

## HC 407-006 Science Journal Club

CRN: 37019 Section 006 TR 1600 - 1650 LNC 350 Winter Quarter 2016 2 UHC Credits

Instructor: Christopher K. Mathews Department of Biochemistry & Biophysics  
Office: Room 2047 Agricultural & Life Sciences  
Phone: 737-1865 e-mail: [mathewsc@onid.orst.edu](mailto:mathewsc@onid.orst.edu)

### Course overview

A journal club is an activity in which members who share a common scientific interest meet periodically to discuss recent publications in the field of interest. In this colloquium the members take all of science as the field of interest. We do this by reading current issues of *Science*, the weekly newsmagazine of the American Association for the Advancement of Science. Each student will select articles of his/her own choosing and deliver brief oral reports in class (four during the term), each to be followed by general discussion of the article. Articles selected may be either general, aimed at the educated lay public, or more technical. All presentations, however, must be intelligible to undergraduates who may be taking their first college-level science courses. Examples of topics covered in presentations could include DNA robotics, earthquake prediction, the obesity epidemic, whole-genome sequencing *in utero*, teaching evolution in public schools, mass vaccination and herd immunity, maintenance of forensic DNA data banks, ethical aspects of publication in science, the Ebola outbreak, research policy issues, or science of climate change. Satisfies UHC **Colloquia**.

### Course format

Each student is expected to make four oral presentations during the term. Each talk should be of ten to twelve minutes' duration, with time left for five to ten minutes' class discussion (typically, seven to ten slides). PowerPoint or other visual medium is recommended but not required. Each talk should be based on an article that appeared in *Science* within the past six months. Background reading will probably be required, and you should identify a few key references when you present each talk. You can pick any article that interests you and that you think would be of interest to the entire class. Suitable areas include biological, physical, environmental, agricultural, social, computational, medical or behavioral science. Articles related to science policy or ethical issues in science are also appropriate.

Each student is expected to read each article, so that everyone is prepared to contribute to the discussion. To give adequate time for the whole class to read each paper beforehand, every article chosen for presentation should be communicated to the class by e-mail at least three days before the scheduled presentation.

Each issue of *Science* contains both original research reports and articles in a news format, which describe recent developments in terms understandable to the educated lay person who has taken some college-level science. These less technical articles are included in the following

sections of the journal: Editorials, News, Features, Perspectives, Book Reviews, Letters, In Brief, and Reviews. Some of the articles, particularly in Perspectives, present one- or two-page summaries and comment about some of the most significant technical research articles published in the same issue of the journal. An additional feature, in the on-line version, is Science Express, which provides links to papers that are accepted but not yet published and can be viewed on-line.

How to access *Science*: Hard copies are available in the Periodicals section of the Valley Library, on the first floor. More likely you will access electronic copies. For this the URL is <http://www.sciencemag.org>. The home page provides a link to the current issue, with complete table of contents, and also links to previous issues. Probably you will be unable to open articles without a password.

Alternatively, you can enter the *Science* website through the Library. Enter the Library website select "find it," and click on E-journals. Under "title equals" type Science and then select under Science (New York) the link entitled "From 01/01/1997 to present in Science Magazine." Again, this will lead to the *Science* home page. When you try to open a particular article, you will be prompted for your OSU username and onid password, particularly if you are using a computer off campus. This procedure will be demonstrated during the first class. If you have trouble accessing the journal, contact a librarian or the instructor. Each article can be opened either as Full Text or as a pdf file.

The course grade will be based upon the oral presentations (two thirds) and your contribution to class discussion (one third). Each presenter will receive an e-mailed critique and a grade, usually within a day or two after class. Grades received in the latter half of the term will count more heavily toward the final grade than those assigned earlier.

Although most scientific endeavor is highly specialized, much of it affects our lives directly. Moreover, there is excitement in all areas, and most of that excitement can be translated for educated lay people. If your own interests lead you into scientific or technical careers, you will be helped in your careers and derive more satisfaction from them if you know what is happening in areas peripheral to your own. Even if you do not become a professional scientist, your responsibilities as a citizen mean that you should remain abreast of those developments and discoveries that have had and are having the most profound effects upon our lives.

### **Course schedule**

Jan. 5	Introduction
Jan. 7	Sample presentations by Dr. Mathews
Jan. 12, 14, 19, 21, 26, 28	Student presentations
Feb. 2, 4, 9, 11, 16, 18, 23, 25	Student presentations
March 1, 3, 8, 10	Student presentations

## **Partial list of presentation topics in previous offerings (Fall 2013 and Winter 2015)**

The GMO stalemate in Europe

Alarm over autism test

Who's afraid of peer review?

Sleep, the brain's housekeeper

Natural selection and pain meet at the sodium channel

Quantifying the influence of climate on human conflict

Morals and markets

What if extinction is not forever

A stem cell perspective on cellular engineering

Fluorine-adding bacteria may transform natural product medicines

A looser clock to cure jet lag

Cholesterol forges link between obesity and breast cancer

Cold-atom thermoelectronics

A semi-floating gate transistor for low-voltage ultrafast memory and sensing operation

Microbiomes, genetics, and obesity

Composition-matched solder for semiconductors

Smoke and fire over e-cigarettes

Africa's soil engineer: termites

Can oxytocin treat autism?