stronger federal interagency cooperation so that federal funding isn't constrained by the weapons orientation of many of the NNSA's programs.

"We didn't tally up specifically the support that exists [for HED physics], but we were struck by the opportunity for agencies to work together to actually fund frontier science," Davidson said.

The report makes for challenging reading for nonscientists in Washington, DC, but Davidson is scheduling briefings with officials at the relevant federal offices, including the DOE's Office of Science and the Bush administration's Office of Science and Technology Policy.

Jim Dawson

Physics Education in the Netherlands Gets Good Marks, Advice

Dutch physics education is world-class, an external reviewing committee concluded last fall in a report on the Netherlands' nine university programs in physics, applied physics, and astronomy. For more than a decade, however, the country has seen falling physics enrollments, and many of the committee's recommendations are aimed at reversing that trend.

Among the recommendations are that each physics department focus on specific research areas, and that students be encouraged to move to the university that is strongest in their preferred subfield. "You cannot have nine MITs. So we strongly emphasized that not all universities can be first in everything, but that they can build niches," says Jan Sengers, the University of Maryland, College Park, physicist who chaired the committee, which looked at pre-PhD university education. Such reviews are undertaken every five years in the Netherlands, but the appointment of committee members from abroad is new. "The point was to make sure there was objectivity," says Sengers.

The recommendations dovetail with broader changes in the Netherlands' education system. In particular, last fall, most programs for the first degree were reshaped into the bachelor's–master's mold, making the country among the first in Europe to implement the Bologna Declaration (see PHYSICS TODAY, May 2001, page 21). Now, instead of studying for 5–6 years to obtain a degree roughly equivalent to a US master's. Dutch students will get a bachelor's after three years, and a master's two years later.

Physics enrollments in the Netherlands dropped by half from 1988 to 1999; by contrast, astronomy saw rising enrollments over the same period. And the number of women in physics is "embarrassingly low" compared with neighboring countries, says Karel Gaemers, a high-energy theorist at the University of Amsterdam. "This was the first time female faculty members were on the review committee of Dutch physics," adds Sengers. "It sends a clear message."

To attract students—both men and women—who otherwise might not choose physics, the committee said that universities should make the first year of study more flexible, and that students should have more time to sample subjects before settling on one. That is similar to the US system, "but in the Netherlands it's more difficult because the degree is only three years," says Sengers. Advertising the career possibilities available to physicists would also bolster enrollments, the committee said.

In addition, says Sengers, "we tried to stimulate [physics departments] to think about their mission in the overall community. We said, 'Even if you don't find many students, make yourself essential to the university and to society.' " Also in the American vein, the committee told Dutch physics departments to cultivate relations with their alumni for fundraising and other purposes.

Says Gaemers, "We were very happy that an international committee says that physics in the Netherlands is on an international level. And we have to work very hard to attract a new category of student and to prepare them for more careers." As a first step in figuring out what actions to take in response to the recommendations, the Dutch association of physics chairs, which Gaemers heads, is holding a symposium this month.

In other Dutch university news, in mid-November students staged a protest against the government's proposed across-the-board cut of several percent in higher education spending.

Toni Feder

HENK THOMAS

Dutch universities face a shortfall of physics students and looming budget cuts. The Maagdenhuis, shown here, was built in 1787 and now serves as the main administrative building at the University of Amsterdam.

Sreenivasan Called to Head ICTP

This spring, Katepalli Sreenivasan will become the third director—and the first experimentalist—to head the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy. Sreenivasan, a 55-year-old fluid physicist at the University of Maryland, College Park, will succeed Miguel Virasoro, who stepped down this past May because he had reached the mandatory retirement age of 62. Virasoro has returned to the University of Rome I ("La Sapienza"). Serving as ICTP interim director until Sreenivasan begins his five-year term is Erio Tosatti, a condensed matter theorist from the neighboring International School for Advanced Studies.

Sreenivasan

Founded in 1964 by Pakistani theoretical physicist and future Nobel laureate Abdus Salam, the ICTP aims to foster the growth of advanced studies and research in physics and mathematics in developing countries (see the article by Juan Roederer, PHYSICS TODAY, September 2001, page 31). That's what persuaded Sreenivasan to accept the directorship despite his recent move to Maryland after some 22 years at Yale University. "I couldn't say no, because of the commitment of the center to the developing world," says Sreenivasan,

who was born and educated in India. "Given the scope that this position presents for creating for others the sort of opportunities I myself have had, it's a calling, not so much of a choice."

The ICTP is home to two dozen or so permanent researchers and twice as many postdocs. It offers master's degree programs and hosts workshops and conferences. Over the years, scientists have logged some 80 000 visits at the ICTP, with two-thirds coming from developing countries. Currently, the four main areas of research at the center are high-energy and condensed matter physics, mathematical sciences, and the physics of weather and climate. ICTP's approach is to deal with people rather than institutions, says Tosatti. "Our role is to identify people all over the world who work in difficult conditions, bring them over, and provide good exposure to science and an opportunity to work. Then we encourage them to go back, keeping in touch when they need to recharge their batteries."

In 2001, Italy added €5 million (roughly $5.3 million) to the ICTP's budget, bringing the total to about €20 million a year. In addition to the Italian government, which provides the largest share of the funding, the International Atomic Energy Agency and the United Nations Educational, Scientific and Cultural Organization (UNESCO) sponsor the center.

"It's a healthy institution, and we would like to make it even stronger by bringing in significant additional funds from other countries," says IBM physicist Praveen Chaudhari, who served on the ICTP's search committee and chairs the center's scientific advisory council. One challenge for Sreenivasan, he adds, "will be to increase the range of research fields and the number of world-class researchers at the ICTP." Another goal, adds Tosatti, "will be to infect the rich countries with appreciation for our work. We are not just helping young scientists, we are helping world politics." By bringing scientists from around the world together, says Tosatti, "differences disappear. We don't think we can solve the world's problems, but it's a step in the right direction." **Toni Feder**

News Notes

Rejoin ITER. In response to a request in September by the US Department of Energy's Office of Science for a quick opinion, the National Research Council's burning plasma assessment committee has issued an interim report recommending that the US enter negotiations to rejoin the International Thermonuclear Experimental Reactor (ITER) project. At the same time, the report says, a strategy for expanding the US fusion program should be "further defined and evaluated."

The NRC committee, cochaired by physicists John Ahearn and Raymond Fonck, said in its report that "a strategically balanced fusion program, including meaningful US participation in ITER and a strong domestic fusion science program, must be maintained, recognizing that this will eventually require a substantial augmentation in fusion program funding in addition to the direct financial commitment to ITER construction." The committee's recommendation follows a similar endorsement, made last fall by DOE's independent fusion energy sciences advisory committee, to rejoin ITER (see PHYSICS TODAY, November 2002, page 28).

Office of Science Director Ray Orbach had asked the NRC committee this past fall for the quick recommendation so he could use it to support his case within the Bush administration and on Capitol Hill that the US rejoin the fusion project. ITER's current partners—Canada, Europe, Japan, and Russia—expect to decide by 2004 on the site of the facility. The US dropped out of ITER in 1998, citing the project's estimated cost of $10 billion. ITER has been scaled back to a projected $5 billion, of which about $100 million would be contributed by the US. **JLD**

Increase infrastructure spending. The National Science Board, noting that over the past decade "funding for academic research infrastructure has not kept pace with rapidly changing technology, expanding research opportunities, and increasing numbers of users," has recommended that NSF significantly increase its infrastructure spending. "The current 22% of the NSF budget devoted to infrastructure is too low and should be increased," the NSB said in a new report, *Science and Engineering Infrastructure for the 21st Century: The Role of the National Science Foundation.*

The NSB panel, chaired by University of Arkansas Chancellor John White, said in the report that NSF's first priority should be developing and deploying "an advanced cyberinfrastructure," followed by increasing support for large facilities. NSF's current large facilities annual budget is about $139 million, which supports projects such as the Large Hadron Collider, the South Pole Station, and the terascale computing program. The science board recommends that "an annual investment of at least $350 million is needed over several years just to address the backlog of facility projects construction" under NSF's jurisdiction.

The report also calls for increasing funding for midsized projects that fall "between the millions and tens of mil-

WEB WATCH

http://members.ud.com/projects/cancer/

By downloading a screen saver from the **United Devices Cancer Research Project**, you could help find a cure for cancer. The project aims to recruit the help of computer users worldwide to identify which molecules among millions of candidates could form the basis of new, cancer-busting drugs.

http://books.nap.edu/books/0309044421/html/182.html

This year marks the centenary of the birth of **Lars Onsager**, whose pioneering work on thermodynamics earned him a Nobel Prize in 1968. H. Christopher Longuet-Higgins and Michael E. Fisher's engaging account of Onsager's life and research is among the biographical memoirs available online from the National Academy of Sciences.

http://science.gov

The US government has created a new Web site for making scientific and technical information available to the public. **FirstGov for Science** provides an online gateway to all 14 of the government's science and technology organizations.

science.gov

To suggest topics or sites for Web Watch, please phone the editor at (301) 209-3036. *Compiled and edited by* **Charles Day**