

Road to Open Access in the Sciences: Exploring publishing trends in OA journals at York University

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Abstract

Academic freedom and openness are the hallmarks of scholarship. Scientific progress is being impeded due to inadequate access to research which ironically is being conducted collaboratively with global researchers. As libraries have struggled to meet the needs of their colleagues, researchers themselves have become dissatisfied that their libraries can no longer afford to buy back their research output even though this is largely provided free of cost to journal publishers. As a consequence publishing in Open Access journals as an alternative route is gaining acceptance within the science community. York University Libraries support Open Access publishers in the form of institutional memberships thus allowing York scientists to publish in OA journals by subsidizing Article Processing Charges. Our present study sheds light on the factors that lead science faculty to choose OA journals over subscription based journals with particular reference to biomedical research. The study proposes some key points for increasing support to OA journals based on feedback from science researchers. This paper highlights the new role of science librarians as awareness builders in the changing knowledge dissemination arena.

Introduction

Academic libraries have devoted large amount of monies in acquiring subscription based electronic journals for the academic community. The e-journals are purchased as bundles or are acquired as individual titles. Over recent years there has been an astronomical increase in journal prices and academic libraries are finding it extremely difficult to get new journals or even renew subscriptions. Open-access scholarly journals have arisen as an alternative to traditional subscription scholarly journals. Some faculty members have taken the lead in publishing their work in OA journals.

As the field of scholarly communication and academic publishing is evolving rapidly, science librarians are being proactive in communicating these changes to their academic community. Libraries are experimenting with different models of knowledge dissemination including Open Access journals. Universities including University of Ottawa in Canada, Harvard, Columbia, UC Berkeley, University of North Carolina-Chapel Hill in the US, and University of Nottingham in the UK are providing funds for Article Processing Charges to publish in Open Access (OA) journals. The [Compact for Public Access Equity](#) is a recent initiative which is gaining ground.

“As a library community, if we really wanted to change behavior of faculty about where they published, we needed to put our money where our mouth was – not only talking about open access, but help them do it”

Beth Weil, Head of the Bioscience and Natural Resources Library at UC Berkeley

Different approaches have been suggested to address the issue of Open Access Author payment. In a recent article Donald King (2010) suggests that there are potential savings to be obtained in the scholarly publishing system by moving to 100% federal funding of articles by US scientists. Shieber (2009) is of the opinion that since universities and funding agencies are already underwriting the cost of journal subscriptions, extending support to OA publishers through article-processing charges is a more equitable approach and can help sustain these publishers. This approach is gaining acceptance with many institutions and SPARC has provided a [guide](#) for those contemplating campus Open Access Author funds.

York University located in Toronto, Canada has a full-time enrollment of around 45,000 students comprising of 1400 science graduate students and approximately 200 science faculty members. The University has predominantly been known as an interdisciplinary university. It is presently targeting health and engineering for future expansion. To that end, there is an emphasis on exposing our university research to a wider audience with increased impact. Some York University Libraries have been supporting alternative publishing models through institutional memberships in BioMed Central (BMC), Public Library of Science (PLOS) and Hindawi Journals. Faculty requests have been the main driver in initiating this support. Our institutional membership with BMC publishers has continued for the past four years and we have initiated institutional membership with PLOS last year. Membership with Hindawi Publishing has been instituted on a trial basis for one year. Librarians have been actively

promoting OA journal memberships and their benefits to researchers. These promotions have been at Graduate Open Houses, e-mail and personal communications, workshops for CIHR funded researchers, articles in the university [newsletter](#), the York Libraries scholarly communication [website](#) and through interviews with faculty.

Science librarians at York University have been examining author uptake in open access journals and promoting the library's role in supporting OA publishers. The following study has been directed at measuring the impact of the libraries initiatives for support of OA publishers. This could help us identify local champions of OA and provide data to the library administration for the continued support of OA publishing. In order to do this we surveyed faculty researchers who had published in these journals. The objective of this qualitative study was to gauge faculty perceptions of certain OA journals and build awareness of the library's role in sustaining OA publishers through institutional membership. The results of the survey provide an insight into faculty publishing behaviour.

The Survey

We identified faculty members across the disciplines who had published in OA journals by checking publisher websites and STM databases. We used Scopus, PubMed and Web of Science databases to identify authors who had published in journals from Hindawi, BMC, & PLoS. The Serials department provided information on Authors who had availed of the membership discounts.

Interviews were semi-structured to allow open-ended responses to our questions. A copy of the questionnaire is included as an Appendix. We sent out invitations to participate by e-mail providing a brief explanation of the study and the amount of time required for completion of the interview. Some researchers declined to be interviewed and requested an online questionnaire. We complied with these requests by sending out an e-mail questionnaire designed using [SurveyMonkey](#), a free online survey software and questionnaire tool. E-mail reminders were sent to online survey respondents with details of closing date. In all we contacted eighteen faculty members requesting a 30 minute interview. Seven agreed to be interviewed and three completed the online survey - a combined response rate of 56%. No material incentive was offered for completion of the interview or online survey.

The survey was conducted from January – April 2010. The respondents were faculty members from different subject areas and departments. Responses were documented on paper and the conversations were recorded after seeking participants' consent. The study methodology and questionnaire was approved by the ethics review committee at the university. The results are reported here by theme, combining findings from the interviews and responses to the online survey. Questions were identical in both surveys, allowing direct comparison of researchers' responses.

Demographics

Respondents included 10 faculty members from different departments in Health Sciences, Biology, Business and Mathematics & Statistics. Faculty members had a wide range of research experience starting from 5 years to more than 25 years with a median of 14.5 years. We did not seek to identify faculty by rank however most of the respondents were early in their careers.

OA Journal Awareness

Researchers were asked how they became aware of Open Access journals and the reasons for publishing in them. Responses indicated that they had read articles in these journals. Some found that the focus of the journal matched with their subject interests and is being read by their peers. Other researchers mentioned that the journal was recommended by their colleague or submissions were solicited by the editor. A few York authors are on the editorial boards of OA journals or were involved in the initial planning stages.

Collaboration with international authors was found to be a factor in the choice of an OA journal. One faculty member publishing on emerging diseases, decided to publish in a BMC journal at the suggestion of her collaborating colleagues from a developing country. This would give other researchers in that country an opportunity to read their paper. According to the same author, North American based subscription journals were not in favour of publishing research from developing countries since it did not align with their scope and objective. In another instance a health science respondent whose research has been focussed on native communities in Ontario, Canada wanted her paper to be read by aboriginal community researchers and hence decided to publish in an OA journal. The same author mentioned that she has started collaborating with researchers from Malaysia after reading their article in a BMC journal.

Editorial policy was cited by more than one researcher as a reason for moving to PLoS. The changing focus of a neurophysiology journal based on the chief editor's interest in genetics prompted one researcher to look elsewhere for a place to publish. PLoS has been actively promoting their journals and the same faculty member heard about this journal during a promotion campaign at a research conference in the US.

PLoS Medicine is receptive to my articles and matches my subject area.

Health Policy & Management faculty member

Yet another researcher decided to publish in PLoS Medicine since they accepted health policy related systematic reviews whereas another major journal declined since it did not match their journal criteria.

Special features in OA journals

Prior to our discussions with faculty we had identified some publishing features that are characteristic of OA journals and asked researchers about the relative importance of these features. During our conversations respondents graded the features according to the level of importance for them. We have classified this in Table 1.

Feature in OA journal	Very Important	Important	Not Important	Neutral
Impact factor	5	3	2	
Community practice/ Matched research interest	6	4		
Articles read by colleagues from this journal	7	3		
Turnaround time	2	5	2	1
Open peer review	3	2	2	3
Online peer review		5	2	3
Publishers supplied data/statistics for articles		5	3	2
Links to PubMed	3	4	1	2
Article Indexed in PubMed/Scopus	4	4	1	1
Ability to attach supplementary material		6	2	2
Article mentioned by influential blogs		1	8	1
Pre-publication history available online		3	6	1
Publisher provides Web 2.0 tools links from website (Facebook, Twitter etc)	1	1	6	2
Ability to post comments and/or reader ratings		1	8	1

Table 1: Factors influencing choice of OA journals

(a) Impact Factor & Community Practice

Impact factor of the journal and subject area were the most common considerations while choosing an OA journal. Faculty wanted to publish in journals which were being read by their colleagues. However some researchers acknowledged that other factors like funding agency policy on Open Access and the target audience for the journals were also taken into account. Others noted that Impact factor of OA journals had steadily increased over time and was now comparable to high profile journals. A couple of researchers mentioned that the level of content usually dictates where to publish - whether in a top-tier journal or a lesser journal.

(b) Speed of Publication

Faculty members who had published in PLoS and BMC journals were impressed by the quick turnaround time from initial manuscript submission to final edited version. Seven faculty members considered it to be an *Important* to *Very Important* factor. It gave some faculty members an impetus to work on their revisions as they were received.

Constant reminders and timely comments from the reviewers helped me in completing the article by the deadline and the article was published faster than I had anticipated!

Business Faculty Member

One researcher initially did not regard turnaround time as *Important*, but based on his experience would consider submitting to the same journal because of the faster publication cycle.

(c) Publisher features: Metrics, Linking, & Supplementary Data

PLoS provides metrics on article downloads, times viewed and cited. This helps researchers to determine the impact of the article. Surprisingly only half of the respondents considered publisher supplied metrics as an important feature. The others were either not aware of them or did not consider them important.

Researchers can also attach formulae, detailed charts and sequence data at no additional charge. Some of the researchers had used the supplementary data features and we found that a few respondents were not aware of these features. Six of the researchers considered the ability to attach supplementary material as *Important*.

The lack of page limits in an OA journal was an important factor for at least one other researcher

Next time I will publish in PLoS ONE over Nature because they do not have page limits.

Respondent from the Neurosciences Department

(d) Peer-Review Process

Faculty members expect that online peer-review in OA journals would be a norm in today's electronic environment. Researchers considered online peer-review to be useful since it reduced the turnaround time and deemed it important. One respondent found open peer-review problematic since it could lead to animosity between the reviewer and submitting author in case the article was rejected. Similarly the ability to view pre-publication history though generally liked was not considered important while choosing an OA journal.

(e) Indexing in STM database

Faculty want their articles in OA journals to be immediately indexed in STM databases. Seven respondents considered linking of the article from the publishers' website to PubMed as *Very Important* to *Important*. There were three separate instances when PLoS articles had not yet

been indexed in Pubmed & Scopus in a timely fashion. Our respondents use PubMed links for displaying their work on websites and consider the delay unacceptable.

(f) Social Networking tools and OA journals

Faculty members do not have the time to use online tools and seldom use RSS, Facebook, Twitter and other social networking tools. A majority of the respondents did not consider these tools as an important factor while choosing an Open Access journal.

My research does not give me the time to explore these applications however graduate students may be using them.

Health Sciences Researcher

Full-time research gives me little time to experiment with them.

Bioinformatics Researcher

Barriers to publishing in OA

Faculty were asked if publishing in OA journals would be considered a barrier in the tenure and promotion process. Most of the faculty members did not consider publishing in OA journals as an impediment in the tenure-track process. There were no departmental restrictions about publishing in OA journals.

The department does not have any policy cautioning authors about wider exposure and higher citations to their OA articles and therefore publishing in OA journals should not be viewed as a barrier in tenure and promotion!

Neuroscience Faculty Member

A neuroscience researcher had heard that reviewers were young and that peer-review was not as stringent in OA journals but in his case he was glad to know that his paper was reviewed by a senior researcher. He was aware of this through the Open-peer review process.

A few faculty members wanted the University to cover the author charges for other OA journals and considered high APC a barrier especially for researchers who do not have grant funding.

If York was not a member then I would not submit to BMC because of their author fees.

Health Sciences Faculty Member

Cost was also seen as a barrier to OA publishing especially by unfunded researchers when APC exceeded normal page charges. A business faculty member whose research is not funded considered \$500 as the maximum article processing charges payable by her. This was the amount the author had paid when publishing in a traditional journal. Faculty who were

receiving Government funding did not have a problem in paying the publication charges from their grant funds. We asked authors about sharing costs and how APC was distributed in case of multiple authors from different institutions. Responses indicated that these costs were paid by the corresponding/principal investigator. Most of the interviewees said that cost distribution was not a problem and was usually decided at the start of the project. Often publication charges were factored in the grant application.

York Libraries has by far done one of the best things by supporting OA publishers and paying Author charges. Keep it up!

Kinesiology & Health Sciences Researcher

One faculty member was not aware of revenue generation in OA journals and did not want publishers to charge any processing fees.

We shouldn't be charged anything. The publishers make money by other sources, they should not make money on the backs of the authors. In fact, they should pay us a nominal fee - without us, they would not have anything to publish.

Kinesiology & Health Sciences Researcher

A couple of faculty members at our university were concerned about grammatical errors in certain peer-reviewed OA journals. Faculty members from York acknowledged that the quality of certain journals needed to improve and that this was a gradual process.

I was involved in the initial planning stages of a BMC journal and I am impressed by the quality of articles submitted and the increased impact factor during this short period of time.

Biology Researcher

One faculty member wanted better press release and coverage of the significant articles by OA publishers. His articles had received better media coverage when they were published in a traditional journal and though he did not consider this as a barrier he felt that it was an area for improvement.

Additional Features

We asked the respondents about extra features and if researchers had paid for colour pages or for audio and video files integration. Health Science and biology researchers had previously paid page charges for extra features including colour images and video files. This was yet another reason to choose OA journals since there were no submission charges and they could submit colour images at no additional cost.

Awareness of Institutional Membership and Library Initiatives

Half of the respondents were not aware of library initiatives for supporting PLoS and Hindawi and the resulting benefits for York authors. This was understandable as York Libraries had

recently started supporting Hindawi and promotion had been directed at Mathematics and Statistics faculty members. BMC has been informing authors of York's subsidy of article processing charges during the submission process.

Benefits of OA publishing including wider exposure and increased citations are explained during personal communications with faculty and graduate students. As a result we have seen a surge of publications and even York graduate students are now publishing in BMC journals. We have had four articles published in BMC journals and several others in-progress. Our pilot with Hindawi has also shown significant uptake with five articles already accepted for publication this year.

Discussion

Although we had invited all authors who had published in BMC, PLoS and Hindawi journals to participate in our survey only one of these researchers was critical of OA journals. This author indicated that it was the principal investigators' decision to publish OA and he had little input in the choice of journal. During the interview process we were able to clear some of his misconceptions about OA journals. The remaining authors provided favourable comments about these journals. They were overwhelmingly supportive of OA publishing and indicated that they would continue to publish in OA journals. Not all authors were aware of Institutional support for APC. Some authors had used their grants funding although they were aware of the libraries support.

Since the library instituted funding for select OA publishers there have been a total of 69 articles in these journals (Figure 1). York University Libraries has used a gradual process in the selection of OA publishers based on faculty requests. We are now assessing the use of these funds with a view to developing a policy recommendation.

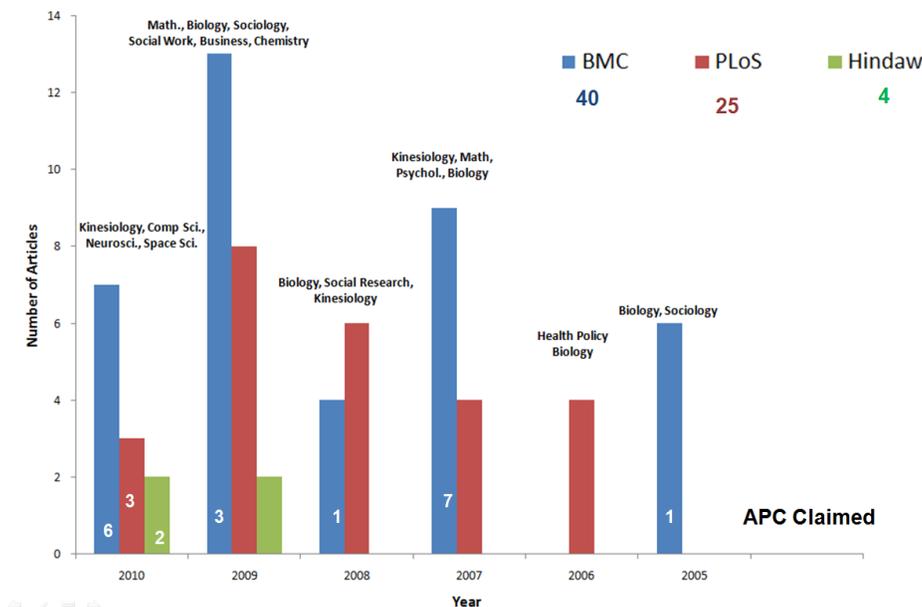


Figure 1: Distribution of York Authors publishing in OA journals by subject and year

Though not all authors have used library funding to pay APCs, we have noticed a steady increase in the usage of funds in the last couple of years. It is interesting that articles published in these journals are not limited to the sciences but have included business and social sciences as well (Figure 1).

OA publishers are offering attractive features (Table 2) that includes affiliation specific websites showing an institution's publications, ability to download usage reports in specific formats and provide supplemental information about authors on editorial and review boards which can be used for journal promotional purposes.

Publisher Features	BMC	PLoS	Hindawi
Listing of articles by Institution's authors on publisher's website	√		√
Details of Institution's authors serving as editors or reviewers			√
Journal Usage reports	√	√	
Impact factors/Article level metrics for OA journals on publisher's website	√	√	
Details of Citations to Articles	√	√	
Highly Accessed Articles	√	√	
Article in XML format	√	√	√
A & I Information	√	√	√
SWORD Protocol	√		

Table 2: Prominent features offered by OA publishers

What We Learned

- Visibility in PubMed and Impact of article and journal are very important to our researchers. They want to publish in journals that are being read by their colleagues.
- Web 2.0 tools provided by publishers are not used to a large extent.
- Researchers require publishers to send them monthly statistics on article downloads and citations so that they do not need to check the websites.
- Faculty perceive that publishing in an OA journal is not a factor in the Tenure and Promotion process as departmental criteria are not restrictive.
- Researchers appreciate the libraries APC support. The better endowed ones use their grants.
- Publishers need to display the articles published by member institutions more prominently.
- Librarians and research officers need to promote special features of these journals to enlist support for OA publishing.
- Researchers would like more promotion of their work by OA publishers through press releases.

Concluding comments

Personal interviews gave us additional input about the attitudes and publishing behaviour of our researchers as compared to the online surveys where the responses were to the point and offered little opportunity for further probing. Through the interviews we were able to better understand their research practices and address some of their misconceptions. In addition it provided us with instructional opportunities.

Based on our assessment of York authors and their acceptance of OA publishers we will be looking at developing a policy on author funding with a view to extending support to additional publishers if necessary. Up until now the Library's approach has been to use collection funds as a commitment to new initiatives in scholarly communication, much as we have supported the Stanford Encyclopedia of Philosophy, The Directory of Open Access Journals (DOAJ) and Bioline International. Our Libraries' support of APCs is a similar venture and we are aware that in the future we may need to fine tune this commitment. We plan to extend this study to other OA journals and to investigate other open access avenues in which our faculty have participated.

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Appendix

Road to Open Access: Exploring trends in Open Access journals at York University

Demographics

1. Disciplinary Area: What is your subject area?
2. Years of Research Experience: How many years have you been conducting research at York or other institution?

Choice of journal

3. Have you published in an OA journal?
4. How did you hear about this journal
 - Known editor
 - Impact factor
 - Colleagues
 - Advertisement/Promotion
 - Librarian
5. Factors influencing your decision to choose a journal / Any special features that lead you to publish in this journal. Please rate on Importance: *Very Important, Important, Not Important, Neutral*
 - Turnaround time
 - Open peer-review
 - Online peer-review?
 - Community practice/- Unique in its field / Matched your research interests
 - Articles read by colleagues from this journal
 - Publishers supply access information / data statistics on your articles
 - RSS feeds -- Export to Facebook, Twitter, Connotea, other Social / Web 2.0 tools
 - Impact factor
 - Article Indexed in PubMed/Scopus
 - Pre-publication history
 - Link from publisher website to PubMed/Scopus
 - - Ability to attach supplementary files
 - Ability to post comments and/or reader ratings
 - Indexing by major search engines
 - Mention by influential blogs
6. Does Author fees/Page charges influence your choice of journals - Have you ever paid charges for colour pages, audio files integration etc
 - How much would you pay?

- Are processing fees a factor when you are deciding to publish in OA journals

7. Would you consider publishing in OA journals being a factor in Tenure & Promotion process?

Awareness

8. What are the barriers to publishing in OA journals?

9. Were you aware of the YUL initiative of paying the Article Processing Charges that leads to reduced/discounted APC for you? Did you avail this option?

10. Would you continue to publish in OA journals with reduced/no APC fees? Do you have any suggestions for other publishers who may be supported by the libraries?

Collaborate/Sharing

11. Are you collaborating with other researchers? Does this influence your choice of journal?

12. How would you distribute the APC in an OA journal? (in case of multiple authors)

Final Questions:

13. Would you consider republishing in an OA journal?

14. Is there anything else you would like to add?

Thank you.