

Task Force on Supporting Research, Creativity and Collaborative Innovation

Work Group 2: Expanding Undergraduate Research Opportunities

The working group held three meetings to identify key issues, needs and common themes relevant to the goal of expanding opportunities for undergraduates to engage in all forms of research, scholarship and creative activity across the university. We also held a listening session with students and met with Dean of Arts & Sciences Dorothy Hodgson and with Alyssa Canelli, former Assistant Director of Experiential Teaching and Learning; Andre Dine, Executive Director, Hiatt Career Center; and Meredith Monaghan, Director, Academic Fellowships, Office of Academic Services. Members of the working group attended task force listening sessions with the leadership of the divisions and professional schools as well as the freestanding centers and institutes and met with several faculty. We also conducted a survey of departments, programs, centers and institutes, receiving responses from 13 departments, 17 interdisciplinary programs, and 8 centers and institutes (primarily in IBS and Heller).

Given the tight timeframe, we did not undertake an extensive inventory of currently available opportunities nor did we attempt to survey large numbers of students. The results of earlier studies are described in the 2017 *Report on Internships, Research and Substantive Experiences for Undergraduates*, and it appears that the situation described in that report remains largely unchanged today. We focused on trying to characterize existing strong suits and challenges, both those that extend across the institution and those that are peculiar to one or several units, with an eye toward identifying areas in which additional resources are likely to have a significant positive impact. Major items to which we wish to call attention are listed as bullet points below.

- The most significant resource limiting the availability of opportunities for undergraduates is faculty time to supervise research/scholarly/creative projects. A key issue is whether and how to compensate such time. In the sciences, many faculty receive summer salary from external grants and some can create student research projects that contribute to their research. This is rarely the case in the social sciences, humanities and creative arts. In Heller, many faculty and research staff are on soft money, and time spent on supervising undergraduate

research needs to be compensated. Should faculty receive course relief for supervising a certain number of student theses or projects, perhaps over a period of several years? Might funds be made available on a competitive basis to faculty who wish to supervise student projects during the summer? Are there additional models from other universities that are worth exploring? Any approach to addressing this issue will require additional financial resources.

- It is essential that access to opportunities for students to engage in research and creative activity not be limited by the students' financial resources. Therefore, funds need to be available to compensate students, particularly during the summer, though the 2017 report revealed that many students feel unable to take advantage of term-time opportunities as well because they need to hold part-time paying jobs. Students should not have to choose between potentially life-changing research/creative activities and meeting their financial obligations. Recent increases in the stipends for several summer grants (e.g., Provost's Undergraduate Research Fund, WOW internships) are steps in the right direction, but more funds are needed.
- A related issue that limits access for students, particularly those who are less comfortable with actively seeking out faculty, is the lack of a central communication structure to inform students about opportunities. There is currently no staff member whose job description includes collecting (much less soliciting), documenting and publicizing opportunities for research, scholarly and creative experiences at the university as well as at off-campus sites. Students are expected to seek out these opportunities on their own, and not surprisingly those with the most outgoing personalities or most extensive social networks are the most likely to learn of, apply for and obtain these opportunities. Staff dedicated to overseeing the undergraduate research effort, either across the university or, ideally, distributed among the divisions, would go a long way toward creating a more inclusive environment for students seeking to engage in these activities, particularly outside the sciences. Creating and maintaining a database of available opportunities might be one of the duties associated with such a position.
- It became clear, in our discussions among ourselves and then with other faculty and staff, that there are many successful models for structuring undergraduate participation in research/creative activity – term-time work, which can be for credit, pay or uncompensated; full-time summer work, often for a stipend, either at Brandeis or at an off-campus site; off-campus internships; the JBS model, in which students enroll full-time in a set of linked courses; ... A single model will clearly not work optimally for all students or all fields, nor should we expect that a

single model can serve the needs, interests and working styles of our intellectually diverse faculty and student body. Nonetheless, as noted above, without better communication, coordination and financial support, we risk limiting access to opportunities to those with the most financial and social capital or the good fortune to encounter a sympathetic faculty member at the right time.

- The availability of opportunities for undergraduates and how these opportunities fit with the faculty culture vary widely from division to division and school to school. Undergraduate research is more widespread and more organized in the Division of Science than in the other divisions of Arts & Sciences. This situation is largely attributable to several factors:
 - a) Some staffing to coordinate activities, such as screening of applications for stipends, research presentations, centralized record-keeping, etc.;
 - b) Availability of research grants and student stipends;
 - c) A sizable fraction of the faculty conducting on-campus research during the summer;
 - d) Ability of faculty who are dedicated to the university's undergraduate education mission to structure undergraduate projects that contribute to the faculty member's research agenda, even if less efficiently than by using more senior personnel;
 - e) Graduate students and postdocs who serve as research mentors.
- The resources in the sciences are stretched thin, but still significantly exceed those in the other divisions. Staffing, perhaps in the form of a university-wide or divisional undergraduate research office, would obviously enable other divisions to broaden participation. Are any of the other factors above replicable across divisions? The Division of Social Sciences has developed a draft vision that would create substantial new opportunities for undergraduates to participate in research. Another exciting idea, still in its early stages, is to create a collaborative research and creativity community for the humanities, humanistic social sciences, and the arts, loosely modeled after the very successful (externally funded) Quantitative Biology Research Community in the sciences. Are physical facilities a major limiting factor? Many of our artists are forced to do their creative work off campus because of lack of studio space, thereby limiting the chances for their students to observe and participate. The professional schools and the centers and institutes already provide attractive opportunities for a number of students. Can access to these opportunities be broadened and better communicated?
- For those student projects that do not conform well to the models suggested above, more support should be available. Survey respondents reported a significant amount of unmet demand. Two frequently mentioned causes of this

were the lack of availability of or compensation for faculty to supervise these projects; and the lack of even modest financial support for undergraduate research. This is especially acute in interdisciplinary programs that have no faculty housed in their program and even more acute in the Business and HSSP programs, where some faculty are from IBS and Heller. We propose two potential ameliorations. First, we suggest providing some structure for compensation (either in terms of money or time) for faculty, perhaps according to the model for practica or graduate sections, or by establishing a research class that consists of supervising a number of projects in a given year, and that counts towards the faculty member's teaching load. Second, a fund provided by the university to support undergraduate research/creative activity for each department or program would help to improve student access. Even relatively small amounts, distributed according to a process decided on by the department or program, could provide students with support for travel, entrance fees, materials, and other costs related to research. This would also help to address the question of equal access to opportunities across the university. A few departments and programs have funds through gifts or other departmental funds. However, access to support should not be dependent on whether a student happens to pursue a major in a discipline that has received gifts, or dedicated part of their budget to undergraduate research.

- Our location in the Boston area offers the potential for collaborative research activities with many outside institutions, including universities, corporations and hospitals. The lack of convenient, affordable transportation poses a significant barrier to many students being able to take advantage of such opportunities. Funding to subsidize transportation costs would open up more possibilities and reduce another source of disparities in access among students. Currently, support from Brandeis faculty is required to supervise off-campus internships for which students register for credit. Such courses require regular meetings, development of reading lists, and feedback on written work, compounding the demands on faculty who are often supervising student work on-campus. Perhaps such supervision could be centralized under an undergraduate research office?
- In some areas of the humanities and social sciences, students lack the skills needed to allow them to contribute to a successful research project (“there are no entry level positions”), and often cannot acquire these skills in courses early enough in their Brandeis careers to get involved in research. The Library has helped to fill this gap by providing workshops to enable students to gain digital research skills. Perhaps more can be done to identify useful skills and develop ways to deliver them to interested students.
- In the sciences, research groups typically span a range of career stages, from undergraduates to graduate students to postdocs to faculty, affording

undergraduate researchers important insights into the profession. Science students also have multiple opportunities to learn about the research that their classmates are doing. In other areas, research tends to be more of a solo enterprise (in one field, the approach to research was described as “sitting alone with the text”). Developing a cohort model, where students doing research on a variety of topics might meet regularly as a group, perhaps with a faculty coordinator, to discuss their work, could be a valuable enhancement to the Brandeis research experience. Such groups might be associated with, for example, the Mandel Humanities Center or one of the centers and institutes, which could become hubs for undergraduate researchers.

- Brandeis currently lacks a strong system to unite international research experiences for students. Other schools offer some opportunities for international experiences through faculty, often in conjunction with individual research grants or through “sister schools”. Given the broad interest in international collaborations and scholarship at Brandeis (e.g., Brandeis India Fellows program; individual faculty research projects), connections across individuals could be strengthened, perhaps with some support for increasing the role of undergraduates in such work.
- Our listening session with students generated several insights and ideas. The students, all of whom are participating in research, felt extremely fortunate to have obtained their current slots and expressed concerns about how difficult it is for students to find out about and gain access to research opportunities at Brandeis. In the absence of a central office or website, students simply don’t know where to look, and one has to be well-connected, aggressive or just lucky to find an opening. They also suggested that some advising (e.g., in pre-health) may be inadvertently creating more demand than is appropriate for research opportunities by (inaccurately) suggesting that a research experience, even a casual one, is “a box to be checked off” among the necessary credentials for post-Brandeis employment or education. Our strong feeling is that students should pursue research only if they find intellectual satisfaction in it, not because it is something that “everyone ought to do.” Of course, one cannot find out if one has a passion for research unless one is able to do research, or at least see it being done up close. One suggestion that emerged was a shadowing program, in which students might observe advanced undergraduates, graduate students or postdocs over a period of months or weeks, thereby getting a realistic sense of what is involved in research before either the student or the faculty member makes the more serious commitment to an actual research project. Students also felt that it would be desirable to provide information to first years, and even at events for admitted students, both about how to access research opportunities and about the impact that doing research can have on one’s career trajectory.

UDRs or other upperclass students could serve the first function, while alumni presentations might address the latter topic.

- Substantively addressing any of these issues will require significant additional resources, but many of our alumni point to their research or creative activities as the most important and memorable aspect of their Brandeis education. Alumni may provide a receptive audience for a well-structured campaign to strengthen our endeavors in this area.