



ling scientist generally must fly solo.

Even if the faculty member wins a federal research grant, chances are it won't include money for lab upgrades. Most federal agencies award less than scientists request, and most scientists choose people over instrumentation when deciding what to eliminate. "NASA always says that things will be better in the out years, but it never happens," says Zuber, who is principal investigator for

GRAIL, an upcoming NASA mission to measure the moon's gravitational field. She says that doubling NSF's major research instrumentation program, which now receives triple the number of good proposals that its \$93 million budget can accommodate, "would be a really helpful" way to ease that crunch.

Pelosi said as much at last week's forum, when she noted Zuber's presence on a panel along with three eminent economists and

Norman Augustine, the former CEO of aerospace giant Lockheed Martin, who chaired a 2005 National Academies' report calling for a \$20 billion federal investment in research and education to strengthen U.S. innovation. "Having a scientist here emphasizes that [the recovery plan] must be about the future," Pelosi stated. "That's nothing new. ... It's about innovation, which begins in the classroom and in the lab." **—JEFFREY MERVIS**

## EXPORT CONTROLS

# Current System Hampers U.S. Innovation, Says Panel

In a world in which economic and national security hinges on a country's technological and scientific prowess, the United States gains more than it loses from sharing information. That counterintuitive message comes from a U.S. National Academies' panel that heaped scorn on current rules that control access to sensitive technical information by non-U.S. citizens as well as the release or export of certain items.

The problem, the panel says in a report issued last week, is that the restrictions are bad for business, security, and science. The solution is to put restrictions on fewer technologies and tighten up on those technologies, such as nuclear weapons or chips to guide missiles, that are vital to U.S. security. "What we want is an open system," says study co-author Brent Scowcroft. "The [better] premise is that everything is open except those things you can justify [a] need to be [restricted]."

The study calls for President-elect Barack Obama to set up new White House bodies to simplify how scientists and companies obtain export licenses and resolve disputes between agencies that delay decisions. It says that export controls on specific items or technologies should last no longer than 1 year unless the government can recertify them. The report also calls for streamlining the process for providing visas for foreigners working in scientific areas. (The study, initiated by the academies, didn't deal with the issue of which information should be labeled as classified.)

Maintained by the State Department, Commerce Department, and the Pentagon, export-control rules determine what products and components can be exported, which concepts can be discussed in open scientific papers, and which subjects are acceptable to discuss with foreign nationals. In the past 2 years, the three agencies have set new time limits to reduce delays in issuing export licenses, removed items that pose no risk from protected lists, and eased restrictions on technical information or products that are readily available on the Internet or overseas. But report co-author John Hennessy, president of Stanford University in

Palo Alto, California, said such moves are just "incremental improvements."

Space scientist Thomas Zurbuchen of the University of Michigan, Ann Arbor, says the current rules are "an obstacle to universities in the United States ... from being the leaders in space research." The Swiss-born researcher was the lead scientist on a project to build a plasma sensor for a Mercury-bound NASA spacecraft called MESSENGER that was launched in 2004. But in 1999, Congress tightened export-control laws, and project managers restricted Zurbuchen's access to design documents he had created. Fortunately, Zurbuchen soon received a green card that exempted him from these restrictions. "We got lucky," he says.

One member of the new Administration likely to be sympathetic to such changes is Defense Secretary Robert Gates, former director of central intelligence and a holdover from the Bush Administration. Gates was a member of the academies' panel before he joined the Cabinet in December 2006. In an e-mailed statement, his spokesperson said the report's recommendations "would have a significant, positive impact" on defense science, though it didn't specify how.

Congress has resisted previous calls for easing export controls, fearing that greater sharing would aid the country's enemies. Supporters worry that any attempt to implement the panel's recommendations could backfire: Legislators could instead pass even more restrictive laws.

**—ELI KINTISCH**



**Killing the MESSENGER.** Rules regulating satellite technology almost knocked out a plasma sensor on a 2004 NASA probe to Mercury.