

BY AHMET ERDEMIR, PhD

Recognizing and Encouraging Timely Dissemination

For scientific progress, dissemination is as valuable as publishing, if not more so. We need to recognize those who put in the effort and encourage all to do the same.



The availability of free and open access data, models, and software indisputably accelerates scientific progress. Unfortunately, dissemination necessitates organization, documentation, and quality assessment for ultimate impact. In addition, dissemination efforts require considerable resources and time. Constrained by the realities of funding and the requirements of academic publishing imposed on investigators, individual dissemination attempts are likely to be a low priority.

Those who have the motivation have many pathways to share their work. The material can be provided on personal websites, on a research laboratory's site, or through

of us, even when funders require dissemination, this doesn't rise to the same level of priority as publishing, which seems to be more important for our career advancement.

Not only does dissemination of scientific software and models receive low priority and attention, it's also poorly done: It can be nearly impossible to find a usable model on the Web. I recently used the keywords "knee" and "finite element" to look for knee models based on finite element analysis. This gave me 371 hits in PubMed and 86,800 in Google. And from those hits, I was unable to find a model that I could download and use. I might have been unlucky or maybe I didn't know where to look, but this experience

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institutional repositories. Alternatively, or additionally, investigators can provide copies of datasets or models in publisher repositories following the work's peer-review and acceptance. But too often, researchers take the lengthy route of publishing before disseminating their work. Associating dissemination with peer-reviewed academic material does increase confidence in its utility. However, we seem to postpone the sharing of more usable and detailed information for months, if not years. Also, once the work is published and we get academic recognition, we may lose the motivation to clean up our raw data, document the details for other users, and provide the data and software on platforms for long-term access. For some

certainly says something about the current practice of dissemination in my field. Are we scientists incapable of sharing? If open source software developers and the editors of Wikipedia figured out how to do it, why can't we? We seem to be emphasizing publishing and the search for funding over the need to openly share our work.

Maybe the solution is to establish recognition and rating systems for dissemination—similar to what exists for academic publishing. Let's assume that all data, models, and software, once documented and provided in a usable form, are worth sharing. We can provide a journal-like system with free and open access, where the submissions would have a digital object identifier; they would be indexed and made searchable in literature databases. We would also need to replace the traditional peer-review system with a more flexible rating system for timely dissemination. The information should be out in public immediately. The ratings could follow later, based on opinions from experts in the discipline—assigned by an editorial board for example—as well as on comments from the public. The dynamic rating can be associated with the indexing of the distribution and available in search results from literature databases, which will provide a quick assessment of quality for those who need the information. This may not be the only way, but it seems that we need new recognition and encouragement mechanisms for scientists to start sharing in a timely manner. □

DETAILS

Please send your feedback to Ahmet Erdemir, erdemira@ccf.org. Ahmet works in computational biomechanics at the Cleveland Clinic; he collects data, builds models, engages in software development, and tries to share them. He appreciates free and open access to other data, models, and software. An ongoing discussion on the proposed journal for dissemination can be found at http://www.imagwiki.org/mediawiki/index.php?title=Journal_for_Dissemination.