Student Learning Outcomes
Program in History of Science, Technology, and Medicine
Adopted by faculty vote 24 April 2014

The Program in the History of Science, Technology, and Medicine underwent formal academic review in October of 2013. As part of the preparation, the faculty met several times, graduate students were surveyed and met with leadership in an open discussion, and the profile and mission of the program were presented in a report of over two hundred pages. In this process, the faculty and students worked to clarify what we do, intentionally, in our program and what we hope to accomplish with graduate education. This graduate program is a joint one between the Medical School and the College of Science and Engineering, established in 2008. It functions in a fully collaborative way in terms of admissions, systematic evaluation of students, and in some joint external grant submissions.

Our agreed-upon goals for the education of our graduate students emerged from the process. In multiple ways, the program is interdisciplinary. First, we work at the intersections of medicine, technology, and science. Second, each member of the faculty is embedded, by tenure, in a department in one of those areas: the Department of Physics; the Department of Ecology, Evolution, and Behavior; the Department of Earth Sciences; the Department of Mechanical Engineering; the Department of Electrical Engineering; and the Department of Surgery. Third, individual faculty members have ties to other departments and programs across the university, from women’s studies to philosophy to veterinary medicine. At the same time, the program is, at its core, historical in its content and methods. This is the basis for the intellectual identity that is expressed in all of our courses and in the research we produce, even as that work may move into adjoining disciplines and may utilize various approaches.

We have several specific student learning outcomes that shape our graduate program.

**SLO #1 Inculcate a sense of history and historical methods**
In coursework and through careful individual advising, students are expected to investigate historical issues, bringing to their work a sensitivity to the importance of change over time and to geographical, cultural, and chronological context. Course work should help develop skills to work with texts, visual materials, and artifacts that reveal the past.

**SLO #2 Develop critical and analytical thinking**
The program should help students build the capacity to develop significant questions and to approach them with critical and analytical thinking that will lead to original and creative results. This includes establishing self-awareness that history writing itself is historically situated so that understanding what we do is intimately related to the world in which we live.

**SLO #3 Enhance communication skills**
History is embedded in record keeping and transmission. Graduate students in history learn to understand the past through records kept intentionally or inadvertently and to both master past scholarship and to create new materials. It is critical that they learn to write for and with others who also study history. It is also important that they learn how to translate and transmit scholarly knowledge to other audiences. Increasingly that includes using an array of methods that may be oral, visual, and technological.
SLO #4 **Build the capacity to be an independent scholar while also practicing collaboration**
Most historical research is undertaken by individuals working with historical materials in libraries, archives, museums, and other places. Increasingly, some scholars are collaborating in group projects, sometimes across additional disciplines such as anthropology, demography, geography, and writing studies, using digital technologies and other techniques to gain access to and to organize large quantities of information.

SLO #5 **Prepare students to use their skills in a variety of professional settings**
Graduate students are encouraged to think about the ways in which they might use the expertise and intellectual insights that they acquire while in our program. At this time our recently graduated students have careers in academic settings (from other land grant and public institutions to smaller private schools), in federal agencies and policy organizations in Washington DC, as journalists, and in science and natural history museums. Here their basic skills, specialized skills developed through internships and supporting programs, as well as the historical perspective and content serve them well.

**Assessment Strategies and Milestones:** The program evaluates the education of our graduate students in a continuous way. There are two standard, required courses for each entering class. One includes an analysis of historical writing (historiography) that introduces students to the array of scholarly approaches to the history of science, technology, and medicine. The other is an intensive research seminar that introduces students to the professional standards for scholarly production and has each student work through a primary source project. All students are required to attend a weekly colloquium and to talk with visiting scholars as another way of learning collaboratively with their peers and the faculty about significant current research in the field. In these early activities, students demonstrate what they are learning and reveal, in some cases, where they will need additional help. Each student is evaluated by the entire faculty early in the spring semester and receives a written report that summarizes strengths and weaknesses as an emerging historical scholar. The goals suggested above become the basis for this evaluation. Once done with course work, students also take a qualifying exam that consists of two written papers and an oral. Those who pass present a prospectus for a dissertation. Some students leave with an M.A., which also requires a written thesis or two written papers. In the final stage, it is an extensive written dissertation, presented to the public in a formal event and then defended before a committee of scholars that is the ultimate evaluation of the achievement of individual students. We work hard to help students with placement and employment into careers where they bring the outlook, methods, and skills that they have obtained through their studies in our program.

**Future Plans:** While at this point we think we are achieving our goals in a significant way, we continuously reassess what we do and work for improvement. In particular, we are planning to build a stronger professionalization program with more peer mentoring and additional professional and academic development activities (including digital resources, grant writing, and preparing publications). We are discussing the qualifying exam and will link it to a system of managing students’ milestones. We are considering a teaching workshop and expanded opportunities for graduate mentoring. Thus, while we are likely to hold to the basic goals, working toward realizing them in ever more substantial ways will be part of our ongoing activity.