

# The evolution of a distinguished neuroscience journal

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I AM HONORED as I assume the editorship of the *Journal of Neurophysiology*, which since 1938 has remained one of the foremost journals in the discipline of neuroscience. The Journal contains some of the most important classic manuscripts in the field, including papers by Roger Sperry (1944, 1945, 1947, 1959) on functional specialization of the cerebral hemispheres, Rall's work on dendritic and synaptic function (Rall 1967; Rall and Shepherd 1968; Segev and Rall 1988), Fuster's (Fuster 1973) and Goldman-Rakic's (Funahashi et al. 1989, 1990) definition of spatial working memory fields in prefrontal cortex, Hubel and Wiesel's description of plasticity in visual cortex (Hubel and Wiesel 1963, 1965; Wiesel and Hubel 1963a, 1963b, 1965a, 1965b), Mountcastle's delineation of the organization of somatosensory cortex (Mountcastle 1957; Mountcastle et al. 1957), Wurtz's reports of visual signal processing in awake primates (Wurtz 1969a, 1969b, 1969c), and Goldberg and Fernandez's explanations of coding of head movement by vestibular afferent fibers (Fernandez et al. 1972; Fernandez and Goldberg 1971, 1976a, 1976b, 1976c; Goldberg and Fernandez 1971a, 1971b). Many neuroscientists, particularly those who began their research careers prior to ~1990, still regard the *Journal of Neurophysiology* as one of the very best places to publish their findings.

Over the past decade, a variety of challenges to the Journal's long-term success have arisen. These include the emergence of open access publications such as the *PLoS* and *Frontiers* suites of journals, which have attracted many high-quality manuscripts, especially from early-stage researchers. A focus on Impact Factor has drawn submissions to multidisciplinary journals. In addition, there is growing competition among established journals in the field. Even the most successful venues must change over time, and the rotation in the editorship of the *Journal of Neurophysiology* provides an opportunity for evolution of this venerable publication.

The changes in the Journal that will be implemented by the new editorial team are described below and are summarized in Table 1. These include inclusion of more reviews and solicited content, the introduction of a Rapid Reports submission option for short, high-profile manuscripts, improved services for authors, and better presentation of journal content for readers.

## THE JOURNAL OF NEUROPHYSIOLOGY TRANSCENDS ELECTROPHYSIOLOGICAL TECHNIQUES

In preparing for my new role, I discussed the Journal with a variety of neuroscientists, and it was evident that many are well aware of the the Journal's focus on electrophysiological techniques. Indeed, many historically significant manuscripts in the Journal entailed recording of neuronal activity, but there remains a plethora of other techniques also included in its

content. Many new methods have emerged in recent years, such as optogenetics and imaging of particular molecules in the nervous system. Studies utilizing these techniques are just as appropriate for the *Journal of Neurophysiology* as those employing microelectrodes. The word "*Neurophysiology*" in the Journal's title pertains to the broad concept of the physiology of the nervous system. Perhaps the first mandate for the new editorial team is to convey to the neuroscience community that the *Journal of Neurophysiology* is a multidisciplinary journal and is interested in publishing any high-quality manuscript that provides insight into the physiology of the nervous system. The new editorial team plans to establish the broad scope of the *Journal of Neurophysiology* by soliciting manuscripts that entail novel, innovative techniques, and that cover all disciplines in the field of neuroscience.

## SPECIAL CALLS FOR PAPERS AND COLLECTIONS

The biggest change in the Journal will be the creation of article Collections, which present groups of reviews and original reports focused on a specific topic. These Collections will be composed of articles formally submitted as a response to a Call for Papers through the normal peer review process. Every new Call for Papers will be announced ~9 mo before submissions are closed. All research submissions relevant to a respective Call are welcome. Reviews, too, are welcome, but reviews must be preapproved by the Editor-in-Chief before submission (jneditor@the-aps.org).

A manuscript accepted for inclusion in a Collection will be directly linked to that Collection when the article is posted online, and the Collections will be a prominent part of the Journal web site. The editorial team is confident that the *Journal of Neurophysiology* Collections will be an important repository of information for the disciplines considered.

The first Calls for Papers for the *Journal of Neurophysiology* are focused on the following topics:

- Neurobiology of deep brain stimulation
- Decision making: neural mechanisms
- Correlating neuronal activity and neural imaging

Submissions for these Calls for Papers are tentatively due by March 1, 2015. Three additional Calls for Papers will be issued by October 2014 (with submissions tentatively due by June 2015). The readership of the Journal is encouraged to suggest topics for new Collections, for which submissions will be solicited in formal Calls for Papers. Send these suggestions to the Editor-in-Chief (jneditor@the-aps.org).

## INNOVATIVE METHODOLOGY AND NEURO FORUM ARTICLES

The Journal's prior two editors each added new publishing initiatives. Eve Marder added the Innovative Methodology article type to the Journal to highlight new techniques, and outgoing editor David Linden added Neuro Forum, journal

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Table 1 Summary of major changes in the *Journal of Neurophysiology* implemented in July, 2014

Introduction of Calls for Papers, which are focused on particular “hot topics”
Introduction of a new article type: Rapid Reports
Inclusion of more reviews
Reduced times for editorial decisions
Indexing of manuscripts by topic

club style discussions of recent manuscripts submitted by early-stage investigators (Linden 2008). Linden instituted Neuro Forum as a means to address the Journal’s “generation gap,” particularly to encourage younger neuroscientists to become engaged with the Journal. These two publishing initiatives will remain important features of the Journal. We are particularly interested in receiving Neuro Forum articles related to recent publications in the *Journal of Neurophysiology*.

#### NEW MANUSCRIPT TYPE: RAPID REPORTS

The newest manuscript category added to the *Journal of Neurophysiology* is Rapid Reports, short papers presenting important new findings that could potentially have a major impact on the field. This manuscript category was recently added to another American Physiological Society publication, *American Journal of Physiology-Heart and Circulatory Physiology*, and has been very successful for that journal. We plan to use this successful model as a basis for the article type in the *Journal of Neurophysiology*.

There will be very specific requirements for Rapid Reports, both in the manuscript composition and in the review process. Rapid Reports may contain no more than 4,000 words and no more than 4 tables or figures. Peer reviewers (largely selected from the Journal’s Editorial Board) will be asked to return their reviews of the manuscript within 1 wk, and our goal is to provide authors with an editorial decision regarding their Rapid Report within 2 wk of submission. Rapid Reports submissions deemed to have high potential impact by the reviewers and editor, and which require only modest revisions, will remain eligible for publication as Rapid Reports, so long as the normal standards of scientific rigor are met. In addition, authors must address the concerns of the reviewers within 2 wk, and a final editorial decision will be made within 5 days of returning the Rapid Report to the Journal. Thus, the full processing time for a Rapid Report, from first submission to final decision (whether accepted or rejected, or decision to redirect as a standard submission), should be ~1 mo.

Rapid Reports accepted for publication will be highlighted in the Journal as Featured Articles. In addition, authors have the option of providing a podcast related to their Rapid Report, which will be linked directly to the manuscript and posted on the Journal’s home page. Scientifically meritorious manuscripts originally submitted and reviewed as Rapid Reports, but which are deemed to lack exceptional potential impact, will be reclassified as regular research articles and handled accordingly through the rest of the peer review process. The same reclassification will occur for Rapid Reports submissions that require substantial revisions. The editors hope that Rapid Reports will be a popular mechanism that neuroscientists use to publish their best work.

The *Journal of Neurophysiology* has always been regarded as an uncommonly unrestrictive venue where authors have the

opportunity to publish long manuscripts, without page limitations, that better facilitate telling a complete story. The introduction of Rapid Reports does not signal a lack of willingness of the Journal to publish long research reports. Rather, the Rapid Reports article type is simply another option to attract high-quality submissions. Both long and short papers are welcomed by the Journal, as long as they convey compelling findings to the readership and meet the Journal’s rigorous scientific standards.

The *Journal of Neurophysiology* has included reviews in the past, and the plan for the future is to strongly encourage and solicit these, so we can publish reviews frequently. Research findings are increasingly distributed across a greater variety of journals and other publication venues, such that syntheses of findings in the context of compelling reviews provide an important contribution to the field. The new editorial team encourages submissions of reviews to the Journal, both as part of Calls for Manuscripts and to be included in Collections, and also as stand-alone reviews on a novel topic. Topics for reviews must be approved in advance of submission by the Editor-in-Chief (jneditor@the-aps.org), and it is prudent for prospective authors to consider consultation before composition is underway.

#### IMPROVED AUTHOR SERVICES AND CONTENT PRESENTATION FOR READERS

The reviewing process at the *Journal of Neurophysiology* has earned a reputation of being transparent, merit based, and constructive. The new editorial team certainly plans on upholding this tradition, while acknowledging that rapid processing of manuscripts is needed in today’s competitive scientific arena. The Journal’s new editorial team is committed to making timely editorial decisions, with a target average time from receipt of manuscript to first decision of 21 days. As noted earlier, Rapid Reports will be reviewed even faster, with the goal of providing an editorial decision to authors within 14 days of submission. Meeting these goals will require a dedicated effort by the Journal office, associate editors, editorial board members, and ancillary reviewers. Decreasing review times is deemed essential and is driven by the belief that authors will be most inclined to submit manuscripts to journals committed to providing both timely and constructive feedback.

There have also been improvements in the presentation of information on the Journal’s web site (<http://jn.physiology.org>). The redesigned web site, launched in March of 2014, increases the opportunity for readers to peruse collections of articles (focused on a specific topic), Featured Articles, and podcasts related to recent Rapid Reports. Changes are planned for the portions of the site dedicated to “Information for Authors,” including the submission requirements for the different article types: Research Articles, Reviews, Rapid Reports, Innovative Methodology, and Neuro Forum.

The American Physiological Society is prepared for an imminent change in publication format for all journals, to allow posting of the final published versions of articles on journal web sites independent of, and in advance of, final issue assembly (the process is currently known as “article based” or “continuous” publication). Thus, edited, polished versions of manuscripts will be available in a short time frame, providing

a better opportunity to convey recent research findings to the Journal's readership.

In addition, the articles in the Journal will be indexed under the following topics, to allow readers to locate articles of interest with ease:

- Cellular and molecular properties of neurons
- Neural circuits
- Sensory processing
- Control of movement
- Higher neural functions and behavior
- Control of homeostasis
- Nervous system pathophysiology

Readers of the *Journal of Neurophysiology* are reminded that members of the American Physiological Society receive free online access to all of the Society's publications, which are listed at: <http://www.the-aps.org/mm/Publications/Journals.aspx>. In addition, an APS member in good standing who is the first or last author of a paper is not charged for color figures published in the *Journal of Neurophysiology*, or other Society journals, provided that the editor deems the use of color to be scientifically necessary. These and the other benefits of membership in the American Physiological Society are posted at: <http://www.the-aps.org/mm/Membership/Benefits>.

#### THE JOURNAL'S NEW EDITORIAL TEAM

The editorial team includes the following 11 talented associate editors, all with a profound dedication to the success of the Journal.

**Michele A. Basso.** Dr. Basso is a Professor of Psychiatry and Biobehavioral Sciences and Neurobiology at the Semel Institute for Neuroscience and the Brain Research Institute at UCLA. Her areas of expertise include basal ganglia and superior colliculus circuits, eye movements, sensorimotor integration and decision making. She has served on the editorial board of *Neuroscience and Biobehavioral Reviews*, as an Associate Editor for *Journal of Neuroscience*, and as a Review Editor for *Frontiers in Systems Neuroscience*.

**Christos Constantinidis.** Dr. Constantinidis is an Associate Professor of Neurobiology and Anatomy at the Wake Forest School of Medicine. His research focuses on the neural basis of cognitive functions such as visual attention and working memory, relying on non-human primate models. He has served as a Guest Associate Editor for *Frontiers in Integrative Neuroscience*.

**Patsy Dickinson.** Dr. Dickinson is a Professor of Biology and Neuroscience at Bowdoin College. Her areas of expertise include invertebrate neurophysiology and the control and modulation of rhythmic motor pattern generators. She has served on the editorial boards of *Journal of Experimental Biology*, *Frontiers in Physiology*, and *Frontiers in Neuroscience*.

**Stefan Everling.** Dr. Everling is a Professor of Physiology and Pharmacology, Psychology, and Psychiatry at the University of Western Ontario. His areas of expertise include oculomotor physiology, cognitive control, and neuroimaging. He has served as a Scientific Review Associate for *European Journal of Neuroscience*.

**Martha Flanders.** Dr. Flanders is a Professor of Neuroscience at the University of Minnesota Medical School. She studies sensorimotor integration, especially in human hand movement. From 2007–2009, she was a Program Director in

Neural Systems/IOS/Biology at the National Science Foundation. From 2010–2014, she was an Associate Editor for *IEEE Transactions on Haptics*.

**Neeraj Gandhi.** Dr. Gandhi is an Associate Professor of Otolaryngology, Bioengineering, and Neuroscience at the University of Pittsburgh. His expertise includes sensorimotor integration, cognition, and control of movement. Dr. Gandhi has served on the editorial board of *Experimental Brain Research*.

**Conny Kopp-Scheinpflug.** Dr. Kopp-Scheinpflug is a Senior Research Scientist in Neurobiology at the Ludwig-Maximilians-University Munich. Her areas of expertise are auditory physiology, regulation of intrinsic excitability, and interaction of excitation and inhibition. She has served as a Guest Associate Editor for *Frontiers in Neural Circuits*.

**Daniel Merfeld.** Dr. Merfeld is a Professor of Otolaryngology and Laryngology at the Harvard Medical School. His areas of expertise include vestibular physiology, sensorimotor integration, decision making, neuroengineering, and systems modeling. He has served on the editorial board of *Experimental Brain Research*.

**Jan-Marino "Nino" Ramirez.** Dr. Ramirez is a Professor of Neurological Surgery and Pediatrics at the University of Washington School of Medicine. His areas of expertise are in cellular and systems level mechanisms of neuronal networks and neuromodulation in the control of behavior and disease. He has served as Review Editor for *Frontiers in Neural Circuits* and as Guest Editor for *Respiratory Physiology and Neurobiology*.

**Sean Stocker.** Dr. Stocker is an Associate Professor in the Department of Cellular and Molecular Physiology at Pennsylvania State College of Medicine. His research utilizes in vivo and in vitro electrophysiology to investigate the role of the central nervous system in cardiovascular and body fluid homeostatic disorders. He has served on the editorial boards of *Hypertension*, *Physiological Reports*, and *American Journal of Physiology-Regulatory, Integrative, and Comparative Physiology*.

**Nathan Urban.** Dr. Urban is a Professor and Head of the Biological Sciences Department at Carnegie Mellon University. His areas of expertise are cellular neurophysiology, imaging, sensory systems, and computational neuroscience. He has served on the editorial board of *Frontiers in Systems Neuroscience*.

#### FEEDBACK REGARDING THE JOURNAL IS APPRECIATED

The *Journal of Neurophysiology's* new editorial team encourages feedback from the readership regarding how we are doing. We also would appreciate suggestions on how to improve the Journal, and suggestions of topics for Calls for Papers to be included in Collections. Please direct this feedback to the Editor-in-Chief ([jnpeditor@the-aps.org](mailto:jnpeditor@the-aps.org)).

#### DISCLOSURES

B. J. Yates is Editor-in-Chief of the *Journal of Neurophysiology* and a member of the APS Council.

#### AUTHOR CONTRIBUTIONS

B. J. Yates drafted manuscript; B. J. Yates edited and revised manuscript; B. J. Yates approved final version of manuscript.

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