

Task Force on Library Research Infrastructure

A report for the Cornell University Librarian and the Vice President for Research and Innovation

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1. Preface

The Task Force on Library Research Infrastructure (TFLRI) was appointed in Spring 2021 by Vice President for Research and Innovation Emmanuel Giannelis and University Librarian Gerald Beasley as a faculty committee that is independent of the Library and its administration. Comprising six faculty members with appointments across the University, it was charged with considering the infrastructure that Cornell researchers in all disciplines will need from the Cornell University Library (CUL) over the next decade.

The TFLRI was conceived as a complement to the [Scientific Research Infrastructure Committee](#), which issued its report in June 2021. The Library is essential to all areas of research including the Sciences, Social Sciences, Humanities, and Arts. The Library is a complex institution, and it serves the University community in multiple ways. This report is confined to examining the role that CUL plays in enabling academic research by the members of the Cornell community. The Library is equally central to the teaching mission of the University. That should be the subject of a separate report.

As will be evident, CUL (like all research libraries) faces serious challenges in the twenty-first century and will have to make choices about how to identify new strategic priorities and rethink approaches to its existing priorities. In writing this report, the TFLRI seeks to articulate critical questions about the role of CUL in the research landscape and to establish a common understanding and framework for addressing the challenges ahead; we do not intend to micromanage the Library. We have tried to write this report so that non-librarians can understand it, in the hope of facilitating better communication between CUL, the faculty, and the administration.

We stress that CUL cannot be discussed in isolation. The responses to the challenges ahead will depend in large part upon its relations with other research institutions. The Republic of Letters spans institutions. It is inevitable and desirable, for example, that scholars from other institutions use Cornell collections (digital and material), just as it is inevitable and desirable that Cornell researchers rely on the collections of non-CUL libraries. Indeed, as this report will show, the CUL system has a symbiotic relationship to libraries across the globe, without which our access to data, sources, and scholarly literature would be impoverished. Moreover, some of the greatest threats to CUL's mission (for example, the rising prices of journals) must be confronted through the collective action of multiple institutions. If Cornell University is to remain a leading institution of scholarly research, CUL must remain a functional and indeed leading member of the wider world community of scholarly libraries.

In compiling this report, the TFLRI pursued several avenues of research. We have made use of publicly available data provided by the Association of Research Libraries (ARL) regarding spending by research libraries across the United States and Canada. With the assistance and approval of the Library Executive Group (AULs Xin Li, Bonna Boettcher, Simeon Warner, and Tamar Evangelestia-Dougherty), we met with librarians and Library staff from across CUL. We conducted a survey of faculty and graduate students to assess the perceived adequacy of Library resources. We have also made use of the 2021 Faculty Library Survey, which CUL generously shared with us.

2. The Research Mission of CUL in the Twenty-First Century and Its Challenges

The Cornell University Library is arguably the single most important component of the research infrastructure at Cornell, for all fields. Its central purpose is to facilitate researchers' access to scholarly materials, literature, and data, without which no academic research is possible.

Beyond that central, defining function, which matters to every Cornell researcher, the Library has taken on many functions that are related to the management and processing of information. Some of these are vital to Cornell's teaching rather than research mission (insofar as these can be separated) and as such do not figure in this report. Others are necessary to the research of some significant portion of the faculty. These include:

1. Providing technical expertise, infrastructure, and training in the use of digital research tools.
2. Assisting with data management and storage for the preservation and public availability of data informing scientific communications, often required by funding agencies.
3. Assisting with protection of data and privacy to minimize researchers' exposure to potential actions ranging from commercial exploitation to surveillance and targeted harassment.

4. Curating and preserving archives and collections, and making them publicly accessible.

Although the core mission of CUL remains the same as it ever was, to facilitate researchers' access to materials, the twenty-first century has brought new technologies, new business models among publishers, and a complex legal landscape around intellectual property and privacy. These all bring promises and challenges going forward. It will be helpful here to lay out some of the most significant developments:

1. **The rising cost of serials.** After years of acquisitions and mergers, five scholarly publishers (Elsevier, Taylor and Francis, Wiley-Blackwell, Springer Nature, and Sage) now control approximately 50% of all scholarly journal publishing and return [profits of 35–40% to their shareholders](#). This consolidation has led to an exponential increase in pricing for academic journals. In fiscal year 2019/2020, almost a quarter of CUL's total collections budget (\$3.6 million of \$17 million) was paid to only three publishers: Elsevier, Springer Nature, and Wiley. [According to the Association of Research Libraries](#), between 1998 and 2018 the total amount of serial expenditures increased 166%, compared with a 68% increase in "one-time resource expenditures" (i.e., monographs). The "big five" also pose newly emerging problems for issues related to ethics, privacy, and academic independence, as the race to monetize open access (see 2 below) has [driven for-profit publishers to invest and develop in the areas of data management and data analytics](#), with implications that extend beyond those of the dissemination of knowledge and scholarly research.
2. **Open-Access (OA) publishing.** A new and increasingly popular business model shifts the costs of publication from the reader to the author (or the author's institution) and makes scholarly communications [freely available via digital platforms](#). CUL and Cornell will need to develop a transparent policy for addressing and supporting sustainable OA. There are a range of options that can be considered: subsidizing faculty publication in existing OA journals, boycotting journals that charge exorbitant article processing charges (APCs), leveraging the expertise and academic publishing networks of CU Press (which reports to the University Librarian), and carefully considering the benefits and drawbacks of "transformative" read-and-publish (or publish-and-read) agreements, which often cost more than conventional subscription models and do not address fundamental questions of access equity (for authors and institutions alike), and continuing exploring collective, consortium-based action toward sustainable and [fair OA](#) models.
3. **The promise and dangers of digital collections and subscription-based access.** The Library provides two types of digital collections: (a) those the Library and its partners have digitized and (b) those we license from publishers. Here we focus on the latter (b), a significantly larger collection with broader ramifications for Cornell research. The licensing of digital materials from publishers offers obvious advantages: instantaneous access (including on-demand purchasing), remote access, and minimal needs for on-site physical storage. These advantages, however, must be balanced against liabilities: restrictive interfaces, the danger of link rot, and the ceding of control over user privacy and metadata to publishers and aggregators (which in turn means that e-books are often not as well cataloged and less discoverable to researchers, while user behavior is potentially available to publishers). Licensed digital materials are more difficult to share across institutions than are print materials: currently, only 10–15% of the 1.7 million ebooks licensed by CUL can be loaned as a whole book to peer libraries. We can expect similar

licensing restrictions among the peer institutions from whom we borrow (for the importance of sharing across institutions, see section 4.2 below). And although digital publication has become the norm for many North American and European academic journals, and is an increasingly common option for academic monographs, this is not true globally. CUL will continue to need to purchase and support non-digital materials.

Choices about whether to purchase collections in physical or digital form can be controversial and sometimes elicit strong feelings from faculty. Supporting disciplinary preferences of physical and digital formats creates tremendous challenges. Digital materials require investments in preservation and stewardship over content, metadata, and discovery services due to technological obsolescence. It also requires increased investment in legal and technical expertise of staff. The provision of physical collections relies upon a separate infrastructure centered around space and efficient storage, building maintenance, accessibility (onsite vs. offsite storage), and retrieval workflows.

4. **Need for training.** New digital research methods in all disciplines, including the humanities, have led to an increased demand for CUL to provide tools, consultation services, and training for scholars. This requires investment in staffing.
5. **Digitization** (the ability to make items in CUL’s physical collections available in digital form, and the construction or curation of collections that are “born digital,” e.g., publications on the web). Digitization makes possible new forms of research. It is also a service to the world scholarly community, from which reciprocal benefits may be expected. It inevitably raises the question of priorities: how much do we digitize, what do we prioritize for digitization, and how do we apportion resources accordingly?
6. **Maintenance and utilization of Library space.** In 2019 Cornell engaged Brightspot Strategy LLC to make detailed recommendations about Olin and Uris libraries. The study highlighted significant maintenance issues that will need to be addressed, as well as concerns about accessibility. Other libraries at Cornell likely have similar deficiencies. It also proposed the reconfiguration and reallocation of Library spaces, which would transform the Library’s physical footprint.
7. **The increasing complexity of Cornell as an institution.** The expansion of Cornell’s New York City campuses, new global partnerships, and an increasing number of colleges, institutes, programs, poses new challenges. Chief among them are ensuring access to all CUL resources across all Cornell’s campuses and ensuring adequate communication between the faculty and CUL.

3. Faculty Experiences and Perceptions

Two separate surveys were conducted in 2021 to assess how well CUL served the needs of the Cornell community. The first of these, conducted by CUL, was directed at faculty only. It asked questions about the faculty’s usage of the Library both for research and for teaching in the year 2021. Given the physical closure of the Library during the period addressed by the survey, the results do not represent Library usage under normal circumstances.

The TFLRI conducted its own survey of faculty and graduate students to gauge the *perceived* quality of CUL’s research collections and services. We received 664 complete responses (304 faculty members and

358 graduate/professional students). We include the full results as a supplement to this report. Because we distributed the survey to all colleges, departments, programs, and institutes as an open link (via Qualtrics), it is impossible to calculate a response rate.

The information from both surveys should be used with caution. Neither survey garnered a high response rate (CUL's Faculty Survey had a total response rate of 22%; the TFLRI response rate was likely lower still). Both were impacted by the conditions of the COVID-19 crisis. For example, respondents to the TFLRI survey could not distinguish between conditions that were Covid-related, conditions that were normal, or conditions that reflected a Covid-induced "new normal" (temporary or otherwise). Moreover, the temporary availability of HathiTrust digital resources during the pandemic changed expectations about the accessibility of digital resources: it gave researchers access to digital resources that they would not otherwise have had, which led to some inevitable disappointment when the HathiTrust "Emergency Temporary Access" was ended on May 26, 2021.

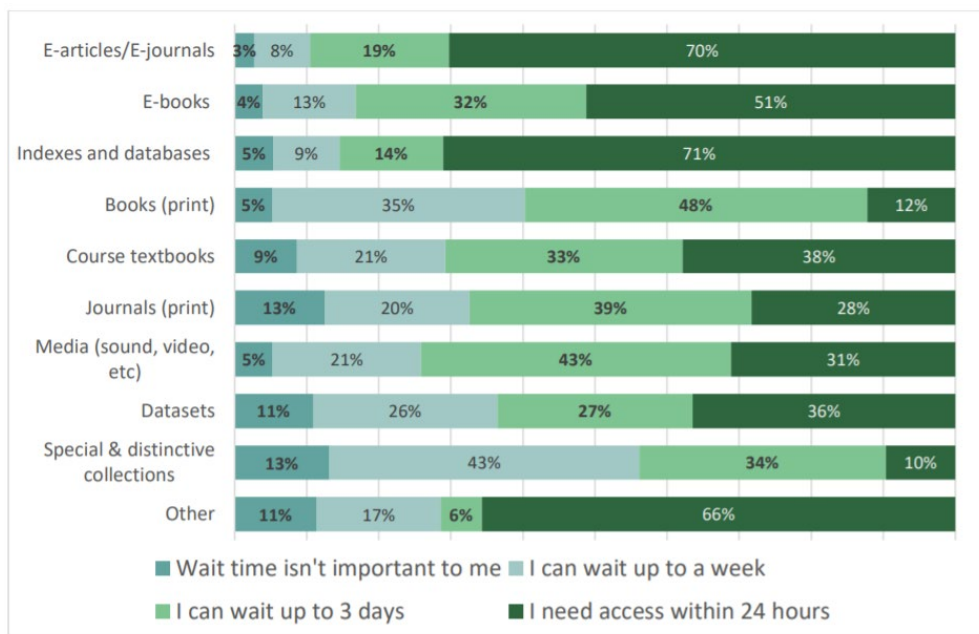
There are nonetheless identifiable takeaways. First, on a positive note, CUL garnered high praise for its efforts making resources available during the Covid crisis. Moreover, there was great appreciation for the skill and resourcefulness of individual librarians at all levels, for the training workshops that CUL offers in the use of research tools, for the open access to CUL stacks, and even for the Library as a physical workspace. The majority of respondents found CUL's resources adequate to their research needs.

A significant number of respondents pointed to challenges, however. In the TFLRI survey, 22% of respondents (25% of faculty and 19% of graduate/professional students) indicated that Library cuts have "negatively affected their research." These numbers varied considerably across Colleges: 33% of faculty respondents in A&S found that Library cuts have "negatively affected their research," compared against 20% of faculty respondents in CALS, for instance. There is also considerable variation across Colleges in the perceived adequacy of access to research materials. For instance, 29% of A&S respondents (28% of faculty and 33% of graduate students) indicate that "only some of their research needs are met" by CUL collections and that they "regularly" need to acquire resources (digital, print, or database access) from outside the CUL system (BorrowDirect, Interlibrary Loan, or colleagues at other institutions); in comparison, only 10% of CALS respondents and 6% of Engineering respondents indicated a similar reliance on resources outside the CUL system. 8% of faculty respondents indicated that CUL's resources in their research area are not competitive with resources available at other prestigious R1 institutions, with the highest percentage of those responses again coming from A&S (11%).

Satisfaction with the Library's current collections and services is encouragingly strong, though there are statistically significant variations across Colleges: while the average satisfaction rating across all respondents is 8.18 (on a 10-point scale: 10 = extremely satisfied, 0 = extremely dissatisfied), CALS respondents report 8.66, while A&S respondents report nearly a full point lower, at 7.79. Likewise, when asked to gauge change in satisfaction over the past three years or since joining Cornell (on a 10-point scale: 10 = much more satisfied, 0 = much less satisfied), respondents on average report 6.66: CALS respondents average 7.23 but A&S respondents are again a full point lower at 6.25. Finally, 13% of all respondents indicate that they have incurred increased publication costs (e.g., APCs) owing to canceled institutional subscriptions and/or Open-Access agreements that reduce APC costs for participating institutions. In this instance, more faculty respondents from CALS (30%) report increased publication costs than do respondents from A&S (9%).

Some of the qualitative answers to the TFLRI help to identify some central issues. We summarize these responses here, and then discuss them further in other parts of the report.

1. Respondents have experienced cancellations of serials that are important to them without any prior consultation. Faculty report learning of cuts only when they try to access a journal that they had formerly found in CUL. This relates to a larger communication problem, discussed more fully elsewhere.
2. Sometimes the difficulty faculty report in accessing collections is created not by the loss of collections, but rather by poor discoverability. To put it another way, faulty interface connections between journal databases and the CUL catalog leads researchers to believe that CUL does not own or license materials that CUL does, in fact, own or license. We describe this as the “Get It Cornell” problem and discuss it more fully elsewhere.
3. Respondents report turning to other resources (departments, labs, or research accounts, or personal academic networks, etc.) when CUL does not have what they need—acquiring items through laboratory or department funds and private purchases, getting materials from colleagues and friends at other institutions, asking for assistance on social media (esp. Twitter), etc. These solutions are problematic: they are not equally available to all members of the Cornell community, and they erode the status of CUL as an institution that exists for the common good of the entire community.
4. Although everyone appreciates Interlibrary Loan (ILL) and BorrowDirect as necessary supplements to CUL collections, the time lag between the request and the delivery (physical or digital) of the item requested remains an issue. Some of the reasons for the time lag are beyond CUL’s control (e.g., the speed of the postal service). The perception of time lag may simply be caused by the fact that, in many disciplines, the consultation of numerous sources in a short period of time is normal and necessary practice. The following chart from the Library Faculty Survey denoting “Acceptable wait times for a variety of Library-provided resources” shows that the majority of faculty do not want to wait more than three days for the delivery of print materials and expect access to electronic materials to be almost instantaneous.



4. Necessary Investments

4.1 Investment in Diversity

While it is to be expected that talented individuals will be lured away by opportunities outside Cornell, the inability to attract and retain librarians of color is a problem not only for CUL but for the faculty. As we emphasize throughout this report, CUL is a collaborator in faculty research: the choices CUL makes about what to collect, what to digitize, what digital tools and services to invest in, how to make data accessible, etc., all impact the research done in the Cornell community. Just as we now understand that a diverse, inclusive community of scholars will produce stronger research than a homogenous one, we understand that we need a diverse, inclusive community of librarians to support a diverse, inclusive community of faculty and graduate students. Hiring and recruiting efforts in CUL are closely intertwined with hiring and recruiting at Cornell in general. Both will stand or fall together.

4.2 Investment in Collections (non-RAD)

In November 2014 University Librarian Anne Kenney presented Cornell University's then President-Elect Beth Garrett with a sobering account of the state of the Cornell University Library:

Multiple years of flat budgets and financial cuts threaten the Library's ability to deliver top-notch resources to the Cornell community. Amongst the Ivy Plus group, Cornell ranks last in collections support per doctoral field. We offer nearly 41,000 fewer volumes per doctoral field than Columbia, which has almost as many doctoral fields as Cornell. Since 2011 the Library has used over \$6 million in one-time funds to offset flat and reduced collections budgets and we have depleted those resources. Costs for print-based and digital research materials increase around 5% annually, so each year that we experience a flat collections budget, the Library must reduce acquisitions by over \$800,000. This would include cancelling journals that receive good use, purchasing fewer books, and forgoing online tools such as Web of Science and the MLA Bibliography. No free online resources can replace these losses and the rising costs of collections is just one budget pressure.

Since and despite this 2014 briefing, continued flat budgets and deeper financial cuts have exacerbated the crisis and further threatened the Library's "ability to deliver top-notch resources to the Cornell community." Between 2014 and 2019 the Library's total expenditures decreased an additional 1.45% and materials expenditures¹ dropped a precipitous 5.63%. The effects of these cuts are compounded by an average annual 5% increase in the cost of maintaining *existing* access to research materials. Put simply, a flat budget is already a cut: budget reductions cut deeper still. If we adjust the Library's materials expenditures by CPI-U inflation (based on the fiscal year 2014/15), the stark reality of CUL's decreased purchasing power is clear. In fiscal year 2014/15 CUL spent \$21,199,087 on materials expenditures; in fiscal year 2018/19 the \$20,005,268 in expenditures had a CPI-U inflation adjusted purchasing power of \$18,694,715. The 5.63% reduction in expenditures translates into a 11.8% reduction in purchasing power (more than 2.5 million dollars).

¹ Here and elsewhere in this report, "materials expenditures" include electronic and print acquisitions, annual subscriptions, and one-time purchase costs.

This is not a temporary aberration but a continuing trend. CUL's materials expenditures were cut annually between 2015/16 and 2018/19 (1.25%, 4.85%, and 1.26% respectively). The drastic cuts in the 2019/20 budget, necessitated by the onset of the pandemic in March 2020 (and hence excluded from our trend analysis), have compounded already existing challenges. The unsustainable (pre-pandemic) cuts to CUL's research infrastructure are **not** reflective of national trends. Put bluntly, if Cornell was already slipping in 2014 relative to its IvyPlus peers, it is now slipping relative to institutions outside of the IvyPlus benchmark. If we take materials expenditures as a heuristic (albeit imperfect) proxy for the strength of CUL's research collections, in the 2014/15 fiscal year Cornell ranked 11th nationally in material expenditures (according to ARL annual statistics); by 2018/19, Cornell had dropped to 21st nationally, surpassed by institutions that had not even cracked the top twenty ARL charts in 2014/15, e.g., Michigan State (26th in 2014/15 and 19th in 2018/19) and Washington University (23rd in 2014/15 and 17th in 2018/19).

It may be misleading to compare raw "materials expenditures" numbers across libraries, however, since there is no shared standard for budgetary reporting. But when we employ an alternative methodology and compare *percentage change* in materials expenditures (however individual institutions calculate them), by that measure, too, Cornell fares poorly. Indeed, it casts in still starker relief Cornell's continued lack of investment in its Library relative to peer institutions. Among the top thirty research libraries in the 2018/19 ARL report, Cornell ranks 29th in its investments in materials expenditures: only **four** universities (Texas, Texas A&M, Cornell, and UC-Berkeley) reported a net negative change between 2014/15 and 2018/19, and only one institution, UC-Berkeley, reported deeper spending reductions than Cornell. The average investment across the top thirty research libraries was a net **10.27% increase**² in materials expenditures, compared against Cornell's net **5.63% decrease**.

Nearly a decade ago, in 2012, 647 faculty signed an urgent petition that affirmed "the critical importance of the library system to all aspects of Cornell's mission" and called upon the central administration, College deans, and faculty to collaborate in meeting the first objective of the Cornell University Library Strategic Plan (2011–2015): "return the Library to its position among the top ten academic institutions in the Association of Research Libraries in terms of collection support." CUL has not received the resources commensurate with this strategic priority, and its purchasing power has continued to slip not merely below the top ten, which was already in 2012 a cause for serious concern and significant faculty mobilization, but below the top twenty "in terms of collection support" (verging on below the top thirty if Cornell-Weill expenditures are discounted). The crisis is more urgent than ever, and the state of emergency necessitated by the global pandemic threatens to obscure the urgency of the pre-pandemic decline in investments in the Library.

Resource sharing (through, e.g., the thirteen networked institutions that participate in BorrowDirect, OCLC's WorldShare Interlibrary Loan, and a myriad other services) has transformed libraries across the twentieth and twenty-first centuries. (The U.S. Interlibrary Loan Code was first published in 1916 and adopted by the American Library Association in 1917.) But Cornell's robust participation in these

² This calculation excludes the data reported to ARL's Investment Index by Yale University, which appears to have changed the data reported in "Materials Expenditures" between the 2014/15 and 2015/16 fiscal years (which show a 76.24% increase, from \$25,135,931 to \$44,299,185). If Yale's material expenditures are included, the average is a 12.29% increase.

networks, which significantly reduce the negative impact of deficits in our collections, is still premised on the strength of the collections at CUL, which has historically lent more than it has borrowed.

Although a wholesale turn from print to digital may seem desirable or even inevitable, the TFLRI argues that CUL's diverse portfolio of collections must include a significant investment in print. Many areas of academic research (especially but not limited to humanistic disciplines) are heavily reliant on print culture, both historical collections (where full digitization is an impossibility) and new scholarship only available in print form. This is true, for example, of many Asian-language books that make up Cornell's distinctive and world-leading Kroch Asia collection. Collection development cannot be framed as a "digital or print" binary. A decision to prioritize one mode of collection above the other would have long-term implications for the disciplines, geographies, languages, etc. represented in the collection.

Moreover, despite their many advantages, digital books present still unsolved challenges in digital lending, platform variability, discoverability and browsability, and format obsolescence. For instance, copyright restrictions currently limit the transmission of entire digital books, which limits their utility within interlibrary networks. The use of e-books often entails a loss of CUL control over the metadata associated with them (e.g., the assignment of call numbers), making it impossible for the online catalog to make those works maximally discoverable to researchers (they are not "browsable" in any traditional sense). Many researchers find e-books cumbersome to navigate, as current formats often make it difficult to move between text and citations, or from book to book within a single platform or across different platforms. Finally, the cost savings the e-materials appear to provide must be balanced against the potential loss of control and as-yet-unknown costs. Continued access is subject to the vagaries of changing technology, subscription or acquisition models, and copyright law and licensing agreements, and thus will require that CUL invest heavily in hiring staff with the appropriate technical and legal expertise.

4.3 Investment in Collective Action to Bring Down the Cost of Journals and Combat Predatory Practices among Publishers

The questions of universal access to scholarly knowledge, versus the commercialization and restriction of this knowledge, are both ethical and existential questions for Cornell University, its faculty, and students. As we have already described, the behavior of publishers constitutes the greatest single threat to the viability of CUL, or any research library. Changing these practices will require collective action across institutions. Cornell has a history of action and leadership in this area. For example, since 2011, in order to promote openness and fairness among libraries licensing scholarly resources, CUL has declined to enter into agreements that require nondisclosure of pricing information (NDAs) and also [makes transparent the expenditures by journal titles and by vendors](#) to enhance awareness of the unsustainable business model, something few libraries do. For many years, CUL housed [arXiv.org](#), the pioneering repository of preprint articles (hosting more than two million articles across eight disciplines). In spring 2019 the Faculty Senate, at the request of the University Faculty Library Board, created a Committee for the Future of Scholarly Communication, a broadly interdisciplinary committee of librarians and faculty chaired by University Librarian Gerald Beasley and Professor K. Max Zhang (Engineering) to explore alternatives to current publication methods, including [Fair Open Access](#), as well as the possibilities of coordination with other universities. We urge Cornell to invest in the legal, technical, and business expertise necessary to take such a collective action. We do not propose to dictate here what that action should be.

4.4 Investment in Discoverability and Cataloging

The investments we make in materials (print and digital alike) only pay off when material is easily discoverable. Many librarians in our conversations emphasized the same point: if researchers cannot discover an item in our collection, there is no point in having it. Investing in discoverability and investing in collections is not an either/or choice. Each requires the other.

Cornell researchers sometimes have difficulty finding materials that Cornell possesses. The “Get It Cornell” button that appears on many externally sourced databases sometimes erroneously informs users they do not have access. Because this “service” is provided by database vendors, it cannot be fixed by CUL librarians. The “Get It Cornell” problem is only one of many challenges that are created by the behavior of digital vendors. For example, the refusal of digital book publishers to provide full Library of Congress call numbers prevents these books from being discovered by the normal process of call number browsing (which would lead a researcher from a given book to other books on closely related topics). Vendors likewise control what metadata concerning a given publication is made available in the online catalog (that is, tables of contents, abstracts of chapters, verbal descriptions of visual or material objects). These problems illustrate the dark side of the imagined print-free utopia that some wish to embrace; reliance on digital materials can be accompanied by a loss of control over how these materials are cataloged and what kind of metadata is provided for them (CUL enhances the metadata provided by vendors, but this requires more processing staff to keep pace with the growth of ebooks collections). Forcing vendors to behave more helpfully will require cooperative collective action from multiple research libraries (as discussed above), leveraging the necessary legal and technical expertise. This will require investment.

Finding better ways to create or source metadata, not only about our own collections but about collections elsewhere in the world, requires investment in technical expertise. Improving the metadata available from vendors requires legal and business expertise (as well as collective action by multiple libraries). Finally, the importance of investing in human catalogers cannot be overlooked. Cataloging is a collaborative enterprise across libraries, and Cornell has historically taken the lead in creating catalog descriptions for materials in certain foreign languages, such as Indonesian and Thai. It is in Cornell’s interest to maintain that leading role. Describing digital materials that are unique to Cornell’s collections in ways that allow them to be found by search engines is labor intensive and requires more investment in staff to keep up.

4.5 Investment in Transparency and Communication between CUL and Faculty

CUL and CU face hard choices in the future. We will need to decide, for example, how to respond to the challenges posed by the skyrocketing cost of journals and the emergence of new purchasing models (so-called “transformative” or “read and publish” arrangements). We will need to articulate a clear institutional strategy with respect to open access publishing: should Cornell, for example, expand the existing [Cornell Open Access Publication Fund \(COAP\)](#), delegate Library staff to support open scholarship initiatives, and/or change requirements for tenure and promotion to enable Cornell researchers to refuse to publish in for-profit journals without jeopardizing their careers? We will need to make decisions about the balance between traditional print and digital publications that we acquire, and then make decisions about the use of space accordingly. In the short run, unfortunately, we will likely be unable to meet the rising cost of journal subscriptions and will be forced to make some cuts.

All these choices must be made transparently, with faculty fully informed and faculty input taken into account. Conversely, collections cannot be determined solely by faculty requests. Patron-driven models of collection development are short sighted, reactive, and unrealistic at the collection scale required by an institution of Cornell's scope, size, and prestige. While the acquisition of materials that faculty and graduate students directly request is, within reason, a crucial part of a responsive and responsible collection strategy, it cannot be the only driver. All these considerations require robust, effective avenues of communication between CUL administrators, selectors, and Cornell faculty.

There need to be improvements and investments in these avenues of communication. We believe that some of the negative perceptions of the Library that emerged in our TFLRI survey stem from communication failures. Researchers learned about journal cuts when a publication disappeared from a reading room, when a web link no longer worked, or when they suddenly saw increased publication costs (some journals offer APC discounts to faculty from subscribing institutions). As we have noted above, some communication failures can be deemed technological or mechanical: databases accessed via the CUL catalog do not always accurately convey whether Cornell possesses a given item (see above, the "Get It Cornell" problem). In other cases, the failures are human. We believe that there is a problem of Faculty-CUL communication in both directions. On the one hand, although faculty know a great deal about their own needs and research priorities, they often understand little about the complexity of the challenges faced by CUL. On the other hand, the system of CUL liaisons and selectors through which CUL seeks to maintain lines of communication with faculty seems overstretched. And the consultation of stakeholders is even more complicated for disciplines that span Colleges, subject areas that span departments, or when different members of a department rely upon different selectors and/or liaisons.

The CUL Liaison program was founded in 2011.³ Since its establishment, the CUL Liaison program has engaged in a robust and healthy self-assessment. In 2017 the Liaison Program Steering Committee, at the request of AUL Kornelia Tancheva, conducted [a review of the Liaison Program](#), which observed that "the success of liaison efforts depends on resources, but also on a chemistry between the department/program and the liaison" and that "resources among libraries vary." These resources do indeed vary among the unit libraries.

There are currently [44 active Library Liaisons](#), with a wide range of departmental, program, and institute assignments, and considerable variability in the number of academic units assigned to a single liaison (some librarians primarily provide liaison services; others have significant supervisory and administrative responsibilities in addition to their liaison activities). Compounding this uneven division of labor, many liaisons are selectors, who purchase digital and print materials according to subject area, but 15 (or 34%)

³ AULs Janet McCue and Oya Rieger sponsored a Library Executive Group initiative to help realize the third strategic priority articulated in "Toward 2015: Cornell University Library Strategic Plan, 2011–2015," which was published in February 2011: "Provide services to support the full cycle of research and scholarly exchange." The charge included two goals: (1) "Look at the University's strategic plan goal regarding library services for faculty and build a robust cohesive program around it"; and (2) "The program should include, among other things, a table matrix of liaisons, updated job descriptions, clear expectations for liaisons, training for liaisons, means of spreading resources across units, and two-way communication (from library to faculty and from faculty/departments to library)." "Final Report: Strategic Objective III.1 Formalize the Network of Library Liaisons to Departments and Academic Programs Across the University to Strengthen Relations. Build Liaisons' Subject and Information Expertise to Enhance Ongoing Dialogue with Researchers," 1.

of the current liaisons are not selectors and at least 10 selectors are not liaisons to any academic units. In some cases, the liaison may be the selector for an entire department, in other cases not. This raises important questions about the continued viability and success of the Liaison Program, and its relationship to Library selectors. Despite the growth in the number of Colleges, Institutes, Centers, and (in a few cases) Departments in the decade since the establishment of the Liaison Program, the number of liaisons has in fact decreased (from 48 assigned in 2011 to the current 44 liaisons).⁴

The CUL website gives a [list of subject areas and selectors](#). It includes the names of approximately 35 individuals covering more than 150 subject areas. It is very hard from this list to gauge whether there are enough selectors to cover all possible faculty needs. The scope and distribution of fields for selection is irregular and perhaps subject to external pressures (e.g., endowments and gifts restricted to specific areas of collection development). Moreover, some unit libraries are closely associated with specific departments (e.g., Math and Music) and are supported by dedicated, departmental Library Committees, which help to advise subject selectors in their field(s). The centralization of selectors' collections budgets has complicated existing, and well-functioning, channels for direct faculty input in collection development (e.g., the Department of Mathematics adjudication of the Mathematics Faculty Book Fund).

The thin spread of selectors has detrimental consequences for equity *among* faculty. Some respondents to our survey reported that when they were unable to access materials in CUL they turned to librarians with whom they had good relationships. Individual CUL librarians are almost always willing (resources permitting) to make purchases upon request or solve access problems in other ways, and CUL librarians received high praise in our survey for their responsiveness. However, not all faculty have equal opportunity to form or maintain such relationships, and very few graduate students have the time, knowledge, or confidence to cultivate such relationships. The qualitative responses to the TFLRI survey of faculty and graduate students indicate that sometimes researchers, rather than consult a librarian, just gave up or spent their own money. Here are some of the answers given to a question about what respondents did when they found they did not have access to material through CUL.

“I lost access during the research process when Cornell did not renew availability. I had to shift the scope of the research project.”

“I ended up not using that material, which is sad.”

“Access to *Le Monde* was removed from Nexis Uni; I was able to substitute by using a different newspaper.”

“Several Journals in Optics are no longer accessible. We have to buy it by ourselves.”

Even though the CUL Liaison Program has been in place for more than a decade, many faculty appear to be unaware of the program or have little contact with a departmental liaison or selector; some resent having to rely on selectors who do not hold advanced degrees in the subject areas or disciplines they are asked to cover. And some departments report that alumni gifts specifically earmarked for collection development in specific fields have been absorbed into non-restricted funds without any formal or

⁴ In 2019, CALS (Mann Library) moved to a “Team Based Service Model” that no longer assigns individual liaisons to individual departments. This number corrects for the team model adopted in CALS and does not count the CALS liaisons active in 2011. If the original CALS liaisons are included, the number has decreased from 53 to 45 (where one of those 45 is the “Mann Librarians Team”).

explicit guarantee that the funds would continue to be used to support the collections for which they were expressly given. While it is clearly impossible for the Library to provide every Cornell researcher with a selector/liaison whose expertise coincides exactly with their own, CUL needs to have a large enough staff, and a large enough quantity of dedicated CUL staff time, to enable all researchers in all departments to regularly learn of and respond to choices about what to buy or what to drop, about whether to invest in digital or print materials, about how to handle package deals offered by publishers, and about numerous other issues that affect their capacity to conduct research. We recommend a careful reassessment of the Library's Liaison Program.

4.6 Investment in Digital Scholarship and Research Services

Digital scholarship is a term that covers a wide range of scholarly practices and technical expertise including computational text analysis (text mining), data analysis and visualization, mapping, network analysis, and digital collections and digital exhibits. It can also include 3D printing, virtual reality, critical code studies, media studies, as well as requisite competencies in digital privacy and algorithmic literacy. Digital scholarship services in libraries also include support for activities that prepare research material for digital analysis (e.g., data cleaning, digitization, and optical character recognition [OCR]), and prepare material for preservation and dissemination (e.g., web archiving and data curation). These last can be considered new forms of collection development, consonant with libraries' concern for making information available to research over the long term.

Libraries have been natural homes for these services because libraries' and librarians' core expertise are closely aligned with the requirements and competencies of digital scholarship: information organization, metadata and database design for scholarly purposes, technical tool development, digital preservation, user experience. Libraries are interdisciplinary hubs of activity and coordination, instruction, research, and discovery, and are operated with a service ethic toward scholars and students. They also approach new technologies with a critical stance appropriate for scholarly work.

Researchers come to the Library for help with gathering research materials (data, text, primary documents), choosing appropriate tools and approaches for processing these materials, strategizing project scope and workflows, and disseminating their work to the scholarly community. The Library also serves as a university "third space" where researchers may interact across disciplines with others who seek similar materials, tools, or research challenges. Librarians facilitate cross-disciplinary interaction and co-learning via events, educational programs, and other shared physical and virtual spaces. Meanwhile, programmers and IT staff working in libraries are often responsible for building and/or supporting new digital tools or infrastructure for managing digital cultural heritage.

CUL has recognized the increasing demand for training and support in these emergent fields, and has supported faculty and students through small centers such as the [Digital CoLab](#) and [Digital Consulting and Production Services \(DCAPS\)](#) in Olin Library. It also provides for individual library positions specializing data and GIS in Mann, Catherwood, Law, and Library Technical Services, as well as digital archivists, metadata librarians, and more.

There is good reason to expect that demand for these services will continue to increase, as interest in the use of digital methods across disciplines continues to grow. For example, applications from Cornell PhD students to the intensive summer training program, [The Summer Graduate Fellowship in Digital Humanities](#) (SGFDH), rose from 7 applications in 2017 to 34 applications in 2021. According to the Lead

Librarian for Digital Scholarship based in Olin Library, the number and technical complexity of requests for consultation by faculty in humanities and social science have increased steadily. Moreover, new Cornell academic ventures like the [Milstein Program in Technology and Humanity](#), the [Rural Humanities Initiative](#), the [Media Studies](#) program and the [Public History Initiatives](#) have generated further demand, among students and faculty alike, for the training and expertise offered by CUL's digital scholarship services. Funding agencies like the National Endowment for the Humanities now also offer programs for scholars using a wide array of digital methods (see, for example, [NEH Digital Humanities Enhancement Grants](#)). This trend both reflects and further energizes an existing trend towards digital scholarship in the humanities and social sciences.

Digital Scholarship Services at Cornell face three related challenges and questions, which are discussed here under the headings of size, organizational structure, and building collaborative relationships with Cornell researchers.

1. **Size.** Staff size is a challenge. Anecdotally, CUL digital librarians report having had to turn down faculty requests for assistance with projects that are especially experimental or technically complex, including collaborations on large grants. In comparison to some peer institutions, digital services at CUL seem small. The [Research Data and Digital Scholarship at the University of Pennsylvania](#), for example, shows eight staff members on its website, making it significantly larger than Cornell's unit. The [Center for Digital Scholarship at Brown University Library](#), and [Scholars' Lab at the University of Virginia](#) likewise appear to be more robustly staffed and to maintain a higher profile. Examples of large-scale ambitious projects of the sort that Cornell has not to date been able to undertake would include: University of North Carolina's [On The Books: Jim Crow and the Algorithms of Resistance](#) (text mining, machine learning, legal/social history); Princeton University's [Shakespeare and Company: Recreating the world of the Lost Generation in interwar Paris](#) (data visualization, databases, mapping, literary/social history); Penn State's [The Colored Conventions Project](#); the University of Minnesota's [Mapping Prejudice: Mapping the hidden histories of race and privilege in the built environment](#).
2. **Organization.** To some extent, the comparative smallness of CUL's digital scholarship program may be an optical illusion created by decentralization. As noted above, librarians who can be classified as digital scholarship specialists are spread across units, Colleges, and libraries. Such decentralization is typical of Cornell University as a whole, and it has some advantages. For example, our system places librarians with a given expertise in close proximity to the researchers who are likely to need that expertise. Nonetheless, decentralization can also discourage the large investments in technology that are needed to support more ambitious scholarly projects and foreclose opportunities to bring together researchers across different units of the University. Greater integration is desirable. Such integration might take form the of a "Center" that brings together all digital services across Cornell; or something looser that keeps the decentralized structure in place but creates more robust avenues for the collective setting of priorities.
3. **Collaborative Relationships.** As has been said elsewhere in this report, there is a synergistic relationship between librarians and researchers: the technologies and collections that CUL invests in has an impact on the choices that faculty and graduate students make with regards to research, and the public profile of the Cornell research community. This is nowhere truer than in digital scholarship. It is difficult, for example, for a researcher to apply for funding for a project

(or even imagine a project) unless access to the requisite technology (and training) is in place. This means that there will always be a delicate balance between researchers and digital librarians: librarians must take care not to dictate research agendas to subject-matter experts, but librarians are also better equipped than subject-matter experts to imagine new avenues of research that technology might enable. To some extent, librarians must take the initiative in laying the technological groundwork that will enable researchers to imagine and apply for funding for complex projects. A balanced and symbiotic relationship between Cornell faculty and graduate student researchers and digital librarians requires dialogue and continuing education to keep up with a rapidly changing landscape of technology and opportunity. For this reason, providing faculty with consultation, support and inspiration is essential. As noted above, Cornell graduate students have been rushing to take advantage of the Summer Graduate Fellowships in Digital Humanities (so much so that the applications now outnumber spaces in the program). There is clearly a demand for more training opportunities, offered on a year-round basis and as a basic part of graduate education at Cornell. Indeed, one of the benefits of building the resources for digital scholarship at Cornell so that it can support complex large-scale projects is that graduate students will find opportunities for training therein (one example of a project on which Cornell graduate student collaborate is [Freedom on the Move](#), which is supported by a partnership involving Cornell (History, CUL and CISER) and several other Universities. For faculty, more access to consultation and more opportunities for education in digital methods are essential if they are to take advantage of the opportunities, or even understand the dangers, presented by digital technologies.

4.7 Investment in Rare and Distinctive Collections

Special Collections are a mark of distinction for any research library. Cornell's collections are especially noteworthy for the way they relate to and represent the wide range of disciplines across the many colleges of the University, as well as its status as both a land-grant and privately endowed, Ivy League university. Especially at Cornell, special collections support far more than the humanities.

Rare and Distinctive Collections comprises a number of units including but not limited to [Rare and Manuscript Collections](#) (RMC), the [John Henrik Clarke Africana Library](#), the [Kheel Center for Labor-Management Documentation and Archives](#), the [Kroch Library Asia Collections](#), [Mann Library Special Collections](#), and the [Cornell Fashion + Textile Collection](#). It also includes unique and distinctive *digital* collections. RAD collections include singular, unique objects, as well as otherwise irreplaceable items or materials otherwise not duplicated at other institutions or repositories.

Faculty and graduate students engaging in RAD-based research (or pedagogy) have found opportunities to create exhibitions, conferences, and public-facing scholarly programs, to introduce undergraduates to the art of research, and to engage with Library staff in curating collections and making their importance visible to the wider scholarly community. Both faculty and Library profit from the synergy created when faculty engage with RAD collections. Moreover, our RAD collections bring scholars from around the world to Cornell, which further benefits our University intellectual community. The importance of our collections should not be gauged simply by their usefulness to Cornell faculty, but by their usefulness to the wider scholarly community (here it is again important to note that Cornell has historically loaned more than it has borrowed in its ILL relationships). In this sense, our RAD collections are vital to the reputation of Cornell as a leading research institution.

Two recent developments in RAD should be noted here, as they will shape the directions that RAD takes in the future.

1. **The increasing importance of digitization in and to RAD collections.** Digitization is central to the mission of RAD in two ways: through the creation of unique collections of material “born digital” and through the digitization of physical materials owned by Cornell through programs like the Library’s [Digital Consulting and Production Services](#) (DCAPS). Included among Cornell’s rare and distinctive collections are born-digital collections composed and curated by CUL librarians, one recent example being the documentation of the pandemic in Tompkins County. Born-digital collections at Cornell preserve access to the cultural record. Digitization also makes Cornell’s unique and rare physical materials differently, and more broadly, accessible to researchers and the public in Ithaca and elsewhere. In this way it is a public service. Digitization also makes physical objects available for scholarly research in new ways such as computational text analysis, mapping, and network analysis. These methods are supported by the Library’s [Digital CoLab](#). A current list of *collections* digitally available, which includes the pathbreaking [historical agriculture collections at Mann](#), can be found at <https://digital.library.cornell.edu/>.
2. **RAD’s innovative organizational structure.** In 2019 an Associate University Librarian for Rare and Distinctive Collections was established, with a portfolio that included collections physically and organizationally distributed across many Colleges and units across Cornell. This new structure has helped make more visible the significant collections housed in the [Kroch Asia Library](#) (the Wason, Echols, and South Asia collections). And it has sought to “un-silo” discrete collections and encourage synergistic collaboration across units. The integration of such collections has made it possible to identify “hubs,” areas of strength that come from combining collections that exist in different libraries. The [Fashion + Textile Collection](#) held by the College of Human Ecology, for example, can be used in conjunction with the [Garment and Clothing Union archives](#) at the [Kheel Center](#). History of Science materials in the Rare and Manuscript collection can be leveraged more powerfully when enhanced with collections in Mann Library. The RAD integrative structure is also useful in supporting emergent initiatives at Cornell, such as the [Public History Initiative](#) or the [Media Studies Initiative](#) (the latter drawing [many library collections](#), including the [Rose Goldsen Archive of New Media Art](#), the [Moog collection](#), the collections of the [Cornell Center for Historical Keyboards](#), and the [punk](#) and [hip hop collections](#)).

RAD will require continued investment. The distinctive digital-born materials, a growing strength of the collection, are challenging to make accessible: they are labor-intensive to catalog, which has resulted in a considerable (and acknowledged) backlog in cataloging both digital and physical materials owned by (or deposited at) Cornell. Moreover, the Library must find ways to ensure that they can always be accessed even as technologies for reading change. The creation of [virtual reading rooms](#) seems like a logical and advisable step to take next. Investment in physical preservation of materials is also crucial.

While the new organization of RAD and its capacity to identify and promote research “hubs” should help to make the treasures of Cornell’s collections visible to the outside world, Cornell could do more to welcome the outside world. Cornell special collections have comparatively scant resources to support visiting scholars. It would benefit from the creation of a fellowship program to draw visiting researchers—faculty, graduate students, postdoctoral researchers—to use our special collections and

participate in the intellectual life of the University. Such visits can benefit the entire Cornell community as much as they benefit the visitor.

There are other ways in which Cornell and CUL can better leverage the impact of RAD's collections by making them better known. The Library might track scholarly publications that draw significantly on RAD collections both for the purposes of internal review and the Library's external visibility. Communication with faculty, and collaboration with faculty to identify and promote yet more research "hubs," is also advisable. Curators and faculty might communicate better through regular meetings between the Curatorial Collections Committee, the University Faculty Library Board, and UL administration, or between particular curators and faculty invested in particular collections.

4.8 Investment in Physical Space

In 2019 Cornell engaged Brightspot Strategies LLC (a company specializing in strategic planning for higher education) in collaboration with Eskew Dumez Ripple Architects to make recommendations about renovations to Cornell Libraries. One notable conclusion was that there are a substantial number of maintenance issues in Olin and Uris Libraries that need to be addressed, as well as concerns about accessibility. It is likely that other campus libraries have similar deficiencies. We urge that these be addressed, as deferred maintenance is ultimately more expensive than timely maintenance.

We would like to note and raise questions about one aspect of the report's recommendations. Over the past several decades, the number of library spaces on campus has declined, as has the amount of space dedicated to what many perceive as core Library functions (collection stacks in particular). The Brightspot report recommends further reducing the amount of traditional Library space in Uris and Olin, replacing space currently used allocated to collections and Library staff with collaborative workspaces, "ideation studios," and (yet to be identified) campus partners. Undoubtedly, many aspects of both the teaching and research mission of the University would be helped by more classrooms, social spaces, study spaces and collaborative workspaces. However, any decision to reduce the amount of space for physical materials will affect decisions about the percentage of the CUL collection available for browsing versus "cold storage" in the Annex (which requires that the materials be robustly discoverable in the online catalogue). The Annex is itself a finite space, of course, and while we have a relative space advantage in comparison to our peers, CUL should start planning for additional storage in the Orchards.

5. Conclusion

CUL is being asked to do even more with even less. Consequently, it is slipping in relation to its peers in the Ivy Plus. Earlier in this report, we discussed relative rates of investment in Library collections, showing that Cornell ranked 21st out of 30 in raw materials expenditures and 29th out of 30 in its annual spending investment (see 4.2 above). The picture does not improve if we track total expenditures: Cornell again ranks 29th out of 30 in the percentage change in its total Library investments from 2014/15 to 2018/19, reporting a **1.45% decrease** against an average **9.05% increase** in total expenditures across the top thirty libraries. The pandemic, while it exacerbated budgetary stresses, must not obscure pre-pandemic trends. As CUL's budget is restored to pre-pandemic levels, CUL returns from a state of emergency to a state of crisis, one that cannot be rectified without substantial reinvestment across all Library divisions:

1. the **materials** expenditures that support research collections in all their diversity;
2. the **staffing** expenditures that support the processing, cataloging, integration, discoverability, and (above all) useability of the materials acquired;
3. and the **physical and technological** expenditures necessary to maintain swift and uninterrupted physical and digital access to both CUL's holdings and the Library spaces where, with the expert guidance of librarians and Library staff, CUL's collections are encountered and engaged by researchers across the University, across the community, and across the world.

"Investment in Excellence" across the University *must* be matched by a concomitant investment in the Library research infrastructure that enables such excellence in the first place.