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With Republicans and Science Societies in the Lead, Congress May Try to Double R&D Budget by 2008

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With Republicans and Science Societies in the Lead, Congress May Try to Double R&D Budget by 2008

"Irrational exuberance" isn't confined to Wall Street. On 22 October, some 40 dignitaries from science and engineering organizations who had gathered in the cherrywood-paneled caucus room on the Senate side of the US Capitol giggled and applauded after hearing talks delivered by Phil Gramm, a Texas Republican, and Joseph Lieberman, a Connecticut Democrat. Though on political and economic grounds Gramm and Lieberman are an odd couple, they had just given a tour of the National Investment Act of 1998 (S.1305), which they introduced in hope of authorizing Congress next year to double the government's funding of nondefense science, medical research and precompetitive technology in the next ten years.

In their effort to round up 51 cosponsors of the bill, which would assure its passage in the Senate, Gramm and Lieberman hauled in Pete Domenici, a leading Republican of New Mexico who chairs the Senate's powerful budget committee, and announced that Jeff Bingaman, who is Domenici's Democratic counterpart in the state, also would back the bill. Domenici and Bingaman are science and technology buffs of old, with more than a casual concern for their state's two national laboratories, which each sport a $1 billion annual budget.

Even so, it wasn't entirely clear who was in front of the legislative effort. The group at the 22 October gathering consisted of some of the presidents and officers of 106 science and engineering societies, brought together by the American Physical Society and the American Chemical Society. In an unprecedented act of unity, the societies released a statement entitled "Decade of Investment," which called for doubling the Federal R&D budget in ten years. Together, the organizations represent more than 3 million members, APS president D. Allan Bromley, Yale University's dean of engineering, reminded the senators. "And that's a number of interest to any politician."

Not to be outdone, two champions of health research, Representative John E. Porter, the Illinois Republican who heads the House Appropriations subcommittee on labor, health and human services, and education, and his Senate counterpart, Arlen Spector, a Pennsylvania Republican, have since announced that they plan to push for doubling the budget of the National Institutes of Health in only five years.

MARVIN T. JONES

PALAVER OVER SCIENCE POLICY: At House meeting on new R&D study (left to right), William Nierenberg of Scripps Institution of Oceanography, House Speaker Gingrich, Congressman Ehlers and John Young, former CEO of Hewlett Packard.

What seems to be exciting Republican leaders on Capitol Hill is the robust economy that has helped reduce the budget deficit to a barely visible $22.6 million in the fiscal year that ended on 30 September, and has raised for many politicians the alluring prospect of spending money from a budget that before long may be not only in balance but in surplus.

At his awkwardly modest best, Gramm drawled the praises of his bill: "I can't think of anything we do in the discretionary part of the budget that is more important than increasing expenditures for basic scientific, medical and precompetitive engineering research." His bill would authorize increasing civilian R&D from the current $34 billion to $68 billion by 2008. But it would only *authorize* spending and not be binding on appropriations committees, which actually decide on budget allocations.

The following morning, House Speaker Newt Gingrich, a Republican of Georgia, appeared upbeat and chummy before the House Budget Committee as he discussed how best to use a Federal surplus in the coming years, mentioned increasing science funding in the same breath as cutting taxes, boosting defense spending and paying down the national debt. An hour later, however, Representative James Sensenbrenner Jr, the Wisconsin Republican who chairs the House Science Committee, dampened hopes of perpetual Federal largess when he told reporters that while he applauds the senators who champion science, he would wait until a surplus actually materializes before embarking on a spending spree. Sensenbrenner noted that the balanced budget agreement enacted by Congress earlier this year places limits on discretionary funding between now and 2002. "Within this time frame, any large increases in Federal R&D . . . can come only at the expense of other popular programs," he said.

Some 30 senior scientists and engineers had responded to Sensenbrenner's invitation to discuss the key questions that need to be addressed as the committee launches an eagerly awaited yearlong study of science and technology policy "in an era of increasing global economic competition and international research collaboration." Intended as a successor to Vannevar Bush's 1945 manifesto, *Science—The Endless Frontier*, which guided US R&D through the cold war, the new study, as Gingrich described it, would provide "vision, strategy, projects and

tactics" for government R&D in the next half-century.

For decades, the science establishment has sought to update Bush's blueprint. All recent efforts—whether by the House science committee in 1987, the Congressional Office of Technology Assessment in 1991, the White House Office of Science and Technology Policy in 1994, and the National Academy of Sciences panel led by a former president, Frank Press, in 1995—have simply gathered dust.

Gingrich and Sensenbrenner assigned Michigan Republican Vernon Ehlers, a former physics professor, to lead the policy study. Ehlers offered no specifics as he embarked on an ambitious venture where others have gone before, beyond saying his report would be "concise, coherent and comprehensive." Gingrich asked Ehlers to replicate some of the "boldness" of Bush's 1945 vision—notably, increasing admissions to colleges and universites and investing in science, particularly in basic science, "with quantities of money that would have been unthinkable prior to 1940." To Sensenbrennr's guests at lunch, Gingrich said he wasn't interested in wish lists of R&D projects but rather "a set of investments large enough to be worth doing, and then make it my problem to figure out how to find the money."

The odd thing about all this is that the push for more funds for research comes from Republicans in Congress. For much of the half-century since World War II, scientists have looked to Democrats for support of nondefense science. For now, at least, Republicans in Congress have taken the reins.

IRWIN GOODWIN

US Formally Rejects Leaked Claim That Russia Violated CTBT with Test

On 18 August, the Central Intelligence Agency (CIA) issued a high-priority, classified alert asserting that Russia had probably conducted an underground nuclear test two days earlier at its test site on Novaya Zemlya, an island near the Arctic Circle. Officials at the White House National Security Council (NSC) leaped into action, convening an interagency meeting and seeking an explanation from Moscow. The Russian ambassador to Washington was summoned to the State Department to hear a strong complaint, and the senior US diplomat in Moscow issued a similar démarche at the foreign ministry there.

Although the US government kept the report secret, the NSC prepared a statement to be read in case of a leak. The statement said in part: "We do have information that a seismic event with explosive characteristics occurred in the vicinity of the Russian nuclear test range on Noyava Zemlya." Sure enough, on 28 August, the statement appeared as the centerpiece of the lead story in the *Washington Times* under the headline "Russia Suspected of Nuclear Testing." This was followed the next day by accounts in newspapers and other media around the world, raising suspicions that Russia had violated the Comprehensive Test Ban Treaty, which it had signed in September 1996 at the United Nations, along with the US, China, France and Great Britain, the acknowledged nuclear weapons countries (PHYSICS TODAY, December 1996, page 37). (The CTBT has now been signed by 146 countries.)

Russian officials adamantly denied having tested a nuclear weapon and insisted that the seismic event was a small earthquake under the Kara Sea, more than 100 km southeast of the test site. The CIA, NSC and other intelligence organizations refused to accept Russia's explanation and remained instead on high alert. Alarms had already gone off when satellites returned photos of suspicious-looking activities at the Novaya Zemlya site. Although no nuclear test had been conducted, Moscow explained that it had made small "zero-yield" tests of warhead reliability, similar to the "subcritical" tests conducted this summer by the US at its underground site in Nevada. These test are not prohibited by the CTBT. Such experiments involve nuclear components and are therefore detonated underground to prevent leaks of radioactive material into the atmosphere. One of these Russian experiments took place on 14 August and another on 16 August, according to a White House source.

The first sign of a seismic event was recorded on 16 August at a station operated by Russia's defense ministry at Norilsk. This station is designated as one of the 320 nuclear monitoring sites that will form a global system for differentiating between clandestine nuclear explosions among the roughly 20 000 seismic disturbances that occur around the world each year. The signal from Norilsk was transmitted automatically to a data center in Arlington, Virginia, which the Pentagon established as a prototype for a more sophisticated operation to be installed near Vienna by 1999. Additional data were transmitted within minutes from monitoring stations in Norway, Finland and Sweden, and these fixed the event as happening at close to 5 am at the site—an hour that eerily matched the timing of Russian nuclear tests in the past.

Within days, independent scientific experts in the US, Norway and Britain claimed the US government's characterization of the event was wrong. Lynn R. Sykes, a seismologist at the Lamont–Doherty Earth Observatory of Columbia University and an authority on detecting nuclear blasts for more than 30 years, had canvassed his colleagues in several countries and reported he could find no one who believed the event was nuclear in origin. Sykes noted that the episode comes at a critical time for the test ban treaty. In September, President Clinton sent the CTBT to the Senate for ratification, which requires support by two-thirds of the members. Advocates of the treaty say it can be policed; its opponents contend it cannot. Accordingly, the accusation of Russian cheating is likely to set off an acrimonious debate over the CTBT.

The White House remained reluctant to accept the accumulating views of the scientific community. As recently as 20 October, it said the event "could be . . . nuclear in nature." Then, on 3 November, the CIA and the White House formally dropped their accusation. The Administration's turnaround came a week after four experts appointed by CIA director George J. Tenet to review the early analysis of the event concluded in a brief, classified report that the tremors "almost certainly" were not caused by a nuclear explosion. The panel consisted of Sidney Drell, deputy director of SLAC; Richard Kerr, former CIA deputy director; Roger Hagengruber, vice president of Sandia National Laboratory; and Eugene Herrin, a physicist at Southern Methodist University. Tenet accepted the panel's finding and distributed the report to senior White House staffers and to key members of Congress.

Having ruled out a nuclear test, neither the panel nor the CIA reached a definitive conclusion about whether the event was indeed caused by an earthquake. The incident is therefore not without some mystery.

In the November/December issue of *Public Interest Report*, the Federation of American Scientists (FAS) newsletter, Sykes offers a way of demystifying similar incidents. Because weak earthquakes can now be detected by seismic arrays designed to monitor the CTBT, tremors near nuclear test sites