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SUPPORT FOR BROWN UNIVERSITY CORE FACILITIES

Need for Research Cores

Brown and other research universities recognize that shared core research facilities are essential for sustaining and advancing research and providing scientists and engineers with access to equipment and technologies that they could not support individually in their own laboratories. Core facilities are extremely beneficial for building research programs, increasing competitiveness for external grant funding, recruiting top faculty members, and attracting excellent students and postdocs. Furthermore, such specialized cores that are overseen by experts can facilitate multi-disciplinary collaboration and provide technological capacity to investigators throughout the University.

We also recognize that developing such facilities and making certain that their equipment remains up-to-date can be difficult and expensive. In the last few years, University core infrastructure investment has been sporadic in Engineering/Physical Sciences (outside of Biology and Medicine), sometimes available through special funding and often *ad hoc*, in response to crises or faculty recruitment and retention issues. The University recognizes that there needs to be a systematic, ongoing investment in laboratory cores to make sure the University is providing support to those that have widespread benefit, and to ensure we get maximum benefit from these valuable resources.

A University-wide core infrastructure study was conducted in 2016, borrowing largely from the current core analysis methodology used in Biology and Medicine (BioMed). The results of this study provided information on the current status of core support, and serve as the basis for recommendations for supporting core capital investments, and supporting operations through user-fees supplements and grants. A governance structure for the allocation of those funds, with coordinated oversight across the entire University, is also proposed.

Funding Streams to Support Research Cores

Research cores have essentially three sources of funds: (i) user fees from researchers or external sources, (ii) external grant funding specifically to support research cores, and (iii) University funds. Generally, funds are needed: to purchase and upgrade equipment periodically in existing cores; for maintenance and service agreements on the equipment; to support salaries of technical and administrative staff running the cores; for supplies and other operating expenses; and to purchase equipment in creating new cores. The University funds are needed to ensure competitiveness of the user-fee rates in attracting and retaining a strong user base. The University support will vary over the life of a core, subject to equipment malfunction and changing technology. Clearly, a process is needed to allocate University funds on a case-by-case basis drawing on detailed technical and financial information.

Across the University in Engineering/Physical Sciences and BioMed, competitively awarded instrumentation and center grants provide the optimal source of funds to upgrade current cores and initiate new cores. In addition to funding core equipment purchases or upgrades from external sources, the peer review process involved with these funding mechanisms provides valuable external input and attests to the merit of the plan. Cost-share associated with these applications, when applicable, can partially subsidize the operational costs (e.g., staff salaries, equipment service contracts, etc.) of these cores for the duration of the grant in some cases.

User fees are expected to cover the remaining personnel, operating, and service contract expenses, enabling the cores to operate financially near-breakeven on an annual basis.

It is recognized that University cores are not always competitive for the external funding due to the restrictions placed on the awards or timing of the request for applications. In these instances, University investment is needed to replace or upgrade essential research equipment. In some cases, additional temporary funding may be necessary to partially offset the operational costs associated with service contracts to maintain the technologically advanced equipment or salary support for highly skilled personnel required to operate these instruments. In particular, supplemental core funding alleviates the need for core facilities to forgo expensive service contracts to keep user fees within market range of peer institutions; an undesirably risky situation for these valuable investments. Although the exact amount for 2017-2018 has yet to be determined, some level of funding will be provided to support research cores, with allocations in future years to be decided as a function of the overall financial picture for the University and the evidence that such investments are providing a clear benefit to the research program.

Governance Structure

The distribution of the funds will need to be informed by an ongoing assessment of both the technical and business aspects of the core. We offer an initial outline of how this might be approached fairly and efficiently. The value of the core to the research field and to supporting funded research at the University would be informed by collecting information from the financial and laboratory information management (LIM) systems, core directors, researchers who use the core, and department chair/center director/dean in the unit where the core is based. Each core would be required to develop a clear business plan, with the help of the administrative/financial oversight team, to provide the information needed to judge the extent to which the core is well-run, appropriately supported by user fees, and on a secure financial trajectory going forward. In addition, an understanding of the technology would be necessary to judge the current research impact and future benefits of the core resource. With this information in hand, a group that can speak to the University's interests needs to convene and deliberate on all issues that bear on the allocation of funding. It is important that this be a transparent, unbiased process, understood and acceptable to Brown's research community, both core leaders and users.

A proposed governance structure would be to constitute a Research Core Advisory Committee, chaired by the Vice President for Research (VPR) that includes representatives from all the schools, departments, and centers that house the core facilities. This is the group that would provide a forum for entertaining new funding requests as well as full reviews of each of the cores on a periodic basis. We envision a process that begins with discussion between the core leader and the administrators and financial managers for BioMed and Engineering/Physical Sciences, respectively, to clarify and guide requests for funding. At this stage, we would identify the need for additional information, provide advice regarding how to make the request have a fair chance to be successful, consider the potential for combining or modifying cores, etc. Following this discussion, a full proposal would be made by the core director to be brought to the Research Core Advisory Committee for discussion. If additional expertise is needed for an informed assessment of the request, additional information might be solicited from internal and/or external sources. This Committee would seek a clear understanding and reach a consensus on the priorities for allocation of available funds each year. Those recommendations would be passed on to the Vice President for Research and the Dean of Biology and Medicine for final decisions, in consultation with the Provost.