LETTERS

Missions and challenges

One reader proposes that the Department of Energy (DOE) define "missions" for its national laboratories, as has been done for the various National Institutes of Health (NIH). (At right, happier days at a DOE national laboratory, 1983.) Other readers discuss whether it would be a good idea for scientists to play by "Washington's rules" in the arena of funding and policy. "Simple changes" to the procedures for reviewing grant applications at NIH are proposed. And "a call to arms in questioning and reviewing the basic linear dose-response paradigm" for low-level radiation risks is continued.

Tail Wags Dog?

It is clear from Andrew Lawler's article "DOE labs: Is evolution enough?" (News & Comment, 14 June, p. 1577) that many of the U.S. Department of Energy (DOE) labs have lost their raison d'être, and I am uncomfortable with the idea that the labs themselves are trying to find new missions in order to survive. This is like the tail wagging the dog. Contrast the state of DOE's research missions with that of the National Institutes of Health (NIH). NIH has clearly defined, focused objectives that have wide public support, as witnessed by current increases in funding.

The DOE, at the cabinet level, should develop specific missions for its labs, and those that don't fit the DOE's mandate should be transferred to other, relevant government, academic, or private entities. Once the missions are clearly defined, only then should the question of lab closings or consolidations be addressed. The time for bold, decisive action is now. To delay is to allow the labs to wander off in diverse, aimless directions, seeking only to survive, not thrive.

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Political Scientists?

The call of Jaleh Daie for "The activist scientist" (Editorial, 24 May, p. 1081) was both compelling and repelling. I agree that individual scientists must overcome their reluctance to participate in the process of influencing resource allocation and setting science policy. I strongly disagree, however, that "in the interests of science, we must accept the necessity of playing by Washington's rules and speaking the Washington language." Many of Washington's rules are just plain stupid and its language unintelligible. I suggest that we use our intelligence and innovational abilities to convince politicians and bureaucrats that sustained funding of research and development, along with the efficient management of natural resources, is necessary for the long-term well-being of this nation and, by extension, the world.

Technology and resource management can make all our lives more enjoyable, more profitable, more fulfilling. And sensible laws and regulations that are based on good science can benefit every citizen every day.

Let's support good legislation and be excited about science, but let's not further the nonsense of Washington politics and patronage that have gotten us into the current sorry state of affairs.

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Educating Congress about the benefits of medical research, while important, is no longer enough, nor are letters of gratitude. It is time for the research community to step up and make financial contributions to the campaigns of legislators who work on behalf of medical science. Members of Congress must raise thousands of dollars each day in order to stay in office. This is a political fact of life. If they do not raise these funds, they will not be reelected, and unknown, perhaps nonsupportive, competitors will take their places.

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NIH Rating System

Although the attempts to standardize the evaluation and scoring procedures of grant applications (E. Marshall, News & Comment, 31 May, p. 1257) are well-meaning, they overlook a major limitation of the current review process: The scores given by individual study section members are not independent measures.

Typically, a grant application is considered in depth by two or three reviewers. They then present their reviews to the rest of the study section, discuss the pros and cons, and publicly announce their scores. Only then does everyone else record a score. Most of the study section members have not read the application under review and may not have a good understanding of the application from the discussion. As a consequence, the vast majority of study section members repeat the score of either the primary or secondary reviewer or split the difference. Without independent evaluations of the applications, statistically manipulating the scores is not justified and will not improve the accuracy or fairness of the process.

At the least, two simple changes should be made. (i) Reviewers should only discuss the merits of the application and should not announce their scoring. (ii) Study section members who feel that they do not have a valid independent evaluation should not be required to submit a score (five independent evaluations are more valuable than 20 repeats). Once independence in scoring is achieved, it would be reasonable to adopt some of the standardized scoring techniques suggested by the Committee on Rating Grant Applications, although reviewers should only score on factors that they feel competent to judge.

The best way to improve the evaluation process would be to increase the number of independent evaluations. The length of proposals should be significantly reduced, and more reviewers should be assigned to each proposal. There is no need for any reviewer to write more than one page of critique, and it is not necessary to designate reviewers as primary, secondary, and so forth, which just encourages everyone to rely on one opinion.

Another way to gain more independent evaluations of a proposal would be to supplement the study section from a large pool of reviewers. Not every reviewer would attend a given meeting, but the outside reviews (two to four) would be read and discussed at the study section (not the scores). Using an outside pool would also allow a better matching of the grant to the expertise of the reviewers and would involve more of the scientific community with the review process.

Our responsibility as scientists is to obtain unbiased estimates of variance in order to evaluate the significance of our findings. It is hard to understand why the same effort should not be made when scoring grant applications. The actual variance in the process may be high, but, if so, we should recognize this and devise a review process that deals with it in a statistically valid way.

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Risks from Low Doses of Radiation: Continued

The three letters published on 3 May (p. 631) challenge some of the statements in my 29 March Perspective (p. 1821), and I would like to address them here. The theme of my