# *JEM*'s 2009 Tune-up

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**Scientific journals, like cars, require periodic tune-ups to keep them running smoothly. Effective immediately, several changes to the *JEM* publication policies will take effect. Our aim is to address policy issues that have arisen over the past several years and, more broadly, to maintain the quality and integrity of the research we publish. The upcoming changes to *JEM* policies and the impetus behind them are outlined here.**

*"Are these just guidelines, or are they actual new policies?"*



## One mouse ≠ one experiment

In the past several years, the editors of the *JEM* have noticed a troubling trend. Authors are increasingly submitting data for publication that derive from a single experiment. Whatever the driving force behind this trend, it is a worrying one. The independent verification of experimental data is essential to demonstrate the reproducibility of a result and is a fundamental tenet of scientific experimentation. Without independent replication, data lose rigor and publications lose credibility.

At the heart of this issue is the definition of an *independent* experiment. The editors of the *JEM* define a single, independent experiment as one in which experimental and control groups (comprising individual mice, culture wells, etc.) are tested contemporaneously to answer a specific question. Each independent experiment must be repeated a sufficient number of times to demonstrate the reproducibility of the data.

Authors have offered various justifications for submitting data from a single experiment. One argument that has repeatedly cropped up, particularly in the context of experiments involving bone marrow chimeras, is that one mouse equals one experiment. According to this reasoning, each mouse generates a new immune system from the transferred bone marrow, and the inevitable variability among individual animals renders each an experiment unto itself. What this argument fails to consider, however, is the fact that experiments performed on any given day could produce erroneous results for several reasons. For example, the bone marrow cells transferred into recipient mice could be contaminated. No matter how many chimeric mice are made or how many controls are performed, if they are tested contemporaneously, they constitute a single experiment.

Another frequent justification for single experiments is that a sufficient number of mice were included in each experimental group to generate a statistically meaningful result. Although this is a laudable practice that should apply to all experiments, it has no bearing on the issue of experimental reproducibility. Others simply argue that certain experiments are too time consuming and/or expensive to justify repetition (on occasion authors have even claimed that repeated experiments would be prohibited by institutional animal care and use committees).

As outlined in our revised Instructions to Authors, all figure legends must specify the number of times each experiment was independently performed, as well as the number of animals or replicates in each experimental group. Although we are reluctant to dictate a specific number of independent experiments that must be conducted in any given case, data used to support any conclusion of the study must be performed more than once and must be repeated a sufficient number of times to demonstrate reproducibility.

The *JEM* continues to encourage submission of studies involving humans and nonhuman primates, and we understand that these studies cannot be readily repeated in their entirety. Vaccine studies,

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for example, typically follow groups of patients or primates longitudinally, comparing various parameters of the immune response relative to a control group. For these studies, it is sufficient to state the number of individuals in each group.

### Length limits and referencing

The *JEM* will continue to publish manuscripts in two formats—full Articles and Brief Definitive Reports (BDRs). The length limits for both formats will increase modestly to accommodate a change in referencing style (see below). Full articles may now include 10 display items and 44,000 characters (excluding Materials and methods and References), which should provide ample space to report a fully developed story. Our BDR format is tailored to exciting new observations that are less extensively explored but have the potential to prompt new lines of investigation. The length limit for BDRs will increase to 22,000 characters, and we will now allow the inclusion of 6 display items and 40 references.

A more substantial change to *JEM*'s current format policies is the introduction of a limit on the number of supplemental items that can accompany each manuscript. Although we are aware of the need for supplemental data—which are often added in response to referees' concerns—the volume of added material has become excessive to the detriment of readability. The inclusion of supplemental data should be judicious, and only those data that are directly relevant to the message of the paper should be included. As such, we will now limit supplemental materials to four items for BDRs and eight items for Articles (excluding videos). In addition, supplemental text and references must be limited to figure legends and materials and methods that were used only to generate supplemental data. All methods used to generate data in the main body of the paper must be described in detail in the Materials and methods section.

Another big change is in our referencing format. The *JEM* has historically used numbered referencing, in which citations are simply numbered in the order they appear in the manuscript. However our sister journals, the *Journal of Cell Biology* and *Journal of General Physiology* use Harvard style, in which references are cited parenthetically by first author and year of publication, and the reference section is organized alphabetically. The *JEM* will now use Harvard style references. This format provides valuable information to the reader without requiring periodic flipping to the reference list. This change will also facilitate the manuscript production process and help to eliminate errors in reference numbering that occasionally occur when citations are added at the proof stage. We feel that the increased length allowance will help to offset the change to Harvard style.

### The coining contagion

The immunology lexicon—perhaps more so than that of any other biological science—is rife with acronyms and jargon. Amid the ever-increasing number of interleukins and CD molecules comes the regular introduction of new molecules, cell subsets, and pathways. Where there were once only a handful of immune cell subsets, for example, there are now a bevy of varieties of helper T (Th) cells, regulatory T cells, B cells, dendritic cells, and macrophages.

Newly coined names often reflect a previously unappreciated function or product of a particular cell subset in a particular environment. But although the name may be appropriate at the time, it often becomes obsolete as more functions and products are attributed to that entity. Some authors have argued that coining a catchy new name will make their research more memorable. But strong data stand on their own, and once-apt names can ultimately become more of an impediment to scientific clarity than a help.

If the name-coining contagion goes unchecked, we run the risk of clogging our vocabulary with superfluous jargon, rendering it impenetrable to nonimmunologists (much less to the general public). To avoid contributing to this glut, the *JEM* discourages authors from introducing new terminology unless there is a compelling scientific justification for doing so. If, for example, you identify a new protein with a chemical structure and function unlike any existing class of protein, it's yours to name. But if the new protein resembles an existing protein or family, the name should reflect this relationship. The same rule applies to cell subsets. For example, just because $CD4^+$ Th cells can secrete interleukin-9 under certain circumstances, are we justified in branding those cells "Th9"?

Thus, in the interest of scientific clarity, the *JEM* will now require a scientific justification whenever a new name or term is proposed.

These amendments to the *JEM* editorial policies are intended to help maintain the high quality of science that we publish, and to better serve the scientific community. As always, we welcome any suggestions from the community for how we can best serve your needs as authors, reviewers, and readers.