



**A reader points out that replenishing marine populations in the Florida Keys will require much larger reserve areas than are currently planned. A letter writer deems the lack of career paths for young scientists in biomedical research a more serious problem than the decline in the number of physician-researchers. A group representing anatomists opposes an effort to redefine rats, mice, and birds as animals protected under the Animal Welfare Act. Field primatologists support "collaboration between biomedical scientists and field-workers to investigate the natural epidemiology of retroviruses in nonhuman primates." Fluorescent lamps are said to have been used in photocopy machines since 1959. And the finding that feeding cattle hay for a brief period before slaughter can reduce the risk of foodborne *E. coli* infection is questioned and defended.**

### Replenishing Marine Populations

A recent note in the Random Samples section ("Payoffs seen from Keys fishing ban" 12 Mar., p. 1631) describing preliminary findings of studies within no-take zones of the Florida Keys National Marine Sanctuary concludes that "[i]t is still too early, however, to measure a hoped-for benefit of such preserves: serving as spawning grounds to replenish populations outside their boundaries." Replenishing populations outside their boundaries, however, is not an expected benefit of these small reserve areas. The small (0.3 to 30.8 square kilometers) no-take zones within the Florida Keys National Marine Sanctuary were established to minimize human impacts to particularly high-risk habitats, promote scientific research, and maintain natural assemblages of living resources within their borders, but they are likely to be too small to provide significant replenishment outside their boundaries.



**Spiny lobsters could be replenished.**

Larger reserves encompassing known spawning areas were originally proposed and widely supported by scientists and conservationists, but they were not created by the sanctuary's management plan (J. C. Ogden, *Perspective*, 21 Nov. 1997, p. 1414). Nevertheless, a process known as Tortugas 2000 was implemented to create such a reserve by the year 2000. The Dry Tortugas Ecological Reserve (DTER) that is being created may be large enough to serve this function. In addition, several species of fish are known to spawn in this upstream area of the Florida Keys, suggesting that a DTER may provide the

hoped-for benefit of replenishing populations outside of its boundaries. Preliminary findings that populations are rebounding and individual size is increasing within small no-take areas in the Keys are consistent with the global experience with marine reserves and suggest that they are functioning as expected. Moreover, the results support the development of larger, well-designed reserves such as the DTER that can conserve biodiversity and protect fisheries.

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### Young Scientists in Biomedical Research

I am somewhat bemused by the 5 March correspondence lamenting the "physician-scientist" as an endangered species (*Letters, Science's Compass*, p. 1455). We are told that M.D.'s who pursue laboratory research full-time are doing as well as anyone, as are those whose research is intimately associated with their clinical responsibilities. It is those trying to divide their time who are apparently endangered. In this respect they are no worse off than harried university professors trying to balance research with increasing teaching and administrative responsibilities. The loss of physician-researchers would be unfortunate if there were evidence that patient-based, disease-oriented research is in decline. But where is that evidence? There may be a decline in quantity, but is there a decline in quality?

Patient-based research is increasingly being supervised by full-time professional scientists. The physician-researcher, like the teacher-researcher, is being squeezed out because it is not possible to compete on a part-time basis. I can see no justification for any

action to shift the goalposts in that competition. Scientifically rigorous patient-based research has an inherent advantage anyway because of the relevance criterion. The way to further encourage high-quality patient-based research is not to encourage part-timers, it is to make it more attractive to the best professional scientists. It may be desirable for both patient care and research for clinicians to get their hands dirty in the lab occasionally, but it is neither necessary, nor possible, for them to run the lab as well as the clinic. A genuine partnership with a professional scientist, based on mutual respect and equivalent status, is a much better option all around. So, while we are lamenting, spare a thought for the lack of career paths for young scientists in biomedical research. To me, that is a vastly more serious problem.

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### Redefining Rats, Mice, and Birds

It was recently reported (D. Malakoff, *News of the Week*, 5 Feb., p. 767) that a coalition of animal rights advocates has petitioned the U.S. Department of Agriculture (USDA) to redefine rats, mice, and birds as animals protected under the Animal Welfare Act. We believe that this move would not only result in a duplication of effort and waste of federal resources, but would also have a strong negative impact on biomedical research.

In announcing the proposed change (1), the USDA Animal and Plant Health Inspection Service points out that 90% of the rats, mice, and birds being used for research in the United States are already covered by voluntary accreditation and/or the Public Health Service Policy on Humane Care and Use of Laboratory Animals, which requires compliance both with the principles of the Animal Welfare Act and the National Research Council's *Guide for the Care and Use of Laboratory Animals*. And, according to USDA, the *Guide* standards often exceed those in the Animal Welfare Act.

At a 2 February hearing sponsored by the Scientists Center for Animal Welfare and the Institute for Laboratory Animal Research, most of the speakers represented animal rights and alternative testing advocates. Representatives from three scientific societies—the American Association of Anatomists (AAA), the American Physiological Association, and the American Psychological Association—presented strong arguments opposing the introduction of additional regulations. They argued that the proposed regulations will