

EDITOR'S COMMENTS

This issue contains articles, news, and reviews centered upon the secrecy, security and integrity aspects of the nation's scientific enterprise. All three are different elements of the same foundation pillar of science. Without personal and national security, no science can be done. Since good science often underlies national advantages conducive to security, it is occasionally vital to live with effective secrecy in order to enhance security. Without integrity, including truthfulness and transparency, there can be no science.

As long as human beings do science, there will always be erroneous "discoveries". The realization of the ever-present possibility of error lies at the foundation of the process of science. From this concern have evolved techniques to be carried out by the discovering scientist and his colleagues to minimize such the possibility of error. *Fraud is a different matter*. Perhaps because of the growth of science as a livelihood rather than a "calling", perhaps because there are growing numbers of scientists competing for a relatively diminishing pool of open positions, perhaps because of the increasing awareness by the public of science and the glamour of discovery, perhaps because of the increasing number of awards and models for the successful "discoverer", the occurrence of scientific fraud seems to be more common today than in the past. And because more science is currently done – and reported - by large teams rather than individual researchers, one of the major techniques for preventing the dissemination of error- the independent, *unprejudiced*, reviewer- has been subverted.

Under ideal circumstances, the reviewer, of a scientific article submitted to a professional journal for dissemination into the world of science, is completely independent of the article's author(s) and focuses exclusively on the article's substance, not on the identity of its creator(s). In that way, the novice would have as good a chance as the well-established scientist to get new ideas and results published.

In reality of course, the established scientist often gets a pass. His/her name and reputation, known to the reviewer, usually eases any doubts that may arise in the latter's mind. And this reality is not that bad- after all, the established name has earned his/her reputation; has done the work, and stands behind it. Or has s/he?

If that "Distinguished Name"(DN) is on the paper just because the work was done in DN's lab –by some striving novice, the paper will get the same "pass" as if DN was actually responsible for the work. ("Responsibility" here does not necessarily imply conceiving and/or doing the work. It does imply being thoroughly familiar with all aspects of the work, all arguments leading to the conclusions, and the foundations upon which the validity of these arguments rest.) This "pass" seems to be what happened in the recent frauds at Bell Labs and at Lawrence Berkeley.

The two young perpetrators of these frauds were soon identified and fired. Warnings have been issued by APS panels (who describe these events merely as "misconduct"), that teams of co-authors should be more alert to the activities – honest or otherwise - of their colleagues. But the question remains: if it was so easy (as apparently it was) to identify, within the groups, the specific individuals who committed the fraud, why is it not equally as easy to limit the list of authors of the research in question to those who really count? It should be possible to find other ways to reward the lab directors, the creators of the hard- and software used, and others who aided the research but were not fundamentally involved.

The affect of fraudulent science negatively impacts all of us – scientists and citizens. We would welcome short comments and suggestions from all our readers about how to deal with this issue for our next letter page.

Continuing with my theme of scientific integrity and its relationship to the well-being of society, our readers should be aware of the recent announcement by the Administration, that the missile defense facilities in Alaska and California, which had been requested and procured as research and development (R&D) facilities, are now to be considered as actively functioning components of our national defense system. R&D and deployment, hitherto regarded as separate activities and concepts, each with their own requirements – often contradictory to each other - are now to be considered as one. Instead of “try before you buy” it will now be “buy before you try”. It’s hard for me to accept that procuring and relying upon a new, very complex, technological system before its parameters, behavior and efficacy are understood, is any different than publishing a paper claiming the discovery of a new element before any of the relevant data has been taken and understood.

Again, I welcome comments from our readers on the science – not the politics - of these developments in the field of defense against long-range ballistic missiles.

Turning to more pleasant matters, I am happy to announce that we again have a News Editor and thus, as seen in this issue, a News Section! Jeff Marque was our News Editor several years ago, but pulled out for family reasons. The News Section continued successfully for a number of years under the guidance of others, but has been absent since Mar Sher had to leave. Happily we welcome Jeff back: from Marque to Marc to Marque.

And I know that he would welcome news items from our readers!