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LETTERS

A Reviewer's Obligation

As the editor of a major scientific journal, I want to respond to an allegation made by Rustum Roy (Letters, 1 Jan., p. 13) about publishing through the "traditional route" (peer-reviewed journals) rather than using the popular press. Roy complains that there is no "formal moral obligation" on the part of the referee of a paper to keep its contents confidential. While I'm not sure I understand what "formal" means in this context, the board of editors of the journals of the American Chemical Society (ACS) have adopted ethical guidelines that state, "A reviewer should treat a manuscript sent for review as a confidential document," and "Reviewers should not use or disclose unpublished information . . . in a manuscript under consideration, except with the consent of the author." These guidelines are published in the *ACS Style Guide* and periodically in ACS journals. Moreover, the *Journal of the American Chemical Society* and many other journals will honor an author's request not to send a manuscript to a certain referee if the author thinks that seeing the unpublished manuscript would give that referee a competitive advantage. In my experience as editor, I have not been informed of any cases where referees disclosed or improperly used information gleaned from an unpublished manuscript. There may be other reasons for announcing findings at a press conference rather than in the scientific literature, but I don't think defects in the peer-review system is one of them.

Allen J. Bard
Editor,
Journal of the American Chemical Society,
Department of Chemistry,
University of Texas, Austin, TX 78712

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Priorities in Research

In a mid-1992 report from the White House, Allen Bromley and the President's Council of Advisers on Science and Technology (PCAST) emphasized the importance of increased emphasis on basic research, defined as the search for understanding of natural laws without reference to the solution of practical problems. A more recent, "farewell" PCAST report, "Renewing the promise—research-intensive universities and the nation" (C. Anderson, News & Comment, 1 Jan., p. 20) deemphasizes further expansion of "basic research" at the universities. A second report, from the National Science Foundation, indicates that "strategic research aimed at national industrial and economic needs . . . wins the day" (C. Anderson, News & Comment, 1 Jan., p. 20). All this has caused some concern in the academic scientific community.

Many years ago, the late Senator and Vice President Hubert H. Humphrey conveyed to me a different version of the problem. He spoke of "noncategorical basic research" as the search for understanding natural laws without reference to solution of practical problems, and of "categorical basic research" as the search for *new* knowledge needed for the solution of practical problems. The questions that are asked are necessarily different, but just as "basic." In his view, the National Institutes of Health were created as "categorical basic science" institutes, although when the going got tough, they engaged in much "noncategorical basic research."

The priorities of science as conceived by the founders of the U.S. National Academy of Sciences are of special interest in this respect: "To Science, pilot of industry, conqueror of disease, multiplier of the harvest, explorer of the universe, revealer of nature's law, external guide to truth" (*1*). There is no question that priorities, however difficult to arrive at (*2*), are needed for a proper division of labor and assignment of financial resources (D. E. Koshland, Jr., Editorial, 15 Jan., p. 291).

Albert B. Sabin
3101 New Mexico Avenue, NW,
Washington, DC 20016–5902

References and Notes

1. Inscribed on the dome of the great hall of the National Academy of Sciences.
2. A. B. Sabin, *Science* 156, 1568 (1967).

We were sorry to learn of Dr. Sabin's death on 3 March.—**Eds.**

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Availability of Taq Polymerase

The article "Roche gets tough on illicit sales of PCR reagent" by Peter Aldous (News & Comment, 4 Dec., p. 1572) discusses the use of Taq polymerase for polymerase chain reaction (PCR) analysis.

Hoffmann–La Roche has taken a position that threatens our research program in a fundamental way. We simply wish to produce our own Taq polymerase for a specific set of experiments. Our experiments would use large amounts of enzyme for automated PCR. If we were to purchase the enzyme, it would cost several times our entire annual laboratory budget. I have been trying for more than 6 months through discussions with Roche and our university legal staff to find some way to get approval to produce Taq polymerase for these experiments. Our group has the skills and the materials to produce all the enzyme we need in a few days at little cost (which suggests that the price of the enzyme may not be reasonable). Yet we have been told by representatives of Roche that we cannot produce our own enzyme for PCR for such experiments without infringing on their patent and that there is no mechanism for our laboratory or our institution to obtain permission or license to do so. Our experiments have no direct commercial application, yet we have made an offer to share in any potential future patents that might come from the results of our experiments.

So, we are in a dilemma. Our research cannot proceed because the costs of the enzyme are prohibitive, yet we are not allowed to produce enzyme specifically for our own use. For us it is not a question of waiting until next year to buy "the new water bath" referred to by Aldhous; it is a question of closing down an entire program aimed at extending the practical application of new PCR technology. The position taken by the holders of the rights to PCR has created a major impediment to our progress. This position is contrary to the spirit of the traditional relationship between industrial and university research and inimical to the philosophy of the patent process, which is intended to encourage innovation.

Ronald Sederoff
Department of Forestry,
North Carolina State University,
Raleigh, NC 27695–8008

The article "Roche gets tough on illicit sales of PCR reagent" states that the ligase chain reaction (LCR) technology is being readied for market by Abbott Labs. In fact, the intellectual property rights to LCR have not yet been resolved (Rick Weiss, Research News, 29 Nov. 1991, p. 1292). LCR as developed by Francis Barany at Cornell University (*1*) has been licensed by Cornell Research Foundation, Inc. to Applied Biosystems, Inc., which is developing assays based on this technology.

H. Walter Haeussler
Cornell Research Foundation, Inc.,
20 Thornwood Drive, Suite 105,
Ithaca, NY 14850

References

1. F. Barany, *Proc. Natl. Acad. Sci. U.S.A.* **88**, 189 (1991).

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Learning to Save Lives

The article "Searching for markers on the AIDS trail" by Jon Cohen (News & Comment, 16 Oct., p. 388) about the problem of assessing the efficacy of therapies in AIDS was illuminating. Unfortunately, some readers might mistakenly conclude from it that researchers who have strong reservations about the predictive value of "surrogate markers" for new drug approval are so concerned about scientific niceties that they are prepared to sacrifice lives that could otherwise be spared; this conclusion would be unjustified. The problem is how most effectively to learn enough to be able to save lives, and sentimentalities do not lead us toward a solution.

Surrogate endpoints are sometimes highly effective indicators (reduction of hypertension reduces morbidity and mortality from stroke), but they are sometimes tragically misleading (drugs that reduce the frequency of abnormal heartbeats actually increase mortality). Which of these examples is the more apt parallel for CD4 cell counts we do not yet know, and, in the interest of saving lives, it is essential to find out.

Paul Meier
Department of Statistics,
and *Division of Biostatistics,*
Columbia University, New York, NY 10027

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The Search for Intelligence

The award of $100 million by NASA for the search for extraterrestrial intelligence (SETI) was viewed with approval, or at least with the spirit of "wouldn't it be nice to discover life elsewhere in the universe?" in the book review (6 Nov., p. 1012) by Ronald N. Bracewell of *Is Anyone Out There?* by Frank Drake and Dava Sobel. The experts on whose recommendation this grant was made were presumably astronomers, physicists, and engineers. Alas, the factors that will determine the success or failure of the project are, as I have argued elsewhere (*1*), biological and sociological. For example, those who think deterministically assume that once life has originated somewhere, intelligence will surely follow, but only one of the approximately 50 billion species that have lived on Earth was able to generate civilizations. Among these approximately 20 civilizations, only one developed electronic technology. I find it