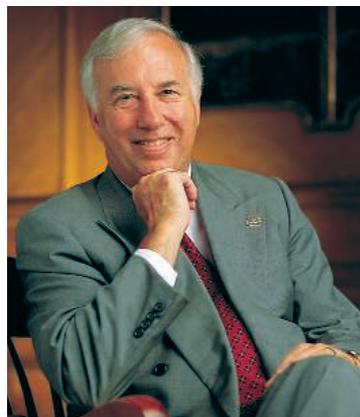


Schools Fear Impact of Proposed License Changes

Academic and industry scientists are fighting proposed changes to export-control rules that could restrict some foreign nationals from using sensitive equipment when they do research in the United States. But federal officials say opponents are vastly overestimating the impact of the changes on the research enterprise.

The rules, enforced by the Commerce Department's Bureau of Industry and Security (BIS), apply to persons from countries that the U.S. government says pose national security threats. The list includes China, India, and Russia, which are major sources of U.S. scientific talent. Universities have traditionally believed that an exemption for basic research in the rules applied to them. But in March 2004, the Department of Commerce Inspector General (IG) noted that the use of export-controlled equipment for research was not exempt, meaning that universities would need licenses to employ foreign nationals in certain research projects.

Based on the IG's recommendations, the bureau clarified the license requirement. It also proposed changing the criterion for granting a so-called deemed export license from the foreign national's country of citizenship to his or her country of birth. That change is intended to block foreign nationals from subverting the rules by establishing citizenship in another country not on the danger list. The changes, which were published in the 28 March *Federal Register*, are open for public comment until 27 May.



The price of security. Maryland's Daniel Mote says rule changes could cost his university \$1.5 million.

BIS officials predict that the number of researchers requiring licenses will be very small. But Daniel Mote, president of the University of Maryland, College Park, says his school will need to spend \$1.5 million to find out, that is, to classify research equipment on campus into different categories of export-controlled items and monitor their use. For practical reasons, he says, institutions may decide "when in doubt, apply for a license." One way for the government to reduce the regulatory burden on campuses, Mote said at a 6 May meeting at the National Academies, would be to grant international students and postdoctoral scholars a deemed export license when they receive visas. ▶

MICROBIOLOGY

Détente Declared on NIH Biodefense Funding

Microbiologists concerned that the buildup of biodefense research could be hurting basic research are celebrating a small victory after meeting with top National Institutes of Health (NIH) officials last week. Both sides agreed they should stop quibbling over grants data, and instead, NIH and the microbiology community should look at what scientific areas are falling through the cracks.

"These are positive developments," says Richard Ebricht, a microbiologist at Rutgers University in Piscataway, New Jersey, and a leading critic of NIH's biodefense spending.

The meeting marked a change in tone for NIH officials, who until now have defended funding decisions that more than 700 microbiologists questioned in an open letter (*Science*, 4 March, pp. 1396 and 1409). The letter claimed that giving the National Institute of Allergy and Infectious Diseases (NIAID) \$1.5 billion more for biodefense has diverted microbiologists from studies of model organisms and non-biodefense pathogens. As proof, the authors noted a sharp drop since 2000 in grants funded by the two main study sections reviewing those proposals.

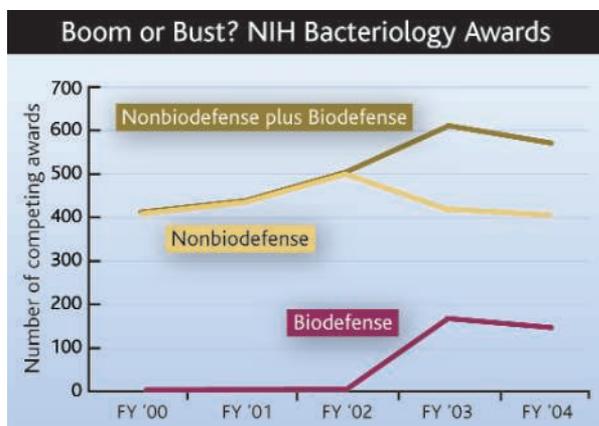
NIH Director Elias Zerhouni and NIAID Director Anthony Fauci initially said that non-biodefense grants rose through 2003 at NIAID (*Science*, 1 April, p. 49). Since then, NIH has analyzed bacteriology grants across all 27 institutes, and NIH's Sally Rockey presented the data last week at a closed meeting with a half-dozen outside scientists including leaders

2003, points out that NIH found a decline even though it used an "extremely inclusive" definition that picked up grants in areas such as psychosocial research. But NIH extramural research chief Norika Ruiz Bravo insists that the drop coincides with a reduction in all disciplines as NIH's budget growth slowed after a 5-year doubling. "Without biodefense, the picture would be much bleaker" for microbiologists, Ruiz Bravo says. Even NIH's critics agree that it's hard to say if there has been a tradeoff. "The numbers are all so convoluted, it's like the blind guys feeling the elephant," says Stanley Maloy of San Diego State University in California, another meeting participant.

NIH and ASM are now planning a workshop to probe further. "The bigger issue is, what are the trends in the field, the gaps, what needs to be done," says Ruiz Bravo. That idea pleases ASM, which has worried about a "perceived decline in interest" in basic microbiology for 10 years, says ASM president James Tiedje of Michigan State University in East Lansing. "This workshop is an important goal for us."

The microbiologists' letter suggested broadening the definition of biodefense to include work on model organisms. But one signer, Barry Bloom of Harvard University, says Congress will expect NIH to spend its money on potential bioterror agents. As for where the money will come from, Bloom says, "it's a matter of priorities" for the entire NIH budget.

—JOCELYN KAISER



Numbers game. Some scientists blame a drop in nonbiodefense bacteriology grants on the rise in biodefense funding. NIH disagrees.

from the American Society for Microbiology (ASM) in Washington, D.C. The new data show a roughly 17% drop in nonbiodefense grants in 2003, the first year of the influx of biodefense funding (see graph, above).

Ebricht, who has calculated a 40% drop for

Peter Lichtenbaum, assistant secretary of commerce for export administration, suggested another approach: Universities could apply for a deemed export license when enrolling international students and employing foreign researchers. “BIS grants 99% of applications,” he says. Instead of classifying every piece of research equipment at the institution, he says, schools could identify technologies used by foreign nationals and then decide which ones needed a license.

Rachel Claus, a Stanford University attorney who specializes in export-control regulations, says BIS visited the campus last month and determined that “virtually none” of the equipment at a materials science and a nanofabrication lab would require a license.

That’s because instruction manuals “were publicly available for all of the items,” she says. “But making that determination for the entire campus would certainly be a big undertaking,” she adds.

The proposed shift in the demographic criterion for determining the need for a license also drew flak. Basing license requirements on country of birth would be a turnoff to researchers born in “countries of concern” who come to the United States as citizens or permanent residents of a third country such as Canada, says Cynthia Johnson, director of government relations at Texas Instruments. The fallout from that rule would “make it difficult for industry to retain them,” she says.

—YUDHIJIT BHATTACHARJEE

U.S. Funds Innovation Summit

Lawmakers worried about science and the future of U.S. industry are planning a fall conference to examine the problem. Provisionally dubbed the Innovation Summit, the event is the brainchild of Representative Frank Wolf (R-VA), chair of an appropriations panel that oversees several science agencies. After hearing a colleague, Vernon Ehlers (R-MI), lament the state of U.S. competitiveness, Wolf inserted \$1 million for the event into a 2005 supplemental funding bill that passed Congress this week.

—ELI KINTISCH

Sex Differences at NIH

The National Institutes of Health (NIH) isn’t paying enough attention to biological differences between the sexes, according to an advocacy group.

Only 3% of recent grants include a hypothesis about sex or gender differences, says the Society for Women’s Health Research in a report released this week. Institutes that study behavioral and mental health research, such as the National Institute on Alcohol Abuse and Alcoholism (at 8%), are doing a better job. But the society found that the topic barely registers at the big five institutes, including those for heart disease and cancer.

The group’s report doesn’t say what the proportion should be, but “5% to 8% would be fabulous,” says Sherry Marts, vice president for scientific affairs at the society.

—JOCELYN KAISER

Student-Friendly Visas

Foreign graduate students and postdocs seeking U.S. visas should not be required to prove they plan to return home, says a new report from the National Academies. The change is needed for the country to attract and retain sufficient scientific talent, says the report, which also recommends two new visa categories for graduate students and postdocs to help the government track them.

Under the U.S. Immigration and Nationality Act, most applicants for non-immigrant visas have to convince consular officials that they intend to return home. The requirement is “a frequent basis for denial of visas in many countries including China, India, and Russia,” says Norman Neureiter, who served on the academies’ panel and directs the Center for Science, Technology, and Security Policy at AAAS (publisher of *Science*). The change would require congressional approval.

—YUDHIJIT BHATTACHARJEE

GAMMA RAY ASTRONOMY

Signs Point to Neutron-Star Crash

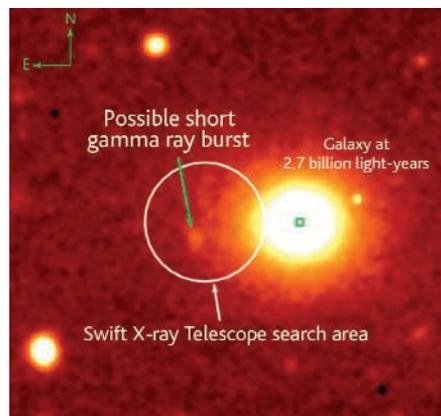
Astronomers think they have witnessed their first colossal crash of two neutron stars, an event that has tantalized theorists for decades.

Shortly after midnight EDT on 9 May, a NASA satellite detected a sharp flare of energy, apparently from the fringes of a distant galaxy. The news from Swift, launched in November 2004, was quickly disseminated to ground-based astronomers, triggering hours of intense research. As *Science* went to press, exhausted observers verified that their early observations look a lot like a neutron-star merger. “Prudence would say that we need a strong confirmation, but we’re very excited by it,” says astronomer Joshua Bloom of the University of California, Berkeley.

Colliding neutron stars would help explain a puzzling variety of the titanic explosions called gamma ray bursts (GRBs). Astronomers are confident that “long” bursts, lasting from seconds to a few minutes, arise from gigantic stars that explode when their dense cores collapse and create black holes. But “short” bursts, emitting pulses of gamma rays in fractions of a second, have been utterly mysterious. The most popular theory holds that each member of a massive binary-star pair could explode as supernovas, leaving neutron stars that spiral inward and eventually merge in a cataclysmic flash.

The new midnight burst fits that picture. Picking up a 0.05-second spike of gamma rays from the constellation Coma Berenices, Swift took less than a minute to swivel and point its x-ray telescope at the GRB. It detected 11 photons—an extremely faint signal, but enough to notify ground-based telescopes of the approximate location.

Hours later, two telescopes—the 3.5-meter WIYN Telescope at Kitt Peak, Arizona, and the 10-meter Keck I Telescope at Mauna Kea, Hawaii—saw a faint patch of light within the search area, aligned with the outskirts of a



Neutron-star cataclysm? A faint patch of light (green arrow) may mark the spot where two neutron stars collided.

galaxy about 2.7 billion light-years away. The galaxy is a massive blob in which no new stars have formed for billions of years.

Such a location is exactly where astronomers expect to see neutron stars collide, says Swift lead scientist Neil Gehrels of NASA’s Goddard Space Flight Center in Greenbelt, Maryland. Fierce kicks from supernova explosions should expel the neutron-star pair far from its native galaxy. Perhaps billions of years later, the stars coalesce in a brief fury of energy—probably forming a new black hole. “Everything seems to fit,” Gehrels says. “It’s the most interesting possibility for short bursts.”

Other telescopes were set to scour the site of the GRB this week, including the Chandra X-ray Observatory. Confirmation that the burst’s afterglow is indeed related to the old galaxy would solidify the discovery, says astrophysicist Shri Kulkarni of the California Institute of Technology in Pasadena: “I think we’re seeing a faint supernova from the dead stuff in the neutron stars.”

—ROBERT IRION

Schools Fear Impact of Proposed License Changes

Yudhijit Bhattacharjee

Science **308** (5724), 938-939.
DOI: 10.1126/science.308.5724.938a

ARTICLE TOOLS	http://science.sciencemag.org/content/308/5724/938.1
RELATED CONTENT	file:/content/sci/308/5724/news-summaries.full
PERMISSIONS	http://www.sciencemag.org/help/reprints-and-permissions

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.