

NAS sizes up scientific misconduct

"The right to search for truth implies also a duty; one must not conceal any part of what one has recognized to be true."

With that quote from Albert Einstein, a 22-member panel of scientists, attorneys, research administrators, historians and philosophers released their long-awaited report on misconduct in science. The National Academy of Sciences (NAS) appointed the panel in 1989 after a number of scientific misconduct cases received publicity (SN: 2/11/89, p.85).

The report addresses the scope of the problem, noting that from 1989 to 1991, U.S. government offices received more than 200 allegations of scientific misconduct. About 30 cases have been confirmed, the panel says.

Such statistics suggest actual cases of scientific misconduct are uncommon. However, the report notes that scientists may tend to underreport misconduct.

"Misconduct in science is a serious issue that requires scientists and research institutions to take explicit action to protect the integrity of research," the committee concludes.

The NAS issued a number of recommendations, including a call for a standard definition of scientific misconduct. The report notes that research institutions currently rely on an ambiguous array of standards to judge alleged misconduct.

The report defines misconduct in science as fabrication, falsification or plagiarism in proposing or performing research, or in reporting findings. It concludes that errors in judgment, differences of opinion in the interpretation of data, and errors in analysis of data do not constitute scientific misconduct.

Questionable research practices are those that violate the traditional values of science but fall short of misconduct, the report says. Such practices include presenting speculation as fact and using inappropriate statistical methods.

Many whistle-blowers experience discrimination as a result of their actions, the panel found. The report calls for greater protection of scientists who come forward: "When necessary, serious and considered whistle-blowing is an act of courage that should be supported by the entire research community."

The primary responsibility for investigating allegations of misconduct should rest with the university or research institution, the report concludes. The NAS urges administrators to recognize the difficulty of such inquiries, especially when the accused scientist is held in high esteem.

AIDS drug finds a booster in FDA panel

A federal advisory panel recommended on April 21 that the U.S. Food and Drug Administration give a new AIDS drug conditional approval. The drug, dideoxycytidine (DDC), would be used in combination with zidovudine (AZT), the first antiviral AIDS drug approved by the agency.

The panel's action is part of an effort to speed up federal approval of lifesaving drugs, especially drugs aimed at combating the deadly virus that causes AIDS.

DDC manufacturer Hoffmann-LaRoche, Inc., of Nutley, N.J., presented the panel with preliminary clinical data showing that DDC administered with zidovudine helped boost the immune system of people with AIDS or a severe precursor to AIDS. Those preliminary studies involved about 150 people monitored for up to one year, says Hoffmann-LaRoche scientist Paul Oestreicher.

The FDA says it is considering the panel's recommendation. Under the accelerated approval plan, the agency can okay an experimental drug based on early data. If further studies negate the drug's promise, then the FDA can revoke approval.

The committee stopped short of recommending that FDA approve DDC as a sole treatment for AIDS, saying the company failed to prove that DDC is as effective as zidovudine.

NSF shortage study called 'bad science'

A 1987 National Science Foundation (NSF) report forecasting a "shortfall" of 692,000 scientists and engineers in the United States by 2010 is unfounded and untrue, scientists told a congressional subcommittee hearing April 8 in Washington, D.C.

Although NSF never published the report, it was widely circulated throughout the organization in draft form. Furthermore, former NSF director Erich Bloch cited the study in numerous speeches, said Rep. Howard Wolpe (D-Mich.), chairman of the investigations and oversight subcommittee of the House Committee on Science, Space and Technology.

Bloch's references caught the attention of both the media and policymakers, who began to cite the study in arguments on education, immigration and employment policy, Wolpe said.

Report author Peter House testified that his predictions were purely hypothetical and intended solely to indicate the number of future graduates with science and engineering majors. The study did not consider demand for those degree holders, conceded House, who serves as deputy director of NSF's office of planning and assessment. "We did not do a market analysis that related to jobs," he said.

"I am absolutely stunned," Wolpe responded. The study was intentionally misleading, Wolpe asserted, and has been used as leverage for NSF budget requests. The chairman criticized House for ignoring scientists' warnings that the study was flawed and for failing to inform anyone that the data were being misused.

Several scientists brought in to testify to the study's validity pointed out its inaccuracies. "The public has been exposed to very bad numbers," said Rustum Roy, a materials scientist at Pennsylvania State University in University Park. Rather than facing a shortage, Roy said, "We probably need a few less [scientists and engineers]." He called the study "bad science."

"If we produced more engineers, there would be no work for them to do," said Richard A. Ellis, director of manpower studies at the American Association of Engineering Societies in Washington, D.C. Both he and Roy noted that if a U.S. shortage ever did materialize, large numbers of scientists and engineers from other parts of the world would be waiting to fill the vacancies.

Wolpe blamed an inadequate review process for failing to squelch the draft report before it was circulated. Walter E. Massey, who became NSF director after the study was completed, told the subcommittee he plans to install stricter review procedures to prevent such mishaps. "I am always willing to learn from past mistakes, either mine or others'," he said.

Watson leaves NIH genome post

James D. Watson, the biologist who won the Nobel prize for codiscovering the structure of DNA, resigned on April 10 as director of the National Center for Human Genome Research in Bethesda, Md.

Watson's ownership of stock in biotechnology companies had raised questions about a possible conflict of interest.

In a brief statement, Bernadine P. Healy, director of the National Institutes of Health (NIH), called Watson "an historic figure in the annals of molecular biology" and said, "We have been fortunate to have his scientific leadership and judgment."

In 1989, after helping to found the genome project, Watson became its first director. The project's goal is to map and sequence all human genes.

Healy appointed Michael M. Gottesman, chief of the laboratory of cell biology at the National Cancer Institute, to temporarily fill Watson's post.

Watson says he will continue to direct the Cold Spring Harbor (N.Y.) Laboratory on Long Island.