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Science in conflict

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Scientists and industry watchdogs gathered in Washington, D.C. last week to explore egregious cases of industry-led manipulation and distortion of scientific research - and to suggest remedies. The [1-day symposium](#), held by the Center for Science in the Public Interest (CSPI), is part of a CSPI project called [Integrity in Science](#).

Project director Virginia Sharpe said that the conference was intended to help CSPI form an action plan for lobbying and advocacy strategies to prevent manipulation and suppression of scientific data, the harassment of scientists reporting potentially industry-damning results, and the raising of evidentiary standards to unreasonable levels. The group also hopes to encourage better conflict of interest policies at journals and to improve disclosure policies and achieve better balance in National Academy of Science and science advisory [panels](#).

"We do not contend that industry-sponsored research is always bad or that companies should be prohibited from providing input to government agencies," CSPI Executive Director Michael Jacobson told attendees. "Rather, our aim is to characterize some of the problems that arise when industry influences science and science policy and to identify ways of minimizing those problems."

Sharpe told us that the CSPI, a longtime advocate of comprehensive nutrition labels on foods, decided to hold the symposium after investigating the food industry's hiring of scientists.

Speakers cited several other examples of industry - inspired deception - including the exploits of the tobacco industry, of Exxon corporation following the Exxon Valdez oil spill, of the food industry, the asbestos industry, and the concentrated animal operation feed industries (CAFOs) in states such as North Carolina, where lagoons of animal waste pollute the air and water.

According to the speakers, several industries have made so-called "junk science" - the publication of their own self-serving research results - common practice. Also common are suppressing or criticizing research that does not support their position and disseminating data or their own risk interpretations directly to the lay press and policy makers.

Many industries have detailed plans in place to challenge scientific findings as soon as regulations appear that could threaten their bottom line, said David Michaels, a research professor of occupational and health services at George Washington University and a former US assistant secretary of energy for environment, safety, and health.

The tobacco industry originated the "junk science" movement, Michaels noted. Using the tobacco industry's own documents, Lisa Bero, a professor of clinical pharmacy at the University of California, San Francisco, described the ways in which tobacco companies have intentionally manufactured doubt and controversy via their own research findings in the hope of downplaying scientific evidence that illustrates the health risks associated with cigarette smoking and second-hand smoke.

Predating the tobacco industry, the lead industry used similar tactics to foster doubt, including targeted advertising campaigns, according to Columbia University history professor David Rosner, Gerald Markowitz of the John Jay College of Criminal Justice, and Herbert Needleman, a professor of

child psychiatry and pediatrics. The speakers described how the lead industry led a campaign to downplay the dangers and effects of lead paint in children and to discredit associated research and researchers - in particular, Needleman himself. At the symposium, Needleman received CSPI's inaugural Award for Integrity in Science for his "pioneering and courageous contributions to the understanding and prevention of childhood lead poisoning."

JoAnn Burkholder, a professor of aquatic biology at North Carolina State University, and Steven Wing, an associate professor of epidemiology at University of North Carolina, described how CAFOs have avoided, for the most part, strict legislation that would require cleanup of huge animal waste deposits, which have been scientifically demonstrated to be major threats to air and soil quality in some states. Wing emphasized that those most affected by such pollution are poor persons unlikely to have a voice in government.

Jeffrey Short, chief chemist for the National Marine Fisheries Service investigation of the Exxon Valdez Oil Spill, described a series of attacks on government science by Exxon. According to Short, Exxon manipulated data about the extent of the spill to support its claim that much of the seafloor near Alaska was already contaminated by natural oil seeps. Short also cited glaring abuses of scientific peer review, the manipulation of scientific meeting agendas, and abuses of the Freedom of Information Act, which Exxon has used to make very broad requests - including requests for data associated with research still in progress - that slowed studies and interfered with their publication. "It has, in effect, reduced us to being field technicians for Exxon," said Short, who took a leave from his job in order to speak out on the subject.

Jennifer Sass, a senior scientist at the National Resources Defense Council, argued that many methodologies for screening and detecting toxic chemical agents are so complex and novel that industries have been able to produce data on the rigor of these models without any outside oversight. As a result, said Sass, polluting industries have weakened regulatory standards based on specious data. She recommended, among other things, that a broader array of tests routinely be employed to include effects on in utero exposures, juvenile animals, both sexes, and central nervous system tissues.

Most speakers also proposed remedies to the problems they described. These included more attention from scientific societies to conflict of science prevention and to the issue of industry pressure; full disclosure from scientists of affiliations with industry, trade associations, unions, and public interest groups; disclosure of the identity of reviewers of industry-sponsored research; further disclosure of internal industry documents to better understand strategies the industries use to influence research study design and conduct; ensuring that all scientists make their data available for public scrutiny; enforcement by journals of standards of scientific misconduct; ombudsmen at universities to help professors [pressured by industry](#); special recognition for scientists who reveal significant research impacts on industry; and legislation to prohibit industries from controlling the publication of findings by nonindustry scientists.

Tufts University professor of urban and environmental planning Sheldon Krinsky suggested that universities reexamine the very principles on which they're founded and find ways of protecting those principles from compromises made for the sake of amassing larger budgets. Krinsky, who has a book due out this August - titled *Science in the Private Interest: Has the Lure of Profits Corrupted Biomedical Research?* - worries that industry involvement in scientific research threatens the very notion of scientific objectivity.

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