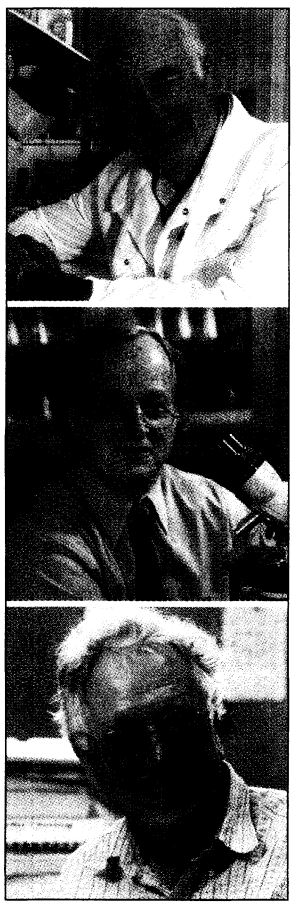
LASKER AWARDS

Geneticists Knock Out Lasker Competition

The creators of "knockout" mice and the developer of in vitro fertilization have won this year's research awards from the Albert and Mary Lasker Foundation in New York City, one of biomedicine's most prestigious prizes. Also honored is an epidemiologist who has battled smallpox and river blindness.



Prized researchers. Martin Evans (*top*), Mario Capecchi (*middle*), and Oliver Smithies (*bottom*) won this year's Lasker for basic research.

The award for basic medical research went to geneticists Mario Capecchi of the University of Utah in Salt Lake City, Martin Evans of Cardiff University in the United Kingdom, and Oliver Smithies of the University of North Carolina School of Medicine in Chapel Hill. The three developed gene-targeting technology that allows scientists to breed mice with specific genes disabled. Researchers have used this knockout technology to determine the function of newly discovered genes and to create mouse models of genetically influenced human diseases such as cancer, cystic fibrosis, and atherosclerosis.

In the clinical research category, Robert G. Edwards of the University of Cambridge won for the development of human in vitro fertilization. Research by Edwards and his colleague Patrick Steptoe, who died in 1988, has led to the births of almost 1 million infants since the first "test-tube baby" in 1978.

Finally, the award for public service in support of medical research and the health sciences went to William H. Foege, former head of the Centers for Disease Control and Prevention and now at Emory University in Atlanta. He outsmarted a burgeoning smallpox epidemic in Africa in 1966 and went on to help track down the causes of toxic shock syndrome and Reye's syndrome.

The Laskers, often viewed as warm-up awards for the Nobel Prize in physiology or medicine, will be presented at a dinner in New York City on 21 September. They're high in honor if not cash: Prizes in each research category are accompanied by $50,000.

–CONSTANCE HOLDEN

ANIMAL CARE

Report Castigates Indian Lab Practices

NEW DELHI—Most Indian laboratories that use animals in research are failing to care for them adequately, according to a new survey by a government watchdog.

The survey comes almost 3 years after the government imposed more stringent rules on the use of animals in experimentation (*Science*, 11 December 1998, p. 1967). It finds that more than 80%—300 of 367—of the labs inspected "do not have the basic facilities for [properly] housing" the animals in their possession. The report scolds scientists for showing "a lack of knowledge and concern" about the welfare of laboratory animals, adding that the community "is not aware of developments with regard to alternatives to animal experimentation." The criticism covers some of the country's more prestigious biomedical facilities, including the Indian Institute of Science (IISc) in Bangalore and the National Institute of Nutrition (NIN) in Hyderabad.

The survey was conducted by a committee of the Indian Animal Welfare Board, chaired by Maneka Gandhi, India's minister for animal care and culture and a longtime animal rights activist. Gandhi told *Science* that the Indian biomedical scientific community is "lazy about adopting world-class standards and just wants to continue in the same state of inertia." Committee member Raman Sukumar, a mammal ecologist at IISc's Centre for Ecological Sciences, adds that "a lack of awareness among society at large about the ethics of animal welfare is responsible for the current situation."

The team of inspectors found violations ranging from a failure to obtain approval for planned experiments to the use of sick and dying animals. The report also suggests that much of the research is unproductive, noting that "few [results] get published in international journals."

Officials at most of the institutions surveyed agree that changes are needed, but they argue that tight budgets prevent the construction and maintenance of state-of-the-art animal houses. The report notes, for example, that IISc officials told inspectors that the "deplorable condition of the primate house was on account of very limited funds." Kamala Krishnaswamy, director of NIN—one of India's largest suppliers of laboratory animals—says that the poor infrastructure is compounded by an acute shortage of knowledgeable and caring staff. Although Sukumar says that "all major animal experimentation facilities should have a full-time veterinarian," Krishnaswamy and others note that few Indian vets have the training for such a role. At the same time, Krishnaswamy says scientists realize that their results will be questioned if they do not "use the best quality animals and ensure their appropriate care."

The government's system for overseeing animal experimentation is part of the problem, say researchers, either driving researchers away from the field or tempting them to cut corners. "Many scientists are reluctant to take up animal studies because of the delays in getting approval for projects involving the use of animals," says Krishnaswamy, pointing to a recent 7-month delay in winning approval for a project involving a recombinant DNA antirabies vaccine developed by the IISc. "The paperwork is really killing," agrees Satyajit Rath, an immunologist at the National Institute of Immunology in New Delhi.

Most of the issues raised by the report would be better handled by scientific advisory committees, say many scientists, adding that the inspectors are not always capable of judging the scientific merits of experiments that they condemn. Varaprasad Reddy, chief of Shantha Biotechnics Pvt. Ltd. in Hyderabad, one of the country's largest biomedical companies, says that Gandhi's committee "is now acting like a rowdy cop, coming down ruthlessly on any animal house."

Dirty work. Primates used for research at the National Institute of Immunology, one of several labs faulted for poor care.

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Valangiman Subramanian Ramamurthy, a nuclear physicist and secretary of the Department of Science and Technology, says that what's needed is a system of laboratory accreditation "so that a fair system of checks and balances is in place." Currently, scientists planning experiments need only inform the ministry of their plans and gain approval from either institutional ethics boards or the government. Ramamurthy says that his department would be more than willing to help set up such an accreditation board. In the meantime, he says, "the country has a 100% need to upgrade its animal facilities."

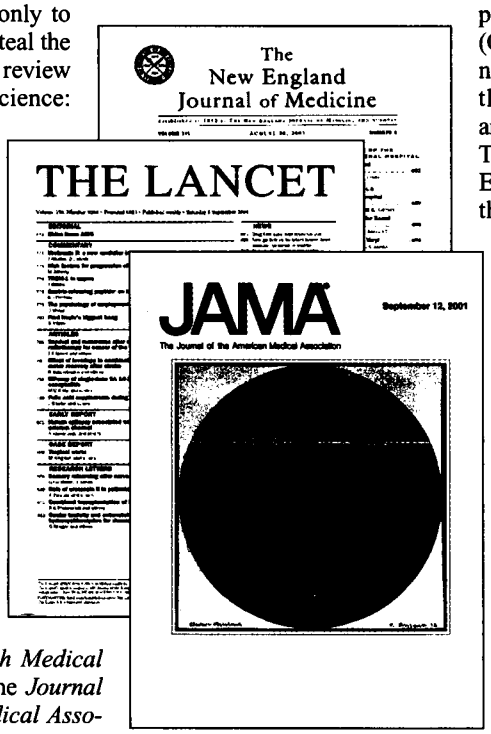
–PALLAVA BAGLA

SCIENTIFIC PUBLISHING

Peer Review and Quality: A Dubious Connection?

BARCELONA, SPAIN—Mention "peer review" and almost every scientist will regale you with stories about referees submitting nasty comments, sitting on a manuscript forever, or rejecting a paper only to repeat the study and steal the glory. Even so, peer review remains a pillar of science: Despite its flaws, letting scientists anonymously judge each other's work is widely considered the "least bad way" to weed out weak manuscripts or research proposals and improve promising ones.

But that common wisdom was questioned last weekend at a meeting* attended by hundreds of editors of medical journals and academics, organized by the *British Medical Journal* (*BMJ*) and the *Journal of the American Medical Association* (*JAMA*). In a meta-analysis that surprised many—and that some doubt—researchers found little evidence that peer review actually improves the quality of research papers. "It's a peculiar paradox," says Frank Davidoff, former editor of the *Annals of Internal Medicine*, about the study. "People cling to a system even though we don't know much about its value."



Under wraps. Critics are urging editors to lift the veil of secrecy surrounding peer review.

To rectify that situation, some speakers argued that more journals should study their own practices with the scientific rigor they demand of their authors—as should agencies that rely on peer review to dole out billions of dollars in research money.

Recently, many medical journals have become increasingly critical of their own procedures, in part because "they can be complicit in killing patients" by publishing bad or biased research, says Richard Horton, editor of *The Lancet*. [Just last week, for instance, a group of leading editors announced that they would no longer publish studies carried out in name by academic researchers but underwritten and run from behind the scenes by the pharmaceutical industry (*Science*, 14 September, p. 1969).] And some scientists and journal editors are putting peer review and other editorial processes to the test.

This emerging research enterprise has shed light on many individual steps of the editorial process, including very small ones; one study presented at the meeting examined whether it was best to prod tardy reviewers by phone, fax, or e-mail. (Conclusion: It makes no difference.) But the sobering meta-analysis, presented by Tom Jefferson and Elizabeth Wager of the Cochrane Centre in Oxford, U.K., showed that it has not answered the most burning question: Does peer review have a measurable effect on the quality of manuscripts?

The team scoured the literature for studies that had analyzed peer review as rigorously as new drugs are put to the test: in a trial in which two or more methods were compared and outcomes scored in some quantitative way. Those strict criteria yielded only 19 studies, but none of them really clinched the case for peer review. For instance, nine studies looked at the effects of blinding the reviewers to the authors or vice versa; they found it made little difference to the quality of the final paper. Two other studies found scant evidence that making peer reviewers use a standardized checklist led to better reviews, while two more revealed that training reviewers was

* Fourth International Congress on Peer Review in Biomedical Publication. Barcelona, Spain, 14–16 September.

ScienceScope

Science Budgets Uncertain With government spending plans in disarray due to major new outlays for recovery and military efforts, biomedical researchers fear that the move to double the National Institutes of Health's budget to $27 billion by 2003 is in jeopardy. Although a major increase for next year appears safe, future raises could be scaled back. But some areas—such as research on defenses against biological attack—could prosper.

Researchers funded by the military, meanwhile, may face feast or famine. Programs judged marginal may be cancelled to free up funds for military operations, observers say. Pentagon R&D projects considered critical—such as developing new security technologies—may be put on a fast track.

Congressional leaders this week were expected to decide whether to buy themselves some time by passing legislation that would freeze budgets at existing levels for up to 6 months into the new fiscal year, which begins 1 October, or try to finalize new spending numbers by the end of next month.

End of Discussion The battle over White House plans to develop a ballistic missile defense (BMD) system is finished, at least for this year. Opponents in the Senate and House this week said they have dropped efforts to cut funds from the president's $8-billion-plus BMD budget request and place restrictions on planned tests, which they fear will breach international arms control agreements (*Science*, 7 September, p. 1750).

Timely study Months before the attack, the National Academy of Engineering (NAE) in Washington, D.C, had already decided the time was right to mount a study of "homeland defense" against terrorism. Now, academy chief William Wulf says the effort will "move ahead smartly," with a report due "as soon as possible." He's already recruited a lead staffer—former Congressional Research Service terrorism expert Raphael Perl, and expects to announce panel members soon. "We hope to convey to the public in a nonalarming way what the threats are and what we might do to protect ourselves," he says. Wulf promises that the homeland defense study will be just the first of several efforts mounted by the U.S. National Academies to "mobilize our immense intellectual resources on this issue."

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