

Curricular Self-Examination: History of Science and Technology (HSC)

19 Nov. 2003

1. Background

A relatively young discipline -- it has had a place in most college and university curricula only since WWII -- History of Science is more than any other academic field the paradigm of interdisciplinary study, uniting as it does a full range of approaches (cultural, historical, technical) in order to understand the development and meaning of scientific endeavor. Smith's HSC Program was founded twenty years ago by interested faculty from across the curriculum, none specifically trained in the field: we've drawn our members from Biology, Chemistry, Mathematics, and Physics; from Economics, History, and Philosophy; and from Art, English, and French. Because of our own interests and conception of the field -- and realities of staffing -- we designed the Program specifically to offer a minor, not a major (though over the years a few students have designed their own HSC majors).

Even since Smith's Program was founded, the field of HSC has undergone striking transformations. In its earliest years it had been conducted mainly as an "internalist" inquiry, exploring conceptual development within scientific fields as traditionally defined. The 1970s and 80s saw a blossoming of "externalist" approaches, from sociology-of-knowledge treatments to gender studies. HSC at Smith has profited from these changes, retaining the most useful elements of each while jettisoning extremes. From the start, our Program embraced the full range of approaches; we especially designed our key introductory course, *Images and Understanding*, to embody the interdisciplinary character of HSC. Whereas other colleges usually offer a "Plato-to-Nato" survey of scientific developments in as many fields as possible (necessarily, a mainly internalist endeavor), we instead treat a more focused set of developments (in the sciences of vision, light, and imaging) in more fully developed cultural contexts.

Given our vision of the field, too, we developed a program in which many of our courses are team-taught by one scientist and one member from another discipline. Thus *Images and Understanding* was taught last year by faculty from Math and English; *The Chemistry of Artists' Materials* has been taught by faculty from Chemistry and Art; and in 2003-04, *Science and Literature* will be taught by faculty from English and Math. Our program is especially proud of the way we have integrated both faculty and appropriate staff in our teaching. David Dempsey (Art Museum) has long given guest lectures in our courses, and now team-teaches *The History of Art Conservation* with Lâle Burk (Chemistry); several of our courses make key use of Greg Young and the Machine Shop (see below). The positions of both David and Greg have been rewritten to reflect their new roles; such participation in the educational mission of the College by knowledgeable staff (a rich and undertapped Smith resource) is both a good in itself and worthy of further exploration as we face a period of reduced resources.

We have also maintained close connections with colleagues at Smith (the great majority of courses listed in HSC are cross-lists), and where possible at other institutions. No other of the Five Colleges has a full-fledged History of Science program. Amherst comes closest, possessing as it does in its History Department John Servos (currently President of the

American History of Science Society); UMass has a historian of technology in Larry Owen and has recently acquired a historian of earlier science, Mark Ogilvie. We've always encouraged our students to make use of these resources.

Meanwhile our Program has served the Smith community in ways that go beyond our individual courses: through public lectures and symposia (most recently, our symposium "Of Human Bondage" on the history of addictions, a selection of papers from which appeared this summer as a volume in the Smith Studies in History), and in participation in larger venues such as the Kahn Institute's Galileo Project (and upcoming project on Visual Languages), and the Northampton Silk Project.

Since the 1990s, perhaps the most important new trend in HSC has been a new seriousness and depth in discussions of technology, a direction our Program has also energetically pursued. Before his departure, Michael Dettelbach (History) designed a course on *Science in the Industrial Revolution*; we have had Mark Aldrich's course on *The History of Technology* and Marjorie Senechal on *Science, Technology, and Silk*. Our first course in this vein was Marjorie's course on *Ancient Inventions*, soon to be team-taught by Marjorie and Domenico Grasso (Engineering; relations between HSC and Engineering have the potential to become very fruitful for both programs). More than any of our other courses, *Ancient Inventions* brings hands-on experience of technology into the classroom through the help of Greg Young and the Machine Shop. Many of the objects constructed by students in this course have found a place in the Virtual Museum on the Program's website; the Virtual Museum in turn has received widespread attention and won several awards. Images from it have been reproduced in magazines and books both in America and abroad, and in ours is the featured museum in the newly printed 2004 Schlumberger Museum Calendar.

All of us continue to believe in the vital place of History of Science and Technology in a liberal arts curriculum, and we welcome the present occasion to explore our place at Smith. In fact, given recent and projected departures and retirements, it's high time that the College fundamentally rethink its commitment to HSC and how we support our program in the field.

2. Current Staffing and a 10% Reduction

Smith commits no full-time FTE's to HSC. Instead we have 2 courses per year as one half of Marjorie Senechal's position, and a few individual course-replacements for which we annually request permission. (There are usually 1-2 of these per year; last year there was 1, for Doug Patey to team teach *Images and Understanding* with Marjorie; we've asked for 1 for next year, for Jeff Ramsey to teach this course.) Sometimes, too, departments make faculty available to us for single courses without replacement.

Our program thus "costs" about 1 FTE per year. Reduction by a single annual replacement would thus constitute a reduction of 25% (shaving off a replacement every other year, 12.5%).

We've in fact already planned for such a reduction. Aware that they alone have taught our introductory course too long, Senechal and Patey will no longer team-teach *Images and Understanding*. In 2003-04, the course is being offered by Patey and Jeff Ramsey (Philosophy) (at

the cost of one replacement); after this year, the course will be taught by Ramsey alone. Jeff, the closest Smith has to a professional historian of science, will also be taking over directorship of the Program. Though for next year Philosophy is asking that Jeff's teaching in HSC be replaced, we hope in future to work out a plan to split his time between Philosophy and HSC.

3. The Larger Picture for HSC at Smith

In recent years Smith has lost without replacement Richard White (who taught *History of Astronomy*) and Michael Dettelbach (who taught *The Scientific Revolution* and a seminar on *Darwin*, as well as other courses related to our program). These courses were crucial HSC offerings: core offerings in our own or any program in the history of science. Meanwhile Mark Aldrich and Marjorie Senechal have elected phased retirement. Taken together, the effect of all these losses on our Program is catastrophic, and (especially were Marjorie's contribution -- half our program -- not to be replaced) necessitates a fundamental rethinking of the viability of HSC at Smith. We can without such replacements continue to offer an occasional individual course or two, but maintaining anything even vaguely like a History of Science *Program* -- something of the sort we advertise in the *College Catalogue* -- will require more.

Given the College's financial restraints, the future of History of Science and Technology at Smith seems to us to lie in shared appointments. At the top of our list would be an appointment in History such as, we are delighted to hear, that department is now discussing: a faculty member shared 3/4 in History, 1/4 in History of Science (and whose History courses we might also cross-list). Such an appointment would mean that we could once again offer core courses in the discipline; we've sent letters expressing our enthusiastic support of such a position to both David Newbury (chair of History) and Susie Bourque. We also trust that Jeff Ramsey's contribution to the Program will continue, and hope to work out with the Philosophy Department a similar arrangement for a permanent commitment (a split appointment). Such appointments would stabilize our program for the foreseeable future. Looking further ahead, a shared appointment with Engineering, again perhaps 1/4-3/4, would maintain and strengthen our hands-on offerings in the history of technology.

Respectfully submitted,

Douglas Lane Patey
Director, History of Science and Technology

Approved 19 Nov. 2003 by the HSC Committee:

Mark Aldrich (Economics)
Lâle Burk (Chemistry)
David Dempsey (Art Museum)
Craig Felton (Art)
Nathanael Forrtune (Physics)
Salman Hameed (Astronomy)
Caroline Houser (Art)

Laura Katz (Biology)
Albert Mosley (Philosophy)
Jeffrey Ramsey (Philosophy)
Nicholas Russell (French)
Marjorie Senechal (History of Science and Technology)
Harold Skulsky (English)
Gregory Young (Machine Shop)