Harvard Tackles the Rush to Publication

New Harvard guidelines set for keeping data, supervising lab, limiting papers—preventing fraud

*This is one of a series of occasional articles about conduct in science.**

PUBLISH AND PERISH. Behind growing concern about the quality of the scientific literature lies a simple notion that if the enterprise could only put less emphasis on quantity and more on quality, embarrassing cases of fraud and error could be nearly stopped. At a recent National Institutes of Health conference on scientific authorship, Marcia Angell of *The New England Journal of Medicine* summarized this sentiment when she said that "sloppiness and shortcuts result from the pressure to publish," which can be traced to the idea that for promotion boards and grant-giving committees numbers count.

Now Harvard Medical School, beset in the past few years by its fair share of instances of research misconduct, has taken an almost bold step toward curing the problem. Harvard has published guidelines that dare to suggest that someone up for promotion to full professor should be judged on no more than ten papers. Those up for associate professor could make the grade on the basis of a mere seven papers, presuming they were pretty good ones. A person could become an assistant professor with only five good papers in the literature.

This notion is not original to Harvard. It has been brought up by a number of scientific leaders, including DeWitt Stetten, Jr., former deputy director of NIH, who noted in a letter to *Science* in 1986 that only 12 citations are requested in nominations for both the Nobel Prize and membership in the U.S. National Academy of Sciences. Stetten suggested that decisions on promotions, appointments, funding of research, membership in prestigious societies, and the award of medals and other honors be based on a similarly select list of publications (*Science*, 4 April 1986, p. 11).

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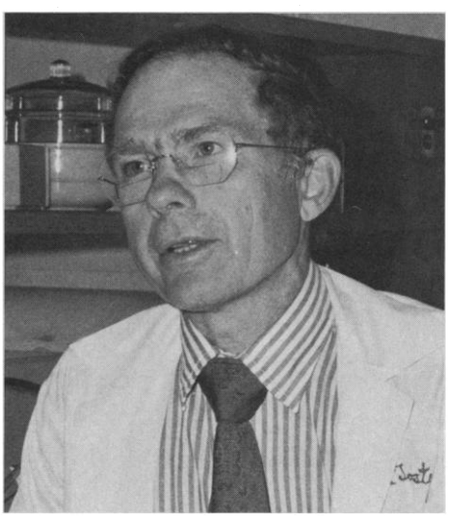
What Harvard is trying to do is institutionalize the concept through a set of guidelines on scientific research and publication that are noteworthy primarily for putting in writing what one might have thought was obvious. The primary reason for "codifying" practices that Harvard says are already in effect in its laboratories is to bring them to the attention of young investigators who, the Harvard guidelines state, deserve "careful supervision" by their lab chiefs. "A preceptor who limits his/her role to the editing of manuscripts does not provide adequate supervision."

In addition, the Harvard guidelines suggest that authors be held responsible for



Daniel Tosteson *wants Harvard researchers to think about adapting laboratory practices to guidelines for the performance of research.*

papers that carry their names and avers that "the only reasonable criterion be that a co-author has made a significant intellectual or practical contribution" to the work. In a world in which "honorary authorship" is distressingly common, a policy linking authorship and direct scientific participation has a kind of humble appeal.

The medical school guidelines also speak to another obvious issue: hanging on to original data. "Custody of all original primary laboratory data must be retained by the unit in which they are generated," the Harvard guidelines say. The guidelines suggest recording data in bound notebooks with numbered pages, which should be kept as long as "colleagues or readers of published results may raise questions answerable only by reference to such data."

The Harvard committee that drafted these guidelines for sensible if defensive behavior, chaired by pathologist Shirley Driscoll, also admonished against bibliography-building by the method known as the least publishable unit. "[T]he rapid publication of data without adequate tests of reproducibility or assessment of significance, the publication of fragments of a study, and the submission of multiple similar abstracts or manuscripts differing only slightly in content," may not be such a great contribution to science, the group observed.

In issuing these scientific words to the wise, medical school dean Daniel C. Tosteson emphasized their tentative nature. The guidelines are "not intended as rules but rather as a statement of desirable practices that might be adopted to the needs of each research group," he said.

In light of the great pressure Congress is currently exerting to get universities to show that they can, in fact, police their own, it will be interesting to see how seriously Harvard researchers across the board respond to this mild challenge.

One other idea aimed at curing the multipaper, multiauthor syndrome emerged at the NIH's authorship conference that bears consideration. It was suggested that various categories of authorship be established: primary authorship would be reserved for those who actually contribute to the conception, generation of data, or analysis and interpretation of data. A second tier would be for those who fit the "with the assistance of" or "in collaboration with" description, such as those who contribute reagents, animals, or a moderate bit of advice. *New England Journal* editor Arnold Relman allowed that it might be worth trying.

The problem of setting standards in science that would at once ensure integrity without introducing inspiration-killing rules is very much on the minds of policy-oriented researchers these days, with at least two groups gearing up for fall conferences on the issues. The AAAS will hold the second of three workshops in September and the Institute of Medicine will hold a meeting in October as part of its program on the "responsible conduct of research."

The outcome of these and other efforts could have a major influence on Congress which is debating the idea of introducing regulations of its own to safeguard the integrity of the research enterprise—regulations that would have the force of law.

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