

► **Clash of Cultures** China's diplomats hailed the visit of President Jiang Zemin as a "normalization of relations" between Washington and Beijing, but, in fact, his eight days in the US indicted how abnormal the relationship remains. Hot lines and annual summits, however useful, evoke memories of the cold war and brinkmanship. Jiang, a history buff, planned his stay around trips to the shrines of American democracy, from colonial Williamsburg to Philadelphia's Independence Hall. During his visit, from 26 October to 2 November, he recited the Gettysburg Address, and, educated as an electrical engineer, he spoke of attaining the heights of science and technology, mentioning Newton and Einstein. But his news conference with President Clinton revealed just how far apart each country is on human rights. "On this issue," said Clinton, "we believe the policy of China's government is on the wrong side of history."

On 22 October, the American Physical Society had sent a letter to Secretary of State Madeleine Albright, asking her to "find out about the fate" of 12 students and scientists in physics, geology, biology and engineering who are either imprisoned or missing for no other reason than voicing views that China holds to be unlawful political dissent. The American Association for the Advancement of Science requested that Albright bring to Jiang's attention the cases of 57 scientists, "all of whom have been arbitrarily arrested solely for exercising their right to freedom of expression and association."

Jiang seemed unmoved by the human rights protests he encountered and by the contentious exchanges with members of Congress in the Capitol. At various places along his route, some US businessmen and dignitaries chuckled when they learned, through translation, that China's national anthem exhorted listeners who don't want to be slaves to "rise up." The White House banquet for Jiang and his wife, who is a practicing electrical engineer, was attended by 234 people—the Americans being mainly industrial executives, publishing tycoons and prominent politicians. Nary a scientist nor academic was invited.

► **Industrial R&D Rises** In their quest for new products and new twists on old ones, US companies increased spending on R&D to \$118.6 billion last year, 9% more than in 1995, the National Science Foundation reported in a data brief on 5 November. What's more, another leap forward in industrial R&D is anticipated this year, as companies are expected to lay out \$130.6 billion, which represents a 7.3% rise after inflation is taken into account. American firms are likely to provide \$1.7 billion by the end of 1997 for academic R&D and another \$1 billion for R&D at nonprofit organizations.

The NSF report stated that US industry has provided the largest share of R&D expenditures since 1980. But while companies shelled out more from their own pockets, the Federal subsidies they received for R&D fell slightly to \$20.9 billion, a victim of budget cutting in this decade. And while corporate outlays to design and develop products took a big jump, spending on basic research has remained between \$5.5 billion to \$6.5 billion per year through the 1990s—the weakest fraction of the calculus. As might be expected, in view of the business cycle of the past few years, the greatest spending on corporate research has been in pharmaceuticals and in electronics.

NSF also conveyed some better-than-expected news about R&D. Growth in overall R&D spending had been relatively slow in the 1990s, but is now accelerating, to the surprise of NSF statisticians. A year ago the agency reported "R&D Growth Exceeded 1995 Expectations, but May Slow in 1996." Those projections suggested a 4% rise in R&D in 1995, after adjusting for inflation, and only 1% in 1996. In

fact, R&D in 1996 went up 3.2% over the previous year, after inflation. Thus, NSF's current report bears the title: "R&D Exceeds Expectations Again, Growing Faster Than the US Economy During the Last Three Years."

(The data brief is available through the World Wide Web at <http://www.nsf.gov/sbe/srs/stats.htm>)

► **Clinton Shoots Down Asteroid Missions** A Pentagon mission to bombard three asteroids projected to fly by Earth in the next two years was, ironically, itself shot down on 15 October by President Clinton. Using his new authority to veto specific items in appropriations bills, Clinton zapped the \$30 million Clementine 2, along with 12 other projects, with a total value of \$144 million, from the \$248 billion Defense Department spending bill for fiscal 1998. Most of Clinton's line-item vetoes were of R&D programs that lawmakers had dropped into the infamous "pork barrel."

Clementine 2 was to be a follow-on to a small, cut-rate 1994 mission to the Moon and an asteroid named 1620 Geographos. Backed by the Ballistic Missile Defense Organization, successor to the Strategic Defense Initiative, the little spacecraft sent back data on the thickness of the lunar crust and its South Pole-Aitken basin, the most prominent feature on the Moon. But when Clementine 1 was about to leave the lunar orbit and head toward Geographos, its computer went haywire, the fuel for its attitude control rockets was dumped and the craft went into an uncontrollable spin. The crippled Defense Department darling was written off, though its revelations were the hit of the American Geophysical Union's 1994 meeting in San Francisco.

A second mission, to cost \$125 million, was delayed by a bitter squabble between the Administration and Congress. Some Pentagon and White House officials argued that the mission wasn't within the ambit of national security—the department didn't even seek funding for Clementine 2 in 1998—while some Republicans in Congress, led by Steven Schiff of New Mexico, chairman of the House subcommittee on basic science, defended it as an attempt to learn more about intercepting objects in space, including asteroids on a collision course with Earth.

Clinton also lined out a \$37.5 million Army-led antisatellite project left over from President Reagan's "Star Wars" program. It would have developed a heat-seeking missile that would smash into spacecraft considered hostile. The Pentagon wasn't keen on it, and the White House National Security Council insisted it would violate the 1972 Antiballistic Missile Treaty. The project was added to the spending bill by a bipartisan House duo, Elton Gallegly, a six-term Republican, and Brad J. Sherman, a freshman Democrat, both representing districts in California.

Another R&D item Clinton vetoed amounted to \$4 million for proton-beam radiation therapy at the Loma Linda Medical Center in California, a private cancer treatment hospital that has been in the Pentagon's pork barrel for several years. The White House pointed out that funds for the hospital had not been requested by the Pentagon and that the project would not contribute to US military capability. The cancellation enraged Representative Jerry Lewis, a Republican in whose district the medical center is located. Lewis, chairman of the House appropriations subcommittee that oversees budgets for NASA, the National Science Foundation and the Environmental Protection Agency, had originally supported the line-item veto, but now admits he is having second thoughts about giving such power to a president. As chairman of California's 52-member delegation in the House, he said, he has some power of his own to "get even."

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