Editorial and Publishing Questions—Data Informed Solutions

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This session was a series of six "lightning talks" that focused on how various organizations, with varied and diverse constituencies, use data to make tactical and strategic decisions. Each presenter focused on a practical, work-related question.

Jill Jackson, Manuscript Processing and Publishing Administrator at the *Annals of Internal Medicine*/American College of Physicians, started by asking the question, "Are my users my customers?" Jackson showed that by looking at how *Annals of Internal Medicine* content was accessed, they could determine if users were also paying customers. *Annals* learned that approximately 40% of people accessing content were paying customers, while 60% of people were users accessing free content, such as guidelines or abstracts. High usage is important because it brings exposure to *Annals* content and other products. In order to learn more about these users, *Annals* would need to require users to sign in for access to free content or drive the users to download the application. Both actions would provide more information about the user.

Esmeralda Buchanan asked the question, "Should we increase the frequency of publication and page budget?" Using the American Cancer Society's journal *Cancer Cytopathology* as a use case, Buchanan discussed what kind of data they regularly review and how that data influenced their decision-making process. By recognizing that the time to first decision was increasing and the acceptance rate was going up, it was determined that it might be a good time to think about increasing the size of this high–Impact Factor journal. The American Cancer Society then looked at how long the publishing process was, where rejected papers were going, whether editors can get more papers if needed, and what the financials look like. In the end the data showed that they could increase frequency to monthly, increase the page budget from 436 to 672, and add two new article types.

Brittany Campbell asked the question, "How can we reach our audience on social media?" Campbell presented statistics showing that the *Proceedings of the National Academy of Sciences* have 57,110 Facebook likes (average gain, 1,300/month) and 41,300 followers on Twitter (average gain, 1,300/month). The goal was to use social media to drive traffic to PNAS.org, increase awareness of Front Matter content (http://frontmatter.pnas.org/), engage with authors and readers, and add value for authors by promoting their research. Facebook and Twitter offer lots of data and analytics, which were used to evaluate the effectiveness of their postings. Analytics can help answer who and where your audience is and inform your goals.

Kerry Kroffe asked the question, "How do I determine the most effective reminder strategy to ensure the most efficient peer-review times?" For *PLOS ONE*, the largest peer-review journal in the world, getting reviews in on time is a major undertaking. Kroffe described the reviewer reminder process, which includes a reminder three days after an invitation and several reminders before and after a review is due. PLOS looked at various factors that might predict which reviewers might be late or fail to return a review. For reviewers that had to be reminded of an invitation, 52% failed to submit and 77% were late. They also looked at the effect of extending

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reviewer deadlines. While 50% of reviewers who received an extension submitted on time, it only increased on-time performance by 3%. Finally, PLOS looked at data to see if it is worth waiting for a late review. Although 81% of late reviewers submitted within 10 days of their due date and just 6.6% submitted after 30 days, a specific cutoff timeline could not be determined. They concluded that extensions do not necessarily help performance.

Jeanette Panning asked, "Who in the world is accessing our publications, and how do we target them?" Panning stated that the goal of the American Geophysical Union was to expand into growing markets. To do this they had to determine where those markets are and what they are most interested in. Using full-text download data, they recognized that China, Japan, and Brazil represented the most potential for growth. In the case of both China and Japan, they used social media to draw attention to titles and topics of interest, they translated materials, held workshops, supported travel to meetings, and expanded the editorial board. Similar efforts are ongoing in Brazil. The American Geophysical Union is also doing a lot of work to examine gender bias in peer review and will be using similar methods to engage women to serve as editors and reviewers.

Sarah Tegen asked, "How can I use data to understand the editorial and production strengths and weaknesses of my journal compared to competing journals?" Tegen discussed various performance metrics and how to use them to make decisions. Metrics examined by the American Chemical Society include acceptance rate, time to decision, geographic distribution, and various quality measurements. Using data is particularly useful when trying to get editors to modify behavior. The American Chemical Society also evaluates production performance, such as time to publication, downloads and citations, open access purchases, and compliance with mandates. Tegen pointed out that these metrics are useful for improving performance and identifying gender and geographic bias. The American Chemical Society also compares their metrics against those of the competition. For example, when the American Chemical Society tracked where rejected manuscripts ended up, they learned that there was an opportunity to launch a new open-access journal.

These six presentations touched on several ways data analysis is being used today to support major publishing initiatives. Publishers have access to lots of data collected through their submission systems, online platforms, social media outlets, and marketing departments. Interviewing authors, reviewers, editors, and readers is also a rich source of information. All of this data can be used to improve performance and quality, reach new markets, and build new brands.