

Openness in Research Post-9/11

Wm. A. Wulf

By now it is trite to observe that the horrendous events of September 11, 2001, “have changed everything”—but then, things become trite precisely because they are true, or at least close to true. However, it is important to realize that what changed on September 11 was not the facts about terrorism and the United States’ vulnerability, but our perception of those facts and the implications of those perceptions.

The ongoing discussion of the proper balance between the free interchange of ideas and data among researchers, for example, has changed in some ways and not in others. What has not changed is the basic ingredient of the discussion: Obviously, the fundamental premise of the scientific method, independent verification, demands the free and open exchange of ideas and data. More than that, the incremental advancement of knowledge is only possible because each researcher adds his or her nugget to the accumulating store.

The tremendous improvement in the quality of life, especially in the last century, was only possible because of the culture of openness and meritocracy in science and engineering. At the same time, we all know that there are certain results of research, and more especially certain uses of those results, that are best kept secret from certain parties.

What *has* changed since 9/11 is a sense of where the balance point between these competing truths lies. The implicit consensus that developed during the Cold War seems to many no longer appropriate. The asymmetry between the research establishment of the developed and developing worlds, coupled with the apparent willingness of terrorists to use whatever means at hand to kill civilians, at least raises the question of whether some additional safeguards on knowledge and personnel in sensitive areas of research are needed.

Material Matters is a forum for expressing personal points of view on issues of interest to the materials community.

To some researchers, even raising the question of decreasing openness is anathema. Other researchers—in biology and the social sciences, for example—are not necessarily opposed to some restrictions, but have little or no personal experience with them. But it seems inevitable that the balance point *will* move, and I believe it behooves the research community to exercise a leadership role to ensure that it moves enough, but not too much. In the United States, neither the public nor those responsible for national security necessarily understand the need for openness in

In the United States,
neither the public nor those
responsible for national
security necessarily
understand the need for
openness in research, or the
benefits that openness has
given the country in the past.

research, or the benefits that openness has given the country in the past—including benefits to national security. The public’s fear for its security is real, and in the zeal to increase it, overshooting a reasonable target is all too possible.

“Getting it right” is *very* important. The Hart–Rudman report* asserts that, second only to a weapon of mass destruction detonated in a major city, nothing is more dangerous than a failure to properly manage science, technology, and education for the common good in the next quarter century.

Nowhere, perhaps, are the stakes higher than with respect to graduate students, postdoctorates, and visiting scholars from outside the United States. We in the research community know the benefits to

*The Hart–Rudman report is a publication of the U.S. Commission on National Security, co-chaired by former U.S. senators Gary Hart and Warren Rudman. The report can be accessed at Web site www.nssg.gov.

the country from the vast majority of these non-citizens, irrespective of whether they ultimately stay here or not. We know that, even in fields where the United States is the clear leader, we gain invaluable knowledge from our colleagues in other countries. We can enumerate many contributions to our national security made by these “foreign nationals.” Sitting as I do now at the U.S. National Academies, I also know how the shared values of scientists and engineers can facilitate communication between countries whose governments are at odds.

Neither the U.S. public nor its representatives necessarily understand any of these things, however. As a result, there have been simplistic, counterproductive attempts to ban all “foreign nationals” from our national laboratories, for example.

So what is the new regime, and just as important, how do we reach a new consensus on this regime? We must not only get the right new balance, but most of us have to agree that it is the right balance—where “us” includes the public, those responsible for our security, and the research community. There is a national dialogue emerging at the Association of American Universities, at the President’s Council of Advisors on Science and Technology, and at the National Academies—but I believe it is critical that dialogue also take place locally in our research institutions and that it involve local representatives of the other constituencies.

As a bit of context for that dialogue, I believe that we researchers must start with an understanding that the status quo is not acceptable, that we must closely examine our own assumptions and be explicit about them. By taking a proactive, positive approach, I think we are far more likely to come out with a new balance point that minimizes the negative impact on research.

Wm. A. Wulf is president of the U.S. National Academy of Engineering and vice chair of the U.S. National Research Council, the principal operating arm of the National Academies of Sciences and Engineering. He is on leave from the University of Virginia, Charlottesville, where he is AT&T Professor of Engineering and Applied Sciences.

How do post-9/11 national policies or concerns affect your research experience?

Send a letter to the editor to: Elizabeth L. Fleischer, Editor, *MRS Bulletin*, Materials Research Society, 506 Keystone Drive, Warrendale, PA 15086-7573, USA or Bulletin@mrs.org.