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## How Open Is the U15? A Preliminary Analysis of Open Access Publishing in Canadian Academic Libraries<sup>1</sup>

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## RESEARCH ARTICLE

# How Open Is the U15? A Preliminary Analysis of Open Access Publishing in Canadian Academic Libraries<sup>1</sup>

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## ABSTRACT

**Introduction:** This study offers insight into open access (OA) culture at Canadian university libraries by detailing the degree to which librarians working at Canada's U15 (a collective of research-intensive institutions in Canada) make their research OA, as well as exploring the depth and reach of any OA mandates these institutions have.

**Method:** This study uses a combination of bibliometric analysis and a review of institutional OA policies, beginning with an examination of a six-year span (2014–2019) of librarian-authored publications, searching four key library and information science databases, followed by a systematic search for a university-wide or library OA statement, policy, or mandate on each of the U15 websites.

**Results & Discussion:** The data suggest that Canadian academic librarians are personally motivated to self-archive and make their research open. The high rate of publication in Gold OA journals, combined with the fact that several of the key library and information science journals for Canadian librarians are already OA, points to the importance of OA publishing for librarians as a community, as does the high number of expressions of commitment to OA publishing. Given the lack of variance comparatively between schools with an expression and without, the authors cannot comment on whether the expressions of support correlate to higher proportions of OA articles.

**Conclusion:** This article provides a snapshot of a positive OA publishing culture at 15 Canadian university libraries by presenting data that show that most libraries have an expression of commitment to OA principles and most Canadian academic librarians working at U15 schools ensure that their research is OA.

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## IMPLICATIONS FOR PRACTICE

1. Canadian academic librarians appear to be making the majority of their publications open access (OA), either by choosing an OA journal, self-archiving, or paying an author processing charge.
2. Many key librarianship journals are already OA.
3. OA policies, statements, and expressions are employed by a majority of Canada's U15, a collective of research-intensive institutions in Canada, at either the university or the library level.

## INTRODUCTION

Librarians have long been champions of the open access (OA) movement. There are two routes to publishing OA content: 1) through a journal, one that is free or one that requires authors to pay a fee (“Gold OA”) and 2) through a repository, a system whereby an author deposits their work, also known as self-archiving (“Green OA”). Some commonly understood benefits of publishing in an OA venue include retention of some or all the authors’ copyrights; increased visibility, usage, and impact of research; quicker and more efficient dissemination of research; and contribution to societal good by enabling and expanding access to information. Librarians’ OA advocacy work has involved strategies such as offering workshops, providing publishing support, and providing publishing infrastructure via institutional repositories and journal hosting. This article seeks to offer greater insight into OA culture at Canadian institutions through a combination of bibliometric analysis and review of institutional OA policies. The authors are motivated by the question of what impedes OA publishing from growing at a quicker pace, and what steps would further the goal of enabling and expanding free access to research. This analysis will explore the OA publishing patterns and behaviors of Canadian academic librarians, by detailing the degree to which research by librarian authors within Canada’s U15—a collective of research-intensive institutions in Canada<sup>2</sup>—is made OA as well as exploring the depth and reach of any OA mandates these institutions have. The result is a snapshot of the publishing behaviors and institutional attitudes toward OA publishing within U15 libraries.

## LITERATURE REVIEW

A review of the literature on the impact of OA mandates, policies, or statements, as well as librarians’ OA attitudes and behaviors, situates this study in the context of previous and current research, in terms of both its aims and the research design.

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<sup>2</sup> For more information, see <https://u15.ca/>.

## OA mandates and impact on OA publishing

One of the most popular ways that organizations, such as libraries, seek to increase OA publications is via mandates, policies, or statements that compel researchers to open their work. These expressions may be issued by an entire institution or a department in that institution (like a library). According to the latest report from the Coalition of Open Access Policy Institutions (2019), 109 member institutions (universities, colleges, research institutes) from across North America have published OA policies or have policies in development. In the case of funding agencies, their expressions apply to anyone, regardless of affiliation, who is receiving funding. For example, at the national level in Canada, the Social Sciences and Humanities Research Council, the Natural Sciences and Engineering Research Council, and the Canadian Institutes of Health Research have a harmonized “Tri-Agency Open Access Policy on Publications” that requires that research publications from their grants be made openly available within 12 months of publication. Targeting author behavior/choice in this manner is a core focus in OA advocacy, as it is ultimately the choice of the author to publish in a certain venue. This advocacy also helps scholars make informed decisions based on their options.

In the discourse, OA “policies” often refers to a spectrum of expressions (policies, statements, mandates) with different goals and varying degrees of authority at the institution. Fruin and Sutton (2016) explain: “An institutional policy specifically articulates what faculty members are ‘required’ to do, while statements of encouragement have less policy like features and explicit expectations” (p. 479). In other words, whereas a policy statement requires an author to perform in a certain way, a statement or mandate may express the need or desire for similar acts, but it is not binding. Authors are encouraged but do not have to comply.

A limited number of studies analyze the impact of OA policies or mandates on the OA publishing behaviors of researchers. Two studies examined this relationship at the institutional level, but at the time of writing, there are no studies that focus solely on librarians’ OA publishing rates vis-a-vis a policy or mandate. For example, Xia et al. (2012) compared the growth of repository deposits before and after the introduction of an OA mandate or policy at 349 institutions. They concluded that it would take more than the implementation of an OA mandate or policy to affect or influence the rates at which researchers self-archive, although they admitted that this is an important step toward building awareness about and participation in OA publishing. They allowed that such policies showed a “positive effect” on the rate of deposit but emphasized that, to really feel the impact, it is important to create a mandate or policy that reflects faculty members’ needs, noting in their conclusion: “There is no such thing as a ‘one-size-fits-all’ mandate” (p. 100). Another study by Vincent-Lamarre et al. (2016), from

Université du Québec à Montréal, looked at the effectiveness of OA mandates on self-archiving deposit rates at 67 institutions. Using the MELIBEA “strength” score (MELIBEA is a directory of institutional open access policies), they found “a small but significant positive correlation between (a) the original MELIBEA score for policy strength and (b) deposit rate” (p. 2817). The most interesting finding was the dramatic effect of certain conditions in some OA mandates that led to higher rates of deposit, which the authors recommend adopting. They are immediate deposit required, deposit required for performance evaluation, and unconditional opt-out allowed for the OA requirement but no opt-out for deposit requirement (p. 2817).

Although not the explicit aim of the work, two studies that focus on librarian publishing behaviors and attitudes do point to the importance of OA mandates and a potential link to publishing behavior. Carter et al. (2007) noted that some of their survey respondents suggested that an OA mandate or policy would compel them to make their publications OA. Mercer (2011), in a bibliometric analysis of peer-reviewed journal articles published in 2008, also wonders whether “[a]cademic librarians might be willing to adopt OA behaviors if presented with a compelling reason for doing so, such as a departmental or institutional mandate to self-archive” (p. 445).

Overall, OA mandates are widely regarded as a way to both compel authors to publish OA and serve as a means of expressing organizational support for OA practices. Their inclusion in a study on OA publishing behaviors, such as this one, may not offer a direct correlation with higher OA publications. Instead, these mandates offer insight into the climate and attitudes of the institution that librarian authors are affiliated with.

### **OA publishing: Librarians’ attitudes and behaviors**

Studies on academics’ attitudes toward OA publishing, as well as their OA publishing and self-archiving behaviors, can be broken down in multiple ways. Some studies focus on faculty members’ opinions and practices from across disciplines or among researchers from one domain, like library and information science (LIS) (Swan & Brown, 2005; Peekhaus & Proferes, 2015, 2016; Rowley et al., 2017). Some studies even take a topic-based approach and analyze the rates of OA publishing among faculty from a range of disciplines (including LIS) who study OA publishing (Grandbois & Beheshti, 2014; Schultz, 2018).

Methodologically, there are two main ways that OA behaviors and attitudes are studied, with each presenting a different perspective on the topic. A bibliometric analysis is a popular method for measuring publishing behaviors (e.g., rate of OA publications, “compliance”

with OA mandates), whereas surveys are used to get at academics' perceptions and attitudes (support for OA, desire to publish OA, etc.).

Several studies focus solely on academic librarians' OA publishing perceptions and practices as authors. One of the earliest studies exploring academic librarians' self-archiving behaviors (Carter et al., 2007) found that only 16 out of 140 survey respondents (12%) had archived their articles in an institutional repository, on a personal website, or on a departmental website. The results of this survey show that, compared with other national and international data available at the time, librarians were self-archiving less, not more, than other faculty members across disciplines. Most respondents indicated that they would self-archive more readily if a mandate were in place at their institution. Palmer et al. (2009) conducted a survey of academic librarian attitudes about OA and found that the relationship between librarians' attitudes and behaviors demonstrates a discrepancy between their support for OA and their actions when it comes to OA publishing. They were positive about the concept of OA but OA-related behaviors were not as popular. Neville and Crampsie (2019) try to uncover some of the reasons why a librarian would or would not deposit an accepted manuscript in an institutional repository. Of the 215 respondents to this survey of North American academic librarians, "76% regularly submit their accepted manuscripts to their institutional repository if permitted by copyright ... [and 84%] of the participants in the current study who uploaded their work to their institutional repository did so because of a feeling of responsibility" (p. 603). However, the authors argue that there is room for expansion, and they cite some possible barriers to self-archiving, including "lack of understanding of publisher's policy on repositories ... [and] lack of time to engage with repositories" (p. 601).

Bibliometric studies of OA publishing behaviors offer complementary findings to the research focusing on attitudes and perceptions. As Xia et al. (2011) state, a bibliometric analysis fills a necessary gap because it offers a "direct measure" of these attitudes and perceptions revealed by studies such as surveys. Way (2010) checked the OA availability of articles from the top 20 LIS journals, using Google Scholar, and found that LIS scholars do not regularly practice OA archiving and publishing, and he believes that this contradicts their stated professional duty to make information accessible to all. Chaudhuri and Baker (2015) also report low rates of self-archiving among librarians and LIS authors. Only 292 (28%) of the 1,048 articles they reviewed were available OA. Like Way (2010), the authors also lament the seeming contradiction between these low numbers and librarians' and LIS authors' stated commitment to preservation of and access to information. The authors of both studies believe that institution-mandated OA policies would expand use of institutional repositories. Although these findings are interesting for LIS researchers overall, neither of these studies differentiates between articles written by librarian practitioners and those written by LIS faculty.

By contrast, Xia et al. (2011) and Mercer (2011) do make the distinction between librarian and faculty authors, making the findings in these studies comparable to existing research on librarians' attitudes about OA publishing. Mercer (2011) looked at published articles from the database Library and Information Science Abstracts (LISA) over the course of one year (2008) and checked the OA availability of articles written by academic librarians. According to Mercer's results, almost half of the articles from her analysis were available in some form of OA, either through a repository or an OA journal. This number is significantly higher than similar studies conducted before and after. For example, Emery (2018) recently analyzed the OA availability of articles by LIS authors published in five Taylor & Francis journals over a span of five years (2012–2016) while Taylor & Francis had lifted all embargos on their LIS journals, allowing for immediate green deposit into a subject or institutional repository. Out of 671 articles published in the five journals, only 22% were available for free as full text. This is significantly lower than the OA publishing rate that Mercer found several years earlier. Xia et al. (2011) found similar results to Palmer et al. (2009) from their bibliometric analysis of OA availability and citations of scholarly articles in 20 LIS journals. The authors compared OA availability of articles by librarian practitioners with those by LIS faculty members and determined that librarians do not participate in OA publishing more than teaching faculty in LIS departments and are not more likely to deposit their research in an institutional repository, compared with LIS academics. The authors ultimately conclude that further study is needed to explore the reasoning behind this lack of participation.

The differences in methodology in these bibliometric studies make it difficult to draw conclusions about librarian attitudes and behaviors, particularly because the findings were also varied. Despite these differences, there is consensus in the literature that more research into the behaviors and attitudes of librarian authors is needed. This study hopes to contribute to filling in this gap, by exploring the publication behaviors of academic librarian authors at 15 of Canada's major research institutions.

The study of faculty and librarian authors as a single group is a limitation to the literature, as both groups are not entirely the same. Referred to as the "librarian-faculty divide," these two groups differ in the nature of their publications, quantity of publications, and even with respect to journal selection for publication (Xia et al., 2011). Moreover, one of the primary reasons several of the authors focus on librarian authors is because of the unique role these authors play in the OA movement as advocates (Palmer et al., 2009; Xia et al., 2011). This conflation of LIS faculty and librarian authors as a homogenous group makes it hard to assess some of the literature on OA attitudes and behaviors of librarian authors as a discrete group. More research is needed specifically on librarians as authors both in terms of attitudes and in terms of their publishing behaviors.

## METHODS

To obtain the snapshot of OA publishing by Canadian academic librarians, the authors selected the U15, a collective of major research institutions in Canada, as a representative sample for the study (see Table 1 for the complete list of U15 schools). The search also examines a six-year span (2014–2019) for publications, is limited to English-language articles, and was performed in four key LIS databases: LISA; Library, Information Science and Technology Abstracts (LISTA); Scopus; and Web of Science (WofS). LISA and LISTA are two of the largest databases indexing LIS scholarship, and the multidisciplinary databases Scopus and WofS index several key LIS journals. LISA, WofS, and Scopus have affiliation as a searchable property in the database, which facilitated searching for articles by librarians at these institutions versus mention of the institution in any part of the article or article record. LISTA does not offer affiliation as a searchable property, but the database was added to strengthen the dataset.

The authors shared the work of designing the precise search strategies for each database, and the searches were tested for a balance of precision and recall. Searching by affiliation presented some challenges by creating more noise in the results, as it did not eliminate LIS faculty members and scholars affiliated with an institution and therefore resulted in more articles to screen.

The results were then imported into a merged EndNote library of records from each of the individual database searches and were deduplicated using a simplified version of the method employed by Bramer et al. (2016), detailed in the section “Deduplicating in Endnote” in the “Systematic Reviews, Scoping Reviews, and other Knowledge Syntheses” McGill Library LibGuide.<sup>3</sup> The list of results was screened by both authors to ensure it only included works written by librarians employed at a U15 school at the time of publication. For the purposes of this study, “librarian” refers to staff members with librarian status, usually defined by a graduate degree in LIS. The sample after the first round of screening contained 252 articles, and a grand total of 377 with the additional citations from LISTA. The sample contains some articles from each U15 school.

During the screening process, author affiliations, the OA status of the article, and whether the article was Green or Gold OA were recorded in a communal spreadsheet. Here, Gold OA is defined as any article published in a journal and made available for free to the reader. This includes articles published in journals that charge authors fees and journals that do not.

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<sup>3</sup> <https://libraryguides.mcgill.ca/knowledge-syntheses/deduplicating>



| Affiliation                    | Type of Expression  | Issuing Body of Expression | Date Published | Link to Statement   |
|--------------------------------|---|----------------------------|----------------|---|
| Dalhousie University           | N/A   | N/A                        | N/A            | N/A   |
| McGill University              | Statement   | Library                    | 2020           | <a href="https://www.mcgill.ca/library/about/open-access-statement">https://www.mcgill.ca/library/about/open-access-statement</a>   |
| McMaster University            | Signatory of Berlin Declaration                                     | University (Senate)        | 2015           | <a href="https://library.mcmaster.ca/research/open-access">https://library.mcmaster.ca/research/open-access</a>   |
| Queen's University             | Policy  | Librarians and Archivists  | 2010           | <a href="https://qulaweb.wordpress.com/issues-correspondence/open-access/">https://qulaweb.wordpress.com/issues-correspondence/open-access/</a>   |
| Université de Montreal         | Policy  | University (Senate)        | 2019           | <a href="https://secretariatgeneral.umontreal.ca/public/secretariatgeneral/documents/doc_officiels/reglements/recherche/rech60_15-Politique_libre_acces_publications_savantes.pdf">https://secretariatgeneral.umontreal.ca/public/secretariatgeneral/documents/doc_officiels/reglements/recherche/rech60_15-Politique_libre_acces_publications_savantes.pdf</a> |
| Universite Laval               | Policy  | University (Senate)        | 2017           | <a href="https://www.ulaval.ca/sites/default/files/notre-universite/direction-gouv/Documents%20officiels/Politiques/Politique_libre_acces_publications.pdf">https://www.ulaval.ca/sites/default/files/notre-universite/direction-gouv/Documents%20officiels/Politiques/Politique_libre_acces_publications.pdf</a>   |
| University of Alberta          | N/A   | N/A                        | N/A            | N/A   |
| University of British Columbia | Statement   | University (Senate)        | 2013           | <a href="https://scholcomm.ubc.ca/open-access/ubc-position-statement/">https://scholcomm.ubc.ca/open-access/ubc-position-statement/</a>   |
| University of Calgary          | Endorsement of BBB definition                                       | University (Senate)        | 2009           | No public link just: <a href="https://ospolicyobservatory.uvic.ca/canadian-university-open-access-statements/">https://ospolicyobservatory.uvic.ca/canadian-university-open-access-statements/</a>  |
| University of Manitoba         | They express support of IFLA's Statement on Open Access in LibGuide | Library                    | N/A            | <a href="https://libguides.lib.umanitoba.ca/oa-whatyouneedtoknow">https://libguides.lib.umanitoba.ca/oa-whatyouneedtoknow</a>   |
| University of Ottawa           | Policy  | Library                    | 2018           | <a href="https://biblio.uottawa.ca/en/about/policies-and-reports/open-access-policy">https://biblio.uottawa.ca/en/about/policies-and-reports/open-access-policy</a>   |

**Table 1.** Breakdown of U15 Expressions of Support for OA (Table continues on following page)

| Affiliation                   | Type of Expression | Issuing Body of Expression | Date Published | Link to Statement   |
|-------------------------------|--------------------|----------------------------|----------------|---|
| University of Saskatchewan    | Commitment         | Library and Archives       | 2020           | <a href="https://library.usask.ca/documents/OA-Commitment-2020-Adopted.pdf">https://library.usask.ca/documents/OA-Commitment-2020-Adopted.pdf</a> |
| University of Toronto         | N/A                | N/A                        | N/A            | N/A   |
| University of Waterloo        | N/A                | N/A                        | N/A            | N/A   |
| University of Western Ontario | Statement          | Libraries                  | N/A            | <a href="https://www.lib.uwo.ca/scholarship/index.html">https://www.lib.uwo.ca/scholarship/index.html</a>   |

**Table 1. (continued)**

The latter is sometimes referred to as Platinum or Diamond OA. Tracking whether an article is made open through journal choice (Gold OA), article processing fees (Gold OA), or via self-archiving (Green OA) potentially offers a more detailed picture of publishing behaviors and a clearer sense of not only whether, but how, librarian authors are making their work open.

Several tools were used to determine an article's OA status: OA Button, Unpaywall, and Google Scholar, and as a last resort, the institutional repositories of each author were manually searched. This “Swiss cheese” method proved to be the most effective way to find a Green OA version, as the OA Button and Unpaywall extension would often find different items. Google Scholar's aggregation of multiple links was useful for locating copies in repositories not picked up by either Unpaywall or the OA Button. Not every institutional repository is indexed in Google, so searching the institutional repository as a last step proved fruitful on multiple occasions. Finally, in order to ascertain whether each U15 institution had a university-wide or library-wide statement, policy, or mandate, the authors searched and browsed each of their websites for documentation of their expression of support (see Table 1).

## RESULTS

### Expressions of support for OA across the U15

Of the institutions that make up Canada's U15, 11 of them have a public-facing statement expressing a commitment to OA publishing practices. Each statement takes on a slightly different form and scope, although they generally take the form of statements

or policies and are issued or apply to either the entire university (often approved by Senate) or just to the library. See Table 1 for further details and links to the institutions' documentation.

Out of the eleven institutions that have expressed support for OA principles, five have university-wide expressions. Université de Montréal and Université Laval both have university-wide policies, with the Université de Montréal policy being one of the strictest in Canada (Garon, 2021). The University of British Columbia has "UBC's Open Access Position Statement," which is endorsed by the Senates of Okanagan and Vancouver campuses. The University of Calgary and McMaster University do not have personalized statements for their institutions; instead, they have become signatories of the BBB definition (refers to three key international declarations on OA, which taken together compose a comprehensive strategy: The Budapest Open Access Initiative, The Bethesda Statement on Open Access Publishing, and the Berlin Declaration on Open Access, respectively).

The other six institutions have statements or policies that refer solely to the activities of librarians and archivists. Both Queen's University and University of Ottawa have OA policies. McGill University and Western University have Statements for their librarians and archivists, and University of Saskatchewan Library has a "Commitment." Finally, the University of Manitoba Libraries has a statement in support of the International Federation of Library Associations and Institutions' principles.

### **OA publishing behaviors of U15 librarians**

Of the 377 articles in the sample, 289 were OA (76.67%), and 88 were not (23.34%). Of the OA articles, the vast majority—221 articles (76.47% of total OA)—were Gold OA, and 48 of those were made Gold via an article processing charge (APC) (16.60% of total OA). Of the OA articles, 68 were made Green OA (23.53% of total OA).

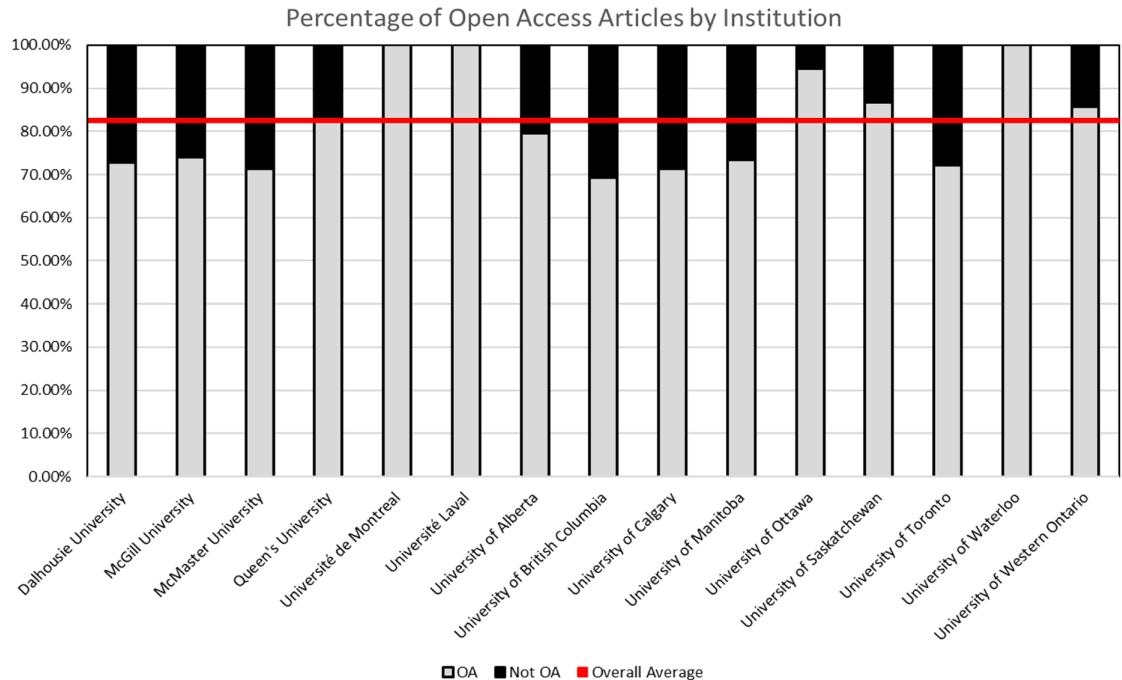
The sample contained publications from all institutions, but the number of articles published from each U15 member varies widely. For example, there were 2 from Université de Montréal and 81 from McGill University. As librarian staff numbers and publication requirements for librarians vary greatly between institutions, this variation in output was expected. Moreover, as the search included only English-language articles, there were fewer articles returned from the Francophone institutions.

In order to examine publication patterns at the institutional level, the authors added a count of the article for each institution, which makes the number of affiliations (407) greater than the number of total articles in the sample (377). Articles with multiple authors from the same

institution were only counted once. The breakdown by affiliation of the articles published as OA (see Figure 1) demonstrates that a high number of authors from the U15 make their work OA, with a proportion of at least 69.23% or more articles published as either Green or Gold OA by each institution and an average of 82% of OA articles published by each institution across the U15. (For distribution of articles by affiliation, see Appendix 1). Moreover, there is not much variability between institutions that fall above or below this average, given that the minimum proportion is so high.

Looking to the institutional mandates (Figure 1), note that of the four institutions without some form of OA expression, three of those fall below the average number of OA articles published by each institution, but only slightly so. Moreover, of the eleven institutions with OA expressions, five of them fall below the average, one sits on the average, and five are above the average. A closer look within this subset shows that two out of the eight institutions with either a “policy,” “statement,” or “commitment” fall below the average of 82%, and all three institutions that only endorse, sign, or support a broader international expression fall below the average. See Table 2 for further details.

Comparatively, the average proportion of articles published by each group (expression/no expression) is quite close: 82.61% OA for institutions with an expression and 81.09% OA for institutions without an expression.



**Figure 1.** Percentage of Open Access Articles by Institution

| Affiliation                    | Percentage of OA Articles | Type of Expression of Commitment to OA                 |
|--------------------------------|---------------------------|--|
| Dalhousie University           | 73%                       | N/A  |
| McGill University              | 74%                       | Statement  |
| McMaster University            | 71%                       | Signatory of Berlin Declaration                        |
| Queen's University             | 82%                       | Policy   |
| Université de Montreal         | 100%                      | Policy   |
| Université Laval               | 100%                      | Policy   |
| University of Alberta          | 80%                       | N/A  |
| University of British Columbia | 69%                       | Statement  |
| University of Calgary          | 71%                       | Endorsement of BBB definition                          |
| University of Manitoba         | 73%                       | Support of IFLA's Statement on Open Access in LibGuide |
| University of Ottawa           | 94%                       | Policy   |
| University of Saskatchewan     | 87%                       | Commitment   |
| University of Toronto          | 72%                       | N/A  |
| University of Waterloo         | 100%                      | N/A  |
| Western University             | 86%                       | Statement  |

**Table 2.** Total Distribution of OA Articles by Affiliation With Mandate Information

OA for ones without. The median shows a slightly larger difference, with 82.35% for institutions with an expression and 76.16% for institutions without.

### Publication patterns in the U15

The articles in the sample were published in 87 different journals (see [Appendix 2](#)). Of these 87 journals, 37 were Gold OA journals (freely accessible). The total articles published in these 37 journals is 173 articles, or 45.89% of the total sample. There were 48 articles made Gold by paying APCs, which were distributed in eight different journals. What is more, the journals with the highest share of articles from the sample were Gold OA journals (free to publish in and read): four journal titles had over 20 articles each, for a total of 104 articles (27.59%). From those four journals, two had 28 articles each.

### DISCUSSION

This article seeks to offer greater insight into OA culture at Canadian institutions through a combination of bibliometric analysis and review of institutional OA policies. Through this

analysis, the authors hope to provide a snapshot into publishing behaviors of Canadian academic librarians at several key research institutions, to gain insight into the practices of these librarian authors and also encourage future research.

From the sample, 11 of 15 institutions have some form of public OA expression of support. Although the findings do not definitively point to the effectiveness of these expressions, the findings do seem to support the notion that these expressions of support for OA publishing are seen as important. Given the overall lack of variance comparatively between the institutions with OA statements or mandates and those without, the authors cannot comment as to whether the expressions of support correlate to higher proportions of OA articles. What can be said about the U15 is that most of the librarian scholarship from the U15 is OA, regardless of having an expression of support for OA publishing or not. These expressions, therefore, may serve a different purpose as they are perhaps less about enforcing or mandating compliance than they are about setting an example for their peers and publicly affirming their commitment to these values. It may also speak to shared values in publishing open research more broadly, given that the Tri-Agency Open Access Policy on Publications is but one of many policies in Canada that compel researchers to make their research open.

The average proportion of OA articles in the sample is 75%, which is higher than previous, similar studies. This difference may be a result of several factors. One factor could be the methodology. Emery's (2018) multi-year study pulled articles from a very small sample of journals, whereas Mercer's (2011) study pulled articles from a single, major LIS database. Another factor could be a shift in publishing behaviors. Given that both Mercer's and Emery's studies were completed several years ago—Mercer's work is over 10 years old—the difference in our respective samples could be attributed to a change in behaviors over time. While there is a partial overlap in the years for Emery's study (she studied 2012–2016; the current study covers 2014–2019), it may be possible that the multi-database search performed for this study offers a more representative sample than Emery's sample of articles in a small subset of journals. Moreover, the methodology in this current study potentially recovered more articles by partially compensating for variable indexing, i.e., the overlap between databases offers a second chance to retrieve the data.

In a bibliometric analysis like the current study, one potential way to gain insight into author behavior is by tracking how many librarian authors self-archive (Green OA) or make articles Gold through paying APCs. Nearly one quarter (23.53%) of OA articles were made OA through self-archiving, which represents 18% of the total sample. What is more, 48 articles were made Gold OA via an APC (16.60% of total sample). This breakdown indicates that 35% of the articles in the sample were consciously made OA by the authors, which suggests

that these researchers were personally motivated to make their research open. Is this 35% mere compliance with policy, or is it a personal commitment to open scholarship? As APCs are generally cost-prohibitive, it is not a surprise that the number of articles is relatively low. However, 16.6% of the total sample is not insignificant and is only just short of the total proportion of Green OA articles (18%).

Given the multidisciplinary nature of librarianship, a large number and variety of journals in the sample were expected. One of the most interesting findings of this study involved the quantity of articles published in Gold OA journals. Given that the four journals with the most articles in them were all Gold OA journals, this finding may point to a larger understanding of the importance of OA publishing by librarians as a community, versus these authors' individual views on OA scholarship. It also explains, in part, why such a large proportion of articles in the sample are Gold OA.

### **Future directions in research**

This study lays the groundwork for several possible directions in research. Future work could explore the motivations and views of librarian scholars in the U15. A qualitative study investigating the motivations of librarian researchers from the U15 could explore how they understand expressions of support for OA publishing, and further explore any impact these statements could have on their research. Another future line of inquiry could analyze the strength of the statements, similar to the [Vincent-Lamarre et al. \(2016\)](#) study, in order to potentially illuminate how much a statement or mandate influences publishing behaviors.

Future work could explore the motivations for publishing in OA journals, as well as the rationale for choosing the other OA journals. This research could explore the following questions: Are librarians in the U15 consciously choosing these OA venues over other venues? How important to librarian scholars is it to publish in an OA venue? These findings also highlight some of the advantages of projects that take a larger, multi-database approach. Future research could also expand their scope beyond the U15 using this approach and focus on Canadian academic libraries overall, or beyond Canada's borders.

### **CONCLUSION**

This article seeks to offer greater insight into OA culture at Canadian institutions through a combination of bibliometric analysis and a review of institutional OA policies. It begins with an examination of a six-year span (2014–2019) of librarian-authored publications, searching four key LIS databases, followed by a systematic search for a university-wide or library OA

statement, policy, or mandate on each of the U15 websites. The authors observed that the majority of the U15 members have an expression of commitment to OA principles. In addition, the majority of Canadian academic librarians working at U15 schools ensure their research is OA. A definitive connection between OA publishing rates and the existence of an institutional or library mandate or statement is not possible from these results, but considering that most U15 schools have some expression of commitment to OA publishing, the authors think that this is a strong indication of the positive culture of OA advocacy in Canada. Several popular LIS journals in Canada are already OA, and according to this analysis, librarian researchers are opting to publish in these journals at high rates. This study departs from previous work by opting for a multi-year, multi-database approach while advancing this scholarship by offering a more recent picture and a uniquely Canadian focus. It also complements the scholarship exploring the scope and extent of institutional forms of advocacy for OA. This study will undergird future work that explores the OA publishing behaviors of librarian authors.

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## APPENDICES

| Institution                    | Gold OA | Green OA | Total OA | Not OA | Total Articles |
|--------------------------------|---------|----------|----------|--------|----------------|
| Dalhousie University           | 8       | 0        | 8        | 3      | 11             |
| McGill University              | 42      | 18       | 60       | 21     | 81             |
| McMaster University            | 3       | 2        | 5        | 2      | 7              |
| Queen's University             | 13      | 1        | 14       | 3      | 17             |
| Université de Montreal         | 2       | 0        | 2        | 0      | 2              |
| Université Laval               | 2       | 0        | 2        | 0      | 2              |
| University of Alberta          | 34      | 5        | 39       | 10     | 49             |
| University of British Columbia | 14      | 4        | 18       | 8      | 26             |
| University of Calgary          | 8       | 2        | 10       | 4      | 14             |
| University of Manitoba         | 15      | 7        | 22       | 8      | 30             |
| University of Ottawa           | 9       | 8        | 17       | 1      | 18             |
| University of Saskatchewan     | 27      | 12       | 39       | 6      | 45             |
| University of Toronto          | 41      | 8        | 49       | 19     | 68             |
| University of Waterloo         | 8       | 1        | 9        | 0      | 9              |
| University of Western Ontario  | 19      | 5        | 24       | 4      | 28             |
| Totals                         | 245     | 73       | 318      | 89     | 407            |

### Appendix 1. Distribution of Articles by Affiliation

|   |    |
|---|----|
| Journal of the Medical Library Association  | 28 |
| Partnership : the Canadian Journal of Library and Information Practice and Research                                       | 28 |
| Journal of the Canadian Health Libraries Association  | 27 |
| Evidence Based Library & Information Practice   | 21 |
| Journal of Academic Librarianship   | 17 |
| College & Research Libraries  | 11 |
| Serials Librarian   | 11 |
| Cataloging & Classification Quarterly   | 9  |
| Canadian Journal of Information and Library Science/Revue canadienne des sciences de l'information et de bibliothéconomie | 8  |
| Code4Lib Journal  | 8  |
| Issues in Science and Technology Librarianship  | 8  |
| Library Management  | 8  |
| Health Information & Libraries Journal  | 7  |

### Appendix 2. Distribution of Articles by Journal (Appendix continues on following page)

|   |   |
|---|---|
| Library Hi Tech   | 7 |
| Collection Management   | 6 |
| College and Undergraduate Libraries   | 6 |
| Reference Services Review   | 6 |
| Science and Technology Libraries  | 6 |
| Serials Review  | 6 |
| Art Documentation : Bulletin of the Art Libraries Society of North America                        | 5 |
| Journal of Information Literacy   | 5 |
| Library and Information Science Research  | 5 |
| New Review of Academic Librarianship  | 5 |
| Papers of the Bibliographical Society of Canada / Cahiers de la Societe bibliographique du Canada | 5 |
| Portal  | 5 |
| Public Services Quarterly   | 5 |
| Archivaria  | 4 |
| Collaborative Librarianship   | 4 |
| Journal of Business & Finance Librarianship   | 4 |
| Journal of Librarianship & Scholarly Communication  | 4 |
| Journal of Library Administration   | 4 |
| Advances in Librarianship   | 3 |
| Education for Information   | 3 |
| Interlending & Document Supply  | 3 |
| International Information & Library Review  | 3 |
| Journal of Electronic Resources Librarianship   | 3 |
| Journal of Map and Geography Libraries  | 3 |
| Journal of Medical Internet Research  | 3 |
| Library Leadership and Management   | 3 |
| Medical Reference Services Quarterly  | 3 |
| Performance Measurement and Metrics   | 3 |
| Collection Building   | 2 |
| Digital Library Perspectives  | 2 |
| Fontes Artis Musicae  | 2 |
| IASSIST Quarterly   | 2 |
| Information Services & Use  | 2 |
| Information Technology and Libraries  | 2 |
| Internet Reference Services Quarterly   | 2 |

**Appendix 2.** Distribution of Articles by Journal (**Appendix continues on following page**)

|  |   |
|--|---|
| Journal of Consumer Health on the Internet                                 | 2 |
| Journal of Documentation   | 2 |
| Journal of East Asian Libraries  | 2 |
| Journal of Librarianship and Information Science                           | 2 |
| Journal of Library and Information Services in Distance Learning           | 2 |
| Journal of Library Metadata  | 2 |
| Journal of Scholarly Publishing  | 2 |
| Journal of Web Librarianship   | 2 |
| Library Trends   | 2 |
| Music Reference Services Quarterly   | 2 |
| Archival Issues: Journal of the Midwest Archives Conference                | 1 |
| Archives and Manuscripts   | 1 |
| Australian Library Journal   | 1 |
| CALA Occasional Paper Series   | 1 |
| Collection and Curation  | 1 |
| Communications in Information Literacy                                     | 1 |
| DttP: A Quarterly Journal of Government Information Practice & Perspective | 1 |
| Gazette des Archives   | 1 |
| Information Research-an International Electronic Journal                   | 1 |
| Insights: the UKSG Journal   | 1 |
| Journal of Library & Information Studies                                   | 1 |
| Journal of the Association for Information Science and Technology          | 1 |
| Knowledge Organization   | 1 |
| LIBER Quarterly  | 1 |
| Library Collections, Acquisition and Technical Services                    | 1 |
| Library Resources and Technical Services                                   | 1 |
| OCLC Systems and Services  | 1 |
| Online Information Review  | 1 |
| Open Library of Humanities   | 1 |
| Practical Academic Librarianship   | 1 |
| Proceedings of the Association for Information Science and Technology      | 1 |
| Progressive Librarian  | 1 |
| Publishing Research Quarterly  | 1 |
| Qualitative Health Research  | 1 |
| RBM: A Journal of Rare Books, Manuscripts, & Cultural Heritage             | 1 |
| Reference & User Services Quarterly  | 1 |

**Appendix 2.** Distribution of Articles by Journal (**Appendix continues on following page**)

|  |     |
|--|-----|
| Reference Librarian                            | 1   |
| Scientometrics                                 | 1   |
| Slavic and East European Information Resources | 1   |
| VINE   | 1   |
| Total Articles                                 | 377 |

**Appendix 2. (continued)**