

Predatory Open Access Publishing in Science, Technology, Engineering & Mathematics (STEM) Fields

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Introduction

As government entities and researchers strive to make science accessible, open access (OA) publishing continues to grow. While many subscription-based publishers and existing OA journals contribute to this charge, there are some that see only a chance to profit financially. These publications, often referred to as "predatory", are listed on a website maintained by Jeffrey Beall, a librarian at the University of Colorado, Denver. His prominent blog, "Scholarly Open Access", contains a list of journals that fit a set of criteria, honed by Beall, which highlight dishonest publishing practices. Unfortunately, the number of predatory journals is growing, focusing on "pay to play" models, regardless of research quality, and even invoicing authors without first relaying the cost. While some research has looked at OA subject coverage in general, the trends in this predatory sphere have not been closely examined.

Methods

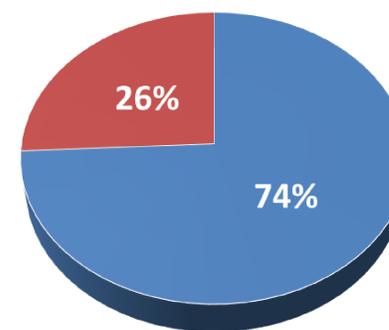
The Directory of Open Access Journals subject categories were used to provide the terms for the study. Beall's individual title list as of Fall, 2014 was analyzed to determine the percentage of STEM journal content. Each journal's website was reviewed for a description of content and then assigned to a term. While compiling the data some websites disappeared and others changed locations, defunct websites are not included. One indicator of predatory journals is the lack of a distinct subject and the tendency to accept any topic. These broad journals that specifically included scientific fields in their descriptions are classified as "General" and included in the broader analysis.

Results

A famous example of identity theft is the longstanding journal *Archives des Sciences*. They never had a web presence, until one of these predatory journals (that still exists) attempted to confuse authors with their journal of the same name. This prompted Archives to create a website entirely to warn authors of the predator. Their website has a disclaimer in French and English as well as images of the journal itself.



STEM-Specific Content in Entire Beall List



■ STEM Specific Content
■ Non-Stem Subjects

Discussion

STEM fields make up the majority of the journals considered predatory. The most likely reason behind this is that university and funding agencies provide a great deal of money for research in STEM fields. Coupling this with growing government open access requirements creates a breeding ground for dishonest publishing practices. If researchers do not stringently assess the quality of a publication, they run the risk of both embarrassment and high costs. This information enables academic librarians, research scientists, science faculty, and students to conscientiously investigate every publication while encouraging best practices in choosing open access forums for their research.

Trends

The list Beall curates has quickly grown over time; 23 journals were identified in 2012, 225 in 2013 and 322 in 2014. **As of his most recent update, February 8, 2015, the number has grown again to 545 journal titles.**

References

Archives des sciences (SPHN). (2015). Retrieved from: <http://www.unige.ch/sphn/Publications/ArchivesSciences/Archives.html>

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Number of Predatory Journals by STEM Subject

