

GRADUATE PROGRAM REVIEW

June 6-8, 2017

Oregon State University History of Science Program (M.A., M.S., and Ph.D.)

I. Overall Recommendation:

“Other”: We recommend a REFOCUS of the degree program.

II. Review Committee Process

The Review Committee consisted of two external faculty members from the discipline of the history of science and two internal faculty members representing the Oregon State University Graduate Council (with names and affiliations below), and most meetings were also attended by Vice Provost and Dean of the Graduate School, Jennifer Brown. After an evening orientation dinner, the committee met for a full day of meetings and concluded with a short briefing of the results elaborated below (section III). On the last morning, there was a tour with Anne Bahde of the widely known and highly respected History of Science Library and Special Collections Library, which has a significant and symbiotic relationship with the faculty of the History of Science Program, who use it extensively and publicize its holdings in both teaching and research.

III. Summary of Findings and Recommendations

Faculty: Three faculty members conscientiously conduct essentially all the graduate courses offered, with a few exceptions. They are each outstanding, productive, and deeply committed scholars and teachers.

Recommendations:

- *integrate more closely with faculty in history and perhaps other departments in the School using team teaching, course exchange, or other mechanisms; this requires mutual cooperation
- *engage history faculty to assist with advising
- *extend and/or deepen current linkages across the campus to create collaborations and provide more funding and opportunities for graduate students in terms of career skill building experiences

Graduate Students: The current cohort of graduate students is predominantly local in origin and is satisfied by their rigorous education at the M.A. level, but more advanced students struggle with funding issues.

Recommendations:

- *recruit more broadly in the region, given that Oregon State has the only history of science program in the Northwest, perhaps particularly concentrating on the numerous public and private colleges in the area
- *provide a curriculum that is defined not only by chronology and topical themes but that includes more historiography and theory
- *find ways to build the teaching experiences of Ph.D. students with academic aspirations
- *provide additional skill development with explicit attention to potential career placement
- *use the three-year plan as an opportunity to consider the question of how to allocate graduate student funding and whether to emphasize the M.A. program and recruiting at that level with the intention of sending students on for the Ph.D. or, perhaps, to focus on a smaller, highly selective cohort of Ph.D. students and leave the terminal M.A. students to be self-funding

Curriculum: The curriculum is rigorous, chronologically comprehensive, and attentive to building research skills through a series of 599 topical courses.

Recommendations:

- *restructure 599 offerings with attention to having some of them engage theory and historiography more explicitly and comprehensively
- *create credit mechanisms for students (especially those taking a terminal M.A.) to build skills and undertake internships for those not seeking academic careers
- *encourage history faculty to teach and advise students (see above)
- *make Ecampus a more integral part of the History of Science faculty planning and responsibility to open opportunities for advanced students

IV. Detailed Findings

Overview

The History of Science Program (HoS) serves Oregon State University well at essentially every level despite its small size and relatively limited funding. The Thomas Hart and Mary Jones Horning Endowment is a significant and contributing factor to its success in that the funds have been carefully used to attract outstanding faculty, contribute to support of graduate education, and provide funding for academic conferences that are held in conjunction with other departments and with the Special Collections library, all of which have served to raise the profile of HoS at OSU. With a strong legacy in the history of science (broadly inclusive of technology and medicine, and now also a strength in environmental history), the Program has earned a national and international reputation. We informally assess that of the sixty-five or so graduate programs in the field it ranks in the top fifteen in terms of productivity and visibility, even though its faculty and graduate student population are much smaller than its competitors.

The tradition of a small, committed, and productive faculty was very evident in our discussions throughout the day. At the same time, as we talked with others in the School of History, Philosophy and Religion, certain tensions emerged, some of which preceded the formation of the School, and others are part of the ongoing process of working out new relationships within this recent reconfiguration. These will be addressed as our review comments on the strengths, challenges, and opportunities that we perceived with regard to the faculty, current and future graduate students, and the graduate curriculum. We believe that the program itself has strong integrity with many high-quality characteristics, while recognizing that it is underfunded in comparison with peer and aspirational institutions (and that in the future HoS will likely continue without expansion of this level of support). The Program has recently suffered from a decline in the funds available from the Horning Endowment, and it was unclear from the discussions why that decline has been so precipitous. There also seem to have been shifts in funding from Ecampus courses that have had an indirect impact on the school and thus the program. Within those parameters, the HoS faculty members have ably met the changing framework of the College of Liberal Arts with courses that contribute to the intellectual vitality of an “outdoor science” orientation and provide a comparative intellectual advantage to undergraduates as well as graduate students who take the classes and engage with this faculty. One wonders if more might be done with undergraduates in terms of a minor or major. The committee believes that the fundamental elements, aside from funding, for an even stronger and more integrated program are in place both in terms of faculty engagement and the structure of the Graduate Program, and for that reason we recommend a strategic plan that will REFOCUS the program for future success.

A. Faculty

Strengths

The basic strength of the History of Science Program since its inception has been the superb quality of its faculty. In terms of both quantity and quality of publication, the core HoS faculty have been at the vanguard of research in the discipline, representing a tradition of depth in fields such as colonial science, the history of natural history, and environmental history that are only now emerging as central foci of the discipline as a whole. As the data provided indicate, the faculty continue to publish monographs with leading university presses and in high-impact journals within the field, and just about all members of the core HoS faculty have occupied leadership and editorial positions in major organizations. Most prominently, Professor Michael Osborne is the incoming elected President of the Division of History of Science and Technology of the International Union of the History and Philosophy of Science and Technology, which is fairly close to being Secretary-General of the United Nations of the discipline. In addition, Anita Guerrini, the Horning Professor, was elected as the first member of the Council to ever serve on the Executive Committee of the History of Science Society, the leading professional society in the discipline. The rest of their research credentials are evident from their CVs. Locally within OSU, Jacob Darwin Hamblin has just been appointed to the head of the new Environmental Arts and Humanities initiative. All the faculty have engaged extensively with other units at the University, such as the Hatfield Marine Studies Institute, and all of them use to the fullest local resources such as the Special Collections in their teaching and research. It was also clear from conversations with the graduate students that faculty research profiles have attracted students who have come specifically to work with them and that their pedagogical and advising duties occupy a significant amount of time and no small degree of dedication.

Challenges

The challenges facing the faculty stem from its small size and relatively isolated position. This isolation, as will be addressed in the next section, seems to be cultural and path-dependent, and not a necessary feature of the structure of the graduate program or the School. Nonetheless, it is undeniable that it poses a formidable challenge. Although there are five faculty members officially affiliated with the HoS program, the bulk of teaching — and, it seems, all of the 599s, which are a major mechanism to meet the 50/50 requirement — are offered by three faculty in rotation (Guerrini, Hamblin, Osborne). Although the quality of the historians in other subfields at OSU is high, and sometimes in areas that are of cognate interest to the history of science, there is at present very little cooperation on either an intellectual or pedagogical level to leverage those resources. This seems to be a challenge specific to the School; the HoS faculty have been quite entrepreneurial in engaging other non-School faculty and institutions on campus, as noted above.

Structurally, there is no reason why other faculty cannot offer these 599 courses or mentor and advise graduate students, and some do — although we heard from many sides that this is an exception and could be pursued more actively. Of course, funding remains a limitation in terms of the degree to which the Program can make use of the latent capacities present on campus already. External grants to supplement graduate funding and creative collaborations might enable a reorientation of the graduate program (and offer more TAs and other forms of support), although the challenges in that regard require careful consideration (see section III.B). It would be hard to extend this faculty cooperation in every direction, since language training is limited at OSU and Eugene is too far for extensive language training (for example in Middle Eastern or East Asian languages).

Opportunities

Fortunately, in this case the challenge is exactly the same as the opportunity: integrating the HoS Program and its faculty more closely with the other historians in the School. There are several obvious

areas (history of sexuality, history of emotions) that could make for fruitful 599 courses and enable more faculty to work with the graduate students. Again, structurally this is permitted with the two-tier faculty system, but the opportunities have not been exploited. This will require honest compromise and give-and-take both in terms of teaching loads and in terms of building trust among members of the School. The resources for the history of science on campus — the special collections in particular, but also the scientific excellence of other departments — justify the current titular focus on this subfield, but the definition of that subfield has been expanding intellectually in the profession toward “history of knowledge” and renewed engagement with intellectual history, and OSU is well positioned to take advantage of that. This will require reallocation of teaching responsibilities and needs to be the outcome of an extensive and respectful discussion.

In addition to further engagement with historians in the school, the presence of philosophers and scholars of religion offer other possibilities for productive cooperation with the HoS faculty within the context of the Program. Given the size of the respective faculties and the current shape of the discipline, we recommend focusing on history collaborations first, but “science and ethics” and philosophy of science would be important areas to consider deepening.

B. Graduate Students

Strengths

The History of Science Program operates as a graduate program whose faculty members regularly teach a significant number of undergraduate students as well, recruiting many of them from the sciences and other colleges. Oregon State’s graduate program is essentially the only one in the Northwest of the United States, with the nearest clusters of historians of science at Montana State University or in northern California at UC Davis, UC Berkeley, and Stanford. (Other graduate programs in the Northwest, such as at University of Washington, have since been shuttered.) The program is a rigorous one that prepares its students well for further advanced academic work at OSU or elsewhere. Some of the M.A. and Ph.D. graduates have also taken advantage of their training to pursue careers in museums, journalism, or various non-profit organizations. We spoke with six students, two completing Ph.D.s and four working on M.A. degrees (one of whom will be leaving at the end of this year for a funded Ph.D. program), as well as spending considerable formal and informal time with the Director of Graduate Studies, Allen Thompson, who escorted us throughout the day. We also read the results of surveys of both alumni and current students.

Graduate students appreciated the quality of their graduate education while seeking more career guidance. These students all had financial support, either as teaching assistants or in other programs at the university, although they indicated that there was greater uncertainty in the later years of study. They felt that the TA assignments were fair but they were concerned that they had mostly grading responsibilities and wanted to have more direct teaching experience (none of the courses in the School have discussion sections led by graduate students). There was also frustration that often they did not know very far in advance whether they were going to have teaching assignments. One student enthusiastically supported the comprehensive curriculum which stretched from the ancient world to the present, an increasingly rare feature of graduate education in the field and one of the distinctive hallmarks of HoS at OSU. Several suggested that the handbook needed to be updated, with particular attention to opportunities for funding and on-campus employment. While all agreed that the 599 courses were often very good, there was an expressed need for more historiography and theory rather than a topical approach. Students were also aware of tensions among the faculty, although most seemed to feel quite comfortable finding appropriate courses and committee members from beyond the program where appropriate.

The Graduate Handbook outlines a very definitive set of coverage requirements that are challenging for a small faculty to maintain. Nonetheless, a significant number of the master's degree candidates are completing their work in two years – an ambitious standard not always met in other history graduate programs. This is particularly significant given the writing and examination requirements. The students with whom we spoke all seemed to think that while the program was demanding, they received the support that they needed in completing their work.

The office space for students is quite adequate. They are all housed in shared but good-sized offices in Hovland Hall furnished with desks and bookcases. They are situated with graduate students taking M.A. degrees in Applied Ethics and that seems to work well to create a cohort. We were also impressed that the DGS has created a course that is directed at both graduate groups, and which the students spoke about positively. Moreover, it was encouraging to learn that they would likely be moving to Milam Hall, which would put them in close proximity to faculty and to the small library and lounge spaces in that building.

When asked about the Graduate School, there was uniform agreement among the students and staff that it provided a helpful site to get answers to technical questions and support of various kinds. One student noted that its staff provided resources when she encountered inappropriate behavior on campus. The Graduate School seems to be important for the strength of these graduate degrees and, according to the current students and alumni, contributes to both their progress and morale.

Challenges

Recruiting has become relatively local, although there should be regional draw given the paucity of comparable programs in the Northwest. There are national applicants, attracted by the reputation of the faculty, but the actual matriculation of such students is limited by the fact that most history of science programs offer packages that include multiple years of support with five-year funding in the case of most of the likely cohort. Because the program has very limited funding and has concentrated this on recruitment and second-year retention, many of the students have chosen to apply elsewhere for their Ph.D., which unfortunately means that some excellent faculty have only rare opportunities to advise doctoral students. It should be noted that the faculty have encouraged students to move to other programs after the M.A. when they felt that this would be in the best interests of the students. In recent years there have been a decreasing number of Ph.D.s, and there was no data on time to degree or clear evidence of placement. Relatedly, it seems that early use of Ecampus funds that provided an important source of income and experience (and apparently still do so in other parts of the university) has now been taken away. This should be addressed.

The students appreciated the efforts of faculty to provide a significant number of graduate level courses to meet the 50/50 requirement, but there seem to be issues with matching up the courses with exams and with exposing the students to a variety of instructors. The series of chronological courses (antiquity to the present) might be abbreviated from four quarters to three and the 599 classes might be offered by other members of the history faculty. How that would work with course loads would need to be configured by the faculty, the DGS, and the School Director, but it seems both possible and important to do this kind of redesign. The fact that the current structure of the school has the DGS dividing his attention between HoS and the M.A. in Applied Ethics (and with a modest one-course reduction which we understand to be below the university standard) might make some of these changes more difficult, and the community should discuss the possibilities for perhaps splitting the position.

The issues raised by students are not unique to OSU, but they are worthy of attention for the particular situation on the campus. Students discussed, of course, the funding issues in terms of predictability and

with surprisingly less concern about level of funding, which tends to be below that of aspirational land grant institutions. Particularly the students taking a Ph.D. were concerned about having teaching opportunities and more advice about other career possibilities outside academia, and on preparation of external grant applications for funding. History faculty also raised issues of concern about the quality and preparation of TAs, and this needs to be addressed in terms of standards and expectations on all sides.

A fundamental question looms in the background, namely to decide whether to emphasize M.A. training with placement elsewhere for the Ph.D. or to concentrate resources at the Ph.D. level along with identifying neighboring sources of support in order to have a small but strong doctoral cohort supplemented by largely self-supporting MA students. Either way, it will be important for the School and University to discuss just how support can be maintained, finding mechanisms to use these advanced students for Ecampus. The policy of Human Resources of only allowing one-year promises of support is a problem. Peer institutions are able to do more than wink and nod to prospective students, making contractual multi-year commitments to the most competitive applicants.

Opportunities

The graduate program has worked to build visibility in the region and could further highlight the ways in which its master's programs build capacities for certain careers and, in some instances, a strong credential for admission to a subsequent Ph.D. elsewhere as well as offering the Ph.D. Some of the current M.A. students are clearly already thinking in those terms. This may be particularly true for OSU undergraduate alumni, several of whom are in the program, drawn to the field by current faculty members. The HoS faculty members have often urged students to move to another place to avoid having all their degrees from the same institution. Success in placing such M.A. students at well-regarded universities is evident in the report and might be emphasized further. The Graduate School also has an assistant dean whose assignment is to work on recruiting and should be well-informed about the HoS program.

Some of the concerns raise the possibility for low-hanging fruit. It should be possible to create more deliberate opportunities for students teaching in classes by integrating guest lectures, using small group discussions, or other techniques to build their skills even as they grade and work with undergraduates on projects. Similarly, there is presently only limited attention given to the issue to external grant applications, but more systematic professional development could also take place in a newly designed course meant for that purpose or through informal sessions throughout the quarter. Ecampus courses should be part of the discussion.

More could be done to highlight career outcomes, especially for those students who are willing and able to be mobile. Historians of science are often able to find employment in a variety of public sites that focus on STEM experiences for younger students, such as museums and science centers, as well as for adults seeking to understand current science outcomes in context through newspapers, magazines, and other media. Exposure to such careers through strategic connections on campus and internships is often essential for moving into these positions. (The experience some graduate students have working in Special Collections offers a model in this regard.)

The history department is an essential resource that seems not to have been integrated into the program as fully as it might be. There are a number of history faculty members who expressed interest in teaching and advising graduate students. Given the limited graduate funds it will be difficult to expand the M.A. and M.S. program broadly into other subfields of history. However, it seems possible to take into account the entire faculty in thinking about course assignments at both the graduate and

undergraduate level and to encourage advisory committees broad enough to encompass both history and HoS.

C. Curriculum

Strengths

The curriculum for graduate education is staggeringly comprehensive in regards to the historical trajectory of science and technology from antiquity to the present. Among major graduate programs in the United States, only Johns Hopkins insists on this long span as essential to graduate training, and it is clear that the graduate students appreciated it. In addition to this temporal span, the HoS faculty also offer a wide diversity of 599 courses, crafting a new one every quarter. The range of these courses is also quite impressive, and particular areas of strength (such as environmental history and history of postwar science) are emphasized. The committee was struck that these courses are based on thorough and well-thought-out syllabi, which demonstrates a strong dedication by the HoS faculty to providing a good grounding in the factual material of history.

The curriculum also stresses the writing of history essays (required for both options in the M.A., although the essay in case of the non-thesis option is of much shorter length), and the students do receive training in this, although this appears to be ad hoc, based on one-on-one meetings with the instructors. Complementing the “nuts and bolts” approach to teaching, this makes for a rigorous and impressive curriculum.

Challenges

With a limited number of faculty offering this diversity of courses, it stands to reason that the curriculum would have to be constrained in other ways, and some of these constraints could be addressed by the measures of broader faculty engagement discussed above. The graduate students craved more history of the field (in the form of a historiography or theory class), and the syllabi in the packet indeed showed less engagement with the “theory” of the field, which is of broad interest to fields such as Women’s Studies, Environmental Humanities, and more.

Opportunities

These are related to many of the points discussed in previous sections: broader engagement by the rest of the history department could alleviate some of the pressure on the curriculum by expanding offerings in diverse subfields. The history of the human and social sciences, as well as science in broader culture, are areas that could also be deepened, preferably through teaching or co-teaching by other members of the history department outside the central HoS core. This would also free up some of the HoS faculty to build an undergraduate sequence in the history of science, generating potential TAs or opportunities for guest-lecturing and other professional development by the graduate students. The HoS faculty also expressed interest in developing a “women/gender and science” course, which is not only an important aspect of the discipline, but raises the visibility of diversity and recruitment issues across a land grant university. With the expansion of some of these curricular developments, something will have to give. The impressive “Plato to NATO” graduate sequence could perhaps be done in three quarters, or theory could be more prominently integrated into them as a way to meet the concerns of students. It is also important that standards remain high. Co-teaching or collaborative syllabus development could help in this regard. It also seems that the HoS faculty are not involved in vetting individuals who teach for Ecampus which, in areas like the history of medicine, is important for maintaining rigor and preserving teaching opportunities.

IV. Final Thoughts

The History of Science Program is one that can provide a strong base from which to expand graduate education in history more generally at OSU and perhaps build a new collaboration with the philosophers in the School as well. Its success in attracting highly productive faculty and maintaining a rigorous graduate degree program can be extended further into other areas of the history department with careful strategic planning, serving as a core on which to build an even stronger M.A. degree while identifying other clusters of expertise that might also move toward M.A. status. While we were concerned about some pre-existing tensions that seem to interfere with collaboration, we also came away with a high degree of optimism, particularly after seeing the amazing resources in Valley Library. With positive leadership from above as well as an open attitude from all parties within the history and history of science contingents, we believe that the History of Science effort, supported by the Horning Endowment, can continue to be a highly productive example of the intellectual leadership and interdisciplinarity of Oregon State University.

Respectfully submitted,

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Graduate Council Addendum, 7 December 2017

At the November 30 meeting of the Graduate Council, members suggested including a minor addendum to perhaps provide clarity as to an opportunity to integrate with History faculty. The recommendation to, “provide a curriculum that is defined not only by chronology and topical themes but that includes more historiography and theory” was an area where Councilors thought there was opportunity to strengthen the connection between History and History of Science faculty. Certainly, there are other opportunities and the review points to mentoring graduate students, etc. However, we wanted to indicate one area we thought may be easily implemented to strengthen the program.

Submitted by Ryan Contreras on behalf of Graduate Council