Faculty Perception on Publishing Research

Abstract—Today’s researchers have not only the traditional publications, but the open access publishing method whereby research papers can be published via the Internet as well as print publications. Researchers must carefully scrutinize the open access publishers in order to ensure the publication is a legitimate scholarly publication.

Keywords—Predatory publications; open access publications; peripheral publishing; paid publishing; hijacked publications

I. INTRODUCTION

The pressure in academia to publish has long been an accepted standard regarding faculty employment, tenure, and promotion. Educational institutions are being pressured to increase and/or retain enrollment amid global competition, and they are touting published faculty as a competitive advantage in attracting students (Cerejo, 2013). The reality of “publish or perish” means that new journals can easily locate authors who are willing to publish in them (Grech, 2013). According to Dudley (2013), academia’s expectations for high-yielding research as well as the multitude of new researchers entering the landscape are factors contributing to the rise of “predatory publishers,” or ill-reputed organizations that charge authors high publishing fees to publish their research. Dudley believes the culture is in need of repair, but until that sea change occurs, researchers must thoroughly investigate the legitimacy of publications to ensure their research is being published in a reputable source.

The researchers for this qualitative study will explore publication-related issues in the for-profit higher education arena. The study includes six sections: a) a detailed literature review, b) research methodology and a summary of data, c) future research, d) strengths and weaknesses, e) limitations, and f) concluding comments. The literature review includes an evaluation of the areas of change in the publication world, open access publications, and predatory publications.

II. LITERATURE REVIEW

A. The Changing Face of Scholarly Component

Only 15 or 20 years ago, the choices for scholarly publication were much more limited. Today, choosing from the range of options such as open access journals, online-only journals, self-publishing options such as institutional repositories, and even social media channels can be overwhelming for busy researchers. Many factors can determine where scholars choose to publish, such as their intrinsic trust in an outlet or how much a particular type of publication will count toward tenure and promotion decisions. These factors can vary by institutional or regional expectations. Jamali et al. (2014) found differences among scholars in more developed and less developed countries. Based on their research, faculty in more highly developed countries are less concerned about which journals they cite in their papers and are more concerned about publishing in peer-reviewed publications than their counterparts in less developed countries. Additionally, they are less comfortable with publishing in institutional repositories or on social media.

Richardson and Parker (1992) studied the “relationship between various types of research or scholarly activity and evaluations of teaching” (p. 79). Because a typical professor’s evaluation is based on three key elements of service, teaching, and research, oftentimes in colleges and universities, tenured professors are rarely in the classroom due to their research obligations (Froomkin, n.d.). At not-for-profit institutions of higher education, the emphasis is on the student in the classroom providing timely feedback and engaging the student as best they can in the electronic environment. Richardson and Parker presented the idea that teaching-oriented institutions / faculty that pursue research often divert their attention from the students and teaching (Fig. 1). Conversely, research-oriented institutions / faculty who conduct to supplement and support their teaching could improve the faculty members’ engagement in the e-classroom (e-connectivity) (Swanson, Hutkin, Babb, & Howell, 2010) and could achieve higher faculty evaluations (Fig. 1).

| Teaching-oriented institutions > research interferes > teaching | Research-oriented institutions > research supplements > teaching |

Figure 1. Comparison of Teaching-oriented versus Research-oriented Institutions

B. Maintaining the Integrity of the Specifications

The Today’s students commonly publish their theses and dissertations electronically, whether through ProQuest or through their university library. Electronic theses and dissertations (ETD) are generally considered to be freely available to the world. Questions exist regarding whether ETDs have been officially published: if the source document is freely available, are students able to publish the work in journals? It can depend on the discipline. Research originally published in ETDs and revised for publication is welcomed by over 80% of journal editors in the social sciences and humanities, and by about half of scientific journal editors (Ramírez, Dalton, McMillan, Read, & Seamans, 2013; Ramírez et al., 2014).

The increase in publication options, as well as the ever-growing increase in the cost of purchasing access to peer-reviewed serials published by big companies such as Elsevier and Springer, has led to the rise of open access (OA) journals. OA is dramatically changing the long-standing precepts of scholarly communication. “The goal of the OA movement is to make scholarly literature freely available in digital form worldwide with minimal restrictions in their use” (Husain & Nazim, 2013, p. 405). In traditional journal publishing, faculty members submit their work to a journal that is published by a commercial publishing house for peer review and publication.
University library budgets cover the cost of purchasing access to the journals from the publishers. In OA, publication is sometimes free to the authors, and sometimes they must pay. A discussion of OA models and uptake concerns is now warranted.

III. OPEN ACCESS PUBLISHING

As previously stated, OA came into existence partly because the price of journals and other publications for institutions has become prohibitively high (Czerniewicz & Goodier, 2014). OA has made volumes of published works free via the Internet (Beall, 2013d). A tenet of OA is that the reader does not have to pay to access the work (Coonin, 2011). The shift from what could be called the “reader pays” model to the “author pays” model signifies a shift in administrative responsibilities on the publisher’s end as well.

Three periods exist for OA publishing, the pioneer years, the innovation years and the consolidation years (Laaksom & Bjork, 2011, as cited in Beall, 2013b). OA publications include four different models, the traditional, gold, green, and platinum (Beall, 2013b). The gold model is very common; in this approach, authors pay a publication fee to the journal (Grech, 2013). Typically, the authors pay the publication fee, which varies among journals, with grant funds. In some other models, the author’s university library pays the fees, which creates complex problems for libraries (Kingsley, 2014). Not all OA journals charge for publication; some of these journals are edited by volunteers. In fact, only about a quarter of the journals listed in the Directory of Open Access Journals charge for publication (Kozak & Hartley, 2013).

Understanding scholars’ responses to and knowledge about OA are essential, because if they do not choose to submit their work to OA publications, the model will fail. According to Van Noorden (2013), the switch to OA publishing will not happen quickly because faculty are more incentivized to publish in traditional, well-known journals for tenure and promotion purposes. Van Noorden (2013) pointed out that no relationship exists between OA status and the influence of a journal’s citations, and that while the question of who pays for publication is still in question, publication can cost less now than it used to due to updated workflows. While faculty demographics such as academic rank and age used to predict OA experience, it no longer does (Rodriguez, 2014). Researchers will tend to publish in OA if they feel it can benefit potential readership, if it fits within their discipline’s culture, and if it does not negatively impact their academic progress or status (Kim, 2010). Possibly, OA adoption will increase in libraries and by scholars if university administration pays more attention to it (Reinsfelder & Anderson, 2013).

Geographic location and discipline does seem to influence OA adoption. Nigerian researchers “have opted to resort to a sub-standard paid-for foreign journals” in order to make sure they publish as much as possible (Omobowale, Akanle, Adeniran, & Adegboyega, 2013, p. 679). Most Iranian medical researchers are not familiar with OA (Khalili, 2011), and their “experience, attitude, facilitating conditions and type of university were significant” factors in choosing to publish in OA journals (Khalili & Singh, 2012, p. 336). In a survey of business faculty, about a third had never heard of OA, another third had paid author fees to publish, and almost 70% had never self-archived a paper (Coonin, 2011). OA publication increases citation counts for legal scholars (Donovan & Watson, 2011).

Concerns surrounding OA certainly exist. Kim (2010) noted that copyright and time are faculty members’ most prevalent barriers to adopting OA. Engineering faculty members are reluctant to participate in Gold OA publishing due to its cost; additionally, they have other publication options that are considered equally important, such as conference proceedings and technical reports (Misco & Schlembach, 2011). Commercial publishers and OA models have not co-existed well. For example, Elsevier notified researchers the PDF versions of their published articles were being removed from academia.edu, which is an influential website for academics to share their publications with their peers. Although researchers were provided other means of sharing their published works in an Elsevier publication (Emery, 2013), it is questionable whether researchers will continue to submit their papers for publication to OA journals or self-publish them in institutional repositories in light of the difficulties. The quality of OA journals is occasionally questioned. For example, Beall (2014) anecdotally observed a decline in the quality of the highly respected and peer-reviewed journal Information Technology and Libraries, a publication of the American Library Association’s Library and Information Technology Association, after it transitioned to OA. Perhaps the most serious concern about OA is the existence of OA publishers who are considered “predatory” (Beall, 2012). Predatory publishing will be considered in the next section.

IV. PREDATORY PUBLISHING

Beall (2013a) stated that “scholarly published literacy” scams are found more in gold open access than any of the other models since it is author paid (p. 3). Generally, after the author pays to be published, the publisher’s follow-up is very weak. The publisher is under the impression that the authors want the fastest way to get their work out to the reader so the publisher will cut corners to accomplish that goal. For example, all works are not peer reviewed when the publishers state they would be, and they call for more articles than they can handle in order to make as much money as possible (Bartholomew, 2014; Beall, 2012). Authors fall prey to these scam artists because they need to publish their work so badly. While it is easy for new researchers to fall victim to predatory publishers (Borneman, 2013; Lázároiu, 2014) in their eagerness to publish, conducting due diligence and careful study can help navigate the perilous waters of open-access publishing. It is up to the author to find quality publishers, although they may not know how to determine whether a publisher is reputable. The problem is beginning to be treated with some urgency: “Fake publishers and impact factors reminded us of the urgent need to evaluate the methods that currently are used to assess academic research” (Jalalian & Mahboobi, 2014, p. 394).

The predatory problem is of particular concern in medicine and the sciences. Researchers in these fields are the most common users of the gold OA model, since their funding sources tend to be quite large and they are the most able to pay author fees (Boumil & Salem, 2014). High-impact scientific journals such as Nature and Science have demonstrations of the gravity
of the situation. For example, Gilbert (2009) reported on a computer-generated article that was accepted for publication in The Open Information Science Journal; the journal’s editor resigned after stating he did not know the article had been accepted. Bohannon (2013) sent a spoof paper to OA journals lacking peer review, with telling results:

Ocorrafoo Cobange does not exist, nor does the Wassee Institute of Medicine. Over the past 10 months, I have submitted 304 versions of the wonder drug paper to open-access journals. More than half of the journals accepted the paper, failing to notice its fatal flaws. Beyond that headline result, the data from this sting operation reveal the contours of an emerging Wild West in academic publishing. (p. 60)

Butler (2013) described a journal identity theft situation in which counterfeiters had used the names of the respected journals Archives des Sciences and Wulfenia to create author-pays journals. “The scammers attend to the closest of details, displaying on multiple websites not only the titles of the authentic journals, but also their impact factors, postal addresses and international standard serial numbers — the unique codes used to identify journals” (p. 421). The counterfeit journals instructed authors to send their fee, $500 per article, to Armenia.

Beall (2013b, 2013d) suggested a conflict of interest for publishers exists, because the more papers the publisher accepts and the authors pay publishing fees, the more money the publisher earns. Predatory publishing might also have a negative effect on the body of research in general (Perry, 2014). Since research is cumulative, researchers cite the works of other researchers. If research papers are published by predatory publishers and the work is not grounded in scientific theory, all other works of research citing such an article will be placed in doubt. Open-access publishing has allowed researchers the ability to publish through a wide variety of digital publications. Czerniewicz and Goodier (2014) stressed the “research-driven model” (p. 8) should be a continuing conversation among academics and researchers to ensure the quality of the research is not compromised. Despite the potential negative impact from open-access publishing, OA serves a benefit to scholarly communities because it allows a broader set of researchers to contribute their work to the body of knowledge (Czerniewicz & Goodier, 2014; Perry, 2014).

Dudley (2013) reported that institutions are the biggest culprit when it comes to predatory publishing. Most institution requires that faculty publish in order to move on the pay scale or to be promoted. “It is no longer possible for peer review to function as it once did – there just aren’t [sic] enough qualified reviewers to do it” (Colquoun, 2011, p. 2 as cited in Dudley, 2013). Colquhoun strongly suggested that institution only require authors to publish once- twice a year and this will help cut down on using predatory publishers (p. 2). In order for a change to happen in the field of publishing, it will have to start on the university level by changing the requirements.

Certain countries seem to proliferate more predatory publishers; for example, researchers found that journals published in India might not be peer reviewed (Raghavan et al., 2014). Some scholars and librarians have published assistance for scholars to help them determine whether a journal is reputable. Conn (2015) provided suggestions about the various publishing options available to researchers as well as how to determine whether an open access publisher is disreputable. Beall (2015) constructed a foundation upon which researchers can evaluate potential publications before submitting their papers. The metrics include:

- Editor and Staff. Avoid publications where the owner is identified as the publication’s editor; no academic information is provided for the editor, staff, or board members; journals have duplicate editorial boards; an insufficient number of board members; or there is little geographic diversity among the board members.

- Business Management. Avoid publications that seem to have a lack of transparency in their publishing practices; has no mention of digital preservation; has a large number of journals; hides the author’s fees; sends an unanticipated invoice after publication for extra fees; search engines cannot crawl through the contents; or locks their publication in a PDF format (harder to check for plagiarism).

- Integrity. Does the name of the journal match the mission of the organization? Read carefully to ensure references to countries align with the affiliation of the editorial staff; beware of awards, etc., posted on the journal’s web site that claim impact factors; watch for spam emails asking for unqualified peer reviewers; and the publisher neglects to devote enough resources to discourage author misconduct.

- Other. Other predatory practices might include publishing papers that were previously published without mention of proper credits; language that claims the publisher is a leader or other accolade; published papers that are not written by academics; and the contact information does not list a physical address.

Beall maintains an up-to-date list of predatory publishers and an associated blog at http://scholarlyoa.com/publishers/. He has reviewed specific predatory publishers in depth and has also identified specific scholarly open-access publishers (Beall, 2012; 2013b; 2013d).

Beall has been criticized for his work in alerting the scholarly community to the predatory publishing situation. Bivens-Tatum (2014) reviewed the claims and assertions of the public attack by Beall (2013c) on OA publishing. He took a philosophical approach to Beall’s argument, and stated, “Beall makes a number of outrageous claims about OA advocates without referring to or citing any of them” (Bivens-Tatum, 2014, p. 441). His bottom line is that Beall’s argument is “neither sound nor valid” (p. 444). Beall discussed various viewpoints on his work in an interview:

Others tell me that their organization uses my Web site and list of predatory publishers in different ways. For example, one organization won’t fund any article processing fees for the publishers that are on my list. On the other hand, I get some negative reactions, especially from Europeans who have a lot invested in the gold open access model. Some of them tell me that they think I’m exaggerating the problem or say that it’s not as big of a problem as I make it out to be. And
they say that any competent researcher is able to judge for himself whether a publisher is a good place to publish, so that my list isn’t really needed. (Wilson, 2013, p. 125)

Beall pointed out in this interview that the gold open access model can be considered a scam for publishers to get money from authors or grant money from institution (Wilson, 2013). Making profits are these types of publishers’ number one concern. They are not interested in the reader gaining knowledge. Of course, Beall is not stating that the model is entirely bad. But, publishers have taken advantage of the situation by using the Internet. Most articles are published quickly so peer review of the article is limited, if at all. Knowing the location is one of the key instances that can tell an author that it is a scam. Most predatory publishers do not list were they are located or who is in charge and how long they have been doing it. According to Beall, authors are required to do intensive research about publishers before submitting any works. Beall has established a blog to help author’s eliminate predatory publishers, but it is still the author’s responsible to check even farther (Beall, 2013).

Schwartz (2013) described a lawsuit against Beall by the “OMICS Publishing Group, an open access (OA) publisher based in India” (p. 19) stating that Beall has made false claims and made offensive postings on his blog.

V. FOR PROFITS SCHOOLS

In order to situate the context of this study, an overview of for-profit schools is warranted. Postsecondary institutions that earn profits from their students’ tuition and fees are somewhat different from public colleges and universities, which receive some of their funding directly from local or state funds, as well as from private nonprofit schools, which have their own funding sources. The for-profits’ increasing impact on the higher education landscape is difficult to ignore; they “employ somewhere between 140,000 and a million faculty” (Berry & Worthen, 2012, p. 35).

For-profit schools have existed in the American education system since the mid-1800s (Douglass, 2012), and although they are relatively expensive, they comprise the fastest-growing sector of higher education in the United States (Davis, Adams, & Hardeyst, 2011). For-profit colleges are able to fill a gap when public or private non-profit universities cannot meet the demand for higher education, which is an issue in developing countries as well as in the United States, due to state budget cuts in recent years (Douglass, 2012). They open up opportunities for higher learning to students that might not otherwise be able to earn a college education. Access to higher education is limited in developing nations (Alema, 2010; Barandiaran, 2011). Various social factors in America make people with various social factors less likely to earn a college education, such as holding a minority status, earning a low income, being functionally illiterate, or raising children alone (Davis et al., 2011; Ryan, 2012). For-profits cater to people in these disadvantaged groups.

On the downside, the overwhelming majority of for-profit college students rely on financial aid to fund their education, and they have the highest student loan default rate of any American higher education sector (Ryan, 2012). For-profit students’ graduation rates tend to be low (O’Malley, 2006). Douglass (2012) noted, “The University of Phoenix’s ‘Online Campus’ has a national graduation rate of only 5%” (p. 256). For-profits have been the target of many lawsuits for issues such as illegal recruitment tactics and illegal misuse of student aid, a fact which has decreased their political standing (Berry & Worthen, 2012). Berry and Worthen advocate for the unionization of for-profit faculty members, since they cannot earn tenure, they possess a lower status than professors at elite universities, and they commonly hold unstable adjunct positions.

The mission and focus of for-profits differs from more traditional schools. They center on career training, especially in high-demand areas like business and information technology (Floyd, 2007). This differs from traditional universities’ missions that center around creating new knowledge and performing original research (Hassler, 2006). For-profits develop classes through the use of student learning outcomes and centralized curricula (Davis et al., 2011; Floyd, 2007). For-profit employees’ time centers almost entirely on the student experience, including recruitment, job placement, retention, student services, high instructional quality, up-to-date course content, and convenience (Davis et al., 2011; Hassler, 2006; Kinser, 2006; O’Malley, 2006; Ryan, 2012). Interviews with senior administrators at for-profits revealed a “customer service” approach to student relations; “serving students seems to hold an elevated status in the for-profit sector” (Kinser, 2006, p. 271).

For-profit faculty members spend the overwhelming majority of their time on teaching (Floyd, 2007). They “seem to be relieved of the necessity for research and publication” (Davis et al., 2011, p. 572). For-profits also tend to provide less support for their libraries than traditional universities do (Davis et al., 2011), which can impede the intellectual growth of its students and faculty. Barandiaran (2011) describes Universidad Andres Bello (UNAB), a for-profit research university in Chile. This university works to generate research output at a rate similar to traditional universities because it views research as “good business” (p. 213). According to Barandiaran, research must benefit a for-profit school politically and/or economically for it to be institutionally supported. UNAB’s mission is different from a traditional university, as explained in the following quote:

While we seek to be equally demanding, to publish in the same journals and patent just like the rest, our objective in doing research has only to do with cultivating a cutting-edge academic atmosphere...The difference has to be clear: a research university—unlike what we do—has to be accountable to society and to the world, of its contribution, which is massive. That is not the purpose of our university, that is not its essential mission. (Krauskopf, 2004a, as cited in Barandiaran, 2011)

VI. PROBLEM STATEMENT

As discussed in the literature review, it can be difficult to determine whether an OA journal is reputable or predatory. In some larger for-profit universities, full-time faculty have a publication requirement, although a lower rate of research output is expected from them as compared to research university faculty. Their faculty members face challenges that may impede their ability to publish in the highest ranked scholarly journals in
their fields. For example, for-profit faculty members in the United States are not allowed to apply for federal research funding, which makes it difficult to purchase lab equipment and data analysis software, hire research assistants, travel to conferences in order to present findings, or pay to publish in gold OA journals. A lack of an ingrained research culture means that junior faculty cannot consult with senior faculty about where and how to publish research in respected journals.

This paper presents a case study of faculty members who work for large for-profit American universities that awards associate’s, bachelor’s, and master’s degrees. Most of its instruction is provided entirely online. Like other non-profits, this university emphasizes teaching and students above all else, but its full-time faculty members are evaluated on the areas of teaching, research, and service, as they are in traditional universities. The university has a competitive internal research grant program, but most funded proposals investigate how to improve teaching and learning at the university rather than on creating new knowledge in the faculty members’ academic subjects of expertise. All these limitations may make it somewhat unlikely that their professors will be able to publish in highly-ranked peer-reviewed journals since they lack the time and the financial resources necessary to conduct studies worthy of publication. To this end, the research questions are as follows:

- How often do full-time for-profit university faculty members publish in peer-reviewed publications?
- What do full-time, for-profit university faculty members know about OA publications?
- How often do full-time, for-profit university faculty members publish in OA peer-reviewed publications?
- Where do full-time, for-profit university faculty members publish their research?
- How do full-time, for-profit university faculty members determine whether a scholarly publication is reputable or predatory?

VII. RESEARCH METHODOLOGY

The researchers used a qualitative survey method called Qualtrix. Researchers gathered data through full-time faculty that were found through social media, such as Facebook and Linkedin.

VIII. SUMMARY OF DATA

A total of 43 responses were received from the survey conducted and all the responders were over 18 years of age. Of these 43 participants, 4 were between the ages of 26 to 35 years for 4%; 14 of the participants were between 36 to 45 years old at 19%; 14 of the participants were of ages between 46 to 55 years old, which was 33% of the total number of the participants. The majority of 17 participants were from the age group between 56 and older.

On the other hand, there was no response from the age group between 18 to 25 years old. Interestingly, in a question to the participants on how many years they have been teaching at a for-profit institution, a large majority of the responders, 19, indicated that in such institution for between 11 to 15 years. This was followed by 12 responders who stated that taught in the for-profit institution for 3 to 5 years; whereas 5 of the responders indicated 11 to 15 years, which represented 11% of the total responders and matched the 5 who indicated they have taught in the for-profit institution for 1to 2 years. Only 3 of the participants, a 7% of the total participants said that they have taught in the for-profit institution.

Twenty-five out of the 42 participants reported to be full-time faculty, which represented 60% of the sample population. The remaining 17 of the participants report as part-time faculty, which was 40% of the total participants. Overwhelming 100% of 44 participants confidently responded yes and non-responded otherwise.

The respondents provide broad responses to their definitions of peer-reviewed literature. Seventeen of the participants did not know the definition of predatory publications nor open-access publications. When asked the definition of a predatory publication, 28 responses included a publication without an editorial board or a biased editorial board, a publication that charges authors a publishing fee, or no idea at all.

When asked the definition of an open access publication, the answers were too diverse to quantify. Responses included one that allows users to publish without a fee or a subscription, web based that publishes all subscriptions, free access, and publishers that allow peer reviewed work.

When asked the difference between an OA journal, 22 responses included both run articles through a review process but proprietary journals typically charge a fee for access, easier to publish and access, open access is not copyrighted, cost, and 5 participants said they did not know.

There were diverse responses to the following questions:

- How do you decide whether you would like to publish in a particular journal?
- Does your university provide guidelines regarding acceptable journals?
- How do you determine whether a journal is considered reputable?
- What, if anything, would set off a red flag in your mind that a journal is not reputable?
- Who do you think pays for your university’s access to peer-reviewed journals?
- To the best of your understanding, why are some journal freely available online while others are not?
- Who do you think should pay for the cost of publication and the cost of accessing journals?

When asked how much are you willing to pay out of pocket to publish in a peer-reviewed journal over 75% said they would not pay to publish.

Participants were unclear as to how to select a publication to publish in. Most of the participants were either unsure if their
university provided guidelines on acceptable journals. Typically, participants considered a journal reputable if it was well known in their respective fields of interest.

The largest group of participants felt that if they had to pay to publish or if a journal did not have a peer-reviewed process these were indicators that the journal may not be reputable.

IX. LIMITATIONS TO THE STUDY

Due to the few participants in the study, this was a limitation to the research. Although the results show that there should be further research, a larger pool of participants should be included.

X. FUTURE RESEARCH AND CONCLUSION

Future research efforts might include a larger sample of research participants in an effort to extrapolate the results to a general population of full-time faculty working in the for-profit universities. Until the “publish or perish” culture changes, full-time faculty will continue to be required to publish. The data suggests a significant number of the research participants did not know the definition of predatory publications or open-access publications. Education on how to assess whether or not a publication could be considered predatory could be helpful in assisting faculty navigate the massive world of publishing options.

Understanding the specific research requirements for each for-profit university might help the faculty member determine whether to publish in an Open Access (traditional, gold, green, and platinum) publication or in the more traditional scholarly journals. Further, understanding each for-profit university’s philosophy on publishing online or in print could also aid in helping faculty determine where to publish.

The damage caused by predatory publications is limited to certain areas especially in the developing and emerging countries. Open access is growing due in part to the increase actions of major research funders and policy makers. However, it is believed that as they are exposed in the developed countries, their growth will be limited in the very near future. The awareness created by different sources such as ours, should create better opportunities for researchers to be more cautious in the developing and emerging countries, where predatory publishing organizations are dominant with low cost of publications. In order to move our science forward, we need to be wary of predatory publishers. Greater education is needed for new researchers on how to identify non Scholarly and Peer Reviewed journals that reflect best practices in publishing.

REFERENCES
