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Support for Reviews and Data Evaluation

Anyone who has been a second-year graduate student, exploring a field for a rewarding thesis problem, knows the value of an excellent review paper written by a scholar who has devoted up to a year of very hard work to evaluating the current state of knowledge. Look at the smudged and dog-eared sections of *Reviews of Modern Physics (RMP)* in your physics library; compare *Science Citation Index* for references to primary and review literature; ask any student.

Unhappily, federal science policy seems to make support for review scholarship the stepchild of research support. Big money has gone into science information systems that accelerate the circulation of primary literature. Big money, fortunately, still goes to original research—the fun part every scientist likes best. Support for review and evaluation languishes.

Where is the leadership that will back with grant support the tough-minded, demanding scholarship that makes review literature and evaluated data compilation possible?

Sixteen years have passed since the Weinberg report of the President's Science Advisory Committee launched the National Standard Reference Data System. It staggers along at a pitiful level of funding, under constant pressure to pay for the scholarship from retail sales. Over a decade has passed since the National Science Foundation first made an experimental grant to *RMP* for commissioned reviews. A decade of studies by the American Institute of Physics, panels of the Committee on Scientific and Technical Information, and articles about the "misinformation explosion" have shown the need for coherent programs to encourage better review literature.

The costs of distributing primary and secondary literature should be paid for out of subscriber and user fees. But no scientific journal is able to sponsor out of subscriber fees the scholarship that lies behind the manuscript. As a former editor of *RMP*, I have been greatly impressed by the willingness of top-notch scientists to devote some of their time to writing scholarly reviews in the interest of the progress of science and its useful application. Increasingly, they need support to do so.

National and major industrial laboratories can encourage their scientific staff members to take the time to contribute to evaluative and review research. Maurice Goldhaber, when director of Brookhaven, used to say to his nonteaching staff, "A good review is the moral equivalent of teaching." Nevertheless, when professional advancement and peer recognition are so heavily oriented toward original discovery and research funding is largely restricted to original or applied research, it is hard to motivate a scientist to write scholarly reviews.

Because review and evaluation of scientific work often call for even higher levels of care and experience than does new research, peer evaluation of proposals for review preparation or data evaluation is especially appropriate. Funds for reviews must be protected by special budget allocation and should be supported by the same mechanisms that support new research, rather than primarily by information dissemination offices.

I have been told by government science officials that "our value system rewards quantity, not quality and utility, of publications. We need strong intellectual leadership to change this pattern." I hope *Science* readers will join me in calling for that leadership. It is particularly appropriate that public funds be invested in ways that can make scientists more productive and improve the quality standards of science.—LEWIS M. BRANSCOMB, *Vice President and Chief Scientist, IBM Corporation, Old Orchard Road, Armonk, New York 10504.*