University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Faculty Publications, UNL Libraries | Libraries at University of Nebraska-Lincoln

5-1-2008

Academic Rank of Authors Publishing in Open Access Journals

Elaine Nowick
University of Nebraska - Lincoln, enowick1@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/libraryscience

Part of the Library and Information Science Commons

Nowick, Elaine, "Academic Rank of Authors Publishing in Open Access Journals" (2008). *Faculty Publications, UNL Libraries.* Paper 180.
http://digitalcommons.unl.edu/libraryscience/180

This Article is brought to you for free and open access by the Libraries at University of Nebraska-Lincoln at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Faculty Publications, UNL Libraries by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Published in *Agricultural Information Worldwide* (2008) v. 1, no. 2, pp. 45-51. Published by International Association of Agricultural Information Specialists; http://www.iaald.org/index.php Copyright © 2008 Elaine Nowick.

Academic Rank of Authors Publishing in Open Access Journals

Elaine A. Nowick

Abstract: When deciding where to publish their research results, faculty take into consideration factors such as the prestige and readership of journals. The weight a journal article will carry is particularly a concern for pre-tenured faculty members. Previous research has indicated that some faculty members may have some concerns about publishing in Open Access journals because of a perceived lack of rigor and reputation of Open Access titles. In this study, the academic rank of authors publishing in Open Access and commercial scholarly journals was compared. Most authors in both Open Access and For-fee journals were full professors. There was no indication that pre-tenured faculty avoided Open Access titles. In fact, there was a slight but significant trend for pre-tenured faculty to publish in Open Access journals.

Resumé: En décidant où publier leurs résultats de recherche, les membres académiques prennent en considération les facteurs tels que le prestige et le public cible des revues. Le poids qu'un article de revue aura, est notamment très important pour les membres académiques sans chaire. Une étude a indiqué que certains membres académiques semblent avoir quelques inquiétudes pour publier dans les revues d'Open Access car ils pensent que les titres d'Open Access manquent de rigueur et de réputation. Dans cette étude, la classification académique a été comparée entre auteurs publiant dans Open Access et dans les journaux érudits commerciaux. La plupart des auteurs dans Open Access et les revues payantes étaient des professeurs avec chaire. Rien n'indiquait que les membres de la faculté sans chaire ont évité les titres d'Open Access. En fait, il y avait une tendance légère mais significative des membres de la faculté sans chaire de publier dans les revues d'Open Access.

Resumen: Al decidir dónde publicar sus resultados de investigación, los miembros del profesorado consideran factores como el prestigio y la audiencia de las revistas. Una yueocupación de dichos miembros que **aún** no han logrado su nombramiento permanente tiene que ver, particularmente, con el peso que lleva un artículo de revista. Estudios anteriores han indicado que algunos miembros del profesorado pueden tener ciertas preocupaciones acerca de publicar en revistas de acceso abierto o libre debido a una falta percibida de rigor y reputación de dichos títulos. En este estudio, se comparó el perfil académico de los autores que publican en revistas de acceso abierto y en revistas académicas comerciales. La mayoría de los autores de revistas tanto de acceso abierto como comerciales eran profesores de tiempo completo. No había ninguna indicación de que los miembros ciel profesorado que aún no habían logrado su nombramiento permanente evitaran títulos de acceso abierto; de hecho, en ellos se observó una tendencia leve pero significativa de publicar en revistas de acceso abierto.

Introduction

It has become a cliché to describe the move from paper to electronic journals as a revolution in scholarly communication. The Open Access (OA) movement is an outgrowth of this revolution. The OA movement seeks to provide free, full-text, quality-controlled scientific and scholarly journals (DOAJ). By making journal articles freely available to readers, OA competes with the older for-fee (FF) model in which the cost of publication is borne by readers through subscriptions. The competition over the future of scholarly communication between OA and FF journals is often quite emotional, and sometimes generates more heat than light.

The need for scientists to quickly and easily share research results and data was a key motivator for early developers of the Internet. The World Wide Web provided an even quicker and less expensive way for research results to be shared. Peer-reviewed OA journals soon became freely available as an alternative to the traditional model of paid subscriptions to print journals. Developments in technology have allowed commercial publishers to put their journals online without losing their ability to control access. Concerns of faculty members about the weight that OA or electronic journals will carry in tenure and promotion decisions is often cited as a barrier to success for OA journals. One clear measure of success for OA journals is their acceptance in the academic and research community. The goal of this research was to compare the tenure status of faculty publishing in OA or FF journals and to determine if tenure status affected the decision of authors of scholarly articles on where to publish. For the purposes of this paper, only electronic, peer-reviewed serials are considered and "Open Access" is defined as any journal that is freely available to the reader.

Literature Review

Open Access is not a totally new concept. In the past, most academic libraries had active gift-and-exchange programs. The journals in this category could be considered to be "open access". However, with the arrival of the Internet and relatively easy and inexpensive electronic publication, freely available publications blossomed exponentially. The number of OA journals listed in Directory of Open Access Journals (DOAJ) has grown from 74 in 1994 (Palmer et al., 2000) to 3293 in 2008 (DOAJ, 2008).

However, this is still a relatively small number of publications compared to the over 70,000 scholarly/academic titles listed in Ulrich Periodicals Directory (2008).

A number of barriers to the acceptance of Open Access journals have been identified. These barriers include: providing a sound financial basis, arranging for reliable archiving, and finding acceptance in the scholarly community (Bjork, 2004). Because so many OA journals were "born digital" there has been a tendency to equate the issues involved with Open Access with the issues involved with electronic publication. Especially in earlier papers exploring changes is scholarly communication, issues of electronic versus paper media; peer-reviewed versus non-peer reviewed publications; and start-up journals versus established journals were not clearly separated.

The primary focus of this study is the acceptance of Open Access, peer-reviewed journals by the academic community. Past research has focused on surveys of faculty attitudes toward OA or electronic journals. In 1994, Schauder (1994) published the results of a survey on faculty attitudes towards electronic journals. At that time, 35% of Schauder's respondents indicated that, assuming peer-review and other quality considerations were the same, their university would give electronic publications the same weight in tenure and promotion decisions. However, 33% of the respondents indicated that they did not know if, in practice, OA articles were actually given the same weight. Schauder did not separate OA from FF e-journals but did note that, at the time the survey was conducted, most e-journals were funded through "subsidy-at-source" aid through donated labor and facilities use. His respondents also indicated that the prestige of the journal and the size of the readership were given almost equal weight in their decision on where to publish (70% to 67%). Because OA journals are online and freely available, readership is an advantage for them. Prestige is a plus for established journals.

Tomney and Burton (1998) surveyed faculty in a broad spectrum of disciplines in the United Kingdom. They also found that faculties were concerned about the perceived quality of electronic journals. In their survey, 61.1% of users of e-journals and 41% of non-users felt that electronic publication was not "real". Those surveyed reported that accessibility was the biggest advantage of e-journals. Respondents emphasized the importance of the peer-review process in ensuring quality of publications. The number of peer-reviewed OA journals had grown to 294 by the time their survey was conducted in 1998.

In 2000, Palmer et al. conducted a survey of faculty attitudes towards electronic journals in business departments. They did not distinguish between OA and FF journals. Again, the responses gave a somewhat mixed message. While only 43% of the respondents who served on promotion and tenure committees felt that an e-journal was of equal or better quality than a paper journal, 76% felt that a top quality journal that had gone electronic would be of equal or better quality than its print equivalent. The authors interpreted these results to mean that it was the perceived quality of the publication rather than the format that was the most important factor. They also found that those who were most familiar with e-journals had the highest opinion of them.

A survey of administrators and faculty in the Florida State University System was published by Sweeney (2000). Again, this survey did not distinguish between OA and FF electronic journals, but the responses and comments also indicated that the format was less important than the rigor and prestige of the individual journal when weighing the value of an article in promotion and tenure decisions. Some respondents (34%) did express a concern for quality control in electronic journals and a majority agreed that the perceived rigor of the review process was more of a concern for pre-tenured faculty. A major step forward for OA journals has been provided by government mandates such as the one from the U. S. National Institute of Health (2005) requiring public access to results through PubMed Central for research funded by their agency.

More recently, Hess et al. (2007) published the results of a survey on faculty attitudes towards OA publications. This survey included both peer-reviewed OA journals and non-peer-reviewed publications such as author websites as OA publications. They concluded that there was a low level of use among faculty for OA publications, although a majority of their respondents admitted that they had read OA publications and about one-third had published via an OA outlet. The respondents expressed a concern for the impact of OA publication on tenure and promotion. Nonetheless, a majority expressed high regard for OA publications. All of the earlier studies reflected an ambiguity towards OA journals among researchers. In this study, the focus is on behavior rather than attitudes or perceptions in an attempt to resolve this ambiguity.

The present study was undertaken to investigate the effect of tenure and promotion concerns on authors' decisions to publish in an Open Access journal. This was accomplished by comparing the tenure status of authors in three pairs of OA/non-OA peer-reviewed journals. Academic rank was used as a measure of an author's tenure status. Statistics from the American Association of University Professors (AAUP) indicate that 94% of professors, 82% of associate professors and 7% of assistant professors in the U.S. have tenure (AAUP, 2007).

Methods

The academic ranks of authors in three pairs of OA/FF journals were examined: *Journal of Insect Science* and *Archives of insect biochemistry and physiology*; *PLOS One* and *Science*; and *BMC Genetics* and *Genetics*. These journals were chosen because of their similar subject coverage. *Journal of Insect Science* is a born-digital OA journal

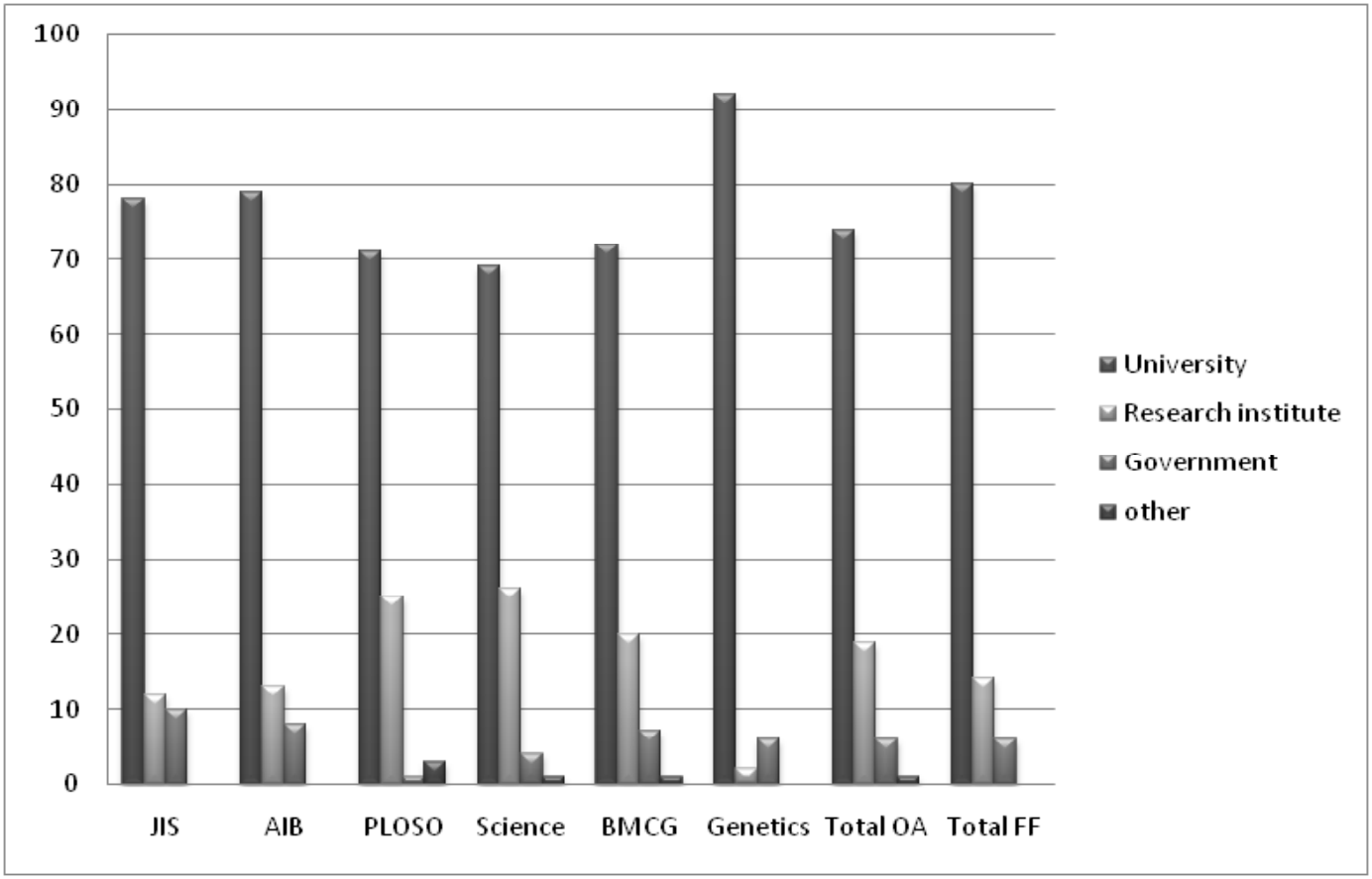

Figure 1. Institutional affiliations of authors publishing in Open Access (OA) and For-fee (FF) journals: Journal of Insect Science (JIS), Archives of insect biochemistry and physiology (AIB), PLOSOne (PLOSO), Science, BMC Genetics (BMCG), and Genetics

started in 2001 by a former editor of *Archives of Insect Biochemistry and Physiology*, while *Archives of Insect Biochemistry and Physiology* has been published commercially since 1983. *PLOS One* was first published in 2006 by the Public Library of Science and was paired with the prestigious journal *Science,* which has been published since 1883. Both of these journals are published by non-profit professional societies and cover a broad range of topics in science. BioMed Central began publishing *BMC Genetics* in 2000, while *Genetics* has been published since 1916 by the Genetics Society of America.

For the analysis, 100 articles published in 2006 and 2007 were randomly selected for each journal using the GraphPad Software (2002) online random integer generator. The academic rank of the last author listed for each article was determined from online curriculum vitae or job titles listed on an official site for the author's home institution. The last author was selected so that multiply-authored articles would not get undue weight and because this is often the advisor for graduate students who are often listed as the first author for articles published from their thesis research. Although the first author may have been primarily responsible for the research, it is the advisor whose reputation carries the most weight. The type of institution, location of home institution, and number of authors was also recorded. Chi square tests comparing the OA to FF journals were performed.

Results

The vast majority of the authors from all of the journals studied were from universities, with research institutions and government agencies a distant second and third (see Figure 1). There were a few authors employed in private enterprise or non-profit organizations not primarily conducting research. While the percentages of the authors from the different types of home institutions differed somewhat by journal, the percentages did not differ according to whether a journal was OA or FF (Chi-Square = 3.2, $.25 < p < .5$). The author's curriculum vita (CV) or job titles listed for some of the non-university positions noted whether they were tenured or tenure track, but for the most part there was no indication. For the purposes of this study, only the tenure status of those authors at universities were included in the analysis.

Curriculum vitae or official titles for most researchers in the United States (U.S.) were found on the Internet and

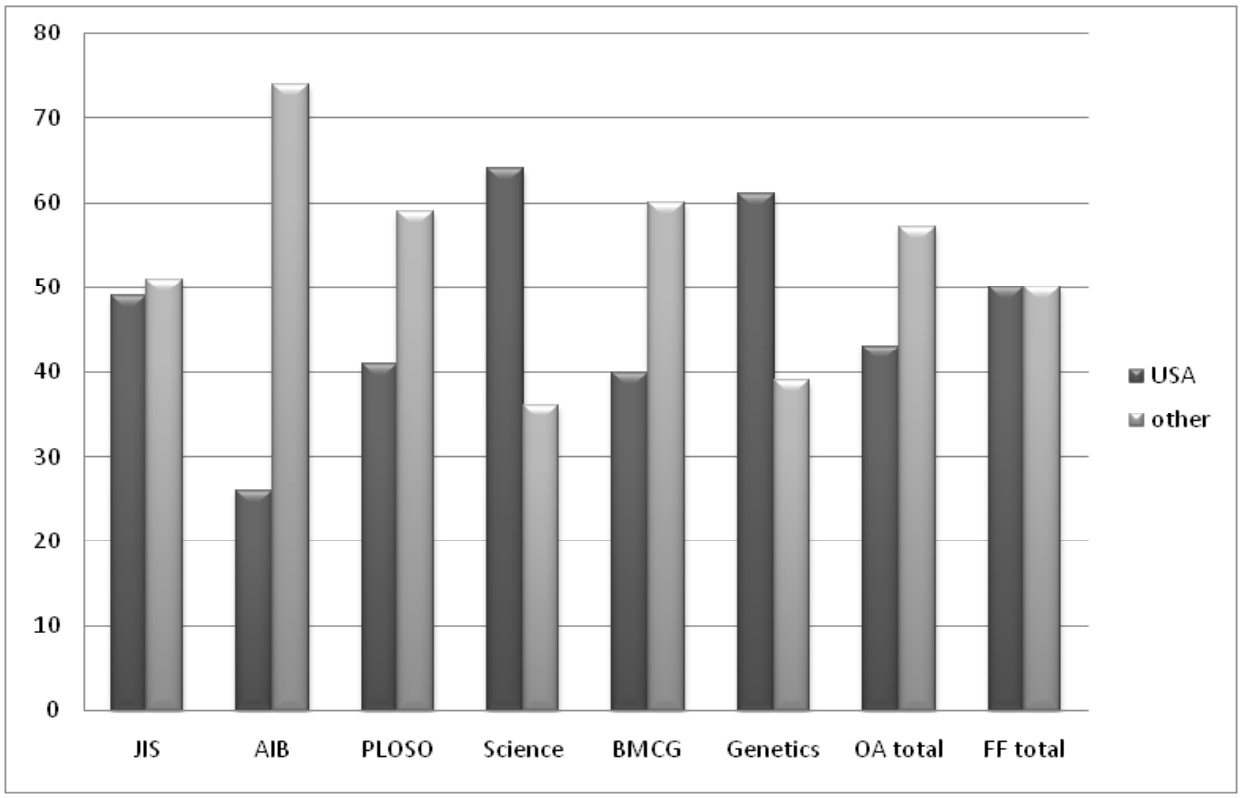

Figure 2. Location of home institution of authors publishing in Open Access (OA) and For-fee (FF) journals: Journal of Insect Science (JIS), Archives of insect biochemistry and physiology (AIB), PLOS One (PLOSO), Science, BMC Genetics (BMCG), and Genetics

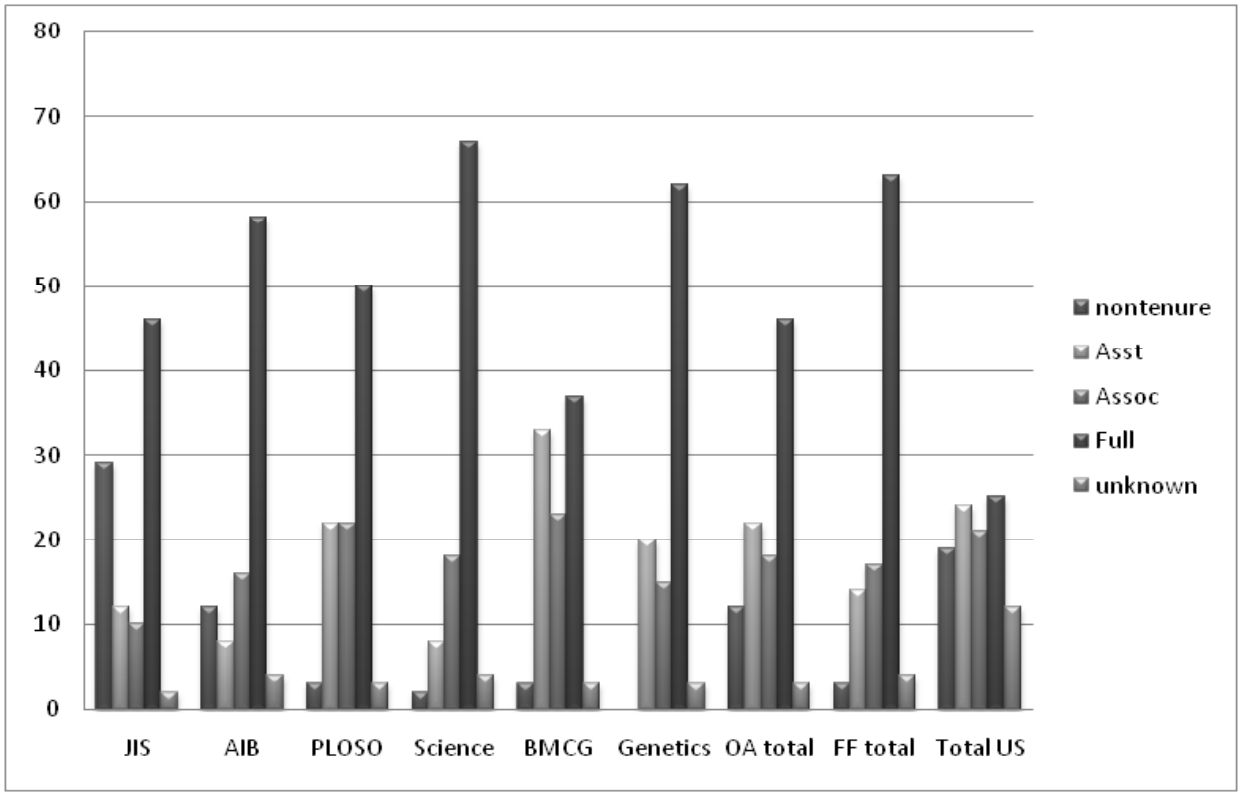

Figure 3. Academic rank of authors located in the USA and publishing in Open Access (OA) or For-fee (FF) journals: Journal of Insect Science (JIS), Archives of insect biochemistry and physiology (AIB), PLOSOne (PLOSO), Science, BMC Genetics (BMCG), and Genetics. Academic ranks are: non-tenure-track (nontenure), Assistant Professor (Asst), Associate Professor (Assoc), Full professor (Full).

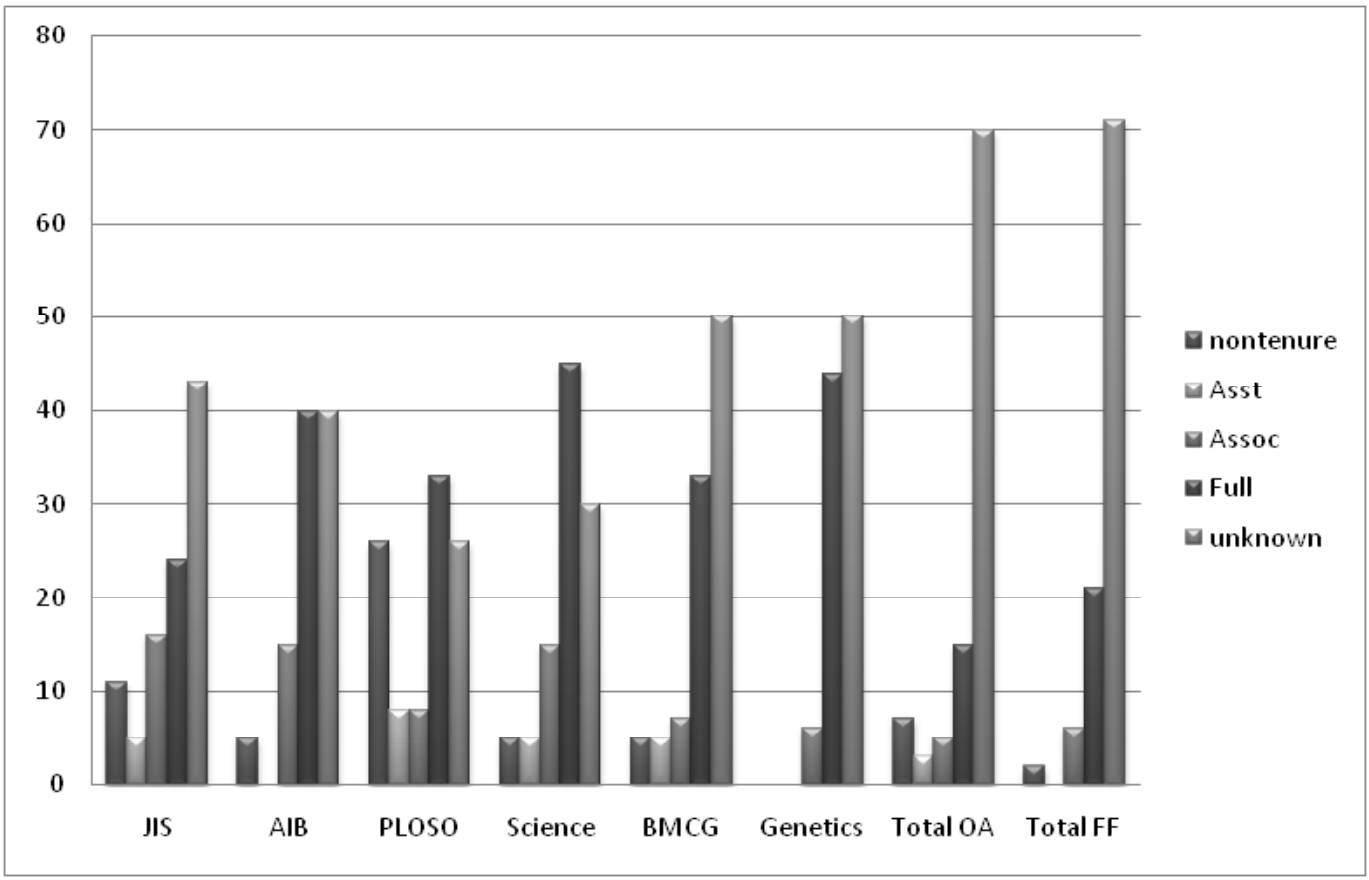

Figure 4. Academic rank of authors located outside of the USA and publishing in Open Access (OA) or For-fee (FF) journals: Journal of Insect Science (JIS), Archives of insect biochemistry and physiology (AIB), PLOSOne (PLOSO), Science, BMC Genetics (BMCG), and Genetics. Academic ranks are: non-tenure-track (nontenure), Assistant Professor (Asst), Associate Professor (Assoc), Full professor (Full).

the tenure status was usually clear from the job title, i.e. Assistant Professor, Associate Professor, and Full Professor or Professor. For those located outside of the U.S., tenure status could not be resolved for a large proportion of the authors. In some cases the tenure status was not obvious from the job title. For others, no CV was found or the CV was in a non-English language. For this reason, the comparisons of tenure status between OA and FF authors from the U.S. and from outside the U.S. were separated and then totaled in the analysis. Results for location of the home institution for authors identified in this study are shown in Figure 2. Although there were differences, with some journals attracting more authors from outside of the U.S., the differences were not consistent with the OA status of a journal. The differences for the total OA journals as compared to the total FF journals were not significant (Chi-square = 2.8, $.25 < p < .5$).

Tenure status for authors in the U.S. is shown in Figure 3. The largest group of authors for all of the journals were full professors. Although no statistical tests were done, it appears that there may be differences among the disciplines. Relatively more non-tenure-track authors appeared to publish in entomology journals and more assistant professors appeared to publish in genetics journals. However, when averaged for all OA and FF journals, there were no significant differences for tenure status of authors in the U.S. (Chi-square = 14.23, $.05 < p < .10$).

For faculty outside of the U.S., the pattern was similar (see Figure 4). The majority of authors were full professors for both OA and FF journals and there were no significant differences between the OA and FF journals in the distributions of tenure status among authors (Chi-square = 13.2, $.10 < p < .25$). However, the high percentage of authors with unknown tenure status sheds doubt on the importance of these results for the authors outside of the U.S.

When data from the U.S. and non-U.S. authors were combined, there was a small but significant tendency for assistant professors to publish in OA journals and full professors to publish in FF journals (Chi-square = 24.94, $p < .05$). Nonetheless, full professors made up the largest group of authors in both OA and FF journals (see Figure 5).

Discussion and Conclusion

A commonly held view within academia is that professors are forced to "publish or perish". It is also commonly thought that promotion and tenure committees

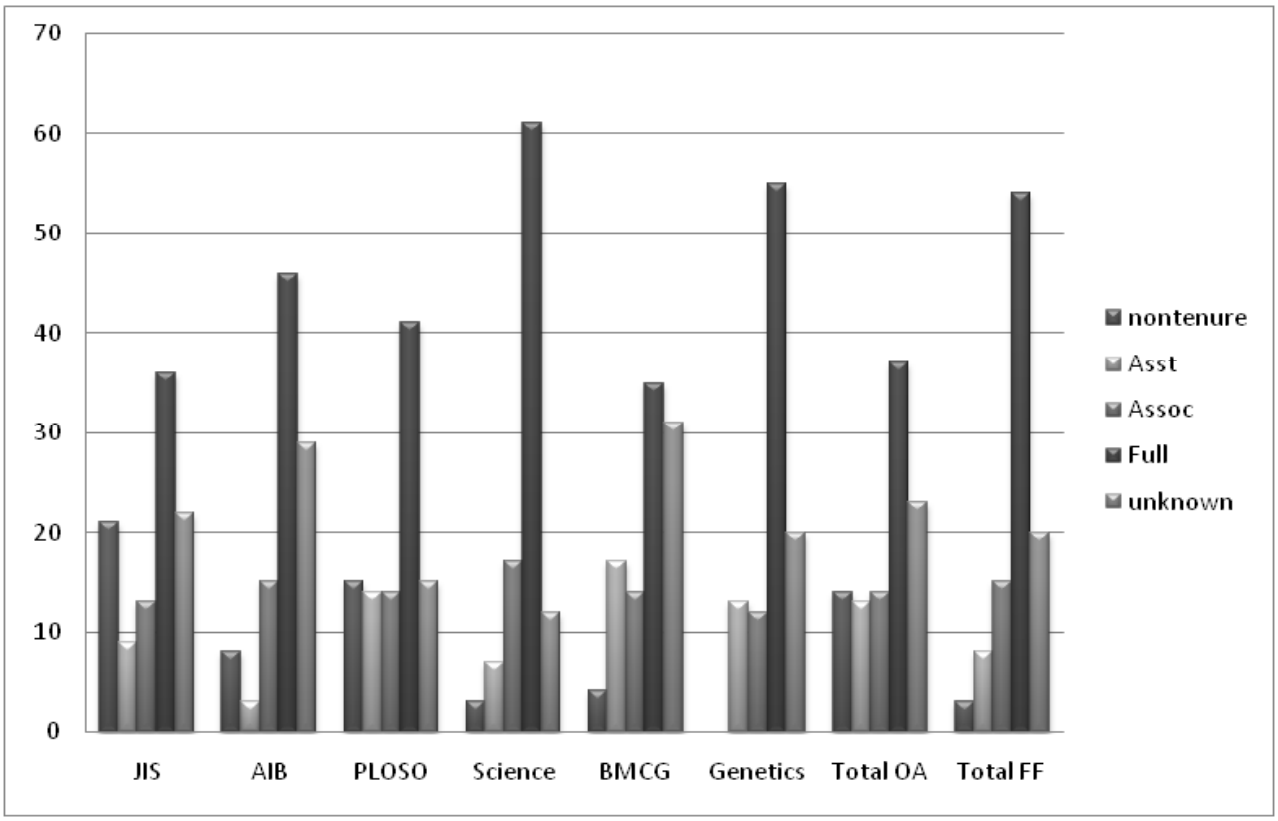

Figure 5. Academic rank of all authors publishing in Open Access (OA) or For-fee (FF) journals: Journal of Insect Science (JIS), Archives of insect biochemistry and physiology (AIB), PLOS One (PLOSO), Science, BMC Genetics (BMCG), and Genetics. Academic ranks are: non-tenure-track (nontenure), Assistant Professor (Asst), Associate Professor (Assoc), Full professor (Full).

primarily consider the number of articles and the prestige of the journals publishing the articles in determining who gets tenure. However, teaching and service are often considered as well and their weight depends on the goals and emphasis of the institution. In this study, most authors were full professors, whether in OA or FF journals. It appears that promotion or tenure is not their primary motivator. Faculty may receive higher raises based on a productive output of research and publication, but, as Harnad (1992) pointed out, scholars publish to inform their colleagues of their work. If wealth and fame are one's goals, becoming a professor would be a poor career choice. Results from this study are consistent with Lotka's law, which states that a relatively few scholars contribute disproportionately to the body of scientific literature. Full professors make up 25% of the total U.S. faculty (Almanac, 2007). In this study, full professors were found to author 46% of OA journal articles and 63% of FF articles.

Results of surveys from previous studies have indicated that there is a concern among pre-tenured faculty that articles in OA journals will not be given the same weight as those in conventional journals (Hess et al., 2007; Sweeney, 2000). These same studies have shown that most faculty profess to be format blind in weighing the value of articles in tenure deliberations provided that the articles are peer-reviewed. In this study, all of the journals considered were peer-reviewed. The results of this study indicate the opposite effect from that expected based on the previous surveys. Rather than avoiding OA journals and favoring established, conventionally-published journals out of concern for their weight in tenure and promotion hearings, pre-tenured faculty appear to slightly favor OA journals. From the results of this study there is no way to determine their motivations.

One advantage of electronic only journals such as the OA journals studied here is that they are faster to publish. Speed of publication can be a significant concern for assistant professors with a ticking tenure clock. However, journals that publish both print and electronic editions can lessen the speed advantage of OA journals by issuing the electronic version of an article before the paper edition is published. It should be noted that all of the FF journals included in this report have electronic versions. A second advantage specific to OA journals is that they may be more widely read and cited (Bauer and Bakkalbasi, 2005). However, Anderson et al. (2001) studied a clinical pediatrics journal that published both OA electronic articles and articles in a print edition available only by subscription. They found that the print articles, accessible only by subscription, were cited slightly more often than the online, OA articles. Although tenure committees did accept online, peer-reviewed jour-

nals, the authors of the articles still felt that they were not as strong as print.

Many institutions and promotion and tenure committees expect authors to prove the impact and significance of their publications. Measures such as the number of times a paper is cited or downloaded can provide a measure of the importance of the article. Usage and citation rates are easier to gather with online publications and this may be another reason for pre-tenure faculty to publish in OA journals.

A third possibility is that established professors may choose to publish in a familiar journal. Readers may follow a line of research in a particular journal or the professor may have established working relationships with editors and reviewers. A proposed scenario for the acceptance of OA journals is that senior professors, unconcerned with tenure, will begin to experiment with electronic journals helping these journals to establish their reputations (Koenig and Harrell, 1995). Although senior scholars are innovators, it would appear that some of them may continue to utilize journals with which they are familiar. Judging by the preponderance of full professors publishing in all formats, the tendency for junior faculty to publish in OA journals is a weak one.

The journals studied here appear to have established their credentials in a relatively short time period. As with all new publications, factors such as the publisher, editor, and review board and early authors can all affect the acceptance of the new title. The main conclusion from this study is that although faculty may express some concerns about the weight of OA journals in comparison to FF journals, there is no evidence that it affected their decision on where to publish their research results for the titles included in the study.

Elaine A. Nowick is Agricultural Librarian and Professor at University of Nebraska-Lincoln, Lincoln, Nebraska, USA.

References

AAUP. 2007. "Annual Report on the Economic Status of the Profession: Selected tables." *Academe* (March-April 2007): 46.

Almanac of Higher Education, 2007-8. 2007. "Number of Full-Time Faculty Members by Sex, Rank, and Racial and Ethnic Group, Fall 2005." *Chronicle of Higher Education* 54(1): 24.

Anderson, Kent, John Sack, Lisa Krauss, and Lori O'Keefe. 2001. "Publishing online-only peer-reviewed biomedical literature: Three years of citation, author perception, and usage experience." *JEP: The Journal of Electronic Publishing* 6 (3). [Online] available: http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;cc=jep;q1=Publishing%20online-only%20peer-reviewed%20biomedical%20literature;rgn=main;view=text;idno=3336451.0006.303

Bauer, Kathleen, and Nisa Bakkalbasi. 2005. "An examination of citation counts in a new scholarly communication environment." *D-Lib Magazine* 11(9). [Online] available: http://www.dlib.org/dlib/september05/bauer/09bauer.html

Bjork, Bo-Christer. 2004. "Open access to scientific publications – an analysis of the barriers to change?" *Information Research* 9(2). [Online] available: http://informationr.net/ir/9-2/paper170.html

DOAJ - Directory of Open Access Journals. Available: http://www.doaj.org/

Graphpad Software. 2002. QuickCalcs online calculators for scientists. Available: http://www.graphpad.com/quickcalcs/randomN1.cfm

Harnad, Stevan. 1992. "Abstract: What scholars want and need from electronic journals." Online posting, 19 March 1992, LSTOWN-L Archives. Available: http://community.emailogy.com/scripts/wa-COMMUNITY.exe?A2=ind9203&L=LSTOWN-L&P=R3328&D=0

Hess, Thomas, Rolf T. Wigand, Florian Mann, and Benedikt von Walter. 2007. "Open Access & Science Publishing - Results of a Study on Researchers' Acceptance and Use of Open Access Publishing." In *Management Reports of the Institute for Information Systems and New Media*, LMU München, Munich, Nr. 1/07. [Online] available: http://openaccess-study.com/Hess_Wigand_Mann_Walter_2007_Open_Access_Management_Report.pdf

Koenig, Michael, and Toni Harrell. 1995. "Lotka's law, Price's urn, and electronic publishing." *Journal of the American Society for Information Science* 46(5): 386-388.

National Institute of Health. 2005. Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research. [Online] available: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-022.html

Palmer, Jonathan, Cheri Speier, Daniel Wren, and Susan Hahn. 2000. "Electronic journals in business schools: Legitimacy, acceptance, and use." *Journal of the Association for Information Science* 1(2): 1-31.

Schauder, Don. 1994. "Electronic publishing of professional articles: Attitudes of academics and implications for the scholarly communication industry." *Journal of the American Society for Information Science* 45(2): 73-100.

Sweeney, Aldrin E. 2000. "Tenure and Promotion: Should you publish in electronic journals?" *Journal of Electronic Publishing* 6(2). [Online] available: http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;cc=jep;q1=Tenure%20and%20Promotion%3A%20Should%20you%20publish%20in%20electronic%20journals;rgn=main;view=text;idno=3336451.0006.201

Tomney, Hilary, and Paul F. Burton. 1998. Electronic Journals: "A Study of Usage and Attitudes Among Academics." *Journal of Information Science* 24(6): 419-429.

Ulrich's Periodicals Directory. 2008. New Providence, NJ: Bowker.

Contact Information

Elaine A. Nowick
Agriculture Librarian & Professor
Research and Instructional Services
University of Nebraska-Lincoln
Lincoln, Nebraska 68583 USA
PH: 402-472-4408 Fax: 402-472-7005
E-mail: enowick@unlnotes.unl.edu