

UTQAP Cyclical Review: Final Assessment Report and Implementation Plan

1 Review Summary

Program(s) Reviewed:	Undergraduate programs: <ul style="list-style-type: none">• History and Philosophy of Science and Technology, HBA: Major, Minor• Science and Society, Minor (<i>offered with Victoria College</i>) Graduate programs: <ul style="list-style-type: none">• History and Philosophy of Science and Technology, MA, PhD
Unit Reviewed:	Institute for the History and Philosophy of Science and Technology
Commissioning Officer:	Dean, Faculty of Arts and Science
Reviewers (Name, Affiliation):	<ul style="list-style-type: none">• Cathryn Carson, Professor and Chair, Department of History, University of California, Berkeley• Harold Cook, John F. Nickoll Professor of History, Department of History, Brown University• David I. Kaiser, Germeshausen Professor of the History of Science, Professor of Physics, and Associate Dean, Social and Ethical Responsibilities of Computing, Massachusetts Institute of Technology
Date of Review Visit:	January 25 and 28, 2022 (conducted remotely)
Date Reported to AP&P:	April 13, 2023

Previous UTQAP Review

Date: November 15 – 16, 2018

Summary of Findings and Recommendations

Significant Program Strengths

- IHPST has a record of achievement that is worth celebrating, having been home to a number of the world's most prominent historians and philosophers of science
- Distinguished Ph.D. graduates, who have gone on to become leaders in their fields
- IHPST programs enjoy impressive resources, including the IHPST scientific instrument collection
- Active graduate and undergraduate student organizations
- Collaborative effort between Victoria College and the IHPST to deliver the undergraduate program

Opportunities for Program Enhancement

- Focusing mainly on the history of science and technology and possibly the social study of science and technology
- Addressing the lack of procedures for coherent internal governance, maintaining graduate program records, and mentoring of junior faculty
- Lack of a consultative and collaborative process for developing the unit's self-study
- Lack of senior leadership at the full professor level and the proportion of graduate courses taught by non-tenure-stream faculty
- Updating the MA curriculum
- Need to avoid duplication with the Department of Philosophy
- Addressing student concerns about the lack of courses on gender and science/technology or non-Western science/technology
- Offering a consistent graduate student orientation from year to year
- Improving graduate record keeping
- Conducting a curriculum review addressing the overall structure of course offerings and strategies for introducing students to the history of science and technology, to draw them into further study in the area

Current Review: Documentation and Consultation

Documentation Provided to Reviewers

Terms of reference; Self-study and appendices; Previous review report including the administrative response(s); Access to all course descriptions; Access to the curricula vitae of faculty.

Consultation Process

Faculty, students, administrative staff and senior program administrators as well as members of relevant cognate units as determined by the commissioning officer.

Current Review: Findings and Recommendations

1. Undergraduate Program(s)

Unless otherwise noted, all bulleted comments apply to all programs reviewed.

The reviewers observed the following **strengths**:

- Overall quality
 - ▶ IHPST faculty have revised undergraduate offerings and dramatically increased enrolments
 - ▶ IHPST has begun to offer a wider range of well-subscribed undergraduate courses and programs in recent years
- Admissions requirements
 - ▶ Undergraduate enrolments in IHPST courses have grown rapidly, roughly tripling over the past decade, despite downward trends in humanities and social sciences
- Curriculum and program delivery
 - ▶ Wide range of course offerings enable undergraduate students to encounter questions and research methodologies drawn from humanistic and social-science modes of inquiry, brought to bear on topics across the natural sciences, engineering, environment, health, and medicine
 - ▶ IHPST faculty have shifted teaching loads from an equal balance of undergraduate and graduate-level courses to a predominantly undergraduate focus, to accommodate the growth in undergraduate enrolments
 - ▶ Faculty express confidence that greater undergraduate teaching commitments are manageable, and note that they benefit from excellent TA support
- Student engagement, experience and program support services
 - ▶ Undergraduate and graduate students enthusiastic about the pedagogical opportunities afforded by IHPST
 - ▶ Some students emphasized their appreciation for the flexibility of IHPST programs
 - ▶ Undergraduates appreciate IHPST's welcoming atmosphere, and reported feeling part of a "tight-knit community"
 - ▶ Undergraduates enthusiastic about new mentorship program with IHPST graduate students

The reviewers identified the following **areas of concern**:

- Curriculum and program delivery
 - ▶ Responsibilities of fielding so many large undergraduate courses leaves fewer opportunities for smaller, seminar-style teaching associated with Victoria College
- Student engagement, experience and program support services

- ▶ Students note some frustrations related to the broad cross-section of U of T students who take courses within IHPST (providing example of instructors in 300 level courses devoting class time to basic instructions for essay composition)
- ▶ Challenges noted around incorporating experiential learning opportunities in classes with very large enrolments

The reviewers made the following **recommendations**:

- Curriculum and program delivery
 - ▶ “We encourage the Director and faculty members of the Institute, now that they can look back on ten years’ collective experience in developing and fielding so many large courses, to undertake a fresh curriculum review for the undergraduate program”, to help identify bottlenecks for student progress, potential overlaps or redundancies among portions of the curriculum, and spotlight areas for targeted development
 - ▶ Involve student consultation and input in undergraduate curricular review
 - ▶ “[There] is room to improve communication to students about shared IHPST-Victoria courses”
 - ▶ If graduate student numbers decrease, reducing the number of TAs available, “perhaps caps would have to be added to some of the large undergraduate courses that IHPST is now servicing so well”
- Student engagement, experience and program support services
 - ▶ Some undergraduates report desire for more structure or clarity among coursework offerings
 - ▶ Students interviewed expressed active desire for more real-world and research opportunities relating to their programs of study

2. Graduate Program(s)

Unless otherwise noted, all bulleted comments apply to all programs reviewed.

The reviewers observed the following **strengths**:

- Overall quality
 - ▶ “IHPST is currently making needed revisions to a successful graduate program”
- Curriculum and program delivery
 - ▶ Graduate course offerings have expanded in recent years in terms of taught subject areas along with changes in the composition of the faculty
- Student engagement, experience and program support services
 - ▶ New system of matching incoming graduate students with a supervisor has greatly improved quality of advising as well as graduate student morale
 - ▶ Director of Graduate Studies has been very effective in overseeing the program and communicating with students and colleagues

- ▶ Graduate program revisions as well as other requirements and expectations have been made explicit in documents that are shared with all graduate students and kept up to date
- ▶ Graduate students enjoy “a welcoming and supportive community”
- ▶ Graduate students have recently partnered with graduate students in STS at York University on an informal workshop series, “which should further strengthen connections within the relevant intellectual community”
- ▶ “Several graduate students mentioned the important role that an informal, monthly workshop has played for the student community”
- Quality indicators – graduate students
 - ▶ IHPST students compete very well for funding, compared to students in other programs
- Quality indicators – alumni
 - ▶ IHPST places their graduates well in academic positions
- Quality indicators – faculty
 - ▶ Graduate course evaluations are high
- Student funding
 - ▶ “Graduate students who need to travel for dissertation research are often supported by research grants, and all are backed appropriately by university and departmental support”
 - ▶ “The high success rate in recruiting graduate students indicates that funding for such students (as well as the reputation of IHPST) is competitive.”

The reviewers identified the following **areas of concern**:

- Curriculum and program delivery
 - ▶ PhD course requirements appear somewhat varied; many graduate students desire greater clarity on program requirements and how to fulfill them
- Assessment of learning
 - ▶ Ongoing deliberations around revisions to the required graduate preliminary examinations noted as a challenge
- Student engagement, experience and program support services
 - ▶ Graduate student surveys indicate some concerns around perceived “fewer opportunities for developing capacities outside the Program Learning Outcomes, including international study, entrepreneurial possibilities, and networking”

The reviewers made the following **recommendations**:

- Curriculum and program delivery
 - ▶ Director and IHPST faculty are encouraged to regularly assess whether the shift in teaching allocation among undergraduate and graduate programs might put unanticipated pressure on staffing an appropriate range of graduate-level courses
 - ▶ Consider waiving PhD residency requirement for periods of time required for research in other places (if this is not already the practice)

- ▶ “We consider the diversity of subject matter and methodology to be a current strength of IHPST’s program, but it will need continued oversight if it is to have a reputational identity”
- Assessment of learning
 - ▶ Reviewers urged changes to the preliminary examination process to align with expectations found in other humanities and social sciences programs, and in keeping with the breadth of coursework evident in IHPST’s current offerings
- Student engagement, experience and program support services
 - ▶ IHPST faculty encouraged to consider student desire for “professionalization” opportunities as they continue to revise the graduate program
 - ▶ Graduate students note desire for enhanced opportunities to learn about research that IHPST faculty are involved in
- Quality indicators – graduate students
 - ▶ IHPST will need to monitor any effects of changing preliminary exam requirements on student progress, as well as on time allotted to work such as TA-ing or RA-ing

3. Faculty/Research

The reviewers observed the following **strengths**:

- Overall quality
 - ▶ “Faculty are research active, very able in attracting external and internal funding, and well-known figures in their respective fields”
 - ▶ Impressive range of courses offered by IHPST faculty, which are received enthusiastically by students
 - ▶ Mid-career faculty are academically mature and productive, and very capable of furthering the aims of the unit
 - ▶ Junior faculty “hold enormous promise”
- Research
 - ▶ All faculty interviewed are active in research and publishing; most have recently received external funding
 - ▶ Many faculty have received awards for published books and/or articles from professional peers
 - ▶ “Many of the faculty conduct high-quality research and publication that pushes forward the boundaries of well-defined subject areas in the history of science, philosophy of science, and intellectual history”
 - ▶ Faculty have taken on research in subjects that “expand the history of science, medicine and technology toward histories of knowledge that are shaped by cultural studies, connected histories, and new materialisms”
- Faculty
 - ▶ Junior faculty especially enthusiastic about their research and teaching, and bring fresh geographical and topical range to the unit
 - ▶ Several new faculty members have been appointed, whose expertise complements recent/ongoing changes in course offerings and research environment

- ▶ “Several tenure-track faculty recently joined the Institute, and they each reported feeling welcomed and well-supported by their colleagues and by the IHPST Director”
- ▶ Faculty hold advanced degrees from at least three different kinds of departments, allowing for considerable range in teaching and research direction

The reviewers identified the following **areas of concern**:

- Faculty
 - ▶ Given rising number of undergraduate courses and enrolments, balancing research, service, and teaching loads may become a concern for faculty (though currently appears manageable)

The reviewers made the following **recommendations**:

- Research
 - ▶ “Many of the graduate students and undergraduates are...eager for teaching and research in areas such as science and society, science policy, and decolonized forms of nature-knowledge.”
 - ▶ “The stated ambition to expand the geographical and cultural diversity of the studies of faculty in IHSPT is in keeping with recommendations in the 2018 review and is also fully supported by this Committee.”
- Faculty
 - ▶ Add to the diversity and number of IHPST faculty when opportunities permit
 - ▶ Reviewers supportive of stated ambitions to make appointments in Indigenous Studies; Non-Western and African-diasporic Science, Technology, and Medicine; and Philosophy of Science and Medicine when opportunities allow, to help to diversify the University and further expand the range of teaching and research

4. Administration

Note: Issues that are addressed through specific University processes and therefore considered out of scope for UTQAP reviews (e.g., individual Human Resources issues, specific health and safety concerns) are routed to proper University offices to be addressed, and are therefore not included in the Review Summary component of the Final Assessment Report and Implementation Plan.

The reviewers observed the following **strengths**:

- Relationships
 - ▶ Reviewers commended Director’s leadership “in the highest terms”
 - ▶ Director has “made every effort to stay in touch with students, colleagues, and staff through informal online meetings and reaching out to others when time allows”
 - ▶ Morale of faculty, staff and students is high, with a strong sense of community and “bright outlook for the future”

- ▶ Rapid growth of undergraduate enrolment and development or expansion of IHPST offerings has generated newfound excitement for students, faculty and staff
- ▶ Students, faculty, and administrative staff enthusiastic about the support and welcoming role extended by both the Director of Undergraduate Studies and the Director of Graduate Studies
- ▶ Director is planning to establish a Climate and Equity Committee to encourage and help maintain an inclusive atmosphere in the unit
- ▶ IHPST's connections with the Social Sciences have become more important
- ▶ "The current relationships with Victoria College are very good, and those with Philosophy are much improved"
- ▶ Overall relationships between IHPST and Philosophy are strong and complementary
- ▶ Many IHPST faculty hold cross-appointments, and many PhD committees include faculty from other units or institutions, indicating a multi-disciplinary and cooperative network
- ▶ Cognate units appear supportive of the new directions IHPST is taking
- ▶ Topics studied by faculty in IHPST are of interest to undergraduates in STEM fields as well as other fields
- ▶ "Under its current leadership, IHPST is now...positioned to become a hub for bringing together many interests shared among students in Humanities, Social Sciences and STEM fields, other public institutions, and members of underrepresented groups in the region"
- Organizational and financial structure
 - ▶ Director has made considerable recent efforts to clarify unit policies, locate decision-making firmly in relevant committees, and increase transparency
 - ▶ Administrative procedures have been brought up to date with new web-based workplace; administrative staff are grateful for opportunities to train in different kinds of digital software, storage spaces and communication methods, and express confidence in navigating the University's and unit's pathways
 - ▶ Students, staff and faculty interviewed largely happy with IHPST's physical location in Victoria College
 - ▶ Victoria College has initiated plans to renovate one of its buildings, which might ideally help to somewhat ease space issues faced by IHPST
- Long-range planning and overall assessment
 - ▶ "IHPST has taken action on many of the issues raised in the 2018 report and is moving forward with heads held high"
 - ▶ IHPST thriving, despite pandemic disruptions
 - ▶ Reviewers underscore IHPST's research excellence and institutional dynamism
 - ▶ Institute has been rapidly changing character to align with disciplinary developments, including newer field of Science and Technology Studies
 - ▶ IHPST is moving in promising new directions by expanding the geographical scope of its offerings
 - ▶ IHPST a "key asset" for FAS and U of T in "creatively instigating and successfully implementing cross-disciplinary programs of research and teaching"

- ▶ With continued internal efforts and support from FAS, Victoria College, cognate units and other interested parties, IHPST will continue to rank among the best units of its kind for research and graduate training, undergraduate education, and potential for public engagement
- ▶ “from its origins the IHPST has sought to bridge many fields of study and research methodologies, drawing insights from across traditional fields in the humanities and social sciences”
- ▶ “the reliance of IHPST teaching and administration on sessional academic staff, criticized in the 2018 report, has been considerably lessened”
- ▶ IHPST now “in a distinctively good position to chart a path, as they are now manifestly able to engage thoughtfully and responsively with one another, to track new intellectual developments, and to listen to their students in order to assess new directions to move forward one step at a time.”
- International comparators
 - ▶ Cambridge, Pitt and Caltech identified as institutions with similar emphasis on HPS
 - ▶ “a strict concern for ‘combined historical and philosophical studies’ is what makes IHPST almost unique in North America”

The reviewers identified the following **areas of concern**:

- Relationships
 - ▶ Attempts to reach out to STEM units and divisions have not yet prospered aside from undergraduate enrolments in IHPST courses by majors in those fields
 - ▶ Observing very high number of faculty listed as affiliates of IHPST, reviewers noted resultant lack of clarity regarding “the place of IHPST in the University’s ecosystem”
 - ▶ Significant impact of pandemic and switch to online course delivery on new Director and members of faculty, particularly newer ones
- Organizational and financial structure
 - ▶ Concerns noted among students, staff and faculty that the unit’s allotted space in Victoria College is insufficient; “The allotment of space on any campus is fraught with difficulties, but we consider the concerns of IHPST to be valid”
- Long-range planning and overall assessment
 - ▶ “The ending of a period of graduate student expansion for Ontario universities poses a challenge for future funding for the number of IHPST graduate students currently enrolled”
 - ▶ “Some of [IHPST’s] rapid growth has come at the expense of overall program coherence”
- International comparators
 - ▶ Many of IHPST’s peers have moved towards inclusion of forms of historical, anthropological, and cultural studies; “the field of HPS has become comparatively uncommon as a self-contained scholarly research subject”
 - ▶ “in its stated self-identity IHPST remains distinct, making comparisons difficult and rankings almost impossible.”

The reviewers made the following **recommendations**:

- Relationships
 - ▶ “Institute-wide opportunities to share informal works-in-progress, among students and faculty alike, could further help to foster a shared intellectual purpose”
 - ▶ IHPST’s new curatorial role for historic scientific instruments at U of T may support more conversations about common interests with STEM subjects across the university and beyond
 - ▶ Opportunities noted for IHPST to help in furthering informed academic/public conversations around issues such as climate change, technology and the future of work, artificial intelligence, racial and class inequities, and other major social and political challenges
 - ▶ IHPST’s notable capacity to bring together students from diverse fields of study corresponds well with Victoria College’s evolution; significant potential observed for ongoing collaboration, “if issues of strategic priorities, resources (including teaching staff), and space allocation can be worked out”
 - ▶ Opportunities noted to expand connections with cognate units such as Economics, Political Science, Mathematics and potentially data science
 - ▶ Reviewers recommended “finding a better way to signal close relationships with other academics while dropping the distant ones”
 - ▶ Opportunities noted for IHPST to continue building relationships to other programs at U of T, including potentially considering cross appointments as part of its complement plan
- Organizational and financial structure
 - ▶ “Proficiency in the digital workspace will clearly continue to be a priority for staff”
 - ▶ Reviewers supportive of IHPST’s desire to establish new administrative positions, including a part-time Communications Officer and a dedicated curator for the Scientific Instruments Collection
 - ▶ A need was observed for “a meeting room controlled by IHPST” where seminars, academic meetings, and meetings between students, faculty and staff could take place
- Long-range planning and overall assessment
 - ▶ Develop clearer sense of IHPST’s strategic goals, and alignment with the goals of the campus
 - ▶ “We encourage IHPST to continue strengthening and strategically building out a rigorous program of interdisciplinary study”
 - ▶ “As he gains further experience with the unit and as waning covid restrictions allow face-to-face group meetings to re-emerge, we urge the Director to think carefully about what internal governance procedures might be invoked for initiating collective discussions with the academic staff about the strategic direction of IHPST so as to encourage buy-in and take further input into account”
 - ▶ Long-range planning for IHPST should consider both undergraduate and graduate components
 - ▶ “Given the enormous good will and community spirit that the IHPST presently enjoys, a useful further step would be to undertake an IHPST-wide curriculum

- review, engaging undergraduates, graduate students, and faculty to help identify strategic areas on which to focus for moving forward”
- International comparators
 - ▶ “Whether the future of IHPST is best cultivated by remaining focused on what is almost unique or by continuing to shift and expand its range of topics and methods, as many peer programs around the world have done, remains an open question”

2 Administrative Response & Implementation Plan



UNIVERSITY OF TORONTO
FACULTY OF ARTS & SCIENCE

March 2, 2023

Professor Susan McCahan
Vice-Provost, Academic Programs
University of Toronto

Dear Prof. McCahan,

RE: UTQAP cyclical review of the Institute for the History and Philosophy of Science and Technology (IHPST)

I write in response to your letter of January 6, 2023, regarding the January 25th and 28th, 2022 UTQAP cyclical review, held remotely, of the Institute for the History and Philosophy of Science and Technology (IHPST) and its programs (History and Philosophy of Science and Technology, Hons BA, Major, Minor; Science and Society, Minor, offered with Victoria College; History and Philosophy of Science and Technology, MA, PhD), and requesting our Administrative Responses.

On behalf of the Faculty of Arts & Science, we would first like to thank the reviewers, Professors Cathryn Carson, University of California, Berkeley, Harold Cook, Brown University, and David I. Kaiser, Massachusetts Institute of Technology, for their very comprehensive review of the IHPST. We would also like to thank the director, faculty, administrative staff, and all those who contributed to the preparation of the self-study. We also wish to thank the many staff, students, and faculty members who met with the external reviewers and provided thoughtful feedback. The UTQAP cyclical review process is an invaluable exercise that affords us the opportunity to take stock of our academic units and programs, to recognize achievement and identify areas for improvement.

The review report was finalized on April 21, 2022, after which the director shared it widely with faculty, staff, and students in the IHPST. We are extremely pleased with the reviewers' positive assessment of the overall strength of IHPST, its continued evolution in the undergraduate and graduate programs, and its outstanding, productive faculty. The reviewers noted the IHPST's "research excellence and institutional dynamism" and credited much of the "positive movement" of the IHPST to its new director, while also observing revised undergraduate offerings and enrolment, revisions to the graduate program, high morale, and building wider, more diverse, interdisciplinary interests. The review report also raised several issues and challenges and identified areas for enhancement, including increasing the diversity and number of faculty, providing more structure and clarity to course offerings, as well as more experiential learning and

research opportunities, in the undergraduate program, and clearer expectations of graduate program requirements, and space challenges.

Each of these recommendations has been addressed in the attached Review Recommendations Table that outlines the Program's response, the Dean's response, and an Implementation Plan identifying action items and timelines for each recommendation. My Administrative Response and Implementation Plan was developed in consultation with the IHPST director and with the Associate-Dean, Unit-Level Reviews, and senior leadership within my office. The Implementation Plan provided identifies timeframes of immediate- (six months), medium- (one to two years), and longer- (three to five years) term actions and who (Faculty, Dean, unit) will take the lead in each area. I also identified any necessary changes in organization, policy, or governance where appropriate, as well as any resources, financial or otherwise, that will be provided, and who will provide them.

The next UTQAP cyclical review of the IHPST will take place no later than the 2029-30 review cycle. My office monitors progress on Implementation Plans through periodic meetings with the director and through the five-year unit-level academic planning process, which begins at the conclusion of the cyclical review. I also acknowledge that your office will request a brief Interim Monitoring Report midway between the 2021-22 UTQAP cyclical review and the year of the next site visit in 2029-30 to report on progress made on the Implementation Plan as outlined in the accompanying Review Recommendations Table.

Thank you very much for the opportunity to respond to the review report. The reviewers' comments and recommendations will help inform the future priorities of the Institute for the History and Philosophy of Science and Technology and its undergraduate and graduate programs.

Sincerely,



Melanie Woodin
Dean, Faculty of Arts & Science
Professor, Department of Cell & Systems Biology

cc.

Edward Jones-Imhotep, Director, Institute for the History and Philosophy of Science and Technology, Faculty of Arts & Science

Alison Chasteen, Acting Associate Dean, Unit-Level Reviews, Faculty of Arts & Science

Daniella Mallinick, Director, Academic Programs, Planning & Quality Assurance, Office of the Vice-Provost, Academic Programs

Andrea Benoit, Academic Review Officer, Academic Planning, Office of the Dean, Faculty of Arts and Science

2021-22 UTQAP Review of the FAS Institute for the History and Philosophy of Science and Technology - Review Recommendations

Please do the following for each recommendation in the table:

- If you **intend** to act on a recommendation, please provide an **Implementation Plan** identifying actions to be taken, the time frame (short, medium, long term) for each, and who will take the lead in each area. If appropriate, please identify any necessary changes in organization, policy or governance; and any resources, financial and otherwise, that will be provided, and who will provide them.
- If you **do not** intend to act on a recommendation, please briefly explain why the actions recommended have not been prioritized.
- In accordance with the UTQAP and Ontario's Quality Assurance Framework, "it is important to note that, while the external reviewers' report may include **commentary** on issues such as faculty complement and/or space requirements when related to the quality of the program under review, **recommendations** on these or any other elements that are within the purview of the university's internal budgetary decision-making processes must be tied directly to issues of program quality or sustainability" (emphasis added)
- You may wish to refer to the [sample table](#) provided by the Office of the Vice-Provost, Academic Programs

Request Prompt <i>verbatim from the request</i>	Rec. #	Recommendations from Review Report <i>verbatim from the review report</i>	Program Response	Dean's Response
<p>The reviewers made a number of observations and potential suggestions related to enhancing the undergraduate program, including:</p> <ul style="list-style-type: none"> • Enhancing the structure and clarity of course offerings • Exploring options for providing students with more experiential learning and research opportunities 	1	<p>"Some undergraduates reported wishing for a bit more structure or clarity among the coursework offerings: if not formal tracks or subdivisions, then at least additional information about clusters of courses that explore similar topics or themes."</p>	<p>As part of a full curricular review (detailed in response to Recommendations 11-13 below) we will be introducing limited and specific pre-requisites and thematic "focus areas" to enhance the clarity and structure of our course offerings. Results of the review will likely require program modifications during the 2023-2024 curriculum cycle.</p> <p>To enhance experiential learning opportunities, we have launched a pilot internship program for our HPS majors, HPS minors, and STS minors, and linked to a course offered by Victoria College</p> <p>Will create an integrated "student opportunities" portal highlighting an array of research and internship possibilities, to ensure that students have up-to-date information about these and have access to additional guidance and support to help them succeed, such as mentoring arrangements</p>	<p>The Vice-Dean, Undergraduate and the Vice-Dean, Academic Planning, will work with the IHPST leadership on any proposed curriculum changes.</p> <p>The Office of Experiential Learning & Outreach Support (ELOS) is available to provide pedagogical supports, including consulting with individual faculty and unit or program leaders interested in developing or expanding experiential learning and/or undergoing experiential learning curriculum planning. ELOS can also provide administrative support, resources, and guidance on funding for experiential learning, as well as offering partner supports, including partnership development, relationship management, and partner recognition.</p>
	2	<p>"...the students with whom we spoke expressed an active desire for more real-world and research opportunities relating to their programs of study"</p>		

			We have recently launched an HPS/STS mentorship program, which matches undergrad students with current grad students and alumni from our undergrad and grad programs.	
The reviewers noted opportunities related to enhancing the undergraduate student experience in association with Victoria College	3	“...the responsibilities of fielding so many large undergraduate courses has left fewer opportunities for smaller, seminar-style teaching associated with VIC. In the meantime, there is room to improve communication to students about shared IHPST-Victoria courses.”	IHPST anticipates a future search request (subject to A&S Faculty Appointments Committee review) for a joint teaching-stream appointment, cross-appointed between IHPST and Vic to strengthen collaboration, foster integration with HPS students, and regularize course offerings in the STS minor. We plan a multi-pronged approach to current responsibilities for large courses: <ul style="list-style-type: none"> - We anticipate that future hires (see points #17-19) will alleviate some pressure - We are exploring the possibility of reducing the number of large introductory HPS courses and rotating teaching among the core staff. This will provide more opportunities for smaller seminar-experience within HPS Major and Minor, and in Vic STS seminars. We will begin listing Vic STS Courses on the IHPST website; publishing a list of these in our Undergraduate Handbook; and advertising them to students in existing IHPST courses.	Institute/Program/Departmental hiring priorities do not necessarily translate into teaching-stream positions because new teaching-stream positions are allocated at the Faculty level. All requests for new positions across the Faculty are submitted to the Faculty Appointments Committee (FAC), which includes representation across its sectors (Humanities, Social Sciences and Sciences) and from the Colleges. The FAC reviews all requests for new positions and makes recommendations to the Dean regarding which requests should be granted. In a given year, there are many more requests than available positions. The Dean’s Office recognizes that the Institute will be addressing the review report recommendation regarding improving communication with students regarding available courses in the College.
	4	“We see significant potential for ongoing collaboration [with Vic] if issues of strategic priorities, resources (including teaching staff), and space allocation can be worked out.”		
The reviewers also made a number of observations and potential suggestions	5	“... most of the graduate students with whom our committee met sought greater clarity on PhD program requirements and how to fulfill them.”	We have initiated a full graduate program review to clarify and streamline requirements for students.	IHPST is encouraged to engage with the Vice-Dean Graduate Education regarding proposed program modifications as a first

<p>related to enhancing the graduate student experience, including:</p> <ul style="list-style-type: none"> • Graduate students desire greater clarity on PhD program requirements and how to fulfill them • The reviewers recommended implementing changes to align the graduate preliminary examination process with those in other humanities and social sciences programs • Faculty are encouraged to address graduate student desire for “professionalization” opportunities • The IHPST Director and faculty are urged to regularly assess whether recent shifts in teaching allocation might put unanticipated pressure on staffing an appropriate range of graduate-level courses 	6	<p>“...we would urge changes that make the preliminary examination process more like the expectations found in other programs in the humanities and social sciences, and in keeping with the breadth of course work already evident in IHPST’s current offerings.”</p>	<p>Our review places particular emphasis on restructuring the qualifying year, including the preliminary examination, to more closely align it with expectations found in other programs in the humanities and social sciences. Expected completion of consultations – Summer 2023. Governance in early 2024.</p> <p>We are also working to integrate professionalization modules into existing course requirements, including information and programming on international opportunities, entrepreneurial possibilities and networking. In addition, IHPST is in early discussions with the Ontario Science Center to create internships for IHPST graduate students, providing experience in science communication, media display, and non-profit work.</p> <p>IHPST leadership is confident in its ability to continue staffing an appropriate range of graduate-level courses. We draw on non-budgetary cross-appointments in key areas that complement our geographic and temporal range while reinforcing key methodologies.</p>	<p>step toward restructuring graduate program requirements. As well, the Institute is welcome to contact the A&S Coordinator, Graduate Student Professional Development for consultation about developing professionalization modules. The Institute can also engage with the School of Graduate Studies, which houses the Centre for Graduate Professional Development as well as offers career exploration and education services.</p> <p>The Institute is encouraged to engage with the A&S Office of Experiential Learning and Outreach Support (ELOS), for further guidance on experiential learning opportunities at the graduate level.</p>
	7	<p>“The graduate student survey conducted by the department also indicated some concerns around the perceived ‘fewer opportunities for developing capacities outside the Program Learning Outcomes, including international study, entrepreneurial possibilities, and networking’ [...] we encourage the IHPST faculty to consider these additional issues, which are sometimes addressed elsewhere by a series of departmental talks or a seminar-style ‘professionalization’ course, as they continue to revise their program.”</p>		
	8	<p>“...the committee encourages the Director and IHPST faculty to regularly assess whether the shift in teaching allocation among the undergraduate and graduate programs might put unanticipated pressure on staffing an appropriate range of graduate-level courses, including preparation opportunities for the graduate students’ Prelim exam”</p>		
<p>The reviewers observed that “some of [IHPST’s] rapid growth has come at the expense of overall program coherence,”</p>	9	<p>“...a clearer sense from IHPST about its own strategic goals and its alignment with the goals of the campus (as well as adjacent departments) will be fundamental to keep things on track.”</p>	<p>Over the course of this year, IHPST will begin clarifying strategic goals and their alignment with Faculty and University Priorities (as well as adjacent departments). In addition to the</p>	<p>Upon completion of the UTQAP review, the Institute will undertake a five-year Unit-Level Academic Planning (ULP) process later in 2023. The unit-level academic plan is a</p>

<p>and emphasized that developing a clearer sense of IHPST’s own strategic goals and aligning these with the goals of the campus and cognate units will be essential in order to maintain a positive trajectory.</p>	10	<p>“... we urge the Director to think carefully about what internal governance procedures might be invoked for initiating collective discussions with the academic staff about the strategic direction of IHPST so as to encourage buy-in and take further input into account.”</p>	<p>Faculty’s priorities of research, teaching, EDI, and community partnerships, we will work to further centre Indigenous teaching, research, and learning in our research profile, graduate education, and undergraduate curriculum plans.</p> <p>The IHPST already possesses internal governance procedures – including its General Assembly — to encourage broad support and buy-in for strategic priorities. Any discussions regarding new strategic direction will be undertaken through these procedures.</p>	<p>forward-looking document that both articulates a department’s academic plans over the following five years and also highlights progress made on the implementation plan identified in the UTQAP administrative response. The ULP includes a discussion of plans relevant to equity, diversity and inclusion at all levels of the institute. The development of the ULP involves significant consultation with stakeholders across the institute (faculty, staff, and students). Senior academic and administrative leadership within the Dean’s Office will meet with the Institute’s leadership to discuss their unit-level academic plan and provide guidance and feedback.</p>
<p>The reviewers recommended undertaking an IHPST-wide curriculum review that engages students and faculty, to strategically identify potential future areas of focus.</p>	11	<p>“We encourage IHPST to continue strengthening and strategically building out a rigorous program of interdisciplinary study.”</p>	<p>We have initiated a broadly consultative undergraduate curricular review, combining insights from the IHPST Self-Study with input from consultations in spring 2023. The review will:</p> <ul style="list-style-type: none"> - articulate program identity, mission, and strategic priorities of our three POSTs. - align these with learning outcomes at each course-level (100, 200, etc.) - identify topic areas for future expansion and possible focus areas to better structure IHPST programs and student experience. - introduce pre-requisites to establish clearer progression of learning from lower to upper course levels. - consider adding elements, including a senior thesis option, to create a more coherent student experience 	<p>The Dean’s Office recognizes that the Institute will be addressing the review report recommendation regarding curriculum renewal. IHPST is encouraged to consult with the Vice-Dean Undergraduate and/or Associate Dean Teaching & Learning as they plan curricular changes.</p>
	12	<p>“We consider the diversity of subject matter and methodology to be a current strength of IHPST’s program, but it will need continued oversight if it is to have a reputational identity.”</p>		
	13	<p>“Given the enormous good will and community spirit that the IHPST presently enjoys, a useful further step would be to undertake an IHPST-wide curriculum review, engaging undergraduates, graduate students, and faculty to help identify strategic areas on which to focus for moving forward. Finding opportunities for more intentional emphasis—rather than simply growing by trying to take on more and more topics—could provide a useful basis for medium- and long-range planning, including key strategies and priorities for new-faculty hiring.”</p>		

			The DUS and Curriculum Committee will provide continued oversight to ensure the program's reputational identity.	
The reviewers observed that beyond a marked increase in undergraduate enrolments, attempts to connect with STEM units have not yet prospered; they also noted possible opportunities to build or strengthen relationships with colleagues in Economics, Political Science, Mathematics and Data Science, and with other initiatives across the wider university landscape.	14	"...attempts to reach out to STEM departments and schools have not yet prospered aside from undergraduate enrollments in IHPST courses by majors in those fields. An exception should be noted: the unit's new curatorial role for historic scientific instruments at UT, which will support teaching and research as well; perhaps this initiative will support more conversations about common interests with STEM subjects across the university and beyond."	IHPST currently enjoys successful and prospering connections to several STEM units and programs, including the Collaborative Specialization in Bioethics; University College's Cognitive Science Program; and the Mathematics Major and Minor programs. We are currently exploring a new course collaboration with Engineering in which HPS/STS students join engineering students in small groups to analyze specific real-world issues faced by particular communities, and develop a proof-of-concept engineering product to address it.	The Dean's response acknowledges currently existing relationships with cognate units both within Arts & Science and beyond.
	15	"...while relationships with the social science departments of History and Anthropology are good, faculty in Economics and Political Science also consider science, medicine and technology important to their work; depending on personal relationships, there may be further opportunities for campus conversations with them."	We plan to build on current collaborations with the Departments of History and Philosophy; and prospective collaborations with Anthropology and Near and Middle Eastern Civilizations. Our current curricular review will take stock of other units offering courses or with interests and will make connections, for possible future collaborations with Munk School, political science, and natural science programs.	
	16	"IHPST enjoys strong and constructive relationships with cognate departments. Given growing interest on the UT campus and beyond in topics such as technology and society (including the new Schwartz-Reisman Institute on campus) and in social and ethical responsibilities of computing and artificial intelligence, the IHPST has a rare opportunity to take a lead in campus-wide discussions and activities, and in broader community engagement."		
The reviewers recommended adding to the diversity and number of IHPST faculty when opportunities permit, noting that Indigenous Studies; Non-Western/African-diasporic Science, Technology, and Medicine; and the Philosophy of Science and Medicine might represent areas in which to prioritize enhanced coverage.	17	"Continued strong leadership from the Director and the office of the Dean, including serious consideration of adding to the diversity and number of IHPST faculty when opportunities permit, will be important in continuing the work of the Institute in an inclusive and multi-disciplinary manner..."	The IHPST will be submitting search requests during the current cycle in Philosophy of Science and African Diaspora history of Medicine. We have plans for a future hire in Indigenous STS, focusing on Canada. These and future foci will be shaped by the curricular and strategic planning described in earlier sections.	As noted above, Institute/Program/Departmental hiring priorities do not necessarily translate into teaching or tenure-stream positions because new positions are allocated at the Faculty level. All requests for new positions across the Faculty are submitted to the Faculty Appointments Committee (FAC), which includes representation across its sectors
	18	"The stated ambition to expand the geographical and cultural diversity of the studies of faculty in IHPST is in keeping with recommendations in the		

		2018 review and is also fully supported by this Committee.”		(Humanities, Social Sciences and Sciences) and from the Colleges. The FAC reviews all requests for new positions and makes recommendations to the Dean regarding which requests should be granted. In a given year, there are many more requests than available positions.
	19	“we note the stated ambition (p. 112) to make appointments in Indigenous Studies; Non-Western and African-diasporic Science, Technology, and Medicine; and Philosophy of Science and Medicine. They would help to diversify the university and further expand the range of teaching and research related to STS-style subject interests. We support the request, along with meeting the strategic need to grow and evolve the relationship with mathematics and potentially data science.”		
The reviewers noted opportunities for broadening the curriculum in response to student interest, including but not limited to non-Western histories of science and technology.	20	“According to the Chair of Anthropology, undergraduate students crave more teaching in non-Western histories of science, medicine and technology...”	We have introduced undergraduate and graduate courses in non-Western topics and methodologies over the past year. We plan to continue expanding in this area vigorously. We are working with other units offering decolonial science and technology studies (including the Department of History and the Women and Gender Studies Institute) to allow our graduate students to enrol in these courses and count them towards their degrees.	The Dean’s Office recognizes that the Institute will be addressing this review report recommendation.
	21	“Many of the graduate students and undergraduates are also eager for teaching and research in areas such as science and society, science policy, and decolonized forms of nature-knowledge.”		
The reviewers observed the need for IHPST to have access to more directly bookable meeting space in order to support effective communication and community building.	22	“The greatest need is for a meeting room controlled by IHPST where seminars and other academic meetings, meetings between students and academic staff, the staff meetings with one another could take place. Currently, rooms for such occasions need to be booked in advance through Victoria University, making on-the-spot group conversation behind closed doors almost impossible and therefore in effect silencing much of the communication needed in any organization. The allotment of space on any campus is fraught with difficulties, but we consider the concerns of IHPST to be valid.”	This will require additional negotiations between A&S and Victoria University to find this space. In the interim, IHPST will need to request additional funding to cover the costs of room bookings for routine department business, including faculty meetings and committee meetings.	Acknowledging the challenges of increasing space demands for all our A&S units, we are working with the Institute to address space needs through the Vice-Dean Research & Infrastructure portfolio.

Other recommendations not prioritized in the Request for Administrative Response	23	“The ending of a period of graduate student expansion for Ontario universities poses a challenge for future funding for the number of IHPST graduate students currently enrolled; this issue is under review at the university level. If numbers go down, reducing the number of TAs available, perhaps caps would have to be added to some of the large undergraduate courses that IHPST is now servicing so well.”	We are carefully monitoring the situation. We have implemented closer coordination between graduate admission and undergraduate course planning precisely to monitor this issue and address it swiftly if it arises.	The Dean’s Office recognizes that the Institute will be addressing this review report recommendation.
	24	"the Director and others shared considerations leading them to advocate for two new semi-academic administrative positions: a part-time Communications Officer and a dedicated curator for the Scientific Instruments Collection...We endorse both requests.”	We plan to move quickly on both these issues. The Director has already initiated an administrative review with Admin HR to establish possibility of Communications Officer. We plan to move later this academic year (Spring/Summer 2023) to explore the possibility of a dedicated curator for Scientific Instruments Collection, which draws stakeholders from across the University, including Faculty of Medicine, Faculty of Information, Victoria College, and Arts and Science.	In the Fall 2022, A&S received a request from the Director to conduct an administrative review in order to identify and address the Institute’s operations and needs. This would include assessing staffing levels, workload and assignments, and areas that may require further support. The A&S administrative review will conclude shortly and the Institute will seek relevant base or OTO funding approval for any new FTEs. A&S Administrative HR Services will support the Institute with the implementation in spring/summer 2023.

3 Committee on Academic Policy & Programs (AP&P) Findings

Reading group members had found the reviewers' comments to be generally supportive of the program and had commended the Director's leadership for much of the progress made by the Institute. The members found the summary to accurately reflect the full review. The responses provided by the Dean and the Institute addressed many of the issues raised in the review, though they noted that some of the data provided in the review was outdated. The group noted that the administrative response was rather generic and had requested additional information on: how the pilot internship programs for HPS majors, HPS minors, and STS minors were linked to courses offered by Victoria College; the concerns around course requirements; and, clarity regarding the place of the Institute within the University's ecosystem.

Edward Jones-Imhotep, Director, Institute for the History and Philosophy of Science and Technology, responded that the pilot internship program had been developed in the winter of 2022 in consultation with the experiential learning and outreach support (ELOS) in the Faculty of Arts & Science to complement the research and work-study opportunities for fourth-year students. He explained that the program provided hands-on experience in several closely related fields such as policy and governance. The program was a one term internship consisting of 100 hours with partner organisations and participants received academic credit as part of a single half-year course through the Science, Technology, and Society (STS) program coordinated through Victoria College.

Professor Jones-Imhotep further clarified that the Institute was undergoing a comprehensive graduate program review to determine the best approach to fix the course requirements and he highlighted a few possibilities under consideration. He commented that the affiliates had played an important role in the IHPST going back to its founding in 1967. The Institute had worked to redefine the role and appointment process for affiliates, aligning it more closely with its original vision and had clarified the relationship to IHPST on the website and corresponding documentation. He concluded by reporting that the Institute had decreased the number of affiliates, from 28 to the 8 affiliates that were listed in the self-study and external report.

Alison Chasteen further outlined the supports and resources provided by ELOS and noted that the IHPST would engage with the Vice-Dean Graduate Education regarding proposed program modifications as a first step toward any restructuring of graduate program requirements.

No follow-up report was requested.

4 Institutional Executive Summary

The reviewers observed that "IHPST has taken action on many of the issues raised in the 2018 report and is moving forward with heads held high", and that the unit appears to be thriving despite recent pandemic-related disruptions; they underscored IHPST's research excellence and institutional dynamism, and the new Director's leadership; they praised IHPST's rapid change in

response to developments in the discipline; and highlighted that faculty have revised the undergraduate offerings and dramatically increased enrolments, and updates to the graduate curriculum are now underway. They observed that the quality of graduate advising is much enhanced; the current relationship with Victoria College is very strong and that with the Department of Philosophy is much improved. Faculty have recently shifted their teaching loads to accommodate the increased undergraduate enrolments and express confidence that these new commitments are manageable, and several new faculty members have been appointed; mid-level faculty were commended as mature and productive, and junior faculty as holding enormous promise. The reviewers underscored that IHPST's reliance on sessional academic staff has been considerably lessened, administrative procedures have been modernized, and morale of faculty, staff and students is high and forward-looking; finally, they noted excellent opportunities for IHPST to take the lead in significant campus-wide discussions, activities and public engagement around multiple issues such as Artificial Intelligence, climate change, technology and the future of work, racial and class inequities, as well as other major social and political challenges.

The reviewers recommended that the following issues be addressed: enhancing the structure and clarity of course offerings; exploring options for providing students with more experiential learning and research opportunities; pursuing opportunities related to enhancing the undergraduate student experience in association with Victoria College; providing greater clarity to PhD students on program requirements and how to fulfill them; implementing changes to the graduate preliminary examination process; addressing graduate student desire for "professionalization" opportunities; regularly assessing whether recent shifts in teaching allocation might put pressure on staffing graduate-level courses; developing a clearer sense of IHPST's own strategic goals and aligning these with the goals of the campus and cognate units; undertaking an IHPST-wide curriculum review that engages students and faculty; pursuing opportunities to build connections with cognate units, particularly in STEM; adding to the diversity and number of IHPST faculty when opportunities permit; broadening the curriculum in response to student interest; and addressing the need for IHPST to have access to more directly bookable meeting space, to support effective communication and community building.

The Dean's Administrative Response describes the division and unit's responses to the reviewers' recommendations, including an implementation plan for any changes necessary as a result.

5 Monitoring and Date of Next Review

The Dean will provide an interim report to the Vice-Provost, Academic Programs no later than the midway point between the 2021-22 site visit and the next scheduled review on the status of the implementation plans, when requested by the office of the Vice-Provost, Academic Programs.

The next review will be commissioned no later than the 2029-30 review cycle.

6 Distribution

On June 30th 2023, the Final Assessment Report and Implementation Plan was posted to the Vice-Provost, Academic Programs website and the link provided by email to the Dean of the Faculty of Arts and Science, the Secretaries of AP&P, Academic Board and Governing Council, and the Ontario Universities Council on Quality Assurance. The Dean provided the link to unit/program leadership.