

◆ Acceptance Address: CBE Award for Meritorious Achievement

Floyd E Bloom

Editor-in-Chief

Science

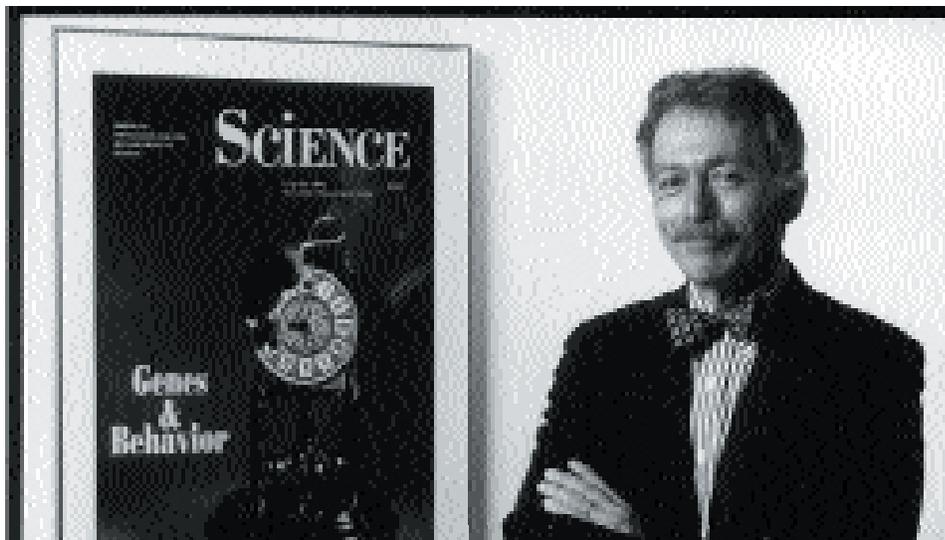
Washington, DC

On behalf of my colleagues at Science, and its publisher, the American Association for the Advancement of Science (AAAS), I am very pleased and flattered to accept your Meritorious Achievement Award. I understand that the credo of the Council is to improve communication in the life sciences by educating authors, editors, and publishers. In that light, I would emphasize that my term at Science has definitely led me to become a much more educated editor, so in that sense I am pleased to be able to identify with your general goals. I've learned from my editors important facts of life in scientific publication. Such matters as the significance of where advertising can go and what the important differences are whether an ad is on a right page or a left page were completely unknown to me.

I've also learned essential practices, such as how to assuage rejected authors, of whom we have had many. I've even learned from my publisher that "not-for-profit" means not-for-loss either. Fortunately, very effective and clever people, such as your board member and my managing editor, Monica Bradford, have taught me what I needed to learn to help them do their important jobs better.

I believe that we at Science also align with another of your missions, namely to facilitate cooperation among those interested in publishing in the life sciences and in promoting effective communication. Much of what we have tried to innovate at Science over the last 4 years has been to facilitate accessibility to the often complex scientific stories that our original research articles contain. We can do this because we have well-trained and gifted science writers and graphic artists who can make clear in common language what scientists often seem to go to great lengths to make obscure.

We have also thought long, intensively, and continuously about the balance between



Editor Floyd Bloom has brought many electronic and other innovations to Science.

print publication and the rapidly growing and exciting world of online publishing. Almost as soon as I began to work with the Science staff, we were able to create a new online electronic magazine for young scientists. The purpose of Science's Next Wave is to help young scientists understand their options and opportunities in career choices and learn how to decide and whom they can ask when another field or a different career trajectory might be a reasonable decision.

From an initial investment of only a modest fraction of the editor's dowry, we have today a career-guidance information source that is accessed by thousands of students throughout the world. In Next Wave, they can learn about training, fellowships, courses, meetings, and trips and come to understand the reasoning behind some of the great debates going on in the scientific community, such as those on the meaning of tenure, intellectual property, and mentoring. Science's Next Wave has since been joined by a daily online news service and news archive, called ScienceNOW or News on the Web.

The Next Wave and ScienceNOW are about to be joined by a third online-only product early this summer, which has resulted from a collaboration among Science, AAAS, and the HighWire Publishing

group at the Stanford University Library. This product, which we are calling the Signal Transduction Knowledge Environment (STKE), was briefly described in our recent special issue on signal transduction as a Web site where one could survey the complex and rapidly growing literature of how cells communicate with each other and react to their environment. It is a form of chemical communication common in the life sciences at all levels of organization from single-celled organisms to complex integrative systems like the immune system and the nervous system. No journal covers all this literature, and practitioners in one field of science often use distinct terminology for their favorite signaling molecules, often unaware that under a different name their molecules also perform important and different roles in other systems. The STKE will allow them to survey all these signals, in all systems, in all species as broadly or as narrowly as they choose, and to be constantly and dynamically updated as new important information appears in the literature. We asked readers to register their interest in using these online tools at a special Web site that we set up for this purpose, and within days more than 1300 scientists had done so.

However, another early decision was made when we were faced with the growing

opportunities of the Internet, and I believe it is still correct today. Our initial view was that Science Online should be viewed as extending and enhancing the information we carry in the printed magazine and not simply be an electronic digital version of the print magazine.

Initial features, such as the supplemental videos and databases and the enhanced perspectives, were created to achieve this extended value-added function. The Web-based Science Online of 1999 is a superb toolkit full of high-technology solutions for scholars. Science Online achieves rapid global electronic dissemination, provides for rapid content searching and archiving, provides links between citations and the content of papers cited, and reorganizes our published information in logical ways other than simply by the date of the issue in which they appeared. All that for an add-on price of only \$12/year.

Although we are very pleased with the choice by some 35 000 of our subscribers to take Science Online and by another 50 000 or so to register for some of the added features without full-length text access, this is still less than one-fourth of our total subscriber base.

Many would like Science Online only, but many more have written that they are not ready to give up their printed magazine nor to try to read about advances in their complex science while staring at 10-point fonts on a monitor.

What makes all these online developments possible is the quality of the weekly magazine-journal, with its news of the world of science and the scientific community, the opinions of our readers and expert advisers in the Compass section, and of course the original research content in the back. It is on that segment of our product that AAAS has long placed its belief that the editor-in-chief should be someone who is an active scientist who has worked long enough to have a name recognized by other scientists.

Before I started to work there, I always believed that having a scientist I could talk

to or write to was at least in appearance a way to appeal from the hasty and obviously erroneous decisions of the reviewers and manuscript editors who had yet again misjudged my very best findings ever. And judging by the bulk of mail I receive from authors, this belief is still widely held.

But trying to be an active scientist also helps guide decisions on where we need to place our resources. Science can't publish all the great findings that are coming along today, but if we recognize that we need to help our readers know about the science

What makes all these online developments possible is the quality of the weekly magazine-journal.

published elsewhere, then we need to do something about it. The growth of our Perspectives and Policy Forums provides such a means to help our readers cast wider but informed nets to bolster their awareness.

What active scientists want to know from their main weekly journal is what's happening in their field or in fields that their field needs to be aware of to keep pushing ahead. I also want to know about new methods being developed in other fields or new devices that some day can change the way I do my work. But I don't have a lot of time to gather that awareness, so for me scientific information has to come in small digestible packets.

As a once-active scientist who has become an editor and as an editor who no longer has the blocks of time to do active research, I am greatly bothered by recent proposals to create an all-encompassing online electronic archive for biomedical research data. In its current iteration, E-biomed would be a Los Alamos National Lab-like enterprise for life scientists.

Authors who so choose could post their papers for public access and volunteer commentary without the need for peer review.

It is said that such an archive is needed to reduce the time to publish, reduce the cost of publication, and reduce the number of third- and fourth-tier quality journals, especially those despised by librarians for their exorbitant subscription fees.

But who in the life sciences will take this choice? What assistant professor will want to be examined by the promotions committee with a bibliography of URLs on an unreviewed Web site? Who will attempt to renew grants with data that are seen only by other researchers who have the free time to surf the Web because they no longer have grants of their own to keep them occupied? What is the point of posting findings on the Web unreviewed, only to be beaten into Science or some other distinguished journal by your competition? My view, and it is only my view, is based on the large numbers of requests that we get not to pick Dr X, Y, or Z as a reviewer of some researcher's paper, because they are the researcher's competition. In my view of the life sciences at this time, this is not a good solution to the problems of already overloaded data collections that will become much more intense before they begin to get better. It does work in other fields, and we are actively examining the principles of where such methods could be of benefit. If the National Institutes of Health really wants to improve access to the literature, it could help us all digitize our archives going back a lot earlier than 1995, when we started getting Science online.

What I think we need are more tools like the knowledge environments I mentioned to help scientists regain some comprehension of what is going on in their fields and to put new data and new concepts into some longer-term perspective. It's been my pleasure to work with the excellent staffers at Science to try to do this, and we sincerely appreciate this award for putting some distinguished critical external approbation onto this massive team effort.

Thank you again. 