

Editorial

The publication of the draft sequence of the human genome, early last year (International Human Genome Sequencing Consortium. 2001. *Nature*. 409:860–921; Venter, J.C., M.D. Adams, E.W. Myers, P.W. Li, R.J. Mural, G.G. Sutton, H.O. Smith, M. Yandell, C.A. Evans, R.A. Holt, J.D. Gocayne, et al. 2001. *Science*. 291:1304–1351), signaled the beginning of a new era of biological research. The full implications of what it means to do biological research in the so-called post-genomic era remain wide open, however. On the one hand, the sheer amount of information that has become available is forcing a shift toward high throughput screens, where the traditional notions of the hypothesis-driven experiment and definitive mechanistic insight become elusive—and yet more important. Given the amount of data that will be obtained, the experimental design becomes even more critical, and the impact of the experiment will depend on increasingly sophisticated statistical analyses and information management. Whereas the scope of the problem is increased severalfold, there are many parallels to the situation encountered in the construction of kinetic/molecular gating models based on electrophysiological results. On the other hand, the information that has become available is catalyzing the design of new, and more powerful, hypothesis-driven experiments that probe the molecular basis for function at many different levels of organization and complexity—where the experimental design depends on the increasing ability to monitor function noninvasively using a variety of methods.

The draft genome provides solid support for general physiology, as practiced by the authors of articles published in *The Journal*. When comparing the human genome with the genomes of invertebrates, the number of genes in our genome is increased only twofold, or so, over the number of genes in some of the major eukaryotic “model” organisms, and ~90% of our protein families appear to be shared with invertebrates. In fact, ~50% of our proteins share similarities with those of invertebrates such as *Caenorhabditis elegans* and *Drosophila melanogaster*. These numbers are important, because they validate August Krogh’s statement (1929. *Science*. 70:200–204) “For a large number of problems there will be some animal of choice or a few such animals on which it can be most conveniently studied,” and, by implication, *The Journal’s* mission to publish articles that elucidate basic biological, chemical, or physical mechanisms of broad physiological significance.

The Journal of General Physiology is ready for the challenges that will arise with the changing focus of biological research. The quality of the published articles is, if anything, increasing. The interval from submission to online publication is four months, and we regularly publish articles within three months of submission. The intervals from submission to the first decision, and from acceptance to online publication, both remain at five weeks. We are particularly pleased that we keep the interval from submission to first decision short—without compromising the quality of the manuscript review—by minimizing the time the manuscripts stay in the editorial office. This gives our reviewers the time needed to carefully evaluate the manuscripts we send them.

The impact of the online version of *The Journal* continues to increase. Each month the online version is accessed from ~5,500 unique IP addresses, with more than 9,000 articles being downloaded. We encourage our authors to make full use of the features that are available in the online version of *The Journal*, where the Supplemental Material can be used to illustrate features (such as the temporal evolution of Ca^{2+} waves) that would be difficult to show in the print version. Reflecting the increased importance of the online version, we also have altered slightly the physical appearance of *The Journal*, most notably by having the Table of Contents on the first page rather than the back cover.

We have for some time received manuscript submissions in the form of PDF files. This reduces the time needed for the editorial manuscript management. We will continue to receive manuscripts as PDF files in e-mail attachments; but institutional limits on the size of attachments remain a problem. To address this problem, we are establishing a site (<http://www.jgp.org>) for electronic manuscript submission, which will become operational later this month. We encourage authors to submit their manuscripts on this site; but, we will keep the options of submitting the manuscripts in paper format or as e-mail attachments. The aim is to provide a service that is efficient and as user friendly as possible. Given the importance we attach to the quality of the manuscript review, electronic submission will not lead to major reductions in the time from submission to publication; but we hope our authors will find that it eases their lives (and saves some postage).

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for the Editors
The Journal of General Physiology