

**Report of the Strategic Directions Task Force of the
Provost's Advisory Committee on the Libraries**

Columbia University

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Report of the Strategic Directions Task Force of the Provost's Advisory Committee on the Libraries (May 2016)

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Preamble

In fall of 2015 Provost Coatsworth asked the newly-reconstituted Provost's Advisory Committee on the Libraries (PACL) to join with Library staff in a year-long Strategic Directions Task Force to consider Library priorities for the coming decade. We hope that the collaboration that developed between faculty and library leadership will become a model for the ongoing analysis and development of library services. We also hope that this report will allow the University community as a whole more fully to appreciate both the needs of the Libraries and their centrality to Columbia's teaching and research mission and its global ambitions.

PACL, augmented by three student members, worked throughout the late fall and winter with a superb team of Librarians to fulfill its charge. We divided our work into three crucial areas: Student Success: Collections Development, Preservation, and Management; and Research Support and Faculty Services. Members of the Task Force were assigned to a subcommittee dealing with one of these issues with Soulaymane Kachani serving as co-chair of the Student Success subcommittee; Elizabeth Blackmar as co-chair of the Collections subcommittee; and Laura Kaufman as co-chair of the Research Support subcommittee. Each group held three lengthy sessions before everyone reconvened as a committee of the whole to share findings and recommendations. Committee members were invited to attend all meetings of any subcommittee, and many did. Short working papers prepared by library staff were circulated before each meeting; these not only outlined what the Libraries already do in each of the areas we were discussing, but underscored the challenges and key decisions that not only the Columbia Libraries, but all Research I Libraries, are facing. The production, storage, curation, and dissemination of knowledge have undergone profound changes in the last decades, and the responsibilities of the Libraries have changed and expanded as a result, even as the demand for traditional services has remained high. In an era when many libraries are primarily acquiring digitally, Columbia, as is true of most of its peers, has committed to continuing to collect and preserve books and other print materials, and to express this commitment in its budget and planning activities. At the same time the Libraries must also collect, curate, and preserve born-digital content and build the infrastructure required to support these acquisitions. Balancing the needs of the Libraries' many constituencies and prioritizing its varied collecting and preservation tasks require ongoing close collaboration between Librarians and a wide range of faculty and student users.

In addition, the Libraries are crucial to fulfilling Columbia's global ambitions. We not only need to continue to collect materials in many languages and in subjects of global importance, but we need to ensure that such collections are discoverable, known and useful to the world. In addition, there are new imperatives to provide global access to the products of Columbia scholars and to facilitate the acquisition of critical skills for students preparing to become global citizens. For the Libraries to fulfill an expanding global mission will require additional investments in endowments to support acquisitions, processing, rights clearance, digitization efforts, technology services and associated infrastructure, and a host of other activities demanded of one of the world's great libraries. A failure to support the Libraries in both its traditional and expanding roles would be catastrophic. In the rest of this report we hope to unpack both the absolute centrality of the Libraries to Columbia's intellectual distinction and highest ambitions, and to make the case for enhanced levels of support.

The meetings that occurred over the last months produced an ever-deepening series of conversations that surprised, delighted, and occasionally frustrated everyone, but that ended up being extremely productive. We think it is safe to say that no faculty or student member really understood, going into this process, the full range of services the Libraries provide to the University community or the complexity of the problems that they face. The Librarians, in turn, eager for faculty and student input, were surprised both by the depth of faculty feeling on key issues and by the lack of faculty knowledge about many of the activities -- like big data storage, the cataloguing of hidden collections, research management information systems, and the appropriate ways to acquire and preserve born-digital materials -- that the Libraries face every day.

The Task Force together strove to orient its final recommendations around the key issues that emerged in each subcommittee. Because the Provost's Advisory Committee on the Libraries had been dormant for some years, some of our attention perforce focused on process: on establishing mechanisms for sustained and ongoing library/faculty collaboration in setting and evaluating priorities in a dynamic field of change. We are convinced that such ongoing and structured conversation will be of enormous benefit to both partners, allowing the Libraries' decision-making to be guided in part by faculty concerns and faculty to learn from Columbia's creative and deeply knowledgeable library professionals.

Part I. General Recommendations

A number of the Task Force findings and recommendations arise from concerns expressed in all three subcommittees and from the general discussions that followed. They fall into the areas of *communications*, *budget*, *space*, and *assessment*.

Communications. The Libraries are committed to communicating their services to the larger university community and have devised many ways of doing so -- from email blasts to a substantial Library web presence to one-on-one connections between library staff and specific faculty members. Nonetheless, it was widely felt that too many students and faculty hear only sporadically or not at all from the Libraries, and that many of its most important resources are not well publicized. Consequently, we recommend that:

1. *The Libraries develop a fresh and comprehensive communication strategy to publicize their services and achievements and communicate with their many user communities from distance learners to research faculty to the general public. This communication*

effort should include strategies for reaching targeted groups as well as for developing broadly disseminated communication vehicles and “digest” web pages to keep faculty and students informed of library resources and services, including in the area of data management. It will also have to keep in mind the constantly changing composition of the university community and develop ways to repeatedly introduce new cohorts of both faculty and students to library resources. The development of such a communication strategy might draw on expertise that exists outside the Libraries but within the University, or might involve the use of outside consultants.

Budget. Many of the recommendations in this report are resource neutral. They make suggestions for improving services or instituting processes that will not in themselves require the Libraries to spend more money. Some recommendations do require additional financial resources, especially those involving infrastructural improvements or space enhancements. Likewise, several of the recommendations are dependent upon increased staff capacity. Consequently, the Task Force makes the following series of linked recommendations:

- 2. That by fall 2016 the Libraries provide the Provost with an assessment of the additional budget support needed to implement some of the resource-dependent recommendations in this report, especially in regard to space enhancements and reconfigurations; technology and infrastructure updating; digitization needs; processing and cataloguing of hidden collections; and further development of technology services, data management, and digital resources. PACL strongly urges that this assessment lead to an immediate enhancement of the Libraries budget to address highest priority needs, especially in light of the possible 3½ to 5% cut in current operating budget in the next fiscal year.*
- 3. That in tandem with such an assessment, the Libraries, with the help of a soon-to-be hired Development Officer, propose strategies to partner with Advancement in acquiring enhanced external support for the Libraries as part of the upcoming university-wide Capital Campaign.*
- 4. That the Libraries cultivate a high-level donor group to stimulate individual philanthropy dedicated to Library needs.*

Space. Space is in demand everywhere on the Columbia campus. As the Libraries expand their services, taking on added responsibilities as partners in teaching and research, their space needs also are expanding. Nowhere is this more evident than in the area of digital scholarship where the Libraries over the last decade have taken impressive leadership in developing the expertise and facilities to allow students and faculty to engage in new kinds of collaborative scholarly projects. At the moment digital centers (the Digital Humanities Center, The Digital Music Lab, the Digital Science Center, and the Digital Social Science Center) are dispersed across four campus locations. However, it would be both cost effective and intellectually compelling to centralize these services, draw together the expert staff who oversee them, supply most cutting edge equipment in one central area, and create a suite of work and study areas to support collaborative creation. We believe that this centralization would serve the entire University community more effectively than the present arrangement. Consequently we recommend that

- 5. The Uris Space Planning Committee include a library representative; that that committee take up the strong recommendation of this Task Force that liberal space be reserved in*

the physical area currently held by the Watson Business Library for the development of a technology rich interdisciplinary digital scholarship hub that would serve the entire University's students and faculty. The digital scholarship hub would include technology, library expertise, and spaces to enable both individual and collaborative project development. This digital scholarship "hub" would replace the four existing digital centers, and allow for "spokes" with site-appropriate technology needs to be distributed throughout the Libraries.

Study space is also at a premium everywhere on campus. A recent space study of the Libraries strongly recommended additional spaces for student library users. Graduate students urgently require better appointed and more numerous carrel spaces during the dissertation stage of their work. Faculty have called for dedicated space for scholars doing research in materials that cannot be conveniently checked out. The Task Force therefore makes two linked recommendations, one aimed at preserving existing study and research space and the other at adding more such space. In particular, Lehman Library could be redesigned to maximize student study space in tandem with other needed improvements.

6. *That the Uris Space Planning Committee should also preserve within the space currently occupied by the Watson Business Library in Uris both individual and group study space. Watson is heavily used by the University community; approximately 50% of the current space use is by non-Business School constituents.*
7. *That the Provost commission a feasibility study in the 2016-2017 academic year to assess the resources required to renovate Lehman Library to meet several pressing needs: (1) more student study space; (2) more library space equipped with state-of-the-art technological infrastructure; (3) library space dedicated specifically to collections aimed at SIPA and Social Science users that serve the global teaching and research mission that Columbia has embraced.*

Assessment. The Libraries have always assessed their services on an ongoing basis and have a full-time librarian devoted to these efforts. Nonetheless, it seems especially important at a moment when the Libraries are seeking new ways to further the teaching, learning, and research mission of the University, that the new initiatives recommended in this report receive careful, rigorous, and ongoing assessment to allow changes in direction as warranted. Therefore, we recommend

8. *That the Libraries commit to creating an assessment plan and methodology for all recommendations within this report to ensure the resources devoted to any new or existing programs, services, collaborations, collection directions, or technologies are effectively serving the teaching, research, and learning mission of the University. Such assessments should include user satisfaction data as a matter of course. PACL should annually review with librarians evaluations of new initiatives to consider ways they can be strengthened.*

Part II. Student Success

The Libraries provide an astonishing array of services and technologies in support of student learning starting with the computer workstations that so many students depend upon to do their homework and advanced research. Library services address myriad separate

constituencies and are provided at sites all over campus. First and second year students, for example, benefit from basic library orientation and library research sessions, but librarians also provide approximately 70 research sessions per semester geared especially for the research paper assignment in University Writing; they arrange sessions in the Rare Book and Manuscript Library for students in Core courses; and they also offer special research orientations sessions for the Egleston Scholars Program in Engineering. More advanced undergraduates can receive one-on-one help with senior theses or research projects as well as advanced workshops on research methods. Graduate students are served by an array of programs and services ranging from individual consultations about dissertation projects to general sessions on how to do archival research abroad to a series of sixteen workshops designed for students in the social sciences to learn about research methods, data analysis, and how to work with new research technologies. A competitive program run jointly with the Graduate School of Arts and Sciences funds internships for graduate students wanting to gain skills and experience working with digital tools and methods. Many librarians have strong and sustained relationships with particular faculty, programs, or departments. These ties result in library staff being asked to come talk to particular classes or to help students with research undertakings.

This list barely skims the surface of the many ways in which the Libraries serve various student populations. Many services are directed at particular points of need, like the moment when a student begins a senior thesis project or faces the first research paper in University Writing.

It became clear, however, though library staff energetically pursue opportunities to help students succeed, there is considerable unevenness in the degree to which their services are utilized or the existence of these services even known. The reasons for this are various. Some departments are less good at directing their students to the libraries than others; some faculty may not realize what the libraries actually can do to support their courses and their students. To some extent the Libraries may not be communicating with various constituencies in the most effective way. In discussing this issue, however, the committee focused repeatedly on structural issues. How can library staff be placed on the committees where they will be able to learn about the points in the curriculum where their services can be utilized? How can they be put in regular conversation with departmental officers, like the Director of Undergraduate and the Director of Graduate Studies, who are best able to identify the particular courses and groups of students who would most benefit from library help? How can programs and services that now are utilized by only a fraction of the university community be advertised in ways that would expand their user population? And how can librarians plan for demands arising from new degree programs? Crucial to student success at Columbia is deep and collaborative partnership between faculty and the Libraries, and the recommendations below all aim at building or strengthening the structures that would make such collaboration more effective.

Under general recommendations, we urged the Libraries to revisit their communications strategies, and this is perhaps especially important for how students and faculty receive information about the programs and opportunities that will promote student learning. However, the burden should not lie entirely with the Libraries. Librarians need to be put in structural positions where they can learn about current student educational needs and give input on how the Libraries can help serve those needs in tandem with the faculty. We recommend therefore that

9. *For the Libraries to be a truly effective partner in student learning and the development of research skills such as data management and digital literacy, library staff must be members (ex officio or regular) of the major committees charged with curricular oversight and development of teaching and learning technologies. These include but are not limited to the Committees on Instruction within the various schools, the Committee on the Core, the Education Policy and Planning committee, the Executive Committee of the Graduate School of Arts and Sciences, faculty committees overseeing Core courses from Literature Humanities to Frontiers of Science, as well as University Writing and the Art of Engineering, and curricular committees within the professional schools.*

In addition, the committee urges the Libraries to make their outstanding student programs and services systematically available to a wider range of students, and to develop relationships with those faculty specifically charged with overseeing undergraduate and graduate life. We recommend

10. *That the Libraries develop or build on existing strategies for systematically supporting student learning at every level of the curriculum and for every kind of student. Such programming should not be dependent solely on personal relationships with individual faculty or departments, but be built into the intellectual structures of the curriculum and available to all. In implementing this recommendation, it will be important to*

- Begin relationships with students as early as first-year orientation and to attract student interest by using strategies such as outdoor events, creative apps, and web pages dedicated to first-year students;
- Identify and work with the appropriate faculty and administrators, such as Directors of Undergraduate Studies and of Graduate Studies, who can advise on appropriate goals and assessment measure and facilitate effective communication of library programs and services;
- Identify and develop relationships with student leaders and student groups;
- Explore ways to work with existing groups such as the Data Science Institute and the Department of Computer Science to develop and support digital literacy initiatives for different kinds of students and to work with the faculty directing the Computing in Context course;
- Maintain regular contact with departments and provide in-person updates about library services at departmental meetings when possible;
- Work with other campus units such as the Center for Teaching and Learning and the Office of University Life to support the University's diversity and inclusion goals by helping target groups acquire specific skills (research methods, digital literacy, etc.); that may involve working more extensively with PALS, Columbia Scholars, Mellon Mays students and other on-campus groups tasked with enhancing the educational experience of under-represented minorities and first-generation and low-income students or those with disabilities;

Discussion also focused on the many students whose educational experiences at Columbia do not always or at all times require their physical presence on campus. As more and more hybrid and online programs are offered through the School for Professional Studies and through an increasing number of other schools at Columbia, and as students take part in distance learning

initiatives, what role do the Libraries play in serving the needs of these students? And what policies need to be developed surrounding access to library services for these new populations? Consequently, we recommend

11. *That the Libraries be consulted in the planning of new academic programs. Such consultation is essential if the Libraries are to consider the policies and services needed to reach students who are not physically present on campus when they need library resources, including distance learners, students studying through the Global Centers, and students enrolled in hybrid courses (partly on campus and partly online). The planners of new academic programs also need to be aware of what kinds of costs and limits libraries face in providing access and services for these groups.*

Finally, the committee discussed the wonderful work being done with students (and faculty) through the Center for Teaching and Learning, especially in creating digital components for courses and projects. As demand grows for the services of the Center, it will become more urgent to set up processes for selecting the projects to be developed. We recommend that

12. *The Libraries, in conjunction with the Center for Teaching and Learning, create an RFP process to solicit faculty digital scholarship projects in support of innovation in teaching and research. These projects would further scholarship and student learning through the integration of faculty research and teaching interests, collections, and digital technologies. This process would provide an objective way to select projects and assign library resources in contrast to the ad hoc arrangements currently in place.*

Part III. Collections Development, Preservation, and Management

For many faculty, especially those in the Humanities and many Social Science departments, acquiring and preserving traditional print collections are arguably still the most important services the Libraries provide. There is widespread faculty anxiety in those divisions about a purported decline in print acquisitions and a worry that print collections are being devalued. The Strategic Directions Task Force explored these concerns and is convinced that the Libraries remain committed to the continuing, aggressive acquisition and preservation of print materials both in regular collections and in the Rare Book and Manuscript Library. Numerically, the Libraries acquired more print books in 2015 than in 2005. In the Humanities, subscriptions to print journals have actually increased over the last seven years. It is good to remain vigilant about the adequacy of print collecting, but we did not find that print collections are being inappropriately neglected.

However, acquisitions are accompanied by the related and wide-spread challenges of access and preservation. The Columbia Libraries, like every other major research library, have a space crisis. The Libraries are acquiring approximately 150,000 new print volumes each year. Consequently, 40% of Columbia's print collection is now held in an off-site storage facility (ReCAP) we share with Princeton and the New York Public Library. There is space there for another 5 to 7 years of storage. A host of policy questions surround this one institution: how are books selected for off-site storage? how can faculty be involved in that selection process? how good are our retrieval policies, and can they be improved? can expanded online cataloguing of books in ReCAP make up for lack of access to books in the physical stacks where "browsing" is a valued activity? to extend the available space in ReCAP, should duplicate copies of some books (those held, for example, by all three institutions) be discarded even if unique features of

those books, like marginalia, were lost in the process? The Libraries are eager for faculty input on all these issues, and a committee, which includes faculty members (with a PACL representative), has already been appointed to explore these and other matters related specifically to ReCAP.

Other questions regarding print collections have to do with systematic identification of items that should be moved, because of rarity or fragility, from general collections to special or unique collections, such as those in the Rare Book and Manuscript Library (RBML). Special collections, moreover, are not always accessible because of processing backlogs. It takes both money and staff time to get rare materials catalogued and ready for use by researchers. Since the Libraries cannot collect everything and make it accessible, what collections policies are in place to guide acquisition decisions about materials that match research strengths at Columbia (like Human Rights) or that should be developed in tandem with emerging areas of interest (like New York Latino writers and artists)?

Print collections, however, are hardly the whole story, especially in science fields. Not only are e-book purchases increasing, but in many fields electronic journals are the predominate form of scholarly dissemination. They currently take up 44% of the acquisitions budget for the Libraries. The Task Force discussed at length experiments going on in some fields to capture scientific publication outside of the domain of the electronic journal, in, for example, websites that make early open-source versions of scientific papers available for comment to the community of researchers. There are many questions, as about the status of peer review, for example, in these venues that at the moment make their substitution for very expensive electronic journals premature, but discussions about such options clearly need to be an ongoing part of a collaborative conversation between faculty and librarians.

Even more challenging are those collections that are born-digital. These range from online digital databases and collections to individual web projects to the digital archives of major organizations to the data faculty produce as part of grants funded from NSF, NIH, and other government agencies. Some of these materials are purchased; more are leased; some are acquired free; and some entail funders' requirements for data preservation. Many exist on unstable platforms that could easily disappear over time. What obligation do the Libraries have to collect born-digital materials? How do they select what to purchase or lease? Just as importantly, how can these materials be stored to avoid platform obsolescence? The digital infrastructure required to acquire and sustain access to ever-increasing amounts of born-digital material represents a major challenge. Should Columbia go it alone in developing such infrastructure? Should it collaborate with other schools and institutions? At the moment, experiments in this area are just that, experiments, often funded by entities like the Ford Foundation and the Carnegie Foundation who have given Columbia grants to access, process, and preserve specific forms of born-digital content. The difficulties that arose and were met in executing these projects helped the Libraries develop the expertise it will need in the future to undertake similar digital preservation projects, but numerous policy and budgetary questions remain to be worked out in the coming years.

Another area of pressing concern is the preservation of time-based media formats. The Libraries have many audio and visual materials in older formats (LPs, VHS tapes, audiotapes) that deteriorate over time and/or can no longer be accessed except through conversion to a newer format. As scholars write the history of the twentieth century, they require access to the

information media on which it was recorded. Should all of these collections be converted? How should priorities be established? Where will the money come from to do such large-scale conversion?

There are, in addition, many other materials so fragile that conversion to digital format may be the best solution for maintaining access to them, and there are many collections that, if digitally converted, would be easier for scholars to use and to access than is currently possible. But what principles will guide priorities for such digital conversions?

A final issue of the many, many challenges discussed by this subcommittee involves what are known as “hidden collections,” materials, often of great value, that have not been fully processed, exist only in formats (such as card files or paper finding aids) that are difficult for researchers to access, or for which no public record of any kind exists. While it will be impossible to eliminate backlogs in processing, nonetheless, it remains a pressing question how to assign priority to cataloguing these materials. Compounding the problem are changing expectations on the part of researchers who by now have become used to the fuller descriptions and item-by-item annotations that online cataloguing has made possible. Is it better to provide minimal descriptions for large bodies of content so that there is some public record of their existence or to catalogue a smaller amount of material at a greater level of detail?

It was a humbling experience to realize the complexity and range of problems that fall under the heading of “collection development, management and preservation,” most of which can only be thoughtfully addressed through sustained, ongoing faculty-librarian consultation. While the Libraries eagerly seek faculty input, faculty face the challenge of understanding the larger technological and financial landscape within which decisions in any of these areas will need to be made and then re-made in the coming decades. Consequently, we single out as of special importance the following:

13. *We recommend that PACL establish a standing faculty-library subcommittee to advise and consult with librarians on strategic issues related to collections development and preservation. Such a committee would meet regularly to consider such issues as the balance of different types of collecting in multiple formats going forward; how to mitigate the effect of budget constraints on collecting policy; strategic opportunities to pursue outside funding for particular collections; and CUL’s engagement in collaborative collecting efforts such as those that might be done through the ReCAP consortium or the IvyPlus/BorrowDirect collaborative. (For details of this and other recommended subcommittees, see the appendix to this report.)*

The work of this subcommittee, however, should not preclude other forms of faculty/library engagements, some of which are well, if selectively, established with particular departments and professors.

14. *Faculty should be encouraged and given opportunities regularly to engage with library staff to discuss collection strategy and review collection development policy through both formal and informal channels. These would include regular bi-annual meetings between subject librarians and faculty in each department or school or cross-disciplinary field consultations of subject librarians and curators with newly hired faculty to develop a mutual awareness of research interests and library resources.*

15. *The faculty-library committee considering the ReCAP shared collections project should, as part of its brief, be asked to consider policies relating to the reduction in duplication of monographs held by the schools in the consortium, including the possible loss of unique feature of those items. This committee should report its recommendations on a regular basis to PACL.*
16. *The Libraries should extend and promote methods for faculty and other users to provide input, either directly to subject librarians or via the library catalog or website, regarding the management of specific items in library collections, such as: identifying items that should be considered for treatment as rare books; suggesting items that should not be moved offsite; identifying collections that would benefit from deeper, item-level cataloguing.*

Another set of recommendations has to do with creating and disseminating guidelines for developing collections. The subcommittee of PACL dealing with Collection matters will review such policies and be available as a partner in their creation or revision. As a matter of course,

17. *Collection development policies should be available through the Libraries website and should be updated regularly. Policy statements will ideally include both broad principles and their application in specific disciplines and include both general and special collections. Policies should delineate both what is collected and what is considered out of scope. Related collection assessment plans and results should be reviewed with faculty.*
18. *The Libraries should codify the principles and criteria by which they currently make decisions about what to digitize from our own collections and make those criteria known to the faculty.*

A final set of recommendations deals with areas where the Libraries need to provide estimates of the time and money required to achieve specific goals, including the crucial goal of making all library resources available online and the equally crucial goal of prioritizing those at-risk materials that need to be digitally converted to preserve them and to make them accessible to users. Once these assessments are complete, funds can be sought, from Mellon and other sources, for underwriting some of the costs. Consequently, to manage the problem of hidden collections,

19. *The Libraries should regularly assess the time and resources needed to ensure that records for all library resources are available online, through CLIO or other mechanisms, and develop plans to follow through in a timely way. Such assessment should include both materials currently represented in card files and backlogs of unprocessed collections. The assessment and accompanying action plan should include considerations of priority, with greater priority given to unique materials and those of high research value, as advised by the faculty.*

In addition, to address the ongoing issues of digital conversion,

20. *The Libraries should undertake an inventory of the unique and most at-risk materials in our collections that require digitization for preservation and access. This inventory will aid both in determining the costs of a comprehensive digitization project and in*

establishing priorities for digitization, long-term management, and storage of these materials.

Part IV. Research Support and Faculty Services

The Libraries support the research efforts of students and faculty in myriad ways, many of them responding to new demands for help with such things as the management of big data sets or the development of collaborative scholarly projects that rely heavily on digital tools. Librarians still deliver what we might call traditional research services. They consult with individual faculty and students on specific projects; they provide course-specific instruction sessions when asked to do so by faculty and graduate assistants; and they offer “embedded” services in particular schools, institutes, and departments. But increasingly, librarians participate in the research life of the university in new ways. In recent decades, Columbia and other Research I institutions have hired more staff who hold not just the MLS but also disciplinary Masters and Ph.D. degrees. In the last five years, the number of Columbia library staff holding only the MLS has decreased by 10% and the number holding the Masters or Ph.D. in a discipline has increased by 40%. In addition, over the same period the Libraries doubled the number of staff members with technical expertise including computer scientists, systems engineers and analysts, programmers, web designers, and imaging scientists, and deepened staffing in areas such as object conservation, digital preservation, and metadata development. This is happening for a reason. The Libraries, long considered the heart of the university’s research and learning endeavors, have retained and expanded that coveted position by providing a new array of services linked directly to changes in the larger research environment.

For example, as open access has become an important part of the way scholarship is disseminated, at Columbia the Libraries have led the way in establishing services such as the Center for Digital Research and Scholarship that developed the Academic Commons Repository where research produced at Columbia University can be digitally preserved and made available to a global audience. When few members of departments had training in the possibilities offered by digital research tools in the humanities, the Libraries created the Digital Humanities Center where library staff work with students and faculty who want to incorporate computer-based textual, bibliographic, image, and video information into their research and teaching. In collaboration with the Science and Social Science departments, the Libraries created similar centers for these divisions with state-of-the-art technology, advanced software, and consultation services suited to particular disciplines. The Libraries have also created innovative “maker spaces” like Studio@Butler, where faculty can experiment, often collectively, with new kinds of digital projects. Members of the Library staff are involved in a plan to develop a Research Information Management System, a tool that aggregates data about faculty research outputs that can be used for a variety of purposes, including meeting federal compliance requirements for reporting research outputs. Library staff are also involved in planning for the establishment at Columbia of an NSA-sponsored Northeast Big Data Innovation Hub that will use data to solve problems in health care, energy, urbanization, and other high priority areas. And, of necessity, the Libraries are integral to University conversations about how to provide adequate data storage infrastructure for students, faculty, collaborative research groups, and to hold the Libraries’ own rapidly expanding born-digital collections. The Libraries are also engaged in international efforts to develop consortial/collaborative approaches to digital collections and long-term data management such as the Academic Preservation Trust. The Libraries are equally eager to engage in conversation about the new formats and venues in which scholarly work products can not only

be circulated and preserved, but also included in tenure and promotion reviews. In short, Library professionals are deeply involved in a number of new dimensions of the University's research life, many of them having implications for Columbia's expanding global mission.

The subcommittee devoted to this dimension of the Libraries' work appreciated the energy and the vision fueling the Libraries' initiatives in emerging dimensions of the contemporary research enterprise. But the subcommittee also felt strongly, and the Library staff agreed, that it is very important for faculty to be more involved in the development of some of these endeavors. For example, faculty have a number of questions about the policies that govern the Academic Commons. These need in-depth discussion with participants from many disciplines and schools involved. Similarly, there was vigorous discussion of the pilot project that has been developed as a prototype for a more extensive Research Information Management System. Some faculty felt that more carefully defined criteria were needed for the scope of data being aggregated, its sources, its review impact, what metrics count as impact, etc. In general, there was a feeling that the system might make administrative reporting easier, but might not particularly benefit faculty and, indeed, could lead to conclusions about faculty productivity and impact that are misleading if the system is not very carefully designed with appropriate faculty input. As with the issues discussed by the Collections subcommittee, many matters discussed in the Research subcommittee, we concluded, could only be adequately engaged by a permanent, specialized committee where library/faculty collaboration is ongoing.

About three other matters the subcommittee was in complete agreement. The first was that there is a need for the Libraries to focus heightened attention on graduate student researchers who expressed a strong need to be made more aware of Library resources and services at every step of their careers. Some do not receive sufficient guidance about research matters from their instructors or from the Graduate School; they often do not know what the Library can offer them by way of training in research methods, data management techniques, or archival research protocols. These matters also came up in the Student Success subcommittee, but they seem sufficiently important to flag a second time.

The subcommittee also agreed that there is an urgent need for the University to tackle the problem of data storage needs in many areas. Individual scientists need more and better infrastructure for storing their research; collaborative big data projects need such storage; the Libraries also require it for their digital collections. In this area, Columbia lags far behind many of its peers.

Third and last, the subcommittee unanimously agreed that there is an unproductive confusion surrounding the relationship between the Libraries and CUIT in regard to the provision of research services for students and faculty. If, in general, CUIT focuses on academic computing and the development of administrative support services, the Libraries also support computing-related services in library locations; obtain campus-wide software licenses for specialized research; help curate faculty-generated data, take the lead in the development of digital learning centers, and provide an array of services aimed at enhancing student research. There is a need to clarify which unit is tasked with (and given resources for) developing what aspects of research infrastructure. Moreover, because CUIT is so tied to the educational mission of the University, it seems unusual that it does not report, at least in part, to the Provost, rather than solely to the Senior Executive Vice President for operating departments and financial management.

Consequently, the subcommittee recommends the following:

21. *That a permanent subcommittee of PACL be established that include both faculty and librarians, and would work, as needed, in conjunction with officers of Research Administration and CUIT (1) to review and advise on research technology infrastructure planning, prioritization, resource allocation, implementation, and governance; (2) to advise on the role of the libraries as partners in supporting emerging scholarly projects, particularly those with big data and/or digital components; (3) to advise on the question of collaboration with peers to develop and/or sustain shared multi-modal platforms to support research collaboration and innovation. Further, that this subcommittee take as its first agenda item the evaluation of the PARC (Promoting Access to Research and Collaboration) proposal for a University-wide Research Information Management System and provide input regarding implementation.*
22. *That, given the important academic functions CUIT performs, it report to the Provost in addition to its present reporting line and that the Provost should clarify the division of labor between the Libraries and CUIT in regard to developing and deploying research and teaching technologies across campus and communicate those roles and responsibilities to the University community.*
23. *That the Libraries, with Research Administration and CUIT, should engage with faculty in an ad hoc working group appointed by the Provost to discuss long-term data management and storage needs and plans for addressing them in a timely fashion. This would include storage for data produced at Columbia by faculty and students and for digital collections acquired by the Libraries. To prepare for this working group, representatives from the Libraries, Research Administration and CUIT should identify relevant questions for the group to consider so that the overarching issue of what is in scope for Columbia University can be addressed, as well as policy decisions about specific aspects of data management and storage. It should report its progress on this matter to PACL by December of 2016.*
24. *That the Libraries develop closer ties with the Dean of the Graduate School of Arts and Sciences (GSAS), the Executive Committee of GSAS, and the Directors of Graduate Studies in all divisions and schools in order to integrate library instruction into graduate programs at every level and to coordinate assessment of those efforts. This is especially important during the first year to establish relationships between graduate students and the Libraries as early as possible and during the transition to dissertation work when the management of data, identification of specialized resources, and information on doing archival work abroad or in other research libraries becomes of crucial importance.*
25. *That the Provost's Library Committee be tasked with reviewing policies and assessment measures surrounding the development of Columbia's Academic Commons, including such matters as appropriate embargo periods for graduate dissertation publication, copyright restrictions in particular fields, the inclusion of undergraduate work on the Commons, and the different norms that govern open source publication in particular fields.*

Appendix

Since a recurring theme of this report is the need to establish clear structures for ongoing collaborations between faculty and library representatives on the many difficult issues outlined within it, the committee decided to set out in this appendix what it sees as a desirable model for ensuring such collaborations going forward. While PACL is the chief advisory body to the Provost on Library matters, it cannot by itself take up on an ongoing basis all the issues on which the Libraries are eager for faculty input. Consequently, we propose the following permanent advisory structure. We recommend

1. *That the Provost's Advisory Committee on the Libraries be the structural mechanism by which ongoing collaboration between the Libraries, the faculty, and the Provost should occur. It should take up pressing issues as they arise, review on an ongoing basis the implementation of the Strategic Directions recommendations contained in this report, and receive regular reports from the two PACL Subcommittees proposed below, as well as from any ad hoc committees appointed to advise on some aspect of the Libraries' work. In order to preserve continuity in its work flow and to preserve the historical memory of discussion and actions taken, members of the committee should serve for staggered, three-year renewable terms. Members should be drawn from faculty across the Arts and Sciences and the professional schools and should, as a matter of course, include several newly tenured faculty whose research methods and investments in the Libraries may differ from older generations of faculty. The PACL should be co-chaired by a faculty member and the University Librarian and should meet at least twice a term.*
2. *That the PACL, in consultation with the University Librarian, appoint two standing subcommittees to develop the expertise that will allow them to provide in-depth and ongoing advice in two crucial areas that dominate much of these PACL recommendations: (1) Collections Development, Management, and Preservation; and (2) Research Support and Faculty Services. The need for these two subcommittees is outlined in the body of the report. Briefly, to understand the myriad services provided by the Libraries and the choices that the Libraries make about allocating resources and prioritizing initiatives requires sustained immersion in particular problems, be it acquisition of digital data sets or the development of Research Information Management Systems. These standing subcommittees are imagined as the collaborative bodies where librarians and faculty will together do sustained work on the issues of pressing concern in these two big subject areas. The subcommittees will ideally meet three times a semester and will be made up equally of librarians and a diverse group of faculty, at least two of whom will also sit on PACL. The subcommittees will be co-chaired by a faculty member and a librarian and will make regular reports to PACL and from there to the Provost. They will also include an undergraduate and a graduate student member.*

In addition, from time to time ad hoc committees to deal with special problems may be established and will report the outcomes of their work on a regular basis to PACL. The

current committee on ReCAP policies is a case in point. In the body of this report (recommendation 23) we have called for a second ad hoc committee to focus on the pressing problem of long-term data management and storage needs at Columbia. Other special committees may be needed in future, but it is imagined that the majority of issues that arise will be addressed by PACL and/or one of its two permanent subcommittees.