Reflecting on Goals for Science

SINCE BECOMING THE EDITOR-IN-CHIEF OF SCIENCE IN 2008, ONE OF MY MAJOR GOALS HAS BEEN to explore how our widely read publication can help to improve science education at all levels—from the very first years of schooling through graduate school. Other goals have been the promotion of important standards in the scientific community and publishing new research results of the highest quality. Here, I highlight some efforts designed to promote these aims.

Science publishes many editorials on the subject of education. Donald Kennedy, my predecessor as Editor-in-Chief, introduced our Education Forum. This has been complemented by special issues on education: Education and Technology (2009); Science, Language, and Literacy (2010); and Investing Early in Education (2011). The next education special issue—my last—will be Grand Challenges in Science Education (April 2013). And Science is now publishing peer-reviewed research in the science of education.

Over the course of the past 4 years, Science has also held two contests designed to help spread good science education across the globe. The first highlighted the best English-language, open-access science education resources on the Web. All of the winners of this Science Prize for Online Resources for Education (SPORE) have published essays in Science, and these have now been compiled into a free 60-page electronic booklet available on our special education Web site.* The second contest, the Science Prize for Inquiry-Based Instruction (IBI), focused on college-level coursework. The 2011 winners published their essays in 2012, and the 2012 winners will be published throughout 2013. They cover a very broad range of science, with titles that include Discovering Nanoscience, Engaging Students in Earthquakes via Real-Time Data and Decisions, Engaging Undergraduates in Global Health Technology Innovation, and Student-Directed Discovery of the Plant Microbiome and Its Products. Each IBI winner also provides a supplement with instructions for teaching their science inquiry module. All of these resources are made freely available,† and it is our hope that their open-access publication will encourage the spread of outstanding science teaching, just as the publication of the best scientific research in Science stimulates new science.

With regard to standards for scientific research, Science has recently completed an experiment designed to improve the process of peer review for research in all of the scientific disciplines we publish. As a result, in 2013 we will be moving to a system that provides an opportunity for each reviewer to comment on the other reviews obtained for the same submitted manuscript, just prior to the decision that is made by a small team of our editors as to whether to reject, accept only with revision, or accept a manuscript for publication. In this way, we hope to minimize the amount of revision required for manuscripts that are judged to be nearly suitable for publication.

Finally, Science’s Senior Editorial Board has increased our awareness of outstanding scientific findings that are very difficult to convey clearly in a short format. Some contain numerous micrographs that require high-resolution displays, while others require more space due to a complexity of analysis. Therefore, in a new offering, selected papers will appear online with the length and integration of methods and data that are most appropriate for reporting the research. These papers will be represented in the print magazine by special structured abstracts, but they will be listed as research articles in the print Table of Contents, being indexed and cited the same way as the shorter papers that appear in full in print. They will also appear in full in all digital versions of Science, such as those designed for mobile devices. A similar approach is planned for selected review articles.

Change is good, and for this and many other reasons, we look forward to a new year at Science.

– Bruce Alberts

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*www.sciencemag.org/site/extra/education †http://scim.ag/Te3EmY