

BUSH SELECTS SCIENCE ADVISORY GROUP; WITH IT, HE REVIEWS THREE POLICY ISSUES

In his only election campaign speech on science policy, delivered in the final month of his run for the Presidency in 1988, George Bush pledged to promote science advice by appointing a science adviser who would have the same status as his national security adviser and a science advisory committee that he would join at meetings with some regularity. Last April, Bush nominated D. Allan Bromley as his top scientist—though the Senate delayed confirming him until August. Bromley's position was elevated, to be sure, from adviser to assistant to the President for science and technology, with his new rank enabling him to participate in deliberations of the Cabinet and of the Domestic and the Economic Policy Councils. As for the President's Council of Advisers on Science and Technology, it was established belatedly on 19 January when Bush signed Executive Order 12700.

The announcement of the PCAST members had a certain irony. Candidates for the advisory committee had been channeled through the White

House since early fall, and the President himself had approved the choices. But on 2 February, when they came to Washington to be sworn in, the President seemed disinterested. He was delivering a speech on science in a basketball court on the University of Tennessee campus. The 12 PCAST members received the oath from Vice President Dan Quayle in the ornate Indian Treaty Room at the Old Executive Office Building, before an audience consisting of a dozen of Bromley's staffers at the Office of Science and Technology Policy and a half-dozen reporters and cameramen.

One of the key reasons for the delay in appointing PCAST was the increasingly intrusive clearance process imposed by the White House personnel office and the FBI. The paperwork for an advisory post at the White House includes full financial disclosures, personality evaluations and security clearances.

By the President's order, Bromley is PCAST's chairman. The council's

vice chairperson is Bernadine Healy, a cardiologist who heads the research institute of the Cleveland Clinic Foundation. She was with the White House Office of Science and Technology Policy in the early 1980s. Other members are mostly familiar figures in the Washington establishment: Norman E. Borlaug, plant scientist, professor of international agriculture at Texas A&M University; Solomon J. Buchsbaum, physicist, senior vice president for technology systems at AT&T Bell Laboratories; Charles L. Drake, geophysicist, professor of earth sciences at Dartmouth College; Ralph E. Gomory, mathematician, president of the Sloan Foundation and former senior vice president for science and technology at IBM; Peter W. Likins, mechanical engineer, president of Lehigh University; Thomas E. Lovejoy, population biologist, assistant secretary for external affairs at the Smithsonian Institution; Walter E. Massey, physicist, University of Chicago vice president for research and for Argonne Nation-

First PCAST meeting took place in the "country White House," at Camp David in Maryland. It attracted many of the key figures of the Bush Administration, including the President (at center on left side of table). On Bush's right is his science adviser, D. Allan Bromley, who serves as chairman of the President's Council of Advisers on Science and Technology. At Bush's left is John Sununu, White House chief of staff, and Bernadine Healy, a cardiologist who is vice chairman of PCAST. Other members are at far end of table and across from Bush and Bromley.



SUSAN BIDDLE/WHITE HOUSE PHOTO

al Laboratory; John P. McTague, physical chemist, vice president for research at Ford Motor Co and former deputy director of OSTP, 1983-86; Daniel Nathans, geneticist, professor of molecular biology and genetics at The Johns Hopkins University Medical School; David Packard, electrical engineer, chairman of the board at Hewlett-Packard Co and former deputy secretary of defense, 1969-71, and Harold T. Shapiro, economist, president of Princeton University.

The committee is the first scientific advisory group since the President's Science Advisory Committee, known familiarly as PSAC, to report directly to the President. PSAC was created by President Eisenhower and advised principally on defense matters until 1973, when President Nixon scuttled his entire science advisory operation after the science adviser, Edward E. David Jr., and members of the committee publicly stated their disagreements with the Administration's plans to push ahead with an antiballistic missile system and a supersonic transport plane. Though the science adviser's job was restored by President Ford, the advisory committee didn't return until Reagan's first year—and then it was as the White House Science Council, reporting to the science adviser, George A. Keyworth II, not to the President.

An inner-circle meeting

The day after PCAST members were sworn in, Bush made good on his promise to meet with them. All 12 of them attended their first meeting at Camp David with the President, Bromley and a White House inner circle: John H. Sununu, Bush's chief

of staff, a former three-term governor of New Hampshire; David G. Darman, director of the White House Office of Management and Budget; Michael J. Boskin, chairman of the Council of Economic Advisers; and Michael R. Deland, chairman of the Council on Environmental Quality. Though invited to the meeting, Vice President Quayle was unable to attend because his helicopter was grounded by fog.

Considering the makeup of the officials and the committee, the discussion was not at all surprising. There was virtually no small talk. Three topics dominated the three-hour meeting: global climate change and its economic implications; education in science, mathematics and technology, particularly of workers in high-technology companies; and consequences for the nation's economic growth of R&D support by government and industry.

At least one topic of conversation anticipated Bush's speech on 5 February to the International Panel on Climate Change, organized by the United Nations Environmental Program. In it, Bush emphasized the need to balance environmental projects with economic policies, which he said "need not be contradictory." Bush acknowledged a "broad spectrum of views" on the issues and called for more accurate computer models of prospective climate changes. In committing the US to put up \$1 billion for new studies on global warming, he paraphrased a remark made during the PCAST session: "Where politics and opinion have outpaced the science, we are working to bridge the gap."

A few days after the speech, *The*

Washington Post reported that Sununu had edited out statements prepared at the request of William K. Reilly, administrator of the Environmental Protection Agency, on global warming issues. In a letter to Bush on 21 February, leaders of eight national environmental organizations protested Sununu's rewrite, complaining that the President had pledged to use "the White House effect" on "the greenhouse effect," but that his chief of staff had broken that promise. Sununu, a mechanical engineer with a DSc from MIT, has been skeptical of apocalyptic views by Earth scientists and government officials on environmental problems. In fact, Bush's address agreed with the predominant opinions on climate change and clean air expressed at the PCAST meeting. Members of PCAST sought to avoid "alarmist" views, favoring what one member termed "sound science and responsible economics."

But all was not sweetness and light at the meeting. Proving that he is possibly the most outspoken member of PCAST, as he was on the old White House Science Council, Packard questioned two science and technology items in Bush's budget for fiscal 1991. He asked for a "coherent explanation" of NASA's Space Station Freedom and a "rational budget" for both the space station and the Superconducting Super Collider. Discussion was cut short, and Bromley assured the panel that it would take up these issues in full at one of the future monthly meetings. Bromley proposes that some parts of each PCAST discussion be open to the public.

—IRWIN GOODWIN

DESPITE AUSTERITY UNDER PERESTROIKA, FUNDING OF SOVIET SCIENCE INCREASES

"Science is the only section of Soviet society that did not suffer from the government program of economic austerity," Guriy I. Marchuk, president of the Soviet Academy of Sciences, boasted during his hour-long informal talk on 30 January at the National Academy of Sciences in Washington. In 1989, he said, the Soviet Academy received an extra 500 million rubles (about \$820 million at the artificially fixed official exchange rate) on top of the 1.2 billion rubles (almost \$2 billion) it customarily gets each year. The extra funds were designated for technological innovations, which, as leaders in every industrialized society know,

are largely dependent on scientific research.

Among Mikhail S. Gorbachev's sweeping reforms under *perestroika* is the stimulation of a dynamic scientific-industrial complex. The Soviet Union possesses the world's largest scientific enterprise and endows its scientists with great respect, high pay and such privileges as big cars and vacation dachas. It was Peter the Great, at the turn of the 18th century, who sought to thrust Russia into the mainstream of Europe's rapidly spreading scientific and industrial revolution. Under Stalin, huge dams were constructed for electric power and heavy industries were built

throughout the land. In the 1960s, Khrushchev bragged that the Soviet Union would soon "bury" the US militarily and economically. It sent a man into space before the Americans, but any notion that the Soviet Union is a modern technological society is fiction.

In an interview following his speech, Marchuk told us that although the Supreme Soviet had decided to reduce the country's budget deficit of 120 billion rubles (nearly \$200 billion) by 50% in 1990 and to do the same in 1991, the academy will again get supplementary funding of 500 million rubles this year. It isn't only the Academy of Sciences that