SCIENCE and POLITICS: The Uneasy Relationship

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By Howard J. Silver, Ph.D.

MY 2005 SUMMER READING included the new biography of J. Robert Oppenheimer, *American Prometheus,* by Kai Bird and Martin Sherwin. An excellent book, it describes one of the clearest examples of the interplay between science and politics in American history. One of its lessons is that if a scientist cooperates with the government and its policy wishes, the relationship goes smoothly. Despite some shaky associations in his past, Oppenheimer got to run Los Alamos and helped American scientists produce an atomic bomb. On the other hand, if a scientist opposes an administration or congressional policy objective, in Oppenheimer's case building the hydrogen bomb, then that scientist is vulnerable to persecution, challenge, and denial of your security clearance. In the end the physics of bomb manufacture served the government's purposes, but for some scientists who began to question those purposes, there was doubt and discomfort.

In recent years this uneasy relationship between science and politics continues, especially as the Federal government has expanded its support for research and development, particularly in the life sciences, exemplified by the doubling of the National Institutes of Health (NIH) budget. At the same time, charges of politicization combined with a disregard for scientific evidence has heightened the tensions between the scientific and political community. Highly publicized debates about climate change, stem cell research, and evolution fill the air. The phrase "sound science" has become part of the lexicon of Washington policy debates, but the "sound" often becomes a cacophony of competing claims. As a member of Congress once told a scientist testifying at a hearing: "You've got your science, I have mine." This has been exacerbated by the rise of policy reports issued by ideologically based think tanks.

When President Kennedy announced that America would place a man on the moon by the end of the 1960s, the politics of the Cold War drove what would become a significant scientific and technological enterprise. The "Space Race" became part of the political lexicon. It was a race that the U.S. "won," abandoned, and that President Bush would like to revive with his Mission to Mars project.

Science is part of the political process. Politics is often defined as the competition for the allocation of scarce resources. Recent budget constraints and priorities suggest funding increases for science could become scarce. Yet, the Federal research and development budget has grown to $132 billion. The size of the annual increase (or heaven forbid, decrease) and how the Administration and Congress allocate that funding has become part of the political concerns of scientists and their representative societies. The American Association for the Advancement of Science (AAAS) monitors and speaks out on research and development funding as well as sponsoring an annual symposium each spring that spends a significant portion of its agenda evaluating how the science budget is doing.

Scientific societies have organized into groups like the Coalition for National Science Funding, which lobbies for increased dollars for the National Science Foundation (NSF), and the Ad-Hoc Group for Medical Research Funding, which does the same for NIH. Universities have their own Washington government relations activities and hire big lobbying firms to seek funding. The social science community threatened with the loss of federal funding for its research in President Ronald Reagan's first budget created, the Consortium of Social Science Associations, which I lead, as a lobbying response to that threat. In many areas of national activity such as agriculture, justice, education, homeland security, and others scientists and their advocates have also joined the game of congressional earmarks, seeking special projects granted by members of Congress to their constituents. Scientists have become deeply involved in interest-group politics in the American policy making process.

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Doubling the budget of NIH was part of a political effort by many disease groups, pharmaceutical companies, and biomedical researchers. The campaign was launched with a public relations activity that included Hollywood and TV personalities, included the proffering of public opinion polls to support the position, and the cultivating of key congressional actors through the presentation of awards. All of these activities are part of the political process to persuade policymakers to do something you want done.

Key heads of scientific agencies such as the White House Office of Science and Technology Policy, NSF and NIH recognize scientists' role in the political process. They have often admonished scientists to "speak with one voice," particularly in the Federal funding game, trying to avoid competition among disciplines for the scarce dollar. This is not always successful as recent years have seen complaints about the neglect of the physical sciences in contrast to the boosting of the life sciences. Yet, when the physics community divided over the Superconducting Super Collider and it was cancelled by Congress in 1993, the science community learned a lesson it hopes will not be repeated.

Presidential elections offer significant opportunities for group politics. Although scientists rarely make significant campaign contributions and for the most part, their issues are not high on the national agenda, and unlike anti-abortion activists do not cast votes based on their group identity, there have been attempts to organize them behind certain candidates. In 2004, certain scientists made a major effort to rally their colleagues to oppose President Bush's reelection. The Union of Concerned Scientists (UCS) and Representative Henry Waxman of California, the Ranking Democrat on the House Government Reform Committee, accused the Administration of distorting scientific evidence to serve its own political purposes. The Committee's Minority Web page[1] under its "politics and science" section includes a series of indictments that question "whether scientific integrity at federal agencies has been sacrificed to further a political and ideological agenda," particularly in the areas of public health and the environment. Waxman concluded that under President Bush they have been.

The UCS also issued a report, *Scientific Integrity in Policy Making,*[2] condemning the Administration's practices it viewed as politicizing science. This report and others, including a statement signed by 62 scientists, including Nobel Prize Winners, such as former NIH director Harold Varmus, accused the Administration of politicizing scientific advisory panels through the appointment process, distorting scientific results that disagreed with Administration policy, particularly in the area of climate change, limiting stem cell research and overruling scientific advisory panels to limit the morning-after contraception pill to satisfy the Administration's religious right supporters, distorting the results of research by editing out results that disagreed with the Administration, as happened with a report on health disparities, the removal of information from web sites, and the continued promotion of intelligent design and creationism as alternatives to evolution in public school science classes. A new book by Chris Mooney, a senior correspondent for the *American Prospect* magazine, is entitled *The Republican War Against Science.*

John Marburger, the President's Science adviser and director of the White House Office of Science and Technology Policy has defended the Administration's science policy, which is part of his job description. However, recently he has insisted that for example "Intelligent Design," which the president supports "is not science" and that "global warming exists."

For scientists the peer review system is sacrosanct as the method for making decisions as to how to fund scientific projects. As the late Senator Russell Long once asked in a late night debate over earmarking many years ago, "Who are these peers?" Congress, especially its appropriators, believes that it determines how best to spend the public purse. I mentioned earmarking earlier and this has occurred in many of the research agencies connected to the mission agencies of departments. NSF and NIH were generally exempt. And there has been some effort made to introduce some competitive funding even into departments whose research agencies have considerable earmarking, e.g., the National Research Initiative Competitive Grants program at the Department of Agriculture.

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Yet, even at NSF and NIH Congress has threatened this system important to scientific discovery. In 2003, Representative Patrick Toomey, a Republican from Pennsylvania, sponsored an amendment to the NIH spending bill seeking to defund five already approved grants. These grants supported research on sexual behavior and health. Supporters of Toomey's amendment argued that this research topic was not as important as funding other more significant disease specific research. Despite the defense of research on sexual health by NIH Director Elias Zerhouni, the amendment lost by only two votes. From this sprang the Coalition to Protect Research,[3] a group of social, behavioral, and biomedical science organizations as well as patient groups and women's health organizations to support NIH's peer review process.

The past two years Representative Randy Neugebauer, a Republican from Texas, has sponsored amendments to the same funding bill to eliminate funding for grants that have also passed the NIH review process. These grants funded by the National Institute of Mental Health did not meet Neugebauer's view that this institute should only devote itself to funding research to help cure severe mental illness. In both years, the appropriations leadership decided not to bring the amendment to a recorded vote and let them pass, with the assumption that they would disappear when the House and Senate met to reconcile their differences in the legislation. This happened in 2004 and is expected to occur this year. Despite this, it appears Congress is ready to help NIH make decisions on individual grants.

At NSF, in the early 1990s Senator Robert Byrd, Democrat of West Virginia, tried to eliminate funding for 31 already approved NSF grants, mostly in economics, because of a dispute he was having with the first Bush Administration over earmarking. In 1995-96 Representative Robert Walker, Republican from Pennsylvania, and then Chair of the House Science Committee, tried to eliminate the Social, Behavioral and Economic Sciences Directorate at NSF. For a long time conservative lawmakers viewed social science research as reflecting a liberal agenda – a bunch of liberals who only wanted government money to study how to spend more government money on programs that did not work. That perception has now been largely overcome by the emergence of scholars and scholarship that has supported the conservative agenda, such as free market principles in pollution control policies.

Congress has also recently asserted itself in the climate change science arena. Senator James Inhofe of Oklahoma claims that there is scientific evidence that global warming is a "hoax." Perhaps he is reading too many Michael Crichton novels. Earlier this year, Representative Joe Barton, Republican from Texas, chair of the House Energy and Commerce Committee, subpoenaed researcher Michael Mann and his colleagues. The Committee asked for raw data and computer code from all of Mann's research that led to the famous "hockey stick" conclusion regarding the increase of global temperatures in the 20th Century. Representative Sherwood Boehlert, Republican of New York, Chair of the House Science Committee, condemned this request, suggesting it seeks to "intimidate scientists rather than learn from them, and to substitute Congressional political review for scientific peer review." He further asserted: "This would be pernicious.... It raises the specter of politicians opening investigations against any scientist who makes the political elite uncomfortable." The AAAS and the National Academy of Sciences, while conceding Congress' oversight role on public policy issues, have also expressed their concerns. So far, Barton has not done much with the information he has received.

What does all this mean? With its activities in the Federal funding arena, the science community has decided to play in the political game. Many of the most important scientific questions are political. Scientists believe that "scientific advice" should be the key to good public policy. They hope that the results of their research are persuasive to decision makers. Yet, a democratic system creates multitude sources of political influence and information. Scientific advice is just one piece of the policy making agenda. For example, the debate over stem cell research involves ethical as well as scientific considerations, according to many. Administrations and Congresses play different games than just the science one.

Yet as Jeffrey Toobin noted in the *NY Times Magazine* (August 28, 2005) there are other debates on the horizon that may mark the next twenty years of the science/politics relationship as scientific discoveries provide advances in nanotechnology, genetics, sensors, surveillance, and other areas of life that will raise social and ethical implications and political questions. Policy makers will continue to sort out competing claims and political needs in addition to the scientific evidence to make and implement public policy. As the debate over the Bush policy on stem cell research has demonstrated, the science can occur without the federal government's support. Yet, as scientific advances create more ethical dilemmas, the political intrusion may grow and disturb the science.

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