

Cornell University Faculty Senate Ad hoc Committee on the Future of Scholarly Communications

Charge

On April 24, 2019, the Cornell University, Faculty Library Board worked with the Faculty Senate to call for the formation of a 1-year, ad hoc Committee on the Future of Scholarly Communications.

In light of the Faculty Senate Resolution on Cornell Leadership in Honesty and Reliable Knowledge (April 2017), we hold that:

1. the rapidly changing landscape of scholarly communications together with the competing pressures of Open Access and commercialization have made the careful consideration of sustainable, universal access to knowledge both an ethical and existential imperative for the University, its faculty, and its students;
2. as a globally influential institution with both private and public elements, Cornell is in a unique position to lead on these issues (as its leadership in arXiv attests); and
3. given emerging alternatives for publication and distribution, we have reached a critical moment and opportunity to rethink and discuss how we publish and disseminate reliable knowledge.

Action in this arena is especially timely due to:

1. The dramatic increase in costs to the Library of academic journal subscriptions, particularly those sold by the big five for-profit academic publishers (Elsevier, Taylor & Francis, Wiley-Blackwell, Springer, and Sage);
2. The opportunities that Fair Open Access publishing offers for sharing scholarly knowledge with underserved populations and the world generally;
3. The significant steps towards mandatory Open Access publishing made by the European science funders who have established “cOAlition S,” a move backed by major libraries and funders in China (September 2018, December 2018);
4. The unprecedented decision by academic libraries in Sweden and Germany to decline to renew Elsevier contracts (July 2018), recently followed by the University of California (February 2019);
5. Recent decisions made by influential editorial boards (e.g., Journal of Informetrics) to abandon Elsevier and pursue Fair Open Access publication; and
6. The NIH’s requirement that all research funded by it must be made publicly available 12 months after publication (<https://publicaccess.nih.gov/policy.htm>)

The Committee will:

1. Assess the ramifications of the escalating costs of scholarly journals
2. Explore and identify inexpensive and fair open access publishing models
3. Address the challenges posed by new publication models, such as a. the implications for tenure and promotion, b. new models for evaluation and measuring “impact,” and c. new funding models for Fair Open Access journals
4. Explore possibilities for coordination with other universities, whether through Faculty Library Boards or existing interinstitutional networks

5. Consider the appropriate role of the University as a funder of new scholarly methods, investing in excellence and taking a leadership role in scholarly communications
6. Consider the role of the Library and University Press as collaborators in any new scholarly communication efforts
7. Report to the Faculty about for-profit academic publishers' move towards investing in data management and data analytics, and the potential impacts on scholarship.

The Committee will report to the Faculty Senate, and will work with the Faculty Library Board, a representative of arXiv, and Cornell University Press

Committee Membership:

- Elaine L. Westbrook, Carl A Kroch University Librarian (Co-Chair)
- K. Max Zhang, Professor, Sibley School of Mechanical and Aerospace Engineering (Co-Chair)
- Gerald Beasley, Former University Librarian
- Diane Brown, Associate Director, Whitney Humanities Center at Yale
- Jane Bunker, Director of the Cornell University Press
- Jim DelRosso, Assistant Director, Catherwood Library
- Andrew Hicks, Associate Professor, College of Arts and Sciences
- Robert Howarth, Professor, Ecology & Evolutionary Biology
- Dan Lichter, Professor Emeritus, Policy Analysis and Management
- Jill Powell, Engineering Librarian
- Joe Regenstein, Professor Emeritus, Food Science
- Diana Sinton, Associate Professor, Soil and Crop Sciences Section
- Michelle K. Smith, Associate Dean, College of Arts and Sciences
- Gail Steinhart, Emeritus Librarian
- Lars Vilhuber, Sr. Research Associate, ILR Labor Dynamics Institute
- Kim Weeden, Professor, Sociology
- Kizer Walker, Librarian, Scholarly Resources & Special Collections
- Terrie Wheeler, Librarian, Weill Cornell Medical College Library

The Committee thanks Ben Fried for his assistance in documenting meetings and compiling the report.

Summary

Kizer Walker, Director of Collections, Cornell University Library

Elaine L. Westbrooks, Carl A. Kroch University Librarian

The global economic shifts and technological developments of the past quarter century have put enormous pressure on every link in the scholarly communication chain by which the work of academic institutions is registered, vetted, published, made accessible, and preserved for the future. The production of scholarly content has expanded tremendously, and at the same time, academic publishing has become big business, with control of the most profitable products of the academy gradually slipping from academic institutions, university presses, and scholarly societies to a few large commercial publishing companies.

These shifts have entailed loss to the academy, Cornell University included, at a number of levels, but the crippling economics of library journal licensing is perhaps the most damaging. Cornell Library and many other research libraries are struggling to acquire journals while the prices for scholarly journals have been rising on average approximately 6% annually. With built-in contractual increases and inflexible package structures, the essential journal literature published by the big commercial publishers cannibalizes the library collection. And yet, the constant flux that now characterizes for-profit academic publishing also means that control of publishing practices and channels is in play, and there are opportunities for scholars and academic institutions to assert more ownership over these processes. Today, we find scholarly communications suspended between accelerating commercialization on one hand and, on the other, the ready availability of tools and models to support a more open exchange of ideas. Just as the academy's efforts to regain some ground on the openness and sustainability of scholarly publishing began to see some success, however, the biggest commercial academic publishers began pivoting to remake themselves as data analytics companies. In this mode, publishers monetize freely available bibliographic metadata created by libraries and authors—only to repackage it and sell it back to higher education. This shift to data analytics has the potential to diminish the privacy that researchers traditionally have enjoyed.

Researchers and authors who produce academic knowledge, including, of course, Cornell's prolific Faculty in STEM, the social sciences, arts, and humanities, have a key role to play in staying informed about global efforts to build a more sustainable, affordable, equitable, and open scholarly communications system, weighing the impact of their own publishing choices, and working proactively to improve the situation.

In 2018, the University Faculty Library Board deemed "the careful consideration of sustainable, universal access to knowledge" to be "both an ethical and existential imperative for the University, its Faculty, and its students," and proposed a committee, to be sponsored by Cornell's Faculty Senate, to study the situation and make recommendations to the University about "how we publish and disseminate reliable knowledge." The Faculty Senate Ad Hoc Committee on the Future of Scholarly Communications, made up of representatives of the University Faculty, the Library, and Cornell University Press, was convened in 2019 and charged with assessing the impact of escalating subscription costs on library budgets, as well as exploring alternative models and ways of supporting scholarly journal publishing at the institutional level and in interinstitutional partnerships. The reports of its five working groups are included in the appendix.

The five Working Group reports reflect the investigations and thoughtful discussions of the respective Working Group members, and their inclusion here does not imply endorsement by the Ad Hoc Committee membership as whole. These reports are introduced by a position paper authored by the co-chair, University Librarian Elaine Westbrook. It is not possible to synthesize all the disparate ideas and proposals contained in the Working Group reports in this Summary Report and the initial action plan recommended here. The Committee makes the Working Group reports available to the University community as a rich source of ideas, some of which could be developed further as the Library, the Faculty, and the University Administration continue to explore avenues for Cornell to lead in building a more open and sustainable scholarly communication system.

Having worked through an extraordinary time and reconvening after a hiatus, the Committee offers a few basic actions and approaches that can be taken locally to advance access, equity, and sustainability in scholarly communications.

The landscape of scholarly publishing is shifting rapidly and options for openly accessible dissemination of scholarship are expanding every year. For example, the Office of Science and Technology Policy (OSTP) released a [memo](#), “Ensuring Free, Immediate, and Equitable Access to Federally Funded Research” on August 25, 2022 that provides guidance for scientific publishing aimed at making publications and their supporting data—the products of federally funded research—publicly available without an embargo by the end of 2025.

Although the federal government has taken significant steps to mandate public access to federally funded research, there is a clear need for additional actions that can empower researchers and research institutions alike to reduce our collective reliance on for-profit publication models that primarily serve the interests of their investors, not researchers, libraries, or higher education generally.

Recommendations

The Committee envisions a leading role for the Library in University initiatives aimed at shifting the dynamics of scholarly communications and publishing. For its part, Cornell University Library is committed to planning and implementing, in partnership with the University Faculty and administration, significant strategic action to make scholarly publishing more sustainable and its products more affordable. The Library supports the shift toward a scholarly communications system that is more openly and equitably accessible for readers and authors at Cornell as well as low-income and middle-income institutions in the United States and globally.

To advance these goals, the Library should commit to the following:

- Invest in projects, initiatives, partnerships, and infrastructure that move scholarly communications in the direction of sustainability, equity, and openness; and
- Launch of a campaign to build awareness across the Cornell community around the challenges of the current scholarly communications system and their impact on the Library’s ability to make essential resources available for Cornell researchers. This campaign will include communication about the benefits of open access for readers and researchers, as well as the Cornell authors’ options for making their own scholarship openly accessible.

The Committee calls on University Faculty to engage with the Library and its campaign, which includes a strategy for engaging University administration, and Faculty colleagues at Cornell and elsewhere to begin building a scholarly communications system that is sustainable over time, one that comports with

academic values, promotes free exchange of knowledge and ideas, and makes the products of academic labors broadly available to society.

1. Faculty should actively engage with the Library to build more campus awareness around issues in scholarly communication:
 - a. Invite representatives from the Library to department meetings to discuss the scholarly communication challenges in their disciplines.
 - b. Library leaders, the [CUL Copyright Office](#), and liaison librarians are available to speak with departments, laboratories, committees, and other groups and individuals at Cornell
2. Authors should, under most circumstances, retain the copyright for their own publications.
3. Researchers should embrace open access research:
 - a. Learn about and promote quality OA journals in their fields that are peer-reviewed and of the same high quality as the research locked behind paywalls.
 - b. Publish in OA Journals and join editorial boards of OA journals.
 - c. Learn how to flip paywalled journals to OA journals.

The Committee calls on the Faculty to commit to learning about global efforts to rebuild scholarly publishing and urges the Faculty Senate to continue to engage with the question of the autonomy and long-term health of the scholarly communications system that is fundamental to the academic enterprise.

With the commitment from the Library to building a robust strategy for sustainable scholarship and a commitment from the Faculty to partner with the Library, Cornell University is well positioned to be a leader in disrupting a system that no longer works for researchers, libraries, or higher education.

Struggling Under a 350-Year-Old Business Model

Elaine L Westbrooks, Carl A. Kroch University Librarian

Great thinkers and inventors of the seventeenth century helped pave the way for modern science, technology, and humanistic studies. This is the era that gave us telescopes, microscopes, calculus, even champagne.

The seventeenth century also saw the very first publications that we would today call [academic journals](#). *Le Journal des Sçavans* and *Philosophical Transactions of the Royal Society of London* both made their appearance in 1665, in France and England, respectively. Through these and similar publication, scholars, and the scholarly societies to which they belonged documented and shared discoveries.

At a time when presses were costly and paper was a scarce commodity, the printing and circulation of subscription journals enabled knowledge to flourish and discoveries to build upon discoveries. Scholarly societies served the function of vetting and disseminating findings for the greater good.

This fundamental approach to disseminating new findings endured, even as other changes in the scholarly process took hold. In the mid-20th century, a system of [scholarly peer review](#) supplanted the judgement of individual editors when it came to deciding which findings to publish. Simultaneously, the post-Second World War boom and the Cold War that followed spurred immense government investments in academic research, also accelerating the rate of publication and the need for ever more specialized journals.

In this environment, commercial publishers began identifying an [opportunity for profit](#). Not only did they move to establish new journals, but they also contracted with the scholarly societies, taking over the operational aspects of journal publishing on the societies' behalf, and eventually moving these titles into the online environment, as well.

While this model worked well for the commercial publishers and simplified a revenue stream for many societies, it has wreaked havoc in other ways. The same journal subscriptions that libraries once purchased at nominal cost directly from the societies, along with vast lists of new titles spun up in an environment of granular specialization, are today breaking institutional budgets as publishers raise prices at many times the rate of inflation. Libraries no longer order journals from scholars acting to benefit scholarship. Instead, we must negotiate massive licensing packages with for-profit publishers, many of them answerable not to scholars but to shareholders.

Elsevier, the world's largest publisher of scientific information, boasts a [profit margin near 40%](#) and its parent company, RELX, had U.S. revenues of \$9.8 billion in 2018. In 2018, Cornell University Library paid approximately \$2.8 million to Elsevier alone to license journals from its list. This year, the cost is roughly the same but we have lost perpetual rights to some titles in the same package.

Four hundred years after the first scholarly journals appeared, the internet has changed everything. And yet, in scholarly publishing, much has not changed. The scholarly journal remains the currency of the academic realm and one of the most important means that researchers have to share their findings, make a reputation and earn tenure.

The pressing need to rethink this system—and to bring the joint negotiating leverage of libraries to bear on the problems of runaway license costs—led me to join library and faculty participants from 16 other institutions in signing the joint [Open Access Tipping Point Public Affirmation](#) when I was the University Librarian at the University of North Carolina at Chapel Hill:

While our approaches and strategies may take different forms, we affirm the importance of using journal license negotiations to promote open access to our scholarship and to support sustainable business models, including the elimination of dual payments to publishers. We will advocate broadly, and work with our stakeholders both locally and in existing consortia, to advance these common goals.

Cornell Scholarship hits the paywall

Cornell's tradition of public service is woven into the very fabric of the University. I see that commitment play out every single day as I interact with scholars who are committed to bettering the lives of New Yorkers and to making discoveries that will change the world.

So, it is ironic that many of these scholars are locked into a publishing ecosystem that is about as far as one can get from serving the public good. This is the case not only at Cornell but at every major research institution in the country.

To understand why this is so, let's look at what is known as the "scholarly publishing cycle." Publishing in scholarly journals to which libraries subscribe is the way that scholars share knowledge with one another—and have done so for hundreds of years.

In addition to conducting the research itself, faculty members volunteer their labor as journal editors, editorial board members, and peer reviewers. They do this not only to advance knowledge, but also because an entire system of academic advancement and tenure grew up around the idea that faculty ought to publish their findings and should provide the services of editing and peer review that make it possible for other faculty members also to publish this way.

When scholars and scholarly societies produced their own journals, this process made sense. But as large for-profit publishers stepped into the equation as the primary purveyors of academic journals, the costs and the benefits have fallen out of balance.

Taxpayers, tuition-paying families, and university endowments already cover the cost of academic research and the publication of research results. Yet, if you are a member of the public who has no academic affiliation, much of this research will be unavailable to you, hidden behind subscription paywalls. To put it plainly, this means that private, commercial entities (the largest academic publishers) are reaping enormous profits from knowledge for which the public largely pays, with a business model that keeps that knowledge out of public hands, and at the same time creating unsustainable pressures on the (partly public-funded) institutions that produce this knowledge and then must buy it back from the commercial entities. The only entity in all of this to turn a profit is the publisher—and those profits can be significant.

As publishing has consolidated, fewer and fewer publishers serve as the gateway to the world's research production. In fact, by 2013, just five publishers had come to control [more than 50% of all academic published output](#). That's a situation that's never good for the consumer, in any industry.

As an institution so deeply committed to the public good and the betterment of all, including New Yorkers, as well as global citizens beyond US borders. I believe Cornell University has a special responsibility to raise awareness about the cost of research publications, and to turn the tide in favor of creative solutions that make information more affordable, sustainable, open, and transparent.

References

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2. [The Birth of Modern Peer Review - Scientific American Blog Network](#)
3. [Is the staggeringly profitable business of scientific publishing bad for science? | Science | The Guardian](#)
4. [Blockchain For Scientists Takes On Elsevier, The Business The Internet Couldn't Kill \(forbes.com\)](#)
5. Open Access Tipping Point (OATIP) Public Affirmation, [Open Access Tipping Point \(OATIP\) Public Affirmation - Office of Scholarly Communication \(universityofcalifornia.edu\)](#)
6. [The Oligopoly of Academic Publishers in the Digital Era | PLOS ONE](#)

Committee Report I: Assess the ramifications of the escalating costs of scholarly journals

Jim DelRosso, Assistant Director, Cornell University Library

Gerald Beasley, Former University Librarian

In assessing the ramifications of the unsustainable escalating costs of scholarly journals, it's important to examine two distinct but related contexts: the conditions in scholarly publishing that lead to these escalating costs, and the specific ramifications on Cornell.

The product being sold (scholarly articles) is often produced by authors, reviewers, and editors whose labor is either unpaid or paid for by their institutions. Nevertheless, there are some key conditions that have not only allowed but encouraged the skyrocketing costs of journals, including the fact that the units within academia that pay for these journals are not primarily the units that use them (so there is perceived pressure from the latter towards the former to buy as much as possible); and that most of the largest scholarly publishers are owned by publicly traded corporations (who by their very definition must provide constant revenue growth to satisfy shareholders).

These conditions lead to a vicious cycle wherein for-profit publishers have strong incentives to increase their profit margins and market share, either by increasing the number of journals they offer, by charging increasingly high prices for individual titles, or by bundling their journals and renting digital access to academic libraries like Cornell's at a large single price. High margins and growing market share in turn make them even more popular to investors, which increases pressure on the publishers for continued revenue growth, and so on.

As these big deals lay claim to more and more of the library budget, which in turn cannot keep up with rising costs, smaller publishers (e.g. scholarly societies) are pressured to throw in with for-profit publishers to prevent losing subscriptions and to provide members with a worry-free revenue stream. University presses including Cornell's find it harder to sell monographs to libraries whose budgets are already strained, and price increases put more and more scholarship out of reach of unaffiliated scholars and potential institutional subscribers, magnifying inequities in academic knowledge creation and distribution, and incentivizing the use of informal (and sometimes illegal) methods of accessing research.

At Cornell, the most obvious impact of this is that CUL is forced to cut journal subscriptions, which leads to a growing perception that it is providing progressively less adequate scholarly resources for teaching and research. But there are secondary effects too: the pressure on collection development budgets doesn't fall equally across departments and units, again resulting in academic inequity; an increasing amount of CUL staff time and effort are spent on negotiation and title-by-title subscription management, drawing staff away from other core duties; and CUL relies more and more on consortia to negotiate at scale and therefore defray costs. The latter can be a good thing but can also reduce our ability to shape our collection to our specific needs.

Cornell scholars have not been the focus of efforts made at a local level to search for sustainable scholarly communication models; and even when the limited library resources available are allocated for experiments in collection development, such as the Cornell Open Access Publishing Fund, they are unable to keep up with the ever-growing costs inflicted by for-profit scholarly publishers.

The fundamental issue is that the scholarly communication crisis faced by Cornell and other institutes of higher education persists because to for-profit publishers, *it is not a crisis*. It is a tremendous source of

revenue for them, and their shareholders demand that this revenue must continue to grow. This puts Cornell, and the Cornell University Library, in a position where they have to dedicate both staff time and funds to purchase a shrinking set of resources that struggles to meet the needs of Cornell scholars.

Committee Report II: Explore and identify promising open access publishing models

Terri Wheeler, Director of Samuel J. Wood Library, Weil Cornell Medicine

Lars Vilhuber, Senior Research Associate, Economics

This report will focus on the Open Access classifications known as Green, Gold, and Diamond, as used by UCL (2018). These may not be the only options. If we consider any collection of peer-reviewed manuscripts to satisfy at least some of the scientific demand for journals, then some other solutions can be identified.

Definitions

UCL (2018) and others define the three categories as follows:

- Green OA is repository-based open-access. The premise is that versions of peer-reviewed scholarly output are copied to an open-access repository.
- Gold APC-based OA is funded by author fees to publish their work so it is freely available.
- Diamond OA is publisher provided, free access to readers with neither author nor reader fees. Costs are covered by institutions (society, government, funder, etc.).

Not all of these are clearly delineated and do co-exist within the same publisher (Elsevier owns the SSRN repository of pre-prints), or within the same publication (certain APCs might be covered by a funder, making it more like Diamond OA for funded researchers). **Newer systems**, such as F1000Research, publish an article prior to peer-review (like a repository), but charge an APC immediately, and only index an article after peer-review (and additional charges). Overlay journals leverage repositories (e.g., arXiv) and conduct peer-review afterwards, often with volunteer labor and without cost. We highlight the role of **scholarly societies**, which have different approaches. Some society-published journals are free to members but present a paywall for others; society journals may charge (very low but non-null) APCs even of their members. Others fund society activities through the profits generated by traditional journals and may be hesitant to remove that income stream. A role that Cornell could play would be to work with societies to flip their scholarly journal to open access.

General Strategies

UCL (2018) suggest the creation or expansion of institutional repositories and policies to support Green OA. Gold OA can be supported through “OA subvention funds.” Offsetting agreements can balance subscription costs and OA publishing fees for an organization or a consortium. Engaging with disciplines to flip their journals to OA increases the availability of Diamond OA.

General concerns

For Green OA, a link to the relevant journal version ensures credibility of the copy, and signals that a manuscript has, in fact, been peer-reviewed. Many repositories contain pre-peer-review versions of manuscripts, and thus implicitly rely on updates and links to existing journals for credibility. Gold OA implies the content is free, but requires authors (or their institutions or funders) to pay publication fees, potentially creating barriers to publications for authors at under-resourced institutions. Diamond OA

also needs to address the role of peer reviewers – it is not sufficient to fund infrastructure and staff, credible peer-reviewers are key.

Possible Strategies Cornell Could Explore

Internal barriers to address for **green OA** include: 1) author motivation to self-archive their work, 2) confusion over which version is acceptable to self-archive, 3) administrative burden of self-archiving, 4) cost of maintaining a repository. Cornell should invest in OA infrastructure: 1) enhance eCommons: enable discipline specific “virtual” repositories or “virtual journals”, enable publisher deposit APIs, 2) explore software to facilitate ease of author deposit, for instance through more efficient faculty activity reports, 3) ensure that appropriate deposit and re-use rights are included in publisher license agreements.

Gold OA can be effective when an institutional fund such as Cornell Open Access Publishing (COAP) is adequately funded. Currently COAP is not funded at a level that meets campus demand for APC support. Program structure and funding level should be reviewed. A Gold strategy for Cornell might also include: 1) tracking APCs paid to publishers by Cornell authors, regardless of the funding source, 2) evaluating “offset” or “transformative agreements”. Concerns include inequities generated for non-participating institutions and authors, limited funding.

Diamond OA can be supported by collaborating with Cornell Press and invest in infrastructure (e.g. OJS as Cornell University Library has already started) to enable Cornell to directly publish OA journals and books. Note that most journals, to be credible, publish authors from a large variety of institutions. In effect, Cornell would be the host after flipping a journal.

External Strategies

External strategies to further **Green OA** that might facilitate Cornell action include 1) shifting, clarifying, and automating publisher policies concerning what authors have a right to self-archive, including elimination of embargo periods 2) concerted cross-discipline reliable discovery of OA versions, avoiding duplication, and increasing relevance of OA versions. For Gold OA, flipping journals to OA (e.g., SCOAP3) can help. Universities can assist societies to flip their journals to OA by supporting institutional memberships or allowing for higher individual membership fees.

University of California Libraries. (2018). *Pathways to Open Access*. Retrieved from <https://escholarship.org/uc/item/5gc4r5mg>

Committee Report III: Cornell is committed to assisting Cornell researchers with making their scholarly work openly accessible

Max Zhang, Professor, Mechanical and Aerospace Engineering
Joe Regenstein, Professor Emeritus, Food Science

Action 1 (short-term)

- Cornell university Library should continue to promote and support [eCommons](#) as a portal to allow researchers to archive scholarly work. The Library should revisit the interface of eCommons to remove barriers to deposit and make it more seamless for Cornell’s research community.

Action 2 (mid-term):

- The University shall encourage faculty to use the eCommons portal as appropriate.
- The University shall encourage faculty to retain the IP rights to their publications as appropriate.

The CUL should continue leading campus-wide engagement to promote open access and the open-access portal.

Action 3 (long-term):

- The Faculty Senate should consider endorsing an Open Access Policy for Cornell faculty. Here are a few examples: [Carolina](#), [Harvard](#), [Duke](#)

Committee Report IV: The Appropriate role of the University as a funder of new scholarly methods, investing in excellence and taking a leadership role in scholarly communications

Jane Bunker, Director, Cornell University Press

Andrew Hicks, Associate Professor, Music and Medieval Studies

Part A: Background and a note on our interpretation of the charge

While support for *new* scholarly methods (as specified in the committee's charge) is well worth exploring, we felt it was even more urgent to address issues of new support structures for *existing* and developing scholarly communication channels. The overarching context includes all the issues that led to the formation of this committee, including subscription price increases, the pressures these increases exert on the library budget, and the practices of major commercial publishers whose interests are often at odds with those of the academy. In the face of continued price increases, the university and the library can continue to cut acquisitions (assuming flat budgets), pay more to simply maintain the status quo (assuming budget increases), or more actively support alternatives to traditional subscriptions and commercial academic publishing. In addition to reconsidering how to spend the library's collections budget (considered by group I), the university also has opportunities to effect change by supporting new and established initiatives in open scholarly communication. That support may be directed to local efforts of Cornell University Press (CUP) and/or Cornell University Library (CUL), and collaborative initiatives beyond the institution.

UC Libraries' *Pathways to Open Access* (OA) (University of California Libraries 2018) describes the three major pathways to open access (green/self-archiving, gold/Article Processing Charges (APC)-based, gold-non-APC-based). We use these to organize our thinking on opportunities and challenges for the university. We note that while these models were developed to address the pricing issues around serials (journals), similar models exist for monographs (albeit at a more limited scale), and we intend for our discussion to encompass both. We also consider more general opportunities not specific to any one model.

Green Open Access (OA)

Authors and/or their institutions make a legal version of works available in an institutional repository, (IR), a generalist repository (GR), or disciplinary e-print/preprint servers (arXiv, [SSRN](#), PubMed, etc.). This may be backed up by an institutional OA policy that retains such right for the institution and may or may not require deposit to an IR. While an OA policy may be appealing, the process of collecting and depositing works to repositories comes at a cost. These costs may include:

- Administrative burden on authors, if they are expected to handle deposits
- Administrative burden on the library or other unit managing the policy (notifying and negotiating with publishers and managing waivers, if applicable).
- Effort or cost for the library or other unit handling the deposits. Either multiple FTE would be required to manage deposits directly or an unknown amount of effort would be required to integrate deposit into existing faculty reporting workflows (which are not consistent across colleges). Alternatively, payment to publishers would be required for automated deposits to the IR (an option that may not be available from all publishers).

Support for green OA models with deposit to IRs also relies on the continuation of commercial publishing as we know it and does not address the problem of rising costs to the library. It requires that libraries or other organizations maintain parallel and duplicative infrastructure. This model is feasible for institutions that can afford to support it and makes the scholarship of those institutions globally available. It may be out of reach for authors from institutions without the resources to manage negotiations and to sustain an IR, or who are not well-served by GRs or preprint services. It is also worth noting that publishers often retain copyright under green OA arrangements, and possibilities for downstream use of scholarly works may be limited.

Preprint services are well-established in some disciplines and gaining traction in others. Where their use is the norm and speedy dissemination is imperative, they have an important place in the scholarly communication ecosystem, but the problem of duplication of infrastructure remains. Overlay journals such as *Discrete Analysis*¹ select and review papers from preprint platforms and bundle them into an OA journal. This is a particularly promising model for the use of preprint services and supports a more progressive journal publishing paradigm.

Gold APC-based Open Access

Authors and/or their institutions pay publishers to make works OA. This can happen in a variety of ways:

- Authors and/or their institutions pay publishers per work. Payment might be made from research grants, departmental funds, or other sources, including Cornell Open Access Publishing (COAP) fund (for qualifying authors and publications).
- Libraries negotiate “read and publish” agreements with publishers. These agreements make the works of an institutions’ authors OA (essentially by prepaying APCs based on projected publication numbers) and provide access to content for the institution.
- Few collective opportunities exist for APC-based OA, but SCOAP3 in high energy physics is one example. Participants redirect subscription funds to a central fund that is used to support APCs, and all participating journals are published OA. Any author may publish. Copyright remains with the author and articles are published with a [CC-BY license](#). Cornell is a participant.

¹ [Discrete Analysis](#)

- [PLOS Community Action Publishing](#) is another recent collective action model (the initiative is in a “pilot period,” January 2021 to December 2023, and Cornell is not a member).

Single APC and so-called “read and publish” agreements present a number of problems:

- Both models may serve to open the works of Cornell authors but not necessarily to transform the landscape to a more open one overall.
- “Double dipping” is endemic to the APC system (outside of “read and publish agreements”): Libraries pay subscription fees for access, *and* authors (at the same institution) pay an APC. The university ends up paying at least twice for the same content.
- Both models may cost Cornell *more* than a conventional subscription model, and neither is particularly promising in terms of controlling costs.
- Both models incur administrative costs to manage payments.
- Neither model addresses equity issues for authors nor institutions without sufficient resources to participate.
- For single APC agreements:
 - The current [COAP fund](#) is too small to have a noticeable impact on the OA status of Cornell works. From its inception in 2010 through March of 2022, the fund supported 251 open access articles and 3 monographs.
 - Tracking APC payments across campus is difficult to impossible, leaving CUL unable to negotiate offsets to subscription prices.
- For read and publish agreements:
 - Access to publisher content varies from agreement to agreement.
 - Reuse/licensing rights to content vary from agreement to agreement.

Gold non-APC-based Open Access (also known as diamond or platinum OA)

Publishers provide free, permanent access to content for readers and without publication charges to authors. Existing initiatives that support this model include:

- Individual OA journals and monographs produced without charges to readers or authors, funded by a variety of means and published on a variety of platforms. The financial status of these journals is often precarious, and as a result they sometimes struggle to implement basic good publishing practices (Bosman et al. 2021).
- [Towards an Open Monograph Ecosystem \(TOME, pilot concluded\)](#). Participating institutions commit funds to support monograph publication (\$15K/monograph) by its authors, and participating university presses commit to publishing open monographs with that funding. CUL has funded the publication of two OA monographs.²
- Lyrasis’ OA Community Investment Program (OACIP), which coordinates community funding for selected open initiatives.³
- Open Library of the Humanities (OLH). A consortium that supports non-APC OA journals in the humanities.⁴ Cornell is a “standard” member.

² [TOME initiative monographs](#) in eCommons

³ [Lyrasis OACIP program](#)

⁴ [Open Library of the Humanities](#)

- Funding models such as Subscribe to Open,⁵ MIT's Direct to Open,⁶ and the University of Michigan's Fund to Mission⁷ programs convert spending on journal subscriptions and monograph purchases to providing open access to content.
- CUL's journal hosting service. The service currently hosts three student journals.
- CUP's Cornell Open program.⁸ Three successive grants from the National Endowment for the Humanities funded the conversion of more than 200 new and backlist books for open distribution.

Additional opportunities for support gold, non-APC-based OA:

- Expand CUL's journal hosting service to support faculty journals, published by CUL and/or CUP.
- Small, independent OA initiatives often struggle with business planning and processes. We heard from one Cornell faculty member that their project had to refuse a \$50K grant because there was no mechanism for them to accept funding. Cornell could provide business and logistical support for such projects.
- Contribute to collective initiatives, such as a proposed OA diamond capacity center (see Becerril et al. 2021).

A general challenge for some of these initiatives is that the publication opportunities they support may be unfamiliar to scholars, and may be perceived as risky, obscure or lacking in prestige. New collective opportunities are many and untested, making it challenging to select the most effective investments.

General opportunities

- OA2020.⁹ OA2020 invites institutions to commit to converting journal subscription spending into funding to support OA business models. Each institution develops its own roadmap for doing so.
- Higher Education Leadership Initiative for Open Scholarship¹⁰ (HELIOS, an initiative of the NASEM Roundtable on Aligning Incentives for Open Science¹¹). HELIOS is a community of practice for university leaders working to align higher education practices and incentives with open research values. Cornell is member.
- OER initiatives, such as SUNY's OER program.¹² [Cornell has participated in SUNY'S OER program in the past, with Mann Library serving as the organizer and liaison to SUNY.](#)

Conclusions

Numerous opportunities exist for Cornell to provide meaningful support to advance open access to scholarship, but continued pressure on the materials budget limits CUL's capacity to support new initiatives. And as long as existing commercial publishing models remain in effect, OA investments cannot be meaningfully offset by a proportional reduction in subscription costs.

⁵ [Subscribe to Open](#)

⁶ [Direct to Open](#)

⁷ [Fund to Mission](#)

⁸ [CUP Cornell Open](#)

⁹ [OA2020: Take action](#)

¹⁰ [Higher Education Leadership Initiative for Open Scholarship \(HELIOS\)](#)

¹¹ [NASEM Roundtable on Aligning Incentive for Open Science](#)

¹² [SUNY OER](#)

Alternative business models, including non-APC-based and selected APC-based models, hold the greatest promise for meaningful and sustainable change in scholarly communication. These could be supported with new funding, or with recognition that a meaningful transition will involve significant inconvenience to Cornell scholars, by redirecting existing funding. A general challenge inherent in some strategies is that scholarly communication practices are often grounded in disciplines more strongly than they are in institutions. This means that aligning Cornell resources to directly benefit Cornell scholars is at times difficult or impossible, and the case for support for collective action can be a difficult one to make, particularly in times of financial austerity. But the alternative, an ever-diminishing return on our expenditures, is also not an acceptable outcome.

[Regardless of specific strategies, Cornell should take a broad view of its mission to](#) “discover, preserve and disseminate knowledge”¹³ and execute that vision with global benefit in mind. The university must formulate and support a scholarly communication strategy that supports immediate and equitable access to scholarship by promoting universal and barrier-free access to scholarly work.

Part B: Consider the role of the Library and University Press as collaborators in any new scholarly communication efforts

Libraries and university presses are natural partners. They explore, experiment, and innovate, sometimes as collaborators, and sometimes as autonomous organizations. As the new scholarly communication ecosystem continues to emerge libraries and presses find themselves reclaiming their organic relationship.

At Cornell, academic monographs (books written by scholars for scholars) comprise the majority of the Press’s list. With the publication of monographs presses act as essential infrastructure for the humanities and the social sciences. But the fee-for-access model no longer supports this infrastructure. Despite ongoing attention to streamlining workflows and creating efficiencies, it has become increasingly difficult to recover the costs of book production. With better and more reliable funding, infrastructure development, and administrative support, however, the expertise possessed by the university’s publishing and information science professionals could be applied to solving multiple complex problems.

For instance, Cornell Open is a collection of 203 Cornell University Press books that are hosted on the eCommons platform at Cornell University Library and are freely available via Diamond OA. Open access needs to be funded, and in this case the funding came from multiple sources including three successive NEH grants. This is one new financial foundation to support the new scholarly communication ecosystem.

Other natural collaboration spaces include both the traditional, from which more innovative ideas are often born, such as:

- Press acquisitions editors and library subject liaisons working together
- Library technical services professionals assisting with metadata and discoverability
- Learning and teaching – press acquisitions editors could be more deeply involved in programming

¹³ [Cornell University: University Mission](#)

- Partnering on book projects coming out of special collections and archives; perhaps even establishing a CUL imprint at the Press?
- Press authors as strong prospects for donation of papers to library
- Fellowships, assistantships, internships – both press and library as avenues for career pipelines for students
- Coordination around copyright education

As well as:

- IT infrastructure and joint digital projects
- Joint outreach to faculty for development, production, and distribution of OER
- Deeper integration with campus regarding classroom materials such as the CAMP initiative

This is just a short list of potential collaboration opportunities that could strengthen both organizations and, importantly, Cornell University as the host institution, in fulfilling its mission to serve faculty, students, researchers, and engage the broader public. What is necessary is to create space for conversation, relationship building, and the natural evolution of those communications. There is at hand a real opportunity to build capacity so that these essential seeds can be planted.

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Committee Report V: Data Management, Data Analytics, and the Potential Impacts on Scholarship

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This section will discuss the growing trend among commercial publishers to dominate the data analytics business, the potential impact on scholars and publishing, and some future recommendations for libraries, academic institutions, and faculty.

As commercial publishers have shifted from their traditional methods of operation, i.e. publishing text books and academic journals, they find themselves collecting and managing large and diverse amounts of data, much of which has tremendous economic and strategic value. Examples of these data include detailed student usage patterns of digital texts and the instructional platforms within which the texts are increasingly housed, extensive measures of research faculty productivity, and the raw information needed to perform AI-enhanced studies of emerging research trends in order to preemptively provide a supply of publishing outlets for potential future demand.

This has put the largest science publishers (Elsevier, Springer/Nature, Wiley) and Clarivate, a analytics company, in control of over 7,800 journals titles, into a position of control and influence through their

data analytics (Aspesi et al. 2019,10, 20, 25). Driving factors changing the business models of publishers overall (including the decline of students purchasing textbooks, the loss of the used book market following the shift to digital formats, the rise of open access, the use of SciHub, ResearchGate, PubMed, and arXiv) will not be changing in the future, so as the companies look for other areas of revenue, gathering these data and reselling it is increasingly likely (Aspesi et al. 2020, 17).

Thus, the leading science publishers are increasingly investing in data analytics companies to service this new growth area: Elsevier (Scopus, Pure, SciVal, Essential Science Indicators), Clarivate (Web of Science, InCites), and Digital Science (Dimensions, FigShare, Symplectic) which is owned by Springer (Aspesi et al. 2019, 31). The publishers then have products and services that can be sold to universities, medical schools, governments, companies, and research funders to assist with admissions, employment, and funding decisions. Through data analytics, the career trajectories of Ph.D. students and faculty researchers can be predicted and influenced (Aspesi et al. 2019, 16). This type of “researcher profiling” and performance assessment is a product of the data services offered by Clarivate, Digital Science, and Elsevier.

In addition, the major textbook publishers Pearson, McGraw-Hill, Cengage, and others are expanding their digital textbook content to sell productivity tools, learning assessment systems, and online learning management systems, resulting in data on student performance (Aspesi et al. 2019, 5). This data too can be packaged and sold to interested parties, including foreign governments who wish to monitor their students’ activities.

Several of the concerns that Aspesi and his colleagues raise include:

1. Libraries continue to fund the bills for the publishers although these additional services are being used elsewhere within universities (Aspesi et al. 2019, 12)
2. Universities have little influence over their own data being aggregated and sold to funding bodies and governments (Aspesi et al. 2019, 32)
3. The ability to decipher and interpret the results of the data analytics and the algorithms being used – with a healthy dose of critical and balanced skepticism - will be inequitable across institutions, and thus unfairly bias some people in some places (Aspesi et al. 2019, 32).

In an update to the Scholarly Publishing and Academic Resources Coalition (SPARC) report (Aspesi et al. 2020), Aspesi and his colleagues note that the COVID pandemic had introduced even greater uncertainty into publishers’ and universities’ operating budgets. They also reported on Elsevier’s recent launch of an international center focused on research assessment (rather than research publishing), and the “bundling” of publishing and data contracts that necessarily limit a university’s ability to disconnect its data contributions from its content access.

The report lists the following recommendations for consideration, several of which the library has already implemented in licenses they sign with publishers. Other recommendations are the responsibility of faculty/researchers/authors and administrators and are so indicated. While some of these proposals are easier to negotiate than others, knowing about all these guidelines is important to raise awareness regarding privacy and potential commercialization of the Cornell community’s data.

Recommendations

1. The library should continue scrutinizing the use and terms outlined in the license/contract of big deals.
2. Data Privacy
 - Students, faculty, and staff should retain ownership of their data as appropriate.
 - University constituents should not sign nondisclosure agreements or licenses that allow data to be resold to third parties or to the government without permission.
 - The university should require that data collected be anonymous to prevent students from being targeted for discrimination and marketing.
3. The Library and researchers should ensure that text and data mining of licensed content is permissible in the licenses being signed. These tools are needed for accelerating science and research across all disciplines.
4. The Library should continue negotiating terms that improve the sustainability and affordability of the scholarly communications ecosystem. In addition, researchers should promote these terms as authors who own the rights to their research until they give them away. This includes:
 - Requesting that the billing for licenses is in US dollars.
 - A financial hardship clause in all licenses/contracts
 - Retaining perpetual rights to subscribed content
 - Authors retaining their copyright should be the default with opt-out options
 - Including price recalibration clauses to have flexibility as open content increases
 - Promoting the use of open persistent identifies, such as ORCID and DOI
5. The Library should avoid licenses that link journal subscriptions with data analytics tools For example, Elsevier signed a 0% price increase with Dutch universities in exchange for wide adoption of their data analytics tools (Aspesi et al. 2020, 18-19).
6. The Library should not sign licenses with publishers that require authors to deposit their data with the publisher. Such licenses may conflict with funder and legislative mandates. In addition, such licenses might exclude green repositories and limit the options for researchers to archive or share their research (Shearer, 2021).
7. The University and researchers should not sign inclusive access deals where publishers bundle textbook purchases for universities, the costs may be passed onto the student in the form of tuition/fees, and data on their use and performance is harvested.
8. The University and the Library should require vendors to be explicit about their privacy policies regarding data management. Libraries should avoid contracts/licenses that allow the publisher to change privacy policies at any time (Aspesi, 2020, p. 23-25, 28).

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