

# A Shaky Consensus on Misconduct

An academy committee says scientific misconduct should be taken seriously but recommends narrowing the definition to include only the most egregious offenses

Few issues punch as many hot buttons for research scientists as does scientific misconduct. Ever since Congress and funding agencies began in the mid- to late-1980s to take an active interest in preventing and punishing scientific wrongdoing, researchers have watched nervously, fearful that federal rules, regulations, and investigations would regiment science and stifle creativity. Yet they have been deeply divided on how to respond to this perceived threat. Some, like Harvard biochemist Paul Doty, have become convinced that the community must get more serious about misconduct for its own good. Others, such as former Harvard microbiologist Bernard Davis, continue to argue that science's "self-correcting" mechanisms of peer review and experimental replicability are sufficient to handle the few cases of misconduct that have cropped up in public. And while the community has dithered, government agencies such as the National Institutes of Health (NIH) and the National Science Foundation (NSF) have forged ahead in creating offices to investigate misconduct, leaving working scientists more or less on the sidelines.

So when a high-level panel of the National Academy of Sciences released a 2-year study\* on scientific integrity last week, it had a unique opportunity to inject a powerful scientific voice into what has become a national debate. The panel, chaired by former presidential science adviser Edward David Jr., appears at first glance to have bridged some of the schisms within the scientific community. On one hand, its report states that "every case of misconduct in science is serious and requires attention," and it explicitly acknowledges that science's self-correcting mechanisms are not sufficient to guard against dishonest research. But it also argues that the primary responsibility for detecting and punishing misconduct lies with universities, not with the federal government.

\**Responsible Science: Ensuring the Integrity of the Research Process*, Volume I, National Academy Press, Washington, D.C., 1992.

The government, it says, has every right to investigate cases of plagiarism, data fabrication, and falsification, but other "questionable research practices" are the business of universities alone. (See box for the report's key recommendations.)

Not all the participants were willing to crowd onto the panel's middle ground, however. Two prominent University of California biochemists on the panel—Howard Schachman of Berkeley and Keith Yamamoto of San Francisco—signed a dissent from the report, complaining that it overstates the importance of scientific misconduct, draws a sloppy line between misconduct and other practices, and fails to address conflicts of interest. The dissenters point to language in the text of the report that appears to fudge its stated recommendations, and they suggest that the panel has really failed to reach much agreement after all. This hedged language has already resulted in widely varying press accounts of the panel's recommendations, and it could blunt the report's usefulness to government officials who have been

awaiting its recommendations for use in formulating suggestions for government-wide misconduct regulations.

## Anxiety attacks in the academy

The panel's lack of consensus reflects ambivalence within the ranks of the academy itself, for academy members have long been uneasy about producing a broad study on scientific integrity. The Institute of Medicine's (IOM) 1989 report on responsible conduct in the health sciences, for instance, "created a lot of fuss," says then IOM president Samuel Thier, now president of Brandeis University. Despite what Thier calls the IOM report's "positive emphasis" on what the research community could do to improve its practices, "there was a lot of anxiety about it—just that it would create more trouble and stir things up, that the scientific community would think

the academy wasn't sensitive enough to the value of the research going on, and so forth."

But widespread interest in the IOM report demonstrated the need for a broader-based study that would address the same issues for the entire research community. As a result, the academy's highest-level committee—COSEPUP, the Committee on Science, Engineering, and Public Policy—began to consider the idea. COSEPUP members are reluctant to describe the committee's internal deliberations in detail, but Thier, who was not a member, notes that some members were "anxious that [the study] would not disrupt the community and that it would serve some useful purpose." Not until they had satisfied themselves that misconduct presented similar problems in all scientific disciplines and that the issues raised wouldn't "get out of hand," in the words of COSEPUP chairman Cornelius Pings, provost at the University of Southern California, did committee members unanimously approve the study in early 1989.

Putting the study panel together, however, proved a difficult matter. Just finding a chairman took 7 months, and the search ended then only because David, the first of five candidates who considered and then rejected the job, relented and agreed to serve. Academy staffers had similar trouble locating bench scientists without close ties to prominent researchers involved in ongoing misconduct investigations—in particular, Nobel laureate David Baltimore and NIH AIDS researcher Robert Gallo—who would agree to sit on the panel. By spring 1990, however, staffers had assembled a 22-member panel that included 11 academic scientists in a variety of disciplines, three university administrators, a lawyer, a historian, a consultant, a journal editor, two public policy and ethics experts, and two industrial researchers.

## What the report says

The diverse background of the members mirrored their diversity of opinion. "The only thing that the committee pretty much agreed on in the beginning was the potential impact on the field of how [misconduct] cases are handled—both in terms of how one operates in the lab and how government regulation could influence the way we work," says Marye Ann Fox, a chemist at the University of Texas at Austin. But when conversation turned to specific issues, panel members invariably

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**—Edward David**



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found themselves at odds. "Most people came with their own positions, then found someone across the table from them who really disagreed," says Robert Sprague, a psychologist at the University of Illinois.

So it's no surprise that panel members tend to emphasize the points where they did agree over those where they didn't. David, for instance, argues that the panel has broken new ground by issuing a consensus statement that misconduct in science must be taken seriously. "The principal issue was, is there a problem here, or just the appearance of a problem?" he says. "A lot of people [on the panel] thought it wasn't a problem. But we heard testimony from a lot of people, many of whom were involved in cases, and after some thinking, people were willing to say there's a problem."

In a similar fashion, panel members point to a "taxonomy" they developed to clarify the definition of scientific misconduct. The panel recommended that federal agencies limit their definition to plagiarism and data fabrication and falsification, thereby eliminating an "ambiguous" fourth clause now used by NSF and NIH that defines misconduct as "other serious deviations from accepted practices." Panel member Ira Hirsch, a psychologist at Washington University, explains that the panel wanted to draw a bright line between serious transgressions that could harm the "edifice" of scientific knowledge and questionable research practices, such as discarding primary data or claiming "honorary" authorship of a paper, that don't interfere with the development of scientific knowledge.

That same bright line, states the report, should also keep the government out of the business of investigating those questionable research practices.

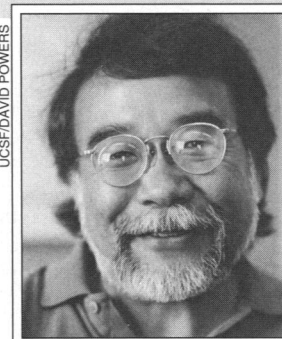
The panel essentially ducked the question of just how prevalent scientific misconduct is, saying there's no reliable information. To help get a better fix on the scope of the problem, the report recommended creating an independent policy board that would, among other things, collect and analyze data on such cases. Academy president Frank Press has suggested he will call a meeting to assess the community's feelings about creating such a board. "For such an important recommendation, I wouldn't want to see it end with the issuance of the report," he says.

#### What the report doesn't say

Beyond its recommendations, however, the report will likely be read as much for what it doesn't say as for what it does. While researchers critical of the report for not going far enough are bound to emerge eventually, for now the field belongs to the camp of the

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UCSF/DAVID POWERS

panel's two dissenters, who argue that the whole tone of the report—mild as it may seem to some—exaggerates the problem. "Doing science is a rather remarkable endeavor," says Yamamoto. "I think the report, written this way with this overall tone, misses that." Yamamoto also criticizes the report for its failure to address conflicts of interest—especially the conflicts universities face in responding to allegations of misconduct involving their own faculty members.

But Yamamoto's most serious objection involves the panel's attempt to limit the definition of misconduct to falsification, fabrication, and plagiarism. While he favors the elimination of a "catch-all" category from the definition, Yamamoto complains that the panel didn't go far enough. In particular, he seizes on two phrases in the text of the report that he argues could give the government license to investigate relatively trivial matters or to include other types of misconduct, such as sexual harassment or misuse of grant funds, as part of scientific misconduct.

For instance, at one point the report lumps actions such as coverups of scientific misconduct and reprisals against whistleblowers together with "other misconduct," noting that "[o]n some occasions, however, certain forms of 'other misconduct' are directly associated with misconduct in science." At another, the report acknowledges that panel members "did not reach final consensus" as to whether the definition of misconduct itself required "additional flexibility" to address problems such as abuse of the peer-review system or intentionally deceptive data selection. "In the end, the report simply waffled a bit on the definition," Yamamoto says.

These arguments are more than academic. Within the federal government, an inter-agency working group charged with formulating a set of government-wide guidelines for dealing with allegations of scientific misconduct has been stalled for months in anticipation of the academy report. According to D.A. Henderson, an associate director for life science at the Office of Science and Technology Policy (OSTP) who is coordinating the group, the goal is to produce guidelines that individual funding agencies can adopt for their own uses. Such guidelines, Henderson says, will likely include a suggested definition of misconduct. In other words, the report could exert a far greater influence than most academy reports enjoy—if its message does not get lost in the hedged language.

**—David P. Hamilton**

## The Academy Panel's Recommendations

After 2 years of sometimes heated debate, a panel formed by the academy's Committee on Science, Engineering, and Public Policy came up with a dozen recommendations for dealing with misconduct and fostering honest research. They include:

- Research institutions and funding agencies should agree on a common framework of definitions that distinguish between scientific misconduct, questionable research practices, and other forms of misconduct such as sexual harassment or mishandling grant funds. Scientific misconduct should be defined as fabrication, falsification, and plagiarism. Government agencies should eliminate ambiguous categories such as "other serious deviations from accepted practices" from their definitions.
- Research institutions and funding agencies should have policies and procedures for handling scientific misconduct and other types of misconduct.
- Scientists and research institutions should discourage questionable research practices through a range of formal and informal methods.
- Funding agencies have regulatory responsibility for handling narrowly defined scientific misconduct and other types of misconduct, but should address questionable research practices only through support of education and peer review.
- The scientific community and its research institutions should create a Scientific Integrity Advisory Board to draw up model policies for handling misconduct, to collect and analyze data on episodes of misconduct, to periodically assess government and private systems for handling misconduct, and to facilitate the exchange of information about and experience with handling misconduct allegations.
- Noting that good-faith whistleblowing plays an "important role" in disclosing scientific misconduct, the panel notes that "serious and considered whistleblowing is an act of courage that should be supported by the entire research community."