

The Justification for the Academy Track in *mBio*

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Through its academy track, *mBio* allows members of the American Academy of Microbiology (AAM) to submit for consideration for publication one paper per year accompanied by at least two reviews solicited by the corresponding member. This track, referred to here as the AAM track, was modeled on that used for the *Proceedings of the National Academy of Sciences of the United States of America* (PNAS), which allows members of the National Academy of Sciences to contribute papers directly for publication. The major difference between the AAM track and *mBio* regular submission track is that the latter uses blinded review. Hence, all *mBio* papers are peer reviewed but differ in the mechanism of peer review. AAM track papers are labeled as such, with the following footnote: “This article is a direct contribution from a Fellow of the American Academy of Microbiology.”

When *mBio* was planned in 2009, the AAM track was conceived with two goals in mind. First, we hoped that it would serve as a mechanism for greater integration between the AAM and the ASM Journals program. Second, it provided a perk to AAM members in the form of a rapid publication mechanism to encourage them to submit outstanding papers to *mBio*. Both goals were accomplished, and the result has been a beneficial synergy for both the AAM and *mBio*. In the early years the AAM track was extremely helpful for *mBio* to establish itself. Since the launching of *mBio* in 2010, the AAM has increasingly identified with *mBio*, with many AAM Fellows serving as editors, invited editors, and reviewers, and the direct submission perk has provided AAM members with a tangible benefit in addition to the honor bestowed by election.

The launching and success of *mBio* was paralleled by a substantial increase in nominations for election to AAM. The journal benefitted greatly from AAM contributions, which provided a core of excellent manuscripts for growth in its early years. However, the AAM track has come under occasional criticism, especially in social media, as an unnecessary perk for some scientists, and a small minority of *mBio* editors do not feel comfortable handling manuscripts submitted via this track. At year 5, *mBio* is thriving and no longer needs the AAM track as a source of superior manuscripts. Consequently, we thought the time was ripe to review the AAM track. In this editorial, we describe the experience with the AAM track during the past 5 years, explain the processes used in evaluating manuscripts, justify the continuation of the AAM track, and detail new steps to increase rigor and transparency.

The AAM track at year 5. The AAM track can be used by Fellows to publish one manuscript per year. The process involves the AAM Fellow making the determination that the manuscript is in the top 10% of his/her field, soliciting reviews from two experts in the field who must also attest that the manuscript is in the top 10% range, revising the paper according to the reviews received, and submitting the revised manuscript together with the reviews and a response letter to *mBio*. The submission package is then evaluated

first by the Editor in Chief and then sent to a regular editor with expertise in that particular field. The editor will then accept, reject, or seek a blinded review. When the editor accepts or rejects the paper, the decision can be extremely rapid and rendered within a few days. When the editor decides to obtain another opinion, the process takes much longer, since the paper must go out for review as a regular manuscript. The decision of whether to send the paper for additional reviews rests with the editor and is often influenced by the quality of the reviews, the identity of the reviewers (i.e., are they the right reviewers?), and how comfortable she/he feels with the topic. The AAM track is not a guarantor of acceptance—approximately 15% are rejected by the handling editor. Nevertheless, a much higher proportion of AAM papers are accepted than is the case for general submissions. This high acceptance rate reflects the fact that these papers come from excellent investigators at the top of their fields who solicit reviews from appropriate experts in the field, the authors revise their papers accordingly prior to submission, and the editors find the complete submission package acceptable for publication. A citation analysis of papers published in the regular versus AAM track, carried out by Phil Davis Consulting (Ithaca, NY; <http://phil-davis.org>), revealed no difference in the citation rate, suggesting that the papers are comparable in quality when assessed by that parameter (Fig. 1).

The justification of the AAM track. Perhaps the first issue to address is the justification for a special submission track that uses nonblinded peer review. The AAM track allows Academy members to communicate rapidly a research finding to the scientific community without the tardiness and uncertainty that is often associated with the standard blinded peer review. We justify the continuation of the AAM track on the grounds that it provides diversity in the publication process at a time of tremendous homogeneity in the scientific literature. Today, the majority of scientific journals use blinded peer review to make acceptance decisions despite considerable evidence that the process is highly flawed (see below). With the exception of PNAS, all other major journals rely on submissions for which the journal arranges peer review, and most use blinded peer review. Historically, PNAS has also been dogged by the perception that the direct contribution tract is a club for members of the National Academy of Sciences (1). We are cognizant that the AAM track makes *mBio* vulnerable to similar criticisms, but we feel the advantages inherent in maintaining this route to publication far outweigh the debits associated with such criticisms.

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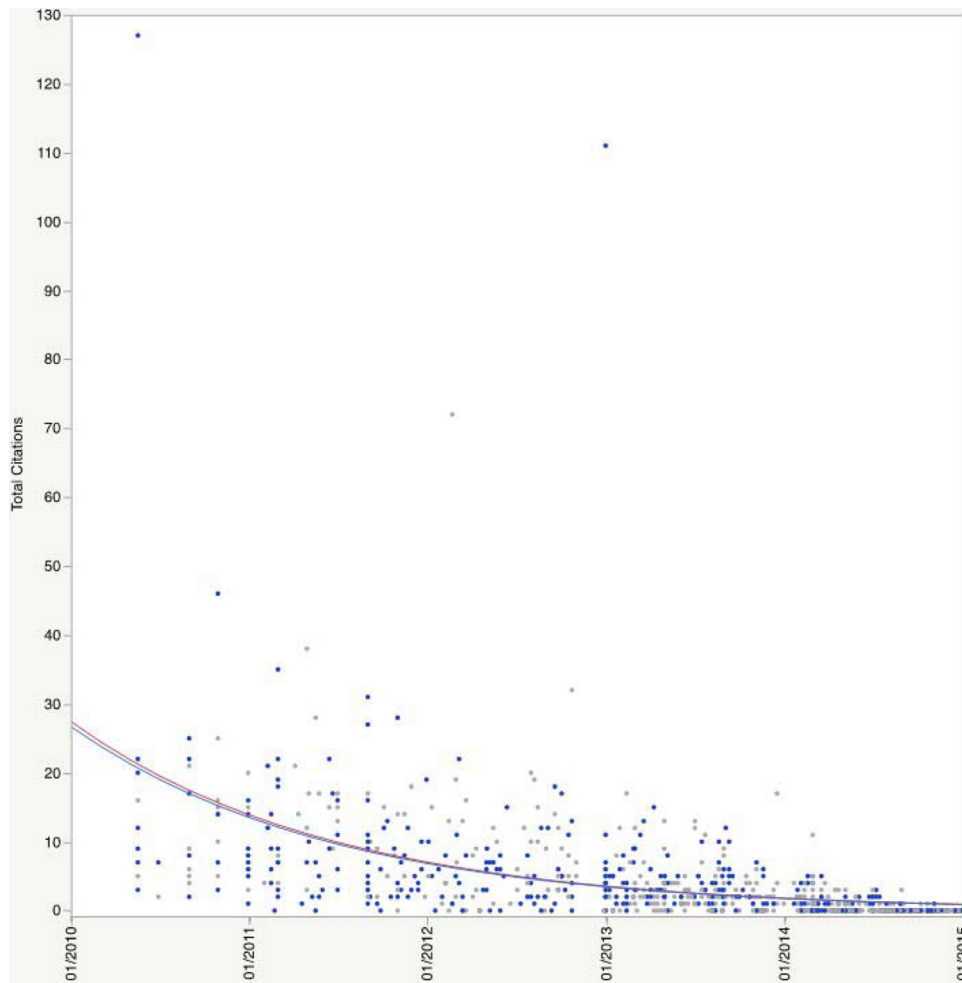


FIG 1 Plot of total citations versus publication date for AAM track (blue) and regular (gray) contributions. After controlling for the date of publication, there was no citation performance difference for papers in the two tracks ($P = 0.78$). Older publications receive more citations because they have been available longer than the more recent publications. (The plot was provided by Phil Davis Consulting. Reproduced with permission.)

Is there any evidence that blinded peer review is better? Some scientists *believe* that blinded peer review is superior to reviews when authors know their reviewers. We emphasize the word “believe” here, because there is no evidence for the superiority of blinded review. Nevertheless, we understand that this belief comes from the fear that some authors will choose friendly reviewers who will be easier on the manuscript, making the AAM track susceptible to abuse. Although we accept that the potential for abuse exists in the AAM track, we have no evidence that this submission route has been abused to date. In contrast, numerous studies have documented that the blinded system is susceptible to both abuse and bias occurring under the cover of anonymity. A study of blinded peer review of abstracts submitted to the American Heart Association for its meetings (2) revealed evidence of bias such that abstracts from the United States, English-speaking countries outside the United States, and prestigious institutions were favored. Gender bias has been measured in studies of blinded peer review such that male reviewers are more likely than female reviewers to recommend the highest and lowest categories with regard to suitability for publication (3). Furthermore, there is no evidence that blinded peer review is more likely to identify problems than are

peer reviewers known to authors. More than 2 decades ago a study of peer review using nonauthentic short manuscripts that included methodological flaws revealed that blinded peer review often failed to identify the problems (4), suggesting that reviewer anonymity was no guarantee of a more rigorous review. Traditional blinded review is slow, expensive, inconsistent, and subject to bias and abuse (5). In fact, a 2002 review of editorial peer review concluded that “peer review should be regarded as an untested process with uncertain outcomes” (6). Perhaps of greatest concern for science is that traditional blinded peer review can be biased toward orthodoxy and against unconventional papers (7, 8). Hence, arguments against the AAM track based on the belief of the superiority of blinded peer review are essentially faith based and not supported by available data. In recent years the blinded peer review system was also found to be vulnerable to scams whereby authors channeled suggestions for reviewers to fake addresses to obtain favorable reviews (9). These scams have resulted in dozens of retractions and affected such respectable journals as BMC, which has now retracted 43 articles, according to a report published on the Retraction Watch website (10). The number of papers compromised by these scams in the published literature is unknown.

More transparency in the AAM track. *mBio* plans to modify the AAM track slightly by publishing the names of the reviewers. Since signed consent is required to publish reviewer names, *mBio* will accept AAM reviews only from reviewers who have consented to make their names public. We anticipate that this small change will have several positive consequences. First, having their names associated with a published paper could make reviewers even more careful and could result in better reviews. Second, it will create a powerful incentive for authors to secure expert reviewers who are recognized in their fields as such and who have no conflict of interest in the review process. Third, it will increase transparency in the AAM track review process, which could enhance its legitimacy as an alternative mechanism of peer review. The proposed change was discussed with the AAM Board of Governors, and the majority thought it was a good idea. However, several noted that the change could make it harder for authors to secure reviewers, since not all reviewers will be comfortable attaching their names to a manuscript. Perhaps the discussion with the AAM Board of Governors can be summarized by the comment of one member, who wrote, “I think it will make it a little harder to line up reviewers, but probably the benefits outweigh the disadvantages.” We certainly agree that recruiting reviewers may be more difficult with this change in policy, but we feel that the overall gain in transparency is worth it. We are also cognizant that the additional friction in securing reviews could reduce the total number of AAM contributions, but that outcome will be acceptable if the quality of the submissions is improved further. This change in policy for *mBio* is in line with that taken by other journals trying various methods to open peer review and make it more transparent (11, 12). Indeed, a similar approach to contributed papers was taken with PNAS (<http://www.pnas.org/site/authors/preparation.xhtml>), for which the editorial policies state, “Starting on a voluntary basis, the names and institutional affiliations of the reviewers will be listed as a footnote.”

After 5 years of experience, the AAM track is working well and provides AAM members with the privilege of contributing papers with a high probability of rapid acceptance. On its fifth birthday, *mBio* is doing very well, and this success allows us to continue to experiment at a time when there is relatively little experimentation and innovation in the scientific publication process. For those uncomfortable with deviations from publishing orthodoxy, it is worthwhile to remember that the current system of anonymous peer review is a relatively recent development, dating largely from the post-World War II period (7). The great ideas of the scientific revolutions, such as Copernicus’s heliocentric theory, Galileo’s contributions, Newton’s laws of motion, and Darwin’s concepts on the origin of species were published as books that were not peer reviewed (7). Furthermore, Einstein’s three remarkable papers published in *Annalen der Physik* in his 1905 miracle year, which explained the photoelectric effect, Brownian motion, and the spe-

cial relativity, were accepted without external peer review (7). It is noteworthy that *Nature* did not consistently use outside peer review until as late as 1973, and its most famous 20th century paper describing the structure of DNA appears to have been accepted based on recommendations from prominent scientists associated with Watson and Crick and without anonymous peer review (13). Hence, the historical record does not support the notion that great science must be anonymously peer reviewed for publication. That said, we believe that peer review is a critically important advance in scientific publishing with the potential to reduce error and improve quality. Yet, the optimal form of peer review remains to be established. So for now, *mBio* will continue to use both blinded and unblinded peer review in the regular and AAM tracks, respectively, with the goal of providing diversity in scientific publishing.

mBio is a scientific journal run by scientists and highly professional staff who are interested in experimentation and innovation in scientific publishing. We welcome additional discussion on this topic from our readers in the form of letters to the editor.

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The views expressed in this Editorial do not necessarily reflect the views of ASM.