Introduction

At the last AMCBT meeting, it was suggested that biologists may have an "image" problem: when the lay public thinks of a scientist, invariably a chemist or physicist is conjured up. One way to assist our students (and ourselves) in understanding biologists is to look at the historical and philosophical underpinnings of modern biology. For this reason, I decided to transform one of my avocations, history of biology, into a formal course at Knox College. Our college, as do many others, offers a course in the history and philosophy of science, but the book and lectures use examples from chemistry and physics - the lone exception is evolution. Ignoring all suggestions of physics envy, I decided that the development of the scientific method for biology fits different paradigms than those of physical sciences, and further, that biology's development was just as exciting as the other sciences.

Pilot

I searched the catalogs of other colleges in our consortium, and found no listed course in the history of our discipline. Therefore, I designed my own course. I knew that I would include a writing component because of Knox's strong emphasis on writing skills, so a topical paper was the first part of the framework. I used my senior seminar class in 1983 as a pilot for the new course. I gave a few cursory lectures, used Asimov's paperback as a text, and asked each student to write a 15-page paper on a topic in the history of biology, then deliver a 1 hour talk based on the paper. While the papers were excellent, the seminar format was a mistake - no one got a decent overview of the history.

Curriculum Committee

Submission of my designs for the course to the college curriculum committee was easy. The hard part was the distribution assignment. When I sought history distribution, questions arose about my training in history (minimal) and whether this would become a "punt" course for science majors trying to avoid real history courses. When I sought science distribution, my colleagues asked if this would become a "punt" course for non-science majors trying to avoid real laboratory science courses. What I ended up with was: one-half credit class, 200-level, 2 lectures per week, with science distribution. The latter required a promise that scientific theory be covered, not just people, places, and events. This turned out to be easy since evolution by natural selection vs. acquired characteristics, preformation vs. epigenesis, and other historical controversies require some knowledge of biology itself.

Books

As my sole textbook, I used Lois Magner's A History of the Life Sciences. Other possibilities were Gardner's History of Biology or Green's History for Medical Students. The Magner book is the most recent, and the students found it readable; it does have some idiosyncrasies, however. Other sources include my modest personal collection of books, those of other biology professors, and a bibliography of the Knox library collection which I drew up last summer. I found some rare books in Knox's collection - a 1748 Linnaeus, and a 1705 Robert Hooke. Of course, most students had to use interlibrary loans for their papers.
Format

I used a lecture format; the grades were based on 2 essay-style exams, 1 ten-page topic paper, and a book report. The latter required the students to read 20-100 pages in a primary source, such as Aristotle, Theophrastus, Vesalius, etc., and write a 2 page synopsis/critique. This is especially important—even in English translation the flavor of these ancient works breaks through, and the students get a very different taste than they get from the chronicles of the textbook.

Results

This fall, nine students enrolled; their majors were: Biology (2), Chemistry (1), History (2), English (2), and 2 underclassmen. The course seemed to proceed well, and some students reported greater appreciation and enthusiasm for biology at the end of the course. I did use some slides and transparencies during the lectures, and I intend to expand this next time because settings are very important for history courses. One problem is the lack of significant contributions by women before the twentieth century. Even the textbook author, a woman, had few examples. I intend to continue the course, although some adjustments such as alternate year offerings may be warranted.

Assessment and Conclusions

I personally feel that the course was successful — I learned much more teaching this class than when I took it as a graduate student. Furthermore, the course attracted some biology majors, but also raised the biological consciousness of some non-majors. (Not everyone received that easy A, either.) Finally, my colleagues are interested in the course — our microbiologist gave a guest lecture on his discipline when I had to be out of town.

If you are interested in developing such a course at your institution, I think that it can readily be done. Please write to me if you would like to see my syllabus, bibliography, titles of student papers, or other information.

References


POSTER SESSIONS AT THE 29TH ANNUAL AMCBT MEETINGS
Jerry Foote, U.W. Eau Claire

A first for AMCBT happened at the 29th annual meeting at Augustana in Rock Island