New opportunities for authors

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The Journal of Applied Physiology is pleased to offer two new article types for you to consider as vehicles for your work. You will find both described on the journal website under article types (http://www.the-aps.org/mm/Publications/Journals/J-Appl-Physiol/Article-Types.html), where the major details and criteria are laid out. As you might expect, the criteria listed in the author instructions for each will also be used during peer review to evaluate each article for possible publication. The two types of articles are:

1) Cores of Reproducibility in Physiology
2) Case Studies in Physiology

Cores of Reproducibility in Physiology

This new article type, CORP for short, will be an invited review. The vision is to have world experts in a particular experimental technique or item of equipment in common use write a detailed review of the technique or device, emphasizing practical aspects of importance for achieving good results. The intent is to improve the use of techniques and equipment by those less familiar with them. This in turn is driven by the need to improve reproducibility of research results generally.

The expectation is that the author(s) will not simply describe the high level features of the method/equipment, but will delve into hands-on details to inform readers of important practical aspects that, if not considered, may lead to poor results.

We will require a uniform format containing several sections, each led by subtitles.

a) The title of the article should start with the acronym “CORP: . . . .” followed by the particular method or equipment.

b) The article should begin with a high level, brief, description of the method/device, the underlying principles, and its intended use(s).

c) There should then be a section on implementation, including not just setting it up and running it, but also “how to” details for calibration, validation, range (high and low), sensitivity, specificity, and reproducibility. Regarding reproducibility, we would like to see separation of sources of variance into that of the method/device itself, within-subject variance, and between subject variance.

d) An important section will follow with the often under-appreciated “secrets” with which only true experts are familiar—issues that are nonetheless important to ensure high quality results. These are often seemingly minor, hands-on details that never appear in the standard instructions, but which experience has shown are important.

e) A section of the article should critically discuss what the method/device can do when used properly.

f) A further section should equally critically discuss what the method/device cannot do and is not intended to do.

Case Studies in Physiology

This new article type responds to the occasional submission we receive that presents original measurements in rarely accessible subjects. Often, there will be just a single subject described. Submissions are at the discretion of authors, and must be based on original, unpublished data. Examples include physiological data obtained from a world class athlete, a single astronaut in space for a uniquely long time, or physiological measurements in a species that is generally not able to be studied but where a unique measurement opportunity presents itself. Such species could be rare wild animals where research measurements can be made only on a single subject, perhaps in conjunction with necessary clinical care. No matter what kind of subject is studied, there must be animal or human use committee approval, just as for regular research papers.

Here too we will require a standard format, with subtitles for each. In general, the format echoes that of regular research papers, but with specific content requirements:

a) The title should begin “Case Studies in Physiology: . . . .” Followed by the specific title words.

b) The introduction should make the case for why the study is of interest.

c) Methods should include description of any specific modifications of standard techniques required by the case in question.

d) There must be explicit statistical consideration of the data given the expectation that in most cases, there will be a single subject studied. The results need to be demonstrably robust allowing clear conclusions.

e) The results section should be detailed with data included for the reader to consider.

f) The discussion must not only present any technical or study design limitations imposed by the uniqueness of the experimental setting, but also discuss their effects on data interpretation. For example, a rare animal study may have to be done in an abnormal body position and during anesthesia, both of which may significantly change physiological states from the normal awake situation. There must also be discussion of the general applicability of the results found, and specific justification of why the case is of value (beyond simply being a unique opportunity to gather data). Most importantly, there must be a broader message than just reporting unusual data. This message will usually need to be supported by contrast with appropriate control subject data from the literature. At the end of the day, the article should be written to be of instructional value to readers.
In general, Case Studies will be limited to five printed journal pages, but exceptions can be made when justified by the extent of data presentation and need for discussion. We not only hope you will enjoy these new article types but want to encourage each of you to think about them and propose specific submissions directly to the Editor (jappleic@ucsd.edu).