding and communicating science. Prof. Kelly E. Mayo, Chairman, Department of Biochemistry, Molecular Biology and Cell Biology and Director, Center for Reproductive Science at Northwestern will answer questions about his work and related topics. Please explore his website: <http://www.biochem.northwestern.edu/mayo/Home.html> and come to class prepared to ask questions.

Part II: Wrapping Up, science writing in perspective.
Final narrative pieces due.