## Summary

From March 2014 through February 2015, the BU Libraries Assessment Committee employed a technique called MINES to survey patrons on their use of the library’s online collection. For the first time, this survey allowed the library to see who was using its online collection, and why it was being used.

The survey results, combined with print circulation data, shows that both print and online collections are used by all the major patron groups. Surprisingly, graduate students are the largest users of the library’s collection, accounting for more online sessions and more print circulation than faculty and undergraduate students combined.

Coursework is by far the most common reason for undergraduate use of the online collection, and the main reason for graduate student use. Research is the primary reason for faculty use, and a significant reason for graduate student use. Of the faculty use devoted to research, 39% is devoted to sponsored (or funded) research. Teaching also makes up a significant (20%) fraction of faculty use.

Most (59%) use of the online collection comes from off campus; when patrons are using the online collection from on campus, just over a quarter of the time they are doing so from within a physical library.

Based on the survey results, supplemented by data on collection usage and results from previous patron surveys, it is recommended the library should:

- Continue its e-preferred approach to collection development, supplemented by print as needed.
- More explicitly consider graduate students in its collection development and services decisions.
- Seek closer integration with the curriculum, and with course management systems.
- Strengthen its engagement with research at BU.
- Optimize the online experience of patrons.
- Conduct brief surveys of physical library visitors to learn about their use of the library and its services.
- Periodically rerun the MINES survey to track changes and answer new questions.
INTRODUCTION

Recently, the BU Libraries Assessment Committee used a technique called MINES to survey patrons on their use of the library’s online collection. For the first time, this survey allowed the library to see who was using its online collection, and why it was being used.

It is vital for a library to understand how its collection is being used. Given the ever-increasing costs associated with creating and maintaining a collection, this knowledge can inform decisions on how the library should allocate its resources to best serve the needs of its patrons.

Traditionally, an academic library’s “collection” was the set of published materials, such as printed books, journals, maps, scores, and the like, made available for the use of its patrons. Such a collection was relatively easy to count, and the use of such a collection could be measured by its “circulation”: how many items are checked out in a given time period.

More recently, an increasing part of the library’s collection has moved online. Online material now includes indexes such as PubMed and Web of Science; the full text of journals, newspapers, and other periodicals, either accessed individually or in databases such as JSTOR and LexisNexis; and ebooks. With the advent of such an online collection, the question of how to count and measure the use of library materials is less straightforward.

Most publishers provide the library with standardized data on the use of online journals, ebooks, and databases. In addition, sometimes they can provide details of how particular resources are being used, such as when the resource was accessed, where the user was located and what link they followed to reach the resource.

While this information is helpful for making decisions about the value of a particular resource, and can give some insight into how patrons interact with online resources, it can be difficult to aggregate the data from multiple vendors to gain an overall picture of collection use, and it does not shed much light on who is using our online collection and why.

From March 2014 through February 2015, the BU Libraries Assessment Committee used

<table>
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<tr>
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<tbody>
<tr>
<td>Online sessions: 750,837</td>
</tr>
<tr>
<td>Searches in BU Libraries Search: 1,174,011</td>
</tr>
<tr>
<td>Items downloaded: 2,730,793</td>
</tr>
<tr>
<td>Print circulation: 109,451</td>
</tr>
<tr>
<td>Physical visits to BU libraries: 2,053,554</td>
</tr>
<tr>
<td>Interlibrary borrowing: 10,323</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of BU Library Collection (2014-2015 Fiscal Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titles: 3,199,551</td>
</tr>
<tr>
<td>Volumes: 3,911,712</td>
</tr>
<tr>
<td>eBooks: 1,473,441</td>
</tr>
<tr>
<td>Annual expenditure on collection: $11,681,906</td>
</tr>
</tbody>
</table>

See Appendix for sources of table data
MINES\textsuperscript{1} to present a brief (less than one minute) survey every 100th time an online session was initiated to access the online library collection (see appendix for more details of how the survey was conducted and its limitations).

This report presents what was found in the MINES survey, supplemented by data from other sources to provide additional context.

Unless otherwise indicated, the data in this report covers all of the libraries at BU, including Mugar and branches, the Alumni Medical Library, the Fineman & Pappas Law Libraries, and the Theology Library.

<table>
<thead>
<tr>
<th>What is an Online Session?</th>
</tr>
</thead>
<tbody>
<tr>
<td>In order to properly interpret the results of the MINES survey, it is important to understand what is meant by an “online session.”</td>
</tr>
<tr>
<td>When patrons first access something in the library’s online collection, they are asked to log in with their BU credentials. As long as they stay in the same browser on their computer, they can continue to access the library’s online collection without having to log in again. All this activity, starting from the log in and possibly involving many different types of online materials, is considered a single online session.</td>
</tr>
<tr>
<td>A useful comparison is to using a gate count (measuring how many people walk in the door of a library) to assess the use of a physical library. A gate count provides important information about the use of a library, but doesn’t tell the whole story, because it doesn’t distinguish between patrons who enter the library briefly to meet a friend from those who stay all day, using a variety of library services and materials.</td>
</tr>
<tr>
<td>In the same way the MINES survey provides useful information, but doesn't give a complete picture of the use of an online collection, because it can't distinguish between brief sessions used to access a single item, and lengthy sessions in which a large amount of different materials could be accessed.</td>
</tr>
</tbody>
</table>

\textsuperscript{1} MINES for Libraries, or Measuring the Impact of Networked Electronic Services. \url{http://www.minesforlibraries.org/}
Use of the Library’s Collection

**WHO**

The MINES survey asked who is using the libraries’ online collection. For comparison, the print circulation is shown for the same period. Because the scales are different for the two charts, and because they are measuring two different things (sessions vs. items), the charts are most useful for comparing the relative proportion of use across the different groups.

**WHO IS USING THE ONLINE COLLECTION**

This figure shows how many online sessions were initiated to access the library collection by each type of patron during the period covered by the MINES survey, from March 2014 through February 2015. Since much of the variation is due to the different sizes of the groups, the chart on the right shows the average per individual.

**WHO IS USING THE PRINT COLLECTION**

For comparison, this figure shows how many physical items (primarily books) were checked out from BU libraries by each type of patron during the same period, March 2014 through February 2015. Again, the chart on the right shows the average per individual. Data was not available for post doctoral scholars.
WHY

WHY THE ONLINE COLLECTION IS BEING USED
This figure shows the percent of sessions from March 2014 through February 2015 for which the patron gave each reason for accessing the online library collection, first for all sessions and then broken down by major patron groups.

<table>
<thead>
<tr>
<th>Reason</th>
<th>All</th>
<th>Faculty</th>
<th>Graduate Students</th>
<th>Undergraduates</th>
<th>Post Docs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course work</td>
<td>52%</td>
<td>5%</td>
<td>58%</td>
<td>86%</td>
<td>12%</td>
</tr>
<tr>
<td>Teaching</td>
<td>4%</td>
<td>20%</td>
<td>1%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>Research</td>
<td>34%</td>
<td>67%</td>
<td>34%</td>
<td>9%</td>
<td>76%</td>
</tr>
<tr>
<td>Patient care</td>
<td>4%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>3%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

TYPES OF RESEARCH
For the three groups (faculty, graduate students, and post docs) most engaged in research, this figure breaks down the online sessions devoted to research into the types of research. The percent after the label is a reminder of what percent of that group's sessions are devoted to research. For example, 67% of sessions by faculty are for research; the chart then shows how those sessions are divided among the different types of research.

<table>
<thead>
<tr>
<th>Type of Research</th>
<th>Faculty (67%)</th>
<th>Graduate Students (34%)</th>
<th>Post Docs (76%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funded</td>
<td>39%</td>
<td>15%</td>
<td>54%</td>
</tr>
<tr>
<td>Unfunded</td>
<td>57%</td>
<td>33%</td>
<td>32%</td>
</tr>
<tr>
<td>Thesis or Dissertation</td>
<td>1%</td>
<td>51%</td>
<td>11%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>1%</td>
<td>3%</td>
</tr>
</tbody>
</table>
**Type of Research by School/College**

The chart on the left shows, for faculty affiliated with a particular school or college, the online sessions devoted to different kinds of research, as a percent of all online sessions by faculty at that school or college. The chart on the right shows the same for graduate students.

**Where**

**Where Are Patrons When They Use the Online Library Collection**

This figure shows the percent of online sessions from March 2014 through February 2015 from each location, first for all online sessions and then broken down by major patron groups.
When

Monthly and Weekly Variation in Use of the Library Collection

The chart on the left shows what percent of yearly online sessions occur in each month from March 2014 through February 2015. The chart on the right shows what percent of online sessions occur in each day of the week, broken down by major patron groups. For comparison, print circulation is also shown in each chart.

Hourly Variation in Use of the Online Library Collection

This figure shows what percent of online sessions (March 2014 through February 2015) occur in each hour, broken down by major patron groups.
MONTHLY VARIATION IN PURPOSE OF ONLINE LIBRARY COLLECTION USE

This figure shows what percent of yearly online sessions occur in each month from March 2014 through February 2015, broken down by major patron groups, and showing the purpose of the sessions.
CONCLUSIONS AND RECOMMENDATIONS

Several conclusions and recommendations can be made based on the results of the MINES survey. Practical considerations meant the survey was conducted on the level of online sessions, where each session could involve use of anywhere from one to a large number of items in the library's online collection. Thus, the survey's results don't directly reveal usage. However, it is not unreasonable to use them as a proxy to suggest relative usage.

To further support these recommendations, reference is made to results from three surveys of BU faculty, graduate students, and undergraduates conducted between 2010 and 2013.²

WHO

The data on who is using the library's collection (page 4) shows that both print and online collections are used by all the major patron groups. This result complements the findings of the library surveys regarding the importance of various resources to patrons. In those surveys, 77% of the faculty and 75% of graduate students rated ejournals as very important to their work, while 37% of faculty and 33% of graduate students rated print books as very important. Undergraduates were asked different questions about their use of the collection, with 76% reporting they used journal articles, and 71% reporting they used books (in both cases the question did not distinguish between print and online). Regarding library collections as a whole, 41% of undergraduates rated library collections as very important to their work.

RECOMMENDATIONS

One unexpected result from the MINES and print circulation data is that graduate students are the largest users of the library’s collection, accounting for more online sessions and more print circulation than faculty and undergraduate students combined.

Given the importance of graduate students as users of the library’s collection, the library should more explicitly consider the needs of graduate students in its collection development decisions, and investigate what library services could best serve this community.

WHY

The data on why patrons are using the library’s online collection (pages 5 and 6) shows that different groups of patrons use the library collection for different reasons.

Coursework is by far the most common reason for undergraduate use, and the main reason for graduate student use. In the surveys, 56% of undergraduates and 64% of graduate students reported that the library makes a “Major 5” or “4” contribution (on a five point scale) to their academic success.

Research is the primary reason for faculty use, and a significant reason for graduate student use. In the surveys, 62% of faculty and 65% of graduate students reported that the library makes a “Major 5” or “4” contribution (on a five point scale) to their being a more productive researcher.

Of the faculty use devoted to research, 39% is devoted to sponsored (or funded) research. This result can be compared to the 2010 faculty survey, where 40% of faculty reported receiving external funding. Such faculty were more likely to agree that the library makes a contribution to their being a more productive researcher, with 72% giving a “Major 5” or “4” rating (on a five point scale).

At 20%, teaching makes up a significant fraction of faculty use. The 2010 survey asked faculty what contribution the library makes to their being a more effective instructor, and 50% gave a “Major 5” or “4” rating (on a five point scale).

RECOMMENDATIONS
Given that course work is a major reason for student use of the library's online collection, the library should seek closer integration with the curriculum, and with course management systems (such as Blackboard) used by instructors at BU; such integration could also support faculty who use the online collection for their teaching.

Since research is the main reason faculty use the library’s online collection, the library should strengthen its engagement with research at BU, both to create a collection more responsive to the needs of BU researchers, and to find new ways to support research.

WHERE
The data on where patrons are when they use the library’s online collection (page 6) shows that most online sessions are initiated while the patrons are off campus (59%). When patrons are using the online collection from on campus, just over a quarter of the time they are doing so from within a physical library. Graduate students are more likely to be off campus (74%), while undergraduates are less likely to be off campus (32%). Faculty are least likely to be in a physical library (only 1% of online sessions), and undergraduates the most likely (14%).

Context for these findings can be found in the surveys, where patrons were asked how frequently they visited the library in person and online:

<table>
<thead>
<tr>
<th>Patrons Reporting Visiting a BU Library at Least Once a Week</th>
<th>In Person</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty (2010)</td>
<td>10%</td>
<td>66%</td>
</tr>
<tr>
<td>Graduate Students (2012)</td>
<td>45%</td>
<td>66%</td>
</tr>
<tr>
<td>Undergraduates (2013)</td>
<td>50%</td>
<td>30%</td>
</tr>
</tbody>
</table>

While most use of the library’s online collection takes place outside of the library, it is important to note that the BU libraries had over two million physical visits in a year, and more undergraduates report visiting the physical library at least weekly (50%) than report visiting the library online at least weekly (30%). So most physical library visits are for purposes other than accessing the library's online collection.

RECOMMENDATIONS
Since most use of the library’s online collection comes from outside the physical library, it is especially important to optimize the online experience of patrons when library staff are not available to provide assistance. Areas that should be addressed include discovery, reliability, accessibility, breadth and depth of the online collections, and the user interfaces.
Use of the Library’s Collection

Improving the online experience has become an increasingly high priority for the libraries.

Given the continued importance of the physical libraries, as shown by the number of visitors, the library needs to better understand how the physical library is being used. In the same way the MINES survey has provided information about who is using the library’s online collection, and why it is being used, the library should conduct brief surveys of library visitors to learn who they are, why they are visiting the library, and what services they using at the library. Findings from such a study can help the library to optimize library spaces and services to meet the needs of its patrons.

The library should also periodically rerun the MINES survey, perhaps with different or additional questions, to track changes in the use of the online collection over time, and learn more about particular topics.
APPENDIX

MINES SURVEY
Access to most of the library’s online collection is controlled through IP addresses. The vendors providing the material have been supplied with the list of IP addresses corresponding to BU’s on-campus internet service, and check users against this list to determine whether to grant access.

To allow access to users who are off campus, the libraries use the EZproxy service from OCLC. Links to the online library collection are routed through the EZproxy server, which authenticates patrons using their BU Kerberos login, and then routes the requests to the vendors, who see the request coming from an IP address associated with BU. Once a patron has been authenticated, a session is started, and reauthentication is not required for subsequent requests during the same session, which generally lasts as long as the patron is actively making requests through the same browser instance.

MINES for Libraries, from the Association of Research Libraries (ARL), works with EZproxy to present random patrons with a short online survey when they initiate an EZproxy session by accessing the online library collection. Using dropdown lists and radio buttons, the survey asked patrons for their primary affiliation (school or college), their status (faculty, graduate student, etc.), their purpose in using the online material (course work, thesis or dissertation, etc.), and their location (off campus, on campus, etc.). The survey is anonymous; no additional data about the patron is captured.

The survey was run from March 4th, 2014 through March 3rd, 2015 (in the rest of this report this period is simplified to March 2014 through February 2015). It was configured so that every time an EZproxy session was started, there was a one in a hundred chance the survey would be presented. The completion rate for the survey was 94%.

Given how MINES is implemented, there are some limitations that should be borne in mind when considering the results of the survey.

• Although nearly all links to online library material from the library’s website are configured to use EZproxy, it is possible for on-campus patrons to bypass EZproxy by going directly to a vendor’s website. Such access would not be captured by the survey. However, data from vendors suggests that such bypasses are rare.

• The survey is only being presented at the start of an EZproxy session, and it can not determine whether it was a short session used to access a single item, or a lengthy session during which the patron accessed many items, and may have shifted between different purposes for using the resources. Thus the survey can provide data about online sessions, but not about use of individual databases, journals, etc.

TABLES IN INTRODUCTION
Online sessions comes from the MINES survey from March 2014 through February 2015, extrapolating from the number of surveys completed to the total sessions, taking into account the sample rate and the completion rate. Note that this is the number of online sessions; each session may involve accessing many individual items.
Use of the Library’s Collection

Print circulation comes from Alma, BU’s Integrated Library System, and covers the same period.

Searches in BU Libraries Search comes from Google Analytics, and cover the same period.

Interlibrary borrowing is the number of items borrowed from other libraries for BU patrons, through interlibrary loan and Boston Library Consortium, and covers the same period.

Size of BU Library Collection and the figures for Items downloaded and Physical visits to the library are for the 2014/2015 fiscal year, and come from the statistics compiled every year and submitted to the ARL for their annual survey.\(^3\)

- **Items downloaded** counts the number of full-text articles downloaded from COUNTER compliant online journals in the library’s collection. COUNTER\(^4\) is a widely accepted standard for counting usage of online resources, but since not every journal is COUNTER compliant, this figure will somewhat undercount usage.

- **Physical visits to the library** counts the number of times someone walks in the door of a library.

- **Titles** counts the number of different bibliographic items held by the library or made accessible online. Each book is counted as a single title, regardless of how many (or few) years the library owns of the journal.

- **Volumes** counts the number of individual volumes owned by the library; multiple copies of the same book are counted, and each bound volume of a journal is counted. It also includes ebooks, but not online journals.

- **eBooks** is a subset of Volumes, counting only the ebooks owned by the library.

- **Annual Expenditure on Collection** is the total amount of money spent by the library on its collection during the year. It includes purchases of print books and subscription to print journals, as well as purchases and subscriptions for online ebooks, journals, and databases. It does not include the salaries of library staff involved in selecting, receiving, processing, cataloging, etc. the library materials.

**NOTES ON FIGURES**
Possible choices for status in the MINES survey were faculty, graduate student, undergraduate student, high school student, post doctoral, BMC resident, staff, and other. Charts labeled **All** include responses from all these categories. In the first chart of **Who is Using the Online Collection**, high school students and BMC residents have been combined with “Other.”

For **Who is Using the Online Collection** and **Who is Using the Print Collection**, numbers for size of most groups (used to calculate average numbers per person) are taken from the Fact Sheet for 2013/2014.\(^5\) The number of

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\(^4\) [http://www.projectcounter.org/](http://www.projectcounter.org/)

Use of the Library’s Collection

post docs comes from the Office of Professional Development and Postdoctoral Affairs, as reported in BU Today.6 Post docs are not included in print circulation because they are not recorded separately in the system.

For Types of Research by School/College, the School of Hospitality Administration (SHA) has been omitted because there were not enough sessions with that affiliation by faculty or graduate students to provide meaningful results. A key to the three-letter abbreviations for schools and colleges can be found at http://www.bu.edu/reg/registration/abbreviations/.

For Monthly and Weekly Variation in Use of Library Collection and Monthly Variation in Purpose of Online Collection Use, because the survey started on March 4th, 2014, and concluded on March 3rd, 2015, the last three days of data (March 1st-3rd, 2015) have been combined with the data from March 2014.

ACKNOWLEDGEMENTS

The Boston University Libraries Assessment Committee would like to thank Terry Plum (Associate, Library Management Consulting), Brinley Franklin (Principal at Library Management Consulting), and Martha Kyrillidou (Senior Director, ARL Statistics and Service Quality Programs) for creating and supporting the MINES survey protocol.

Information Services & Technology (IS&T) staff at BU were very helpful during the implementation of MINES. These staff included Scott Macomber, Charles Ball, Peggy Gup, and Anne Marie Kelley.

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6http://www.bu.edu/today/2015/postdoctoral-scholars/