IN JULY 2014, A ROTATION of the Journal of Neurophysiology editors occurred. The new editorial team introduced a number of initiatives aimed at increasing the submission of high-quality manuscripts to the Journal. Those initiatives included: 1) a new manuscript type, Rapid Reports: complete but short papers with expedited peer review and publication. 2) Addition of the tagline “a multidisciplinary neuroscience journal” to the Journal’s name to emphasize that we publish high-quality papers that provide insights into the physiology of the nervous system regardless of the methodology used in the study. 3) Introduction of “Calls for Papers” to solicit manuscripts in particular “hot” areas of neuroscience. 4) Implementation of “Collections,” virtual journal issues generated from manuscripts accepted for Calls for Papers. 5) Use of social media to highlight selected manuscripts. At a year following the introduction of these initiatives, we evaluated their impact as well as future directions for improvement of the Journal. This analysis is provided below.

Types of Papers Published by Journal of Neurophysiology

All research articles (excluding Editorials, Reviews, and Neuro Forums) published in the Journal in January–June 2015 were evaluated to determine: 1) whether the study used human subjects, animal subjects, or other methodology (computational approaches or in vitro experiments); and 2) if the study used animal subjects, which species was involved and which techniques were incorporated.

Figure 1A indicates the number of papers reporting data collected from human or animal studies as well those using neither (i.e., studies employing computational approaches or established cell lines). Most papers published by the Journal of Neurophysiology in the first half of 2015 (207/328 papers, 63%) reported data from animal subjects, whereas 107/328 papers (33%) included data from human subjects. Two of the 328 papers presented data from both animal and human subjects and are incorporated in both of these assessments. Only 16 papers (5%) did not report data from either human or animal studies; most of these papers were theoretical considerations of signal processing by neurons or networks of neurons.

Figure 1A subdivides the animal subjects employed in studies published in the Journal of Neurophysiology in the first half of 2015 into the following groups: 1) rats and mice, 2) nonhuman primates, 3) other mammals, 4) vertebrates other than mammals, and 5) invertebrates. The most commonly used animals in the studies were rats and mice (115/207 papers). Approximately one-fourth of the papers (47/207) reported data from nonhuman primates. The rest of the papers provided data from a variety of species of mammals (7 studies in cats, 5 in guinea pigs, 2 in bats, 2 in hamsters, and 1 each in gerbils, ferrets, rabbits, and squirrels), other vertebrates (3 studies in birds, 2 in fish, 2 in frogs, 2 in turtles, and 1 in salamanders), and invertebrates (8 studies in insects, 3 in mollusks, 2 in crustaceans, and 2 in annelids).

Figure 1B shows the techniques used in studies on animals published by the Journal of Neurophysiology in the first half of 2015. The largest group of papers (95/207) reported data collected from brain or spinal cord slices or isolated tissues or cells from animals. In most of these experiments (69/95 papers), tissues or cells were obtained from rats or mice. In virtually all of these studies, electrical activity was recorded from individual neurons or collections of neurons. Seventy-six of the 207 papers presented recordings of electrical activity of neurons in vivo, with 45/76 papers including recordings from neurons in conscious animals and 31/76 conveying data from anesthetized or decerebrate animals. Only 35/207 papers (17%) reporting animal data did not indicate the use of any electrophysiological technique.

Forty-one percent of studies on humans published by the Journal of Neurophysiology in the first half of 2015 included the recording of electrophysiological data such as changes in electroencephalographic (EEG) activity produced by a stimulus. About half of the papers including data from humans reported the findings of behavioral studies such as evaluations of movement dynamics or performance on a cognitive task. Approximately 10% of the papers provided data from functional imaging studies. No other major types of methodology, such as a cellular or molecular analysis of tissue samples, were incorporated into the human studies.

To provide a basis for comparison, we also considered the papers published in the Journal of Neurophysiology for three months in 2005: January, June, and December. Of 189 research papers published during those months, 128 (68%) reported data from animal subjects, 42 (22%) reported data from human subjects, and 19 (10%) used neither. One paper included data from both animal and human subjects and is included twice in this tally. These percentages are similar to those for papers published in 2015: 63% animal, 33% human, and 5% neither. Animal data published in the Journal in 2005 included those from rats and mice (41% of papers), nonhuman primates (19%), other mammals (20%), vertebrates other than mammals (11%), and invertebrates (9%). Approximately 83% of the experiments on animals published in 2005 incorporated electrophysiological methodology, which is nearly identical to the percentage for the first half of 2015.

This analysis shows that whereas there is breadth in the species used in studies reported in the Journal of Neurophysiology, the majority of recently published papers reported electrophysiological data from animals or humans. The types of methodology used for experiments published in the Journal...
have not changed appreciably in a decade. In particular, most conventional approaches of cellular and molecular biology (other than the recording of electrical activity), such as gel electrophoresis, Western blotting, and cloning, were lacking in papers published in the Journal in the first half of 2015.

Findings from Reader Survey

In May 2015, a survey was sent to a mailing list of ~10,000 individuals who authored or reviewed a manuscript for the Journal of Neurophysiology in the past three years; 448 of the invited participants completed the survey. Of these respondents, 31% indicated that the new initiatives vastly improved the Journal, 58% indicated that they modestly improved the Journal, 9% indicated that they had no impact, and 2% indicated that they harmed the Journal. The respondents indicated that both Calls for Papers and Rapid Reports enriched the Journal: 31% indicated that the introduction of Rapid Reports made them more likely to submit a manuscript to the Journal, whereas 49% indicated that this initiative made them somewhat more likely to submit a manuscript. Similarly, 23% of survey respondents indicated that they were highly interested in the Calls for Papers and Collections initiatives, whereas 46% indicated that they were moderately interested in the initiatives.

Introduction of Social Media

A Facebook page (https://www.facebook.com/JournalOfNeurophysiology) and Twitter feed (@JNeurophysiol) related to the Journal of Neurophysiology were introduced in July 2014. Two to four articles published in the Journal are promoted daily through social media along with the Journal’s initiatives. As of the writing of this article, the Journal Facebook page had 715 “likes,” and the Twitter feed had 431 followers. Seven and twenty-four percent, respectively, of the respondents to the survey indicated that initiation of social media made them much or somewhat more likely to submit a manuscript to the Journal. However, the majority of respondents (68%) indicated that they do not use social media or that this initiative was unimportant. Thus our social media initiative is considered valuable by only a subset of authors, although this minority indicated that social media pages are an important component of the Journal.

Increases in Manuscript Submissions

Perhaps the most important indicator of a journal’s success is the submission rate for manuscripts. Since July 2014, after several years of decline, submissions of manuscripts to the Journal of Neurophysiology increased significantly, as indi-
cated in Fig. 2A. The Journal received 1,162 submissions from July 1, 2014 to June 30, 2015 compared with 787 submissions over the same period of months in 2013–2014, 826 in 2012–2013, and 974 in 2011–2012. Submissions increased progressively over the past year, as shown in Fig. 2B.

However, the reason for this increase in submissions is uncertain. Two of the recently introduced initiatives, Calls for Papers and Rapid Reports, generated 135 and 30 submissions, respectively, from July 2014 to June 2015. Although it is unknown whether these manuscripts would have been submitted as regular research articles had the initiatives not have been introduced, there were spikes in submissions related to the closing of Calls for Papers in March and June 2015 (see Fig. 2B). For example, in March, 41 manuscripts were submitted for Calls that were closing, which supports the notion that Calls for Papers have been at least partly responsible for the Journal’s increased submission rate. Other initiatives, such as the use of social media to highlight manuscripts, may have also played a role.

**Misconceptions of Authors and Reviewers**

The changes introduced to the Journal of Neurophysiology during the past year have also confused some authors and reviewers who either submitted a manuscript that was not appropriate for the Journal or provided a review of a manuscript that incorrectly reflected the Journal’s scope. The mission of the Journal is to publish high-quality papers that provide insights into neural function regardless of the methodology used in the study. However, we have received a few submissions that evaluated a clinical methodology or compared treatment modalities; these manuscripts were deemed to be out of scope for the Journal. Although studies on patients that provide insights into nervous system physiology are appropriate and welcomed, clinical papers that fail to provide knowledge about neural function are unsuitable. As an example, one of the first Calls for Papers introduced in July 2014 was “Neurobiology of Deep Brain Stimulation.” Many of the manuscripts submitted for this Call included data from patients and provided insights into an evolving clinical methodology. However, a key component of all of the accepted manuscripts was information about how the methodology altered the neurobiology of the patients, thereby producing a clinical effect.

Some reviewers have also criticized manuscripts that failed to include electrophysiological techniques, as they believed that the use of such techniques is necessary for studies published by the Journal. This is contrary to our current stance of defining a neurophysiological technique as any methodology that provides insights into neural function. We are actively encouraging submissions that utilize techniques in addition to electrophysiological methods and will continue to remind reviewers of this expansion in the Journal’s scope.

**Summary**

Over the past 12 months, a variety of initiatives were introduced to increase the number and diversity of submissions to the Journal of Neurophysiology. A survey of our authors and reviewers indicated that these initiatives strengthened the Journal, and submission of manuscripts was 60% higher in January–June 2015 compared with the same months in 2014. However, similar to a decade ago, the majority of manuscripts published in the first half of 2015 by the Journal contained data obtained using electrophysiological methods in animal subjects. Thus far, adding the tagline “a multidisciplinary neuroscience journal” to the Journal’s name has not resulted in a large increase in published papers using techniques common in molecular or cellular biology; it is extremely rare to find a gel or immunoblot depicted in a figure in the Journal.

Historically, the Journal of Neurophysiology has benefited from the reputation as a preeminent vehicle to publish electrophysiological data, and there is certainly no plan to discourage such submissions in the future. However, long-term success of any biomedical journal rests on its ability to attract manuscripts reporting findings collected using the most current methodology. Thus additional effort will be needed to convert the Journal from a niche publication focused on electrophysiology to a true multidisciplinary journal. Over the coming year, we will direct additional efforts to attracting to the Journal manuscripts using techniques of cellular and molecular biology as well as neuroanatomic and behavioral methodology. Such efforts will entail Calls for Papers in selected areas, advertisement via social media and newsletters, and direct contacts to prominent neurobiologists.

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**DISCLOSURES**

Bill J. Yates is Editor-in-Chief of the Journal of Neurophysiology and is a member of the American Physiological Society Council.

**AUTHOR CONTRIBUTIONS**

B.J.Y. analyzed data; B.J.Y. prepared figures; B.J.Y. drafted manuscript; B.J.Y. edited and revised manuscript; B.J.Y. approved final version of manuscript.