Erosion of the integrity of public health science in the USA

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Ethics

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Protecting the evidentiary base of occupational and environmental health

There is increasing evidence that political and economic interests are eroding the independence and integrity of public health science in the USA.[1 2] A recent supplement of the *American Journal of Public Health* has several insightful articles on the topic.[3 4] Readers will by now be familiar with the manipulation of scientific information by executives and scientists in the tobacco industry.[5] Sadly, it now appears that the tobacco story was not an isolated case of a few unethical businessmen and scientists, but merely the best documented example of economic interests undermining public health science. In recent years, the threats to the integrity of science in the US have come not only from economically interested parties, but also from government.

A report of the US Congress found numerous examples of how the current Administration has manipulated scientific research and traditional scientific review procedures.[6] These include inappropriate questioning of prospective members of scientific review committees about their political views; removal of long serving members on the basis of political litmus tests; and blocking research funding and the publication of research results, when these appeared to reflect badly on economic interests supporting the Administration. Although shifts in political leadership often lead to greater or lesser emphasis on environmental regulation from time to time, what is new and alarming about current decision making is the degree to which politicians have chosen to intrude into scientific debates as a tactic for achieving political goals.[1 4]

One increasingly common form of political interference involves compromising the work of US scientific advisory committees.[1] In 2002, the Secretary of the Department of Health and Human Services removed three well qualified experts from the National Institute for Occupational Safety and Health (NIOSH) grant review study section.[7] The candidates were highly qualified and had been approved by staff at NIOSH. Their removal without explanation by the Secretary strongly suggested that the action was politically motivated. The candidates were experts in ergonomics—a topic on which the Bush administration has taken a strong stand opposing regulation.

Industries themselves are also increasingly active in influencing scientific research, through challenges to the scientific basis of health regulations, targeted funding of research designed to answer particular questions and not to answer others, and participation on research and decision making panels. The influence of the regulated community (or its third party funded think tanks) on environmental and occupational health research and policy has been widely documented.[2] This influence is used to raise uncertainty about the strength of evidence identifying environmental and workplace hazards, as a strategic smokescreen to avoid regulation.

> While maintaining our objectivity, we must be aware of our social responsibility to protect human health and the environment through our scientific practice

For example, in November 2000, industry consultants presented a re-analysis of occupational cohort studies of dioxin exposed workers to a science advisory committee of the US Environmental Protection Agency. According to the authors, the re-analysis indicated the existence of a safe threshold, implying that low dose dioxin exposures did not need to be regulated. This testimony effectively stalled the committee's work for months while the findings were debated. A subsequent, peer reviewed examination of the methods used by the industry consultants showed that they were flawed, but this was not published until several years later.[8]

Scientists, as a group, would generally prefer to be left alone to do their work free from interference, and free even from having to think about how to maintain their independence. Unfortunately, this wishful thinking is not enough to ensure the continued integrity of public health science and other related fields in the US. We believe that our colleagues must become more active in establishing structures and practices which protect them from financial and political influences.[9] There are many ways that this might be done, and they will probably vary from one country to another, and among scientific fields. But we suggest that scientists engage in processes to assert positive principles of sound environmental health science—how science should work, and how it should be applied to public policy decisions—in a world in which money and partisan political power are held at bay.[10 11] This is likely to be more effective and persuasive than a list of what *not* to do. We propose that there are at least three main themes in a positive response to the attacks on scientific integrity:

1. Strong pressure from within the scientific community for codes of ethical conduct and financial conflict of interest. Many scientific societies have such codes, as do most biomedical journals, but they tend to leave open grey areas that provide ample opportunity for sponsors to influence research design and conduct. And, more to the point, we do not believe that these codes are taken very seriously. We urge the leaders of scientific organisations and journal editors to continue to emphasise development of and adherence to strong ethical codes.

2. Calls for strengthening and formalising the independence of academic researchers through funding and oversight mechanisms that insulate them from political and economic pressures. Neutral intermediaries between funders and researchers have a long tradition, but are still not widespread.[12] We need to assert to the public that science independent not only of flagrant but also of subtle influence by sponsors is essential to democratic decision making. To mention just one small example: scientists are aware, as no one else, of the critical role of our ''volunteer'' service as anonymous peer reviewers. But in some fields it is becoming difficult to find peer reviewers who do not have a financial stake in the outcome of a study that needs to be reviewed. We believe that the public would be willing to support greater funding for science if the case for independence were made clearly.

3. Autonomy in the conduct of science does not require (as some have suggested) that scientists isolate themselves from policy debates. Quite the contrary:

as public health scientists, funded largely with public dollars, we must acknowledge that our work informs democratic decision making, and that therefore we have responsibilities in addition to the ''search for the truth''. Scientists are most familiar with the strengths and weaknesses of the research they conduct, and it is appropriate for them to participate in discussions about its interpretation. While maintaining our objectivity, we must be aware of the policy uses of our work and of our social responsibility to do science in the service of protection of human health and the environment.[13]

It is unlikely that these proposals will quickly reverse the current worrisome trend in US science policy, but we believe they are important in preventing further erosion of scientific integrity. We invite our colleagues to join us in defending sound science from those who seek to undermine it for narrow political interests.

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