



Polarized protons will flow for 20 weeks around the 2.4-mile ring of the Relativistic Heavy Ion Collider (top center) at Brookhaven National Laboratory, thanks to a \$13 million gift of private money.

and finish at the end of June, in part because electric rates on Long Island jump dramatically in July, making the cost of continued operation of the energy-intensive collider prohibitive.

Simons's investment company, Renaissance Technologies Corp., will provide the operating money to the Stony Brook Foundation, which will in turn give it to the Brookhaven Science Associates, the group that runs the lab. Simons issued a statement saying, "It seemed a terrible shame that so valuable a piece of scientific equipment and so valuable a team of experienced scientists be left for a year to lie fallow. We are happy to be able to help this work get back on track."

Chaudhari said he is not concerned that private money had to be used to replace operating money that traditionally comes from DOE, but he did say it should highlight the ongoing problem with a shortfall in operating funds for federal science facilities. "Maybe this will be a service to the scientific community by pointing out that here is a case of a scientifically rich, valuable machine that we have spent a billion dollars to build, then we don't run it because we're short the operating money. There are other facilities in the DOE complex that have this kind of shortfall, and perhaps once and for all, they [the administration and Congress] will face it and fix it."

Operating times at virtually all of the federal labs have been declining for the past six years. While Simons's gift got RHIC back online, Thomas Jefferson National Accelerator Facility (Jefferson Lab) in Virginia is still facing a reduction in operating time for its Continuous Electron Beam Accelerator Facility (CEBAF) because of the same nuclear physics budget cuts that hurt Brookhaven.

When the operating problems arose for RHIC and CEBAF in December, Jefferson Lab director

Christoph Leemann said his science programs could handle a one-year interruption in funding without too much damage, but if the cuts became the "permanent baseline," the lab would have serious problems. As PHYSICS TODAY went to press, the administration's proposed FY 2007 budget included a whopping 34% increase in the DOE nuclear physics program, enough funding to assuage Leemann's concerns (see the story on page 25).

In a 6 February budget briefing, DOE's Office of Science director Raymond Orbach said RHIC would not only be fully funded in FY 2007 but upgraded. He also said there would be money for developing the National Synchrotron Light Source II at Brookhaven, and for the 12-GeV upgrade to CEBAF at Jefferson Lab.

The administration budget is always changed, sometimes dramatically, by Congress, and the final FY 2007 numbers for operating RHIC, CEBAF, and other federal scientific facilities likely won't be known until late this year. But for the moment, Brookhaven's Chaudhari, rescued by an investment billionaire, won't have to worry. Still, he points out, "there aren't that many Jim Simonses in the world," and the probability of having a billionaire scientist who understands and values a big physics machine enough to pay millions of his own dollars to operate it is "very small."

Jim Dawson

US Visa Processing Speeds Up

The US State Department is taking steps to simplify travel into the country and counter the complications of security measures that have been piled on since the September 11th terrorist attacks. At a 17 Janu-



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any press conference, Secretary of State Condoleezza Rice and Homeland Security Secretary Michael Chertoff announced new visa application submission and screening procedures aimed at making travel to the US easier for foreign nationals, including students and researchers. The goal, Rice said, “is to get travel back up to pre-9/11 levels without downgrading security.”

At the press conference, Rice outlined the three pillars of the new procedures. First, on arrival in the US, visitors will be told in a selection of languages how to clear customs. Second, since US driver’s licenses will no longer be accepted as identity cards for travel to Canada or Mexico, the Department of Homeland Security is

issuing a replacement travel document for US citizens. Third, and most significant for students and researchers, is a streamlined, electronic visa application process.

A trial of the new paperless application process will go into effect in the UK by December of this year. British citizens will be able to apply for visas electronically and attend interviews by teleconference, rather than having to travel up to hundreds of kilometers to a US consulate. If the trial is successful, the system will be deployed in other countries in 2007.

In addition, consulates in all countries will issue visas to US-bound visitors 120 days before their entry to the US, up from 90 days, and students and scientists will be permitted to enter the country 45 days before the start of their studies or research posts, up from 30 days. And since last June, a bilateral agreement has allowed Chinese applicants seeking US student, scholar, or vocational training visas to obtain 12-month, multiple-entry visas instead of six-month, single-entry visas. Some efforts at cutting wait times have also been implemented. “A Russian scientist who applied for a visa two years ago would have waited 75 days, perhaps even longer, while his application underwent additional screening and review,” Rice said. “Today that review time would take less than two weeks.”

Visa processing has improved, says the American Physical Society’s director of international affairs, Amy Flatten (see her article in PHYSICS TODAY,

February 2005, page 49). “We have definitely noticed a drop in [problem] cases in the last few months,” she says, “but some individuals still have troubles.”

For the past three years, the US research community has been vocal about the need to improve the visa situation. A report from the Council of Graduate Schools, a Washington, DC-based nonprofit organization, says the numbers of foreign researchers and students in the US have dropped since September 11th, although last year saw a 1% increase in the number of foreign students in physical sciences at US universities. According to Rice, “Getting visas into the hands of foreign students is becoming a top priority.”

Paul Guinnessy

Physics Employment in US Reflects Weakened Economy

The production of physics and astronomy bachelors is rising, more bachelors are doing less-technical jobs, and more physics PhDs are doing postdocs. These and other data about all levels of US physics and astronomy degree recipients from the classes of 2002 and 2003 are presented in the latest employment report by the American Institute of Physics.

The 4553 bachelor’s degrees conferred in physics in 2003 represent a 6% increase over 2002 and a 25% increase over a low in 1999. In astronomy, some 325 bachelor’s degrees were awarded in 2002 and again in 2003, a 63% increase over 2000. Women comprised 22% of the combined classes of 2002 and 2003 in physics and 44% in astronomy. Among the nearly two-thirds of physics bachelors who borrowed money to help pay for their education, the median debt was \$18 000.

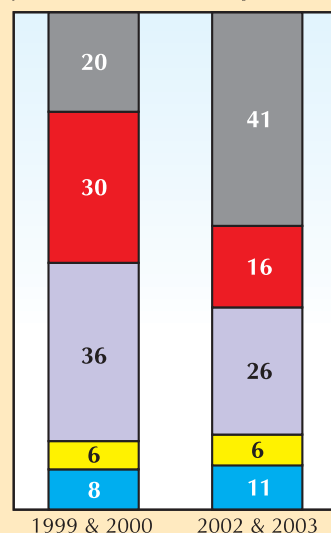
Reflecting a weakened economy, the proportion of physics bachelors who took jobs has declined, from 50% in 2000 to 35% in 2003. Concurrently, the proportions who were unemployed, accepted part-time positions, and enrolled in graduate school increased. In

the private sector, the proportion of physics bachelors working in fields unrelated to science or engineering climbed to 41% for the classes of 2002 and 2003, up from 20% in 1999 and 2000 (see the top figure below).

US universities conferred 1106 physics PhDs in 2003. The median time to earn the PhD was six years, with nearly 20% of recipients requiring eight years or longer. The number of PhDs awarded in astronomy departments was 88 in 2003, down from 102 in 2002.

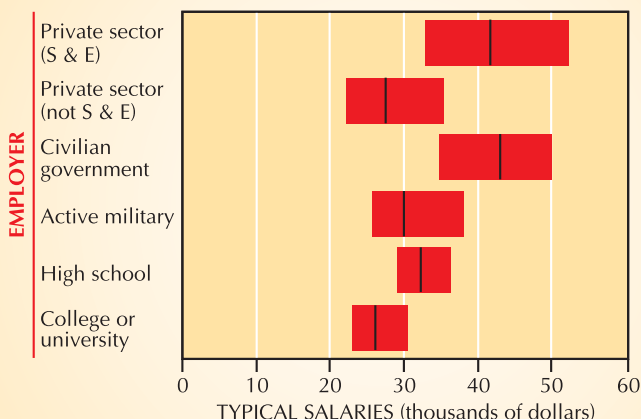
In the combined classes of 2002

Changes in field of employment for physics bachelors in the private sector



AIP STATISTICAL RESEARCH CENTER, INITIAL EMPLOYMENT REPORT

Typical range of starting salaries for physics bachelors, classes of 2002 & 2003



S & E refers to positions in science- and engineering-related employment. Vertical lines indicate median salaries.