## SCIENTISTS ORIENTING SCIENTISTS

## **Coming Aboard**

**Donald Kennedy** 

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and the worst

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our venture."

whe new Editor-in-Chief, upon entry, has two choices: look back, or look forward. Wishing to have the best of both worlds, I select first one, then the other.

The backward look is both encouraging and daunting. Science is an institution with a remarkable recent history of growth and change. During Dan Koshland's decade, it expanded in scope, in the quality of scientific communications, and in the depth of its news coverage. And for the past 5 years, Floyd Bloom's deft leadership has not only continued that trajectory, it has made Science a real pioneer on the hectic, exciting new terrain of electronic publishing—an expedition that may change us, and what we do, in unforeseeable ways. Dan, Floyd, and the extraordinary group of colleagues who remain to indoctrinate their new E-in-C have cemented this journal's place as a respected voice for all of science. Not only do we speak to the scientific community, we speak for it to thoughtful and influential outside audiences.

It is both the best of times and the worst of times for our venture. The sciences have experienced stunning growth in achievement; seldom have we seen more excitement in a number of disciplines at once: genomics, paleoclimatology, materials science, astrophysics, neurobiology, and nanotechnology. And suddenly science is able to tell us more about what it means to be human, through the unfolding story of our origins and of the great transitions in human societies. Despite these triumphs, however, public ambivalence about the methods of science and its fruits has grown. Questions about the safety and use of genetically modified crops, doubts about the value of animal research in biomedical innovation, ostensibly serious proposals that something called "creation science" be given equal billing with evolutionary theory in U.S. classrooms—these are outcomes of public skepticism about what we do. They remind us that nonscientists will increasingly insist on a

role in policy decision-making about science and its uses. That can be a force for good, but only if we are able to communicate, with responsibility and passion, the value of what we do.

Public doubt about science has other roots as well, and these too speak to Science's responsibilities. Our public—and they are our patrons as well as our observers—looks to what we do as well as to what we say about our work. At Science we have an intimate view of how our community behaves professionally. In the main, it is impressive testimony to the integrity of a vocation dedicated to truth-seeking. But the exceptions are quickly brought to public view: research misconduct, overcommercialization, and conflict of interest.

Perhaps more damaging is the view of science as an intensely competitive activity, where the desire to be first can become more important than the scientific objective. Even an achievement as remarkable as the soon-to-be published sequence of the human genome has been publicized as a contest. True, this "race" between the publicly funded Human Genome Project and the privately financed

effort undertaken by Celera Genomics has surely had some positive results: The project will be completed much sooner than predicted, and outside interest in the objective has quite probably been enhanced. But there are also potential costs. One is that haste is seldom the friend of careful science; pressure to finish first can produce results that are less than complete, or worse, flawed. Intense competitors sometimes trade a little trash talk, and the media love it; the emphasis on the race may have the effect of obscuring the real story here, which is a magnificent scientific achievement.

An apparent collapse of collegiality between the two efforts would poorly serve the scientific community, which depends on the public's belief that the objectives are important enough to submerge personal differences. Having recognized the importance of the adventure, the general public expects that it will end well, with the fruits of these massive undertakings shared in a variety of ways, launching the great explorations to come. Anything less is likely to be interpreted as a perplexing failure to serve the public interest and will inevitably affect the regard in which the scientific community is held by those who support it.

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