time (a year ago), not a single "outside" scientist had been refused animals and expertise at the centers for a peer-reviewed, funded project. I believe that is still true today. Some in the audience objected, stating they knew this had occurred, but none could provide a specific example of such a refusal. My impression was that some investigators, lacking peer-reviewed project support, believed the RPRCs should provide animals and expertise "gratis." The perception among these investigators appears to be that there is not "equal access to nonhuman primate models." Such is not, and has not been, the case.

It is ironic that, with this increased interest in nonhuman primate models relative to AIDS, the RPRCs have been reported to have received less than a cost-of-living budgetary allowance during the current year. One would hope that if greater research were needed, it would be reflected in a more positive increase in support funds to these valuable research resources.

There would, however, be great value in a review of the total RPRC program, as the committee suggests. Each RPRC is reviewed extensively every 5 years, but a total review of the entire program has not been conducted for more than 15 years and is overdue. Two years ago, the plans for such a review were initiated, and NIH received an outstanding planning report by a blue-ribbon committee (which included AIDS researchers). Unfortunately, this report did not receive the approval of an NIH committee. One hopes that the research efforts relating to AIDS will not only build on the work that the RPRCs have done but, through appropriate review and evaluation, will further strengthen future research on this dread disease.

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Going to Sea

I strongly disagree with the suggestion, quoted by Jeffrey Mervis ("A fleet too good to afford?", News & Comment, 15 Mar., p. 1486), that academic research ought to be performed on ships provided lowest bids. This would be the worst of all possible outcomes. The great bulk of the nation's oceanographic research is done on ships of the University–National Oceanographic Laboratory System's (UNOLS's) fleet. The science operations conducted at sea represent the spectrum of the work done in our nation's premier scientific laboratories. This work may range from deploying large instruments such as remotely operated vehicles and deep-sea moorings, to probing the atmosphere with laser-based instruments, to studying trace elements under clean room conditions. The ships and their crew play a critical, and constantly changing, role in this work by properly handling and deploying instruments, station-keeping, and providing ship services that range from highly regulated electrical power for sensitive instrumentation to safe areas for research with radioactive isotopes. This type of experience is not developed elsewhere in the commercial shipping industry, and the crews of the ships in the UNOLS fleet represent a remarkable asset that has grown from within by long experience. Any ship that cannot excel at this spectrum of work will not remain competitive in the fleet. In an age when success rates for ocean science proposals are running as low as 5 to 10%, it would be a gross disservice to the science community to send researchers to sea on a vessel that could not be counted on.

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After a 32-year Navy career and 5 1/2 years at the Woods Hole Oceanographic Institution (WHOI) that WHOI operates as part of UNOLS, it is my view that the Navy's oceanographic fleet was neither cheaper to operate nor better. Driven by bottom-line considerations, the contractor-operators appeared to feel little obligation to strive for excellence. Reviews by the Federal Oceanographic Fleet Coordinating Council, which I chaired, showed that UNOLS was well operated, well maintained, and well equipped. In 1995, the UNOLS deep submersible *DSV Alvin* made three times as many dives as the Navy's two deep submersibles (*Sea Cliff* and *Turtle*) at one-fifth the cost. The quality of science services provided by *Alvin* far exceeds that of Navy submersibles. The Navy's large oceanographic ships cost at least 50% more to operate than UNOLS's large ships. Similar comparisons with the National Oceanic and Atmospheric Administration's (NOAA's) fleet indicate that NOAA's costs are at least as high, possibly more.

Going to sea safely and effectively is never going to be cheap. UNOLS is well tailored to support the stated needs of our ocean science community thanks to a great deal of work by that community and the dedicated support of Congress and the funding agencies. We should continue to properly support it.

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Linac-Based Free Electron Lasers

I was surprised to discover from Alexander Helleman's article (News & Comment, 16 Feb., p. 902) that we had reached "consensus" on future x-ray generation at the International Committee on Future Accelerators Workshop on 4th Generation Light Sources, hosted by the European Synchrotron Radiation Facility in Grenoble, France. In fact, the group of more than 100 international scientists found it difficult even to agree on the definition of "4th Generation," let alone have a precise view of the future. While linear accelerator (linac)–based free electron lasers (FELs) did have their strong advocates, as Helleman describes, there was more to the meeting than that.

FELs have already demonstrated success as powerful infrared facilities in Europe, the United States, and elsewhere, mostly on the basis of relatively low-energy electron linacs. However, electron storage rings are likely to remain better value for the money in the higher energy range from 100 mega-electron volts to at least several gigaelectron volts; such energies are needed for the next step of user facilities using very ultraviolet, extreme ultraviolet, and even soft x-ray output. Of course, if an accelerator has already been funded for other purposes [such as the TESLA linac at DESY (Germany's particle physics laboratory near Hamburg)], then it makes sense to exploit it for FEL development. In contrast to such unusual (and technologically demanding) linacs, there are already large numbers of storage rings in use or planned around the world, and it seems logical to explore the use of FELs on these as a favored option. Successful demonstrations have been conducted for more than 10 years, and one UV user facility now exists at the LURE center near Paris. It seems likely that the present Russian world record for FEL output wavelength [240 nanometers (nm)] will be broken later this year as the Duke University storage ring in the United States comes on stream. The workshop concluded that storage ring FEL technology should reach 50 nm within 2 years and 20 nm soon afterwards (the possibility of 4 nm was also discussed).

It is far too early to write an obituary for both the 3rd Generation Light Sources and the FELs they are likely to contain in the future. As usual, a number of complementary sources are going to emerge, and each will have its application.

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Corrections and Clarifications

The beginning of the last sentence of the cover caption for the issue of 5 April should have directed the reader to the article by E. C. Butcher and L. J. Picker on page 60 (not page 54).

Letters to the Editor

Letters may be submitted by e-mail (at science_letters@aaas.org), fax (202-289-7562), or regular mail (*Science*, 1333 H Street, NW, Washington, DC 20005, USA). Letters are not routinely acknowledged. Full addresses, signatures, and daytime phone numbers should be included. Letters should be brief (300 words or less) and may be edited for reasons of clarity or space. They may appear in print and/or on the World Wide Web. Letter writers are not consulted before publication.