

Rescuing Science from Politics

When researchers feel the squeeze from lawsuits and government regulators, we all suffer.

BY PROFESSOR RENA STEINZOR

To the casual observer, scientists seem to be among the most influential people in America. Demands that we use “sound science” to make decisions about everything from global warming to Vioxx are ubiquitous. Prominent decision-makers in the legislative, executive, and judicial arenas have urged that scientists be elevated to the pinnacle of power, entrusted by the rest of us with the authority to resolve our most important and complex problems. Why, then, do so many scientists deployed at the front lines of the most significant controversies feel not like anointed and omniscient saviors, but instead like hunted prey?

The moment that scientists announce a discovery that has significant economic ramifications, they reap a whirlwind.



Beleagued by scientific misconduct charges or threatened with breach-of-contract lawsuits if research is published over a private sponsor's objections, scientists must struggle to maintain their independence and, equally worrisome, their professional credibility. Such threats are so severe in some arenas that they have already deterred the best and the brightest from entering the very disciplines with the greatest potential to inform public affairs.

If such trends continue, scientific integrity could be undermined to the point that we are deprived of the progress that independent and transparent research could offer on a wide range of pressing social problems. When scientists cannot control their own research agendas, because they are preoccupied with responding to subpoenas and data requests, when private funding comes only with long strings attached, and when scientists are sanctioned for communicating results that do not serve the interests of their sponsors, the core values that define science are threatened.

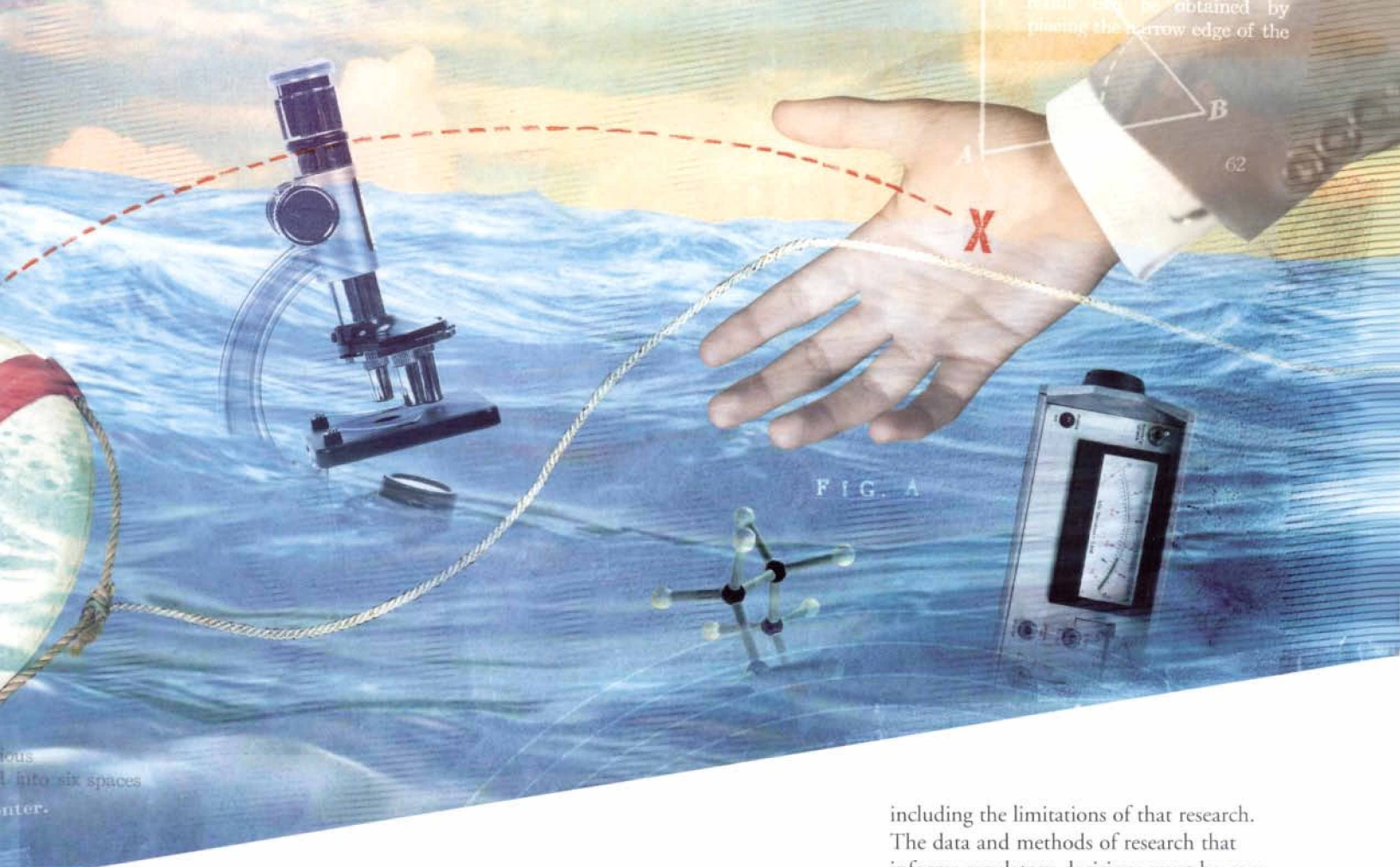
Scientists unfamiliar with the political process generally assume that the path of their research from the laboratory to policymakers is straightforward. Research results enter the literature and the research is judged on the merits by knowledgeable colleagues. Well-designed studies with original discoveries play a significant role in formulating social policy, while studies with evidence of bias or unclear methodology are discounted. Scientists expect that when policymakers are confronted with important questions regarding scientific



evidence, they embrace a “weight of evidence” approach, taking into account the inevitable weaknesses in individual pieces of research, but rendering a judgment based on the evidence taken as a whole. After all, judicial and regulatory institutions have the same objectives as scientific institutions: improving social welfare.

Yet scientists who have ventured out of their laboratories into legislative, regulatory, and even courtroom battles over the last few decades have learned that reality is diametrically opposed to this idealized view. And that controversy is deepening. The dramatic growth of the regulatory system, the expansion of liability for damages caused by defective products, and the continuing failure of government to provide public funding for scientific research have worked synergistically to amplify the pressure.

Plus, the Information Age intensifies that synergy in ways not imaginable a decade ago. With the invention of the World Wide Web, adverse information about a product circulating in commerce travels rapidly, prompting rapid fluctuations in markets even without a finding



of ultimate liability.

The list of scientists undermined by such clashes is as long as it is varied. Dr. Takeshi Hirayama was called on the carpet by his superiors when he published research connecting secondhand smoke with increased lung cancer among non-smokers. Dr. Paul Fischer was forced to pay his own legal fees in a fruitless effort to protect the identity of the people he interviewed for a study about childhood perceptions of Joe Camel. Dr. Herbert Needleman had no fewer than three sets of scientific misconduct charges filed against him when he found that low levels of exposure to lead cause brain damage in children under six; once again, although he was exonerated on all the significant charges, he was compelled to pay considerable legal fees out of his own pocket. On the eve of publication, Dr. Betty Dong was forced to withdraw an article finding that generic thyroid medication was just as effective as designer drugs when her private sponsor threatened to sue her home institution, the University of San Francisco. And, most recently, Dr. Tyrone Hayes was vilified as incompetent when he announced the results of experiments showing that very low doses of atrazine, one of the country's most widely

used pesticides, caused endocrine disruption and infertility in frogs.

Attacks like these have generated significant concern among the scientific community, prompting professional organizations to return to first principles of science. Biomedical journal editors, for example, now require the disclosure of possible conflicts of interest before scientists are allowed to publish scientific findings or to serve as peer reviewers. The Union of Concerned Scientists collected signatures from hundreds of scientists, including dozens of Nobel Prize winners, in protest of the politicized use of science by the executive branch. Even large and generally unflappable societies like the American Association of the Advancement of Science have passed resolutions, filed comments, and conducted panels on the increasing problems of biased research and biased literature reviews.

Three fundamental principles should serve as a shield against the worst of these abuses:

Independence: Scientists must be able to conduct research without unjustified restrictions, including undue influence by research sponsors.

Honesty and Transparency: Researchers and those using their research must be careful to accurately represent their findings,

including the limitations of that research. The data and methods of research that informs regulatory decisions must be communicated honestly and expeditiously to the research community and broader public.

Public Funding of Basic Science:

Government support of independent research is essential to produce discoveries that benefit the public good. In appropriate circumstances, peer review may serve an important role in assisting the government's decision-making, but peer review must never be used to censor research.

At one level, these principles are incontrovertible: no one would argue that science should be dependent on special interests; no one would suggest that scientists should suffer retaliatory attacks on their professional reputations; and no one would urge the suppression of research that advances the public interest. Equally obvious, articulating these principles and finding ways to implement them effectively are two very different things. Yet the debate on how to reinforce these principles is long overdue. Scientists and policymakers can no longer afford to ignore the increasing politicization of science.

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