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## Government Reviving Ties to Scientists

By WILLIAM J. BROAD

A new sense of urgency about terrorism has prompted the Bush administration to try to repair federal relations with the nation's scientific elite — ties forged during the cold war that shriveled with the demise of the communist threat as advisory panels went out of existence and agencies dropped scientists in droves.

A main focus is the National Academies of the United States, which are perhaps the world's most prestigious scientific organizations. They have been asked to rally not only their own 5,000 members but the nation's other scientists as well. Last week, the academies ran a private meeting to help federal officials better protect the mail from anthrax, and have recently begun advising the Central Intelligence Agency and the Federal Bureau of Investigation as well.

"We need to understand what ideas are out there," said Dr. John H. Marburger III, president Bush's science adviser and former director of the Brookhaven National Laboratory on Long Island. "And we need to let the intellectual community know what is needed from our perspective."

Dr. Lewis M. Branscomb, a Harvard physicist, who is helping to direct a new academies panel on antiterror technologies, said the developing bond between science and government promised to rejuvenate the partnership that built the atomic bomb, landed American astronauts on the moon, won the cold war and cured many diseases.

"Our model is before World War II and after," Dr. Branscomb said. "It could be a turning point." He said the whole scientific enterprise of the country might need to be different now that suicide jets and germ attacks had driven home the reality of new kinds of terrorism.

The new focus of federal officials is welcome news to the academies, made up of the National Academy of Engineering; the Institute of Medicine; the National Research Council, which carries out detailed studies; and the National Academies of Sciences, the oldest of the groups, founded by Congress at the height of the Civil War to advise the government "upon any subject of science or art."

Government officials "are recognizing that they need help, and that's a step forward," said William A. Wulf, president of the National Academy of Engineering.

In a sense, the administration is taking small steps toward conditions that prevailed during the cold war, when the government financed much of the nation's basic scientific work. For obtaining technical guidance, many departments and intelligence agencies had their own science staffs, and Congress could seek advice from its Office of Technology Assessment, which became known for its detailed reports on topics as diverse as oil deep underground and weapons in space. With the end of the cold war, though, demand for scientific advice fell. The changing atmosphere was exemplified by the fate of the Office of Technology Assessment, which in 1995 was abolished after more than two decades of existence. Experts judge the Clinton administration, despite good intentions, especially as voiced by Vice President Al Gore, as just adequate in fighting the reduction trends.

With the Bush administration, scientists complained it was leaving key advisory jobs unfilled and generally paying only perfunctory notice to the nation's research agenda.

All that changed on Sept. 11. Now, the government is scrambling to get wide-ranging advice from the academies on outwitting terrorists and better protecting Americans from threats of germ, computer, chemical and nuclear attack.

Teaming with Dr. Branscomb to run the academy's antiterror panel is Dr. Richard D. Klausner, a molecular biologist who directed the National Cancer Institute for six years before leaving in September after the terror attacks.

The White House is "very interested in reaching out and getting input," Dr. Klausner said. "The science communities have a lot they must do, giving the best possible advice. So many things are going on. Our hope is to synthesize and integrate."

Among the Bush administration bodies seeking academy advice is a little-known task force called the Technology Support Working Group, which identifies promising ways to fight terrorism and provides money to develop them. The task force was founded in 1986 and has representatives from the C.I.A., F.B.I., Secret Service and Departments of State, Energy and Defense; it has never before asked the National Academies for help, officials said.

Now, though, it is seeking guidance on making devices that can peer through walls and buildings to recognize bombs or bodies. Another aim is to develop ways to protect computer networks, electrical power grids and other vital systems. Still another goal is to find improved ways to sense, track and eliminate biological and chemical arms.

Dr. E. William Colglazier, executive officer of the National Academies, said another administration body, which he would not name, was seeking help from social scientists to better "understand the motivations of terrorist groups and the things they value."

He said the National Academies were becoming a "science broker" to the White House and the wider government in a time of crisis. In doing so, he said, they are setting aside their usual practice of convening expert panels to deliberate for months and then produce detailed reports. Instead, they are identifying scientists who can do quick studies and run expert meetings on short notice.

Dr. Marburger, the presidential science adviser, said a major function of the academies and their members at the nation's universities would be to help evaluate hundreds and even thousands of ideas pouring in from around the globe about how to thwart terrorism.

"There's not enough expertise in agencies to deal with them in a timely fashion," he said.

A more basic challenge, Dr. Marburger added, will be helping the government to brainstorm to make sure it was "covering everything you need to do to protect yourself" against terrorism.

"That's obviously a key element in providing maximum protection," he said.

Some leading scientists question whether the Bush administration's quick embrace of the elite will be deep or effective. Dr. Richard L. Garwin, a top physicist who has advised Washington for decades, said the sheer size of government today reduced the influence of outsiders.

"It was easier in World War II because there wasn't a standing bureaucracy," Dr. Garwin said.

"Now we have such a big defense infrastructure. People are going to argue, 'That's my turf!' It's going to be extremely difficult."

Complicating things, trends in research financing have widened the rift between top science and Washington. In decades past, the government was the major source of money for basic research, giving it ready access to the best scientific minds. But now it is private industry that pays for most of the nation's science, making it harder for Washington to reach the intelligentsia.

Perhaps hardest of all, most science analysts fault the Bush administration as getting off to a very slow start with science, saying the White House showed little enthusiasm for research spending or getting sound guidance on science policy.

"Bush took longer than any other president to appoint a science adviser since the office was created in the Eisenhower administration," said Matthew G. Bunn, assistant director of the science, technology and public policy program at Harvard's Kennedy School. He added that when Dr. Marburger was appointed, it was not as assistant to the president, as his predecessors had been, but simply as director of the White House Office of Science and Technology Policy. As a result, the science adviser is now lower on the White House pecking order. The Bush administration also dropped two of the adviser's four Senate-confirmed associate directors (for the environment and national security), leaving ones for science and technology.

Mr. Bunn said he believed the Bush administration had shown no interest in making the science adviser a serious player in policy formulation, limiting his influence in the war against terrorism. Dr. Marburger, who was not confirmed as science adviser until Oct. 23, said such criticism was unfair.

"There is a certain value in symbolism," he said. "But I'm more interested in performance." He added that he had suffered no loss of influence with President Bush or in policy development. Such complaints, he said, "reflect an unrealistic view of how things get done in Washington." Experts agree that the Bush administration's new love of science and the academies builds on an early reliance on the elite institutions for help with specific problems, as when the White House sought out advice on climate change early this year.

But it remains to be seen whether the administration will act on the science advice it is beginning to seek out. For instance, the White House recently asked for \$202 million in the 2002 budget, down from \$271 million in 2001, to help Russia make its nuclear weapons more secure. Critics see such cuts as potentially abetting the rise of nuclear terrorism. "There's a mismatch between the rhetoric on reducing the nuclear threat and the budget," said Dr. Frank von Hippel, a physicist who advised the Clinton White House and now teaches science policy at Princeton. But Dr. Marburger, the science adviser, while calling such financing a good investment, said it had to be weighed against competing demands emerging in the overall antiterror war.

"That's one among many things you need to think about," Dr. Marburger said of the Russian aid program, adding that lots of other challenges were more immediate. No one, he said, should underestimate the power of science to address many of these challenges by engaging in simple, quick, smart analysis.

"That," he said, "is appropriate to the urgency of these issues."