

the same overall performance in mathematics, but "both teachers and pupils regard mathematics as a subject at which boys are likely to achieve a higher overall performance than girls, and teaching styles and expectations are modified accordingly."

The trend is reinforced at secondary schools, where teachers "unconsciously project a prejudice against girls by rewarding only achievements that are appropriate to the pupil's sex." For example, girls are rewarded for doing well on computational tasks, which they are generally found more capable of at a certain stage in their development, but in contrast boys are rewarded for solving problems.

Other barriers include the orientation of examination questions toward males, the fact that most heads of mathematics departments in schools are men, and toys that are marketed with a bias that reinforces sexual stereotyping and role playing.

Nelson acknowledges that recent evidence suggests that some mathematical abilities may be sex-related. "But it cannot possibly explain the statistics [of relative performance]," she said. "You cannot say that just because someone is a girl, therefore she is likely to be less good at mathematics." ■

DAVID DICKSON

New Animal Regulations Causing Scientists Pain and Distress

The new federal regulations for the care and use of laboratory animals are causing considerable financial pain, and, in the present budget climate, will inevitably hamper some research, according to scientists who spoke last month at a seminar on the issue.

Two researchers offered dim views of the effects of the regulations. Barbara C. Hansen, physiologist and psychologist at the University of Maryland, said that although the regulations have been in place "in spirit" since 1976, requirements for new staff and changes in facilities are going to cost her institution up to \$1.1 million to begin with, and \$500,000 annually. "We have no source for such funds at this point in time," she said.

Although the impact of the regulations will depend on how they are interpreted in the months to come, Hansen said their apparent rigidity makes for problems. For example, she is doing research on obesity in monkeys. Now that a whole range of cage sizes has been mandated for primates, the

rules mean that as the animals gain weight they will have to be put in "baboon-size" cages, which are in fact too large for their needs. The university is spending \$160,000 this year on new caging.

Dennis M. Stark of Rockefeller University offered a rough annual cost estimate of \$50,000 to \$100,000 per campus for compliance with the new regulations. One of the big problems, he said, is that under the new rules animal care and use committees are required to review all research protocols involving animals, not just those protocols that have received funding, which increases the volume by a factor of 4.

Other than cost worries, one of the main concerns that has been voiced by scientists has been whether they are going to be kept continuously off balance by further changes down the line. "The question is will those regulations change again 5 years from now," said Hansen. Federal officials at the meeting, which was sponsored by the AAAS, the Scientists Institute for Public Information, and the Association of American Universities, said they did not think so.

Charles McCarthy, director of the Office for Protection from Research Risks at the National Institutes of Health said that "some institutions are dropping out, the rest are scrounging around to find the money, but we feel we have no choice. . . ." He reported that, judging from the rate of renewals of animal assurance statements, perhaps 75 to 100 small research institutions have been forced out of the animal business by the new policy. But he expressed confidence that the government is pursuing a moderate policy in view of the fact that the volume of complaints from both sides—scientists and animal activists—is about equal. McCarthy added that full compliance is not expected immediately and that it will probably be 2 to 3 years before everyone has fallen in line.

Richard L. Crawford of the Department of Agriculture's Animal and Plant Health Inspection Service reported that APHIS is still struggling with the regulations for implementing new amendments to the Animal Welfare Act, which are designed to be complementary to the new regulations. These include the requirement for exercise for dogs, which Crawford said is being defined as "socialization and the opportunity for motion," and the perplexing call for measures to promote the "psychological wellbeing of primates."

This latter mandate is "very complex," said Crawford, particularly in view of the fact that 40 to 50 species, all with different needs, have to be taken into account. Hansen added she had "grave concern" about that requirement, since "no methods exist

today to measure the psychological wellbeing of children" much less monkeys. Even within species, she said, "individual temperaments vary widely."

Franklin Loew, dean of the veterinary school at Tufts University, said that in the long run he didn't think the regulations would constitute "a body blow or even a serious blow" to basic research, "providing time is given to adjust to the new reality."

The threat to science from "animal rights" groups, who oppose all use of animals in research, is still growing, however. Some old-line animal groups, such as the Humane Society of the U.S. and the Society for the Prevention of Cruelty to Animals, have taken a philosophical turn in the animal rights direction. Loew said a "litmus test" for the intentions of animal activists is whether they are lobbying not only for regulatory changes but also for more funds for compliance. Unfortunately, he said, "few organizations who have lobbied for changes have also lobbied for money," which means that many of them want to cost animal research out of business. ■ CONSTANCE HOLDEN

Time Inc. Buys Science Digest

Time Inc., which recently purchased *Science 86* from the AAAS, has now bought the name and subscription list of *Science Digest*, the only other general science magazine of its kind, from the Hearst Corporation. *Science Digest*, which had a paid circulation of about 575,000, was closed by Hearst; its subscribers will be offered a choice of another Time Inc. publication. Subscribers to *Science 86* are being offered *Discover*, Time's own popular science magazine.

For the past couple of years, the popular science magazine business has been hit by significant financial losses due to a sharp decline in commercial advertising. For example, *Science Digest* had 156 ad pages during the first half of 1985 but only 84 during the first 6 months of this year. Maintaining high circulation has also been a problem for many of the general science magazines. Hearst had been actively looking for a buyer for *Science Digest* for some time.

Time's *Discover*, with losses in the millions, has not been immune from the negative trends in the business but the publishing giant has decided to hold out a while longer in the hope that things will turn around. By eliminating the competition and thereby increasing its own readership, at least for now, Time hopes to be able to keep *Discover* alive. ■ BARBARA J. CULLITON