



ADVISOR REVIEWS—STANDARD REVIEW

PLoS ONE

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Composite Score: ★★★★★ 3/4

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### Pricing Options

PLoS ONE is an Open Access journal, a new addition to the PLoS (Public Library of Science) series. Hence, there is no subscription cost to the user. The publication model is built on an author fee for publication of \$1,350 per article. While the majority of authors who are published here do pay the fee, articles are peer-reviewed without regard to the ability to pay. If the author of a selected article cannot pay (e.g., is without means from a developing country) the fee is waived. While publication fees provide the main source of revenue for the journal, it is supplemented by advertising, sponsorship, membership programs, and a reprint service. Comparisons of Author Fees for other Open Access titles are shown in Table 1.

### Product Description

PLoS ONE <<http://www.plosone.org/home.action>>, an international online Open Access publication (eISSN-1932-6203), is the newest entry into the Public Library of Science’s lineup of peer-reviewed academic journals. Founded in 2006, it is a departure from the PLoS progression of narrowly-focused disciplinary titles in that it is meant to cover all areas of science; however, at this point its content leans toward the life and biomedical sciences. It has grown dramatically since its inception: from 1,231 articles published in 2007 to a projected 4,300+ in 2009. If current growth continues, PLoS ONE estimates that in 2010 it could be publishing one percent of all articles listed in PubMed for the year. (Binfield (1), p. 70)

Since the journal’s intended scope covers all aspects of science, it has developed a list of 53 categories to facilitate browsing, each with its own RSS feed. The categories are mainly within the scope of medicine and the life sciences, but some are not, such as Chemistry and Mathematics. It is assumed that these categories will evolve over time as submissions become broader in scope.

Organizationally, PLoS ONE employs an Advisory Board that provides overall direction and community perspective and an Editorial Board that pro-

vides oversight of the content and is responsible for setting editorial policy, managing the peer-review process, and determining which articles are accepted for publication. The Editorial Board is comprised of both Section Editors (currently 30, but with plans for expansion) and numerous Academic Editors (more than 940 as of December 2009) from institutions all over the world. Section Editors provide oversight for particular disciplinary areas, while Academic Editors manage the peer-review process, and determine which articles will be published in PLoS ONE. In addition, there are Statistical Advisors, who are mostly used for Clinical Trials papers and whose function is to assure that the methodological and statistical techniques of the manuscript comply with PLoS ONE standards.

PLoS ONE is indexed in PubMed, MEDLINE, PubMed Central, Scopus, Google Scholar, the Chemical Abstracts Service (CAS), EMBASE, AGRICOLA, PyscINFO, Zoological Records, FSTA (Food Science and Technology Abstracts), GeoRef, and RefAware, and can also be searched via the Web of Knowledge. In addition, PLoS ONE is formally archived via PubMed Central and LOCKSS.

### Critical Evaluation

#### SCOPE AND CONTENT

The scope of this newest title in the Public Library of Science is indeed ambitious: it will publish reports of original research from all

PLoS ONE	U.S. \$1,350	<a href="http://www.plos.org/journals/pubfees.html">http://www.plos.org/journals/pubfees.html</a>
PLoS Biology	U.S. \$2,900	<a href="http://www.plos.org/journals/pubfees.html">http://www.plos.org/journals/pubfees.html</a>
PLoS Medicine	U.S. \$2,900	<a href="http://www.plos.org/journals/pubfees.html">http://www.plos.org/journals/pubfees.html</a>
PLoS Computational Biology	U.S. \$2,250	<a href="http://www.plos.org/journals/pubfees.html">http://www.plos.org/journals/pubfees.html</a>
PLoS Genetics	U.S. \$2,250	<a href="http://www.plos.org/journals/pubfees.html">http://www.plos.org/journals/pubfees.html</a>
PLoS Pathogens	U.S. \$2,250	<a href="http://www.plos.org/journals/pubfees.html">http://www.plos.org/journals/pubfees.html</a>
PLoS Neglected Tropical Diseases	U.S. \$2,250	<a href="http://www.plos.org/journals/pubfees.html">http://www.plos.org/journals/pubfees.html</a>
Hindawi Open Access Journals	Free to \$1,400, depending on Journal	<a href="http://www.hindawi.com/apc.html">http://www.hindawi.com/apc.html</a>
BioMed Central	\$1,525 Standard fee (but some journals charge as much as \$2,350)	<a href="http://www.biomedcentral.com/info/about/apcfaq#apccomparison">http://www.biomedcentral.com/info/about/apcfaq#apccomparison</a>

TABLE 1 Pricing and URLs

disciplines within science or medicine. While this concept of a multidisciplinary, peer-reviewed, scientific, and scholarly journal is not unique in itself (*Nature* and *Science* are two others that come to mind), several aspects of its publication model are indeed groundbreaking, and will be discussed in this article.

### ARTICLE LEVEL METRICS VERSUS IMPACT FACTOR

The peer review process at PLoS ONE focuses on whether the article is worthy of publication based solely on its scientific merits and research integrity. In traditional publishing models, articles are also judged for acceptance on more subjective criteria such as “impact” (which is largely tied to the journal title), “broad interest,” or “likely to generate citations.” The philosophy of PLoS ONE is that each article should be judged on its own merits, such as scientific validity and contribution to the advancement of research, rather than the prestige of the journal in which it is published. By employing Web 2.0 functionality, the journal hopes to employ “post-publication” evaluation to assess the research impact of individual articles. According to Pete Binfield, Managing Editor:

PLoS ONE takes the traditional functions of a journal and consciously separates them into those functions that are most effectively carried out before publication (for example, peer review in order to evaluate whether the article deserves to join the scientific literature) and those that can most effectively be carried out after publication (for example, how impactful was that article once it joined the literature). (Binfield (1), p. 72)

This innovative concept, introduced in March 2009, has been termed “Article Level Metrics” and is described on the PLoS ONE Web site. As noted on that page, the following data is currently available from PLoS ONE for each article:

- **Article usage statistics**—HTML page views, PDF downloads, and XML downloads
- **Citations from the scholarly literature**—currently from PubMed Central, Scopus, and CrossRef
- **Social bookmarks**—currently from CiteULike and Connotea
- **Blog posts**—aggregated from Postgenomic, Nature Blogs, and Bloglines

And the following Web 2.0 features, as noted here, allow readers to participate in the evaluation of the article. An account (free to the user) is required to use these features, and to receive e-mail alerts. For example, readers may:

- Add a **note** to the article
- Provide **written comments** on the merits or flaws of the article
- Submit a **numerical rating** (one to five stars) for Insight, Reliability, Style, and Overall

It is the intention of PLoS ONE to continue expanding these features to further encourage reader participation: “Subsequent steps in this project will include expanding the number of data sources and adding online tools to help the most significant and relevant content to rise to the top” <<http://article-level-metrics.plos.org>>. There are also tabs on this page for additional information regarding the interpretation and evaluation of the data from these metrics, helpful features since these measures are new and evolving.

Figure 1 illustrates how these innovative features are available for each article in PLoS ONE (example shown is Ahmed N, Saini V, Raghuvanshi S, Khurana JP, Tyagi AK, et al. 2007 Molecular Analysis of a Leprosy Immunotherapeutic Bacillus Provides Insights into *Mycobacterium* Evolution. PLoS ONE 2(10): e968. doi:10.1371/journal.pone.0000968). By accessing the Metrics tab for the article, statistical data, which is continually compiled, is available for viewing (Figure 2). Data, updated daily, is available on the total number of article views, where the article has been cited, user “star” ratings, comments, where the article is bookmarked, blog coverage, and trackbacks. In addition, there is a chart published showing the cumulative views by month since time of publication.

While PLoS ONE does not currently have an Impact Factor (IF) rating, some have tried to estimate what it might be based on current publication history and citation patterns <<http://lampreylinux.wordpress.com/2009/02/26/impact-factor-of-plos-one/> and <http://pbeltrao.blogspot.com/2009/04/guestimating-plos-one-impact-factor.html>>.

According to the different methods of calculation in these (and other) blog posts, the IF for PLoS ONE has a variation in the range 2.9 to 5.68. As stated previously, though, PLoS disagrees with the use of the Impact Factor as a measure of worth of individuals or individual articles, and has chosen to focus instead on metrics at the article level. For those interested in total citations to the journal, however, Scopus

reports 11,194 citations to the 2,836 articles published before February 1, 2008, recorded as of July 31, 2009. (Current articles are eliminated from this count since they have not had time to accrue citations).

### BLOGS

PLoS ONE has actively embraced the use of Web 2.0 technology to add value to its content post publication. EveryONE is a blog hosted by PLoS ONE devoted to promoting news and

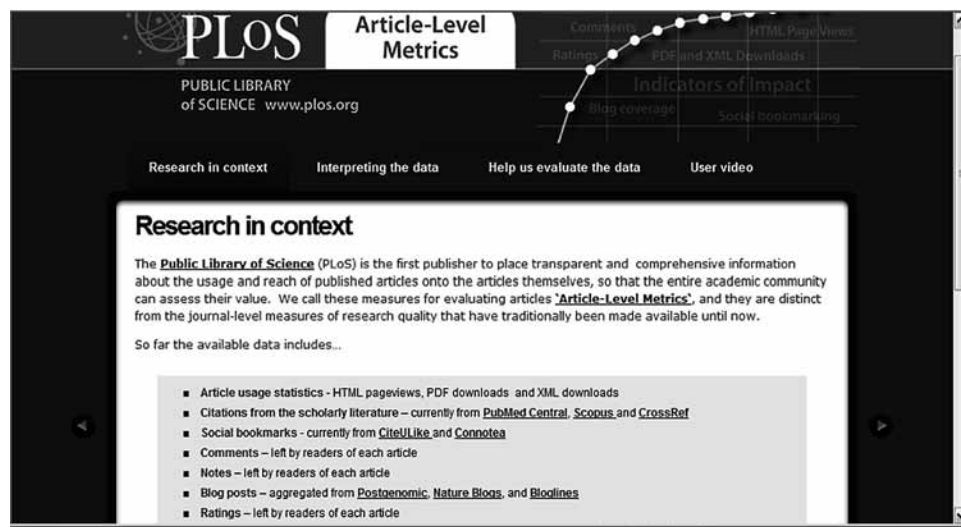
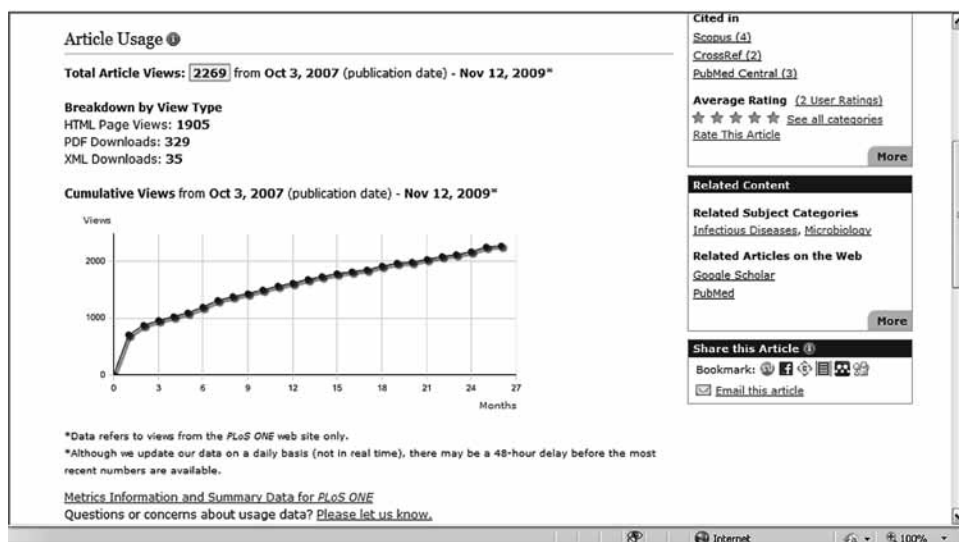
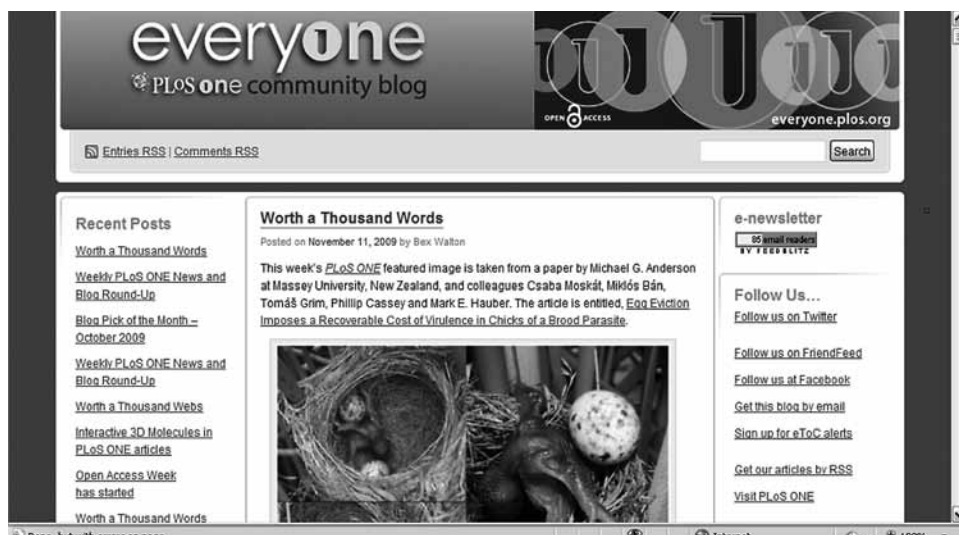


FIGURE 1 Article Level Metrics are available for each article in PLoS One.

**FIGURE 2** Statistical data are compiled continuously.



**FIGURE 3** EveryONE is a blog hosted by PLoS ONE.



discussion about its content <<http://everyone.plos.org/>>. See Figure 3. This blog seems to serve as a weekly summary of the latest in research and developments at PLoS ONE, and while comments are invited, it does not appear that readers are using this feature to any great extent yet. Users can subscribe to the blog via Feedblitz <<http://www.feedblitz.com/f/?Sub=562413>> or follow it via Twitter, Facebook, FriendFeed, e-mail, eTOC alerts, and RSS. Postgenomic, Nature Blogs, and Bloglines also track blog posts tied to specific articles in the PLoS lineup of journals, including PLoS ONE. In this way, the user can access blog discussions of an article of interest from multiple sources.

**TRACKBACKS**

Trackbacks provide a way to measure how often and where an article has been linked to by other sources. If the citing Web site constructs a link to a PLoS article in a correct format, a “trackback link” is automatically created by PLoS so that the citing site can be identified. This link is then displayed with the article.

**SOCIAL BOOKMARKING**

PLoS ONE displays data from the social bookmarking sites CiteU-Like and Connotea so readers can see how many people have bookmarked an article. The theory is that this provides a measure analogous to citation counts indicating the level of interest (and therefore possible value) of each article.

**GROWTH OF PLOS ONE**

PLoS ONE has experienced dramatic levels of growth in its short history: 1,231 articles (2007); 2,722 articles (2008); more than 4,300 articles projected (2009); and more than 7,000 articles projected (2010). Figure 4 shows this growth trend, with figures for 2009 and 2010 projected based on current submission levels. Because of its financial model based on author fees covering costs of publication, and the Open Access, online format, this rapid growth is sustainable. A more traditional model journal (subscription fees, print publication) could not keep pace without a dramatic rise in subscription price.

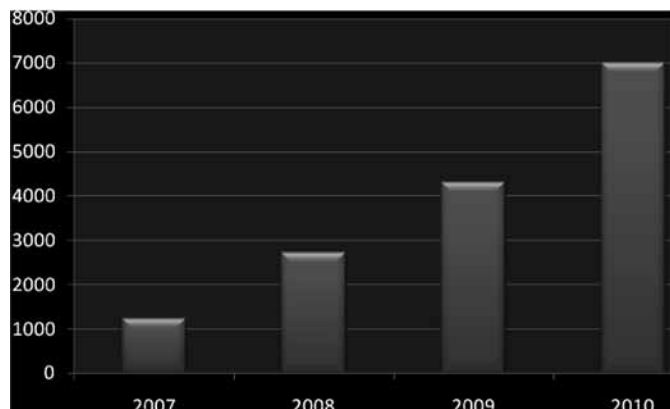


FIGURE 4 Growth of PLoS ONE since 2007 including projections for 2009 and 2010

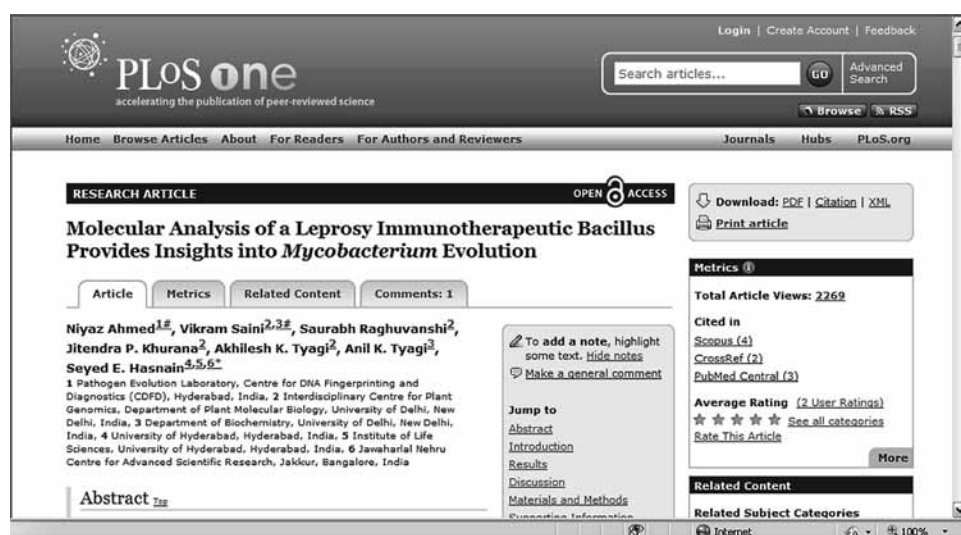


FIGURE 5 PLoS ONE’s tabbed interface is attractive, easy to navigate and content-rich.

**NAVIGATION**

The PLoS ONE’s tabbed interface is attractive, easy to navigate, and content-rich (Figure 5). The interface and header are consistent for each Research Article with the following tabs: Article, Metrics, Related Content, and Comments. As already noted, there is ample opportunity for readers to evaluate and comment on each article, and continually updated article metrics are displayed on the side.

**SEARCHABILITY**

PLoS ONE features both a simple keyword Search box as well as an Advanced Search option, which allows searching by Author, searching by Article Text (includes phrase searching, the NOT operator, and specification regarding where the word(s) occur), and searching within specified PLoS Journals and Subject Categories.

**OTHER ITEMS OF INTEREST**

PLoS ONE was awarded the 2009 ALPSP (Association of Learned and Professional Society Publishers) Award for Publishing Innovation. The award recognized that PLoS ONE “combines the traditional values of the journal with innovative online features to create an

inclusive and efficient publication channel. It is bold and successful and shaping the future of publishing” <<http://plos1.files.wordpress.com/2009/09/alpsp-awards-2009-winners-pr-20090914.pdf>>.

In line with this recent award, PLoS ONE recently introduced an exciting new capability called 3D Molecular Manipulation. This feature is available using a free downloadable plug-in. The software allows the user to manipulate molecules in three-dimensional space in its new Collection entitled “Structural Biology and Human Health: Medically Relevant Proteins from the SGC” (Structural Genomics Consortium). PLoS ONE has formed specialized Collections <<http://www.plosone.org/article/browseVolume.action>> of its articles on particular topics of interest. This newest Collection utilizes three-dimensional molecular animation technology, which allows the user to virtually manipulate molecules on the screen <<http://everyone.plos.org/2009/10/19/interactive-3d-molecules-in-plos-one-articles/>>.

For those who need hard copies of articles, PLoS offers an option called Print on Demand. This service is designed “for those who would like multiple professionally-produced print copies to take to interviews, to include in course packs, to distribute to colleagues at conferences, or for any purpose they wish” <<http://www.plos.org/>>



## PLoS ONE Review Scores Composite: ★★★★★ 3/4

The maximum number of stars in each category is 5.

### Content: ★★★★★ 1/2

I did not give the full five stars only because the journal is still very new, and the quality of its content will (as is the stated intent) be judged post publication. Given the thorough peer-review process and excellent editorial board, however, I have no doubt that the content will be judged excellent by the scientific community. The content is heavily weighted at this point toward the biomedical and life sciences, but in time will likely expand to include a broader range of scientific disciplines.

### Searchability: ★★★★★

The journal has an excellent search interface, with standard features such as single search box as well as advanced searching capability.

### Pricing Options: N/A

There is no subscription or usage fee. The author pays a fee for publication (according to ability to pay), but article is peer-reviewed blind to this information. Publishing fee to authors is very low compared to other Open Access journals.

### Contract Options: N/A

There are no contracts involved since it is an Open Access journal.

journals/print.html>. Finally, while this is not meant to be a comparative review, it is worth noting that *Nature* recently announced the launch of a new multidisciplinary, peer-reviewed science journal—with an Open Access publishing “opportunity.” Titled *Nature Communications* <[http://www.nature.com/ncomms/about\\_journal.html](http://www.nature.com/ncomms/about_journal.html)>, it is now accepting submissions and is scheduled to publish its first issue in Spring 2010 <<http://www.nature.com/ncomms/marketing/index.html>>. According to the Web site, “*Nature Communications* will provide a unique forum for the rapid publication of high-quality research in all areas of the physical, chemical and biological sciences.” A critical difference between this publication and PLoS ONE is that it is a hybrid model: it is basically a subscription journal with an option for the author to choose to publish as an Open Access article (with a \$5,000 article publication charge).

### Contract Provisions

There are no subscription contracts since the journal is Open Access. Regarding the Author’s rights, PLoS states:

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### Authentication

PLoS ONE is Open Access, so no authentication required. It is freely available on the Web.

### Author’s Selected References

Binfield, P. PLoS One: background, future development, and article-level metrics. ELPUB, North America, Mar. 2009 <<http://conferences.aepic.it/index.php/elpub/elpub2009/paper/view/114/51>>.

Binfield, Peter. PLoS ONE: New Approaches and Initiatives in the Evolution of the Academic Journal. *Against the Grain*, June 2009, pp. 24, 26.

### About the Author

**Betty Ladner** is Associate University Librarian for Collections Access and Outreach Services, Atkins Library, University of North Carolina at Charlotte. She has a master of arts degree in Library Science from the University of Chicago, and a background in medical, technical, and academic libraries. ■