Letters

Peer Review at NIH

In a recent letter (10 Sept., p. 984), S. Walter Englander comments on the selection of National Institutes of Health (NIH) study section members and the assignment of priority scores. NIH obviously shares his desire for the peer review system to operate at the highest level of competence, fairness and efficiency, and so welcomes any suggestions for improvement. However, Englander's letter does not fully and accurately describe the two important aspects of peer review about which he is concerned.

When selecting study section members, NIH exercises great care and follows sound management methods. The identification of potential study section members is the responsibility of executive secretaries. Since they are present, as managers, at hundreds of detailed reviews of research grant proposals three times each year, these individuals are most knowledgeable about who are the experts in the scientific areas reviewed by their study sections. In addition, executive secretaries routinely consult colleagues within the NIH community, highly respected experts in the scientific community, and study section members, present and past, when new study section members need to be identified. Thus, NIH believes that its executive secretaries are best aware of both the need for specific scientific competency, as well as the scientists who may be able to meet the review needs of the study section.

It is also important to note that NIH has made an increased effort in recent years to identify female scientists, members of minority groups, and others who may wish to serve on study sections but have not been easily identified. For this purpose, NIH established a consultant file that now lists more than 9000 individuals. NIH welcomes continued suggestions from the entire spectrum of the biomedical and behavioral scientific communities.

Regardless of the method used to identify potential study section members, only those who are judged to meet the necessary levels of scientific competence, maturity, fairness of judgment, and sufficient standing among their peers in the field are submitted by executive secretaries for further consideration by NIH. These submissions are reviewed by several layers of NIH professional staff, who alert the executive secretary to any questionable nominations that might have been made. Only after the review and approval process has been completed will the director of NIH invite an approved new study section member to serve. Thus, the selection process is systematic and under careful management. While the executive secretary is certainly the key individual in the process, NIH as a whole is involved and has a vital interest in seeing that only the most appropriate scientists serve on the study section.

Regarding the assignment of priority scores and Englander's concern that softness or "noise" in the system prevents accurate judgments, several points need to be made. Study sections have uniform guidelines by which to assess the merit of research proposals under review. The executive secretary is responsible for ensuring that these guidelines are followed. The criteria for new research project grant applications include (i) the scientific, technical, or medical significance and originality of the research; (ii) the appropriateness and adequacy of the experimental design and methods; (iii) the qualifications and experience of the investigator(s); (iv) the reasonable availability of resources; (v) the reasonableness of the proposed budget and duration of support in relation to the proposed research; and (vi) where an application involves activities that could have an adverse effect upon humans, animals, or the environment, the adequacy of the proposed means for protecting against such effects. NIH considers these criteria to be sound and sufficient to enable the peer review system to identify the most meritorious research grant applications for support.

For applications that they recommend to be approved, study section members must communicate with each other in the least encumbered manner to obtain the most accurate scoring of priorities. To achieve this goal, members vote in 0.1 increments, from 1.0 (most meritorious) to 5.0 (least meritorious); and, when they wish, they may indicate the number that they feel best describes their level of support for a given research effort. Each member votes privately and independently, and the chairperson and executive secretary foster open discussion on the rationale for any differences of opinion, especially if a member's evaluation varies significantly from the consensus.

Englander's criteria for determining a priority score based on various degrees of solid science, innovation, and potential importance are, thus, in part, the same criteria used by study section members. Whether these attributes of meritorious research should be assigned equal weight is precisely the judgment the members are called upon to make. In some proposals, the importance of the work may outweigh innovative aspects; in others, an innovative idea may outweigh a less than perfect experimental design.

We at NIH welcome comments and ideas such as those expressed by Englander. The soundness of NIH peer review procedures is vital in order to maintain excellence in biomedical and behavioral research in the United States.

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Academia and Industry

I was pleased to read the cautionary notes in Philip H. Abelson's editorial "Differing values in academia and industry" (17 Sept., p. 1095) and would like to add a few of my own. While interactions with industry have played and will continue to play an important role on the university research scene, they should not be expected to replace a significant portion of the research funding now provided by the federal and state governments. The reasons are many: those Abelson discusses in his editorial and those which have concerned various university groups, as outlined in recent articles in the News and Comment section of *Science* (9 Apr., p. 155; 28 May, p. 960; 11 June, p. 1200; 18 June, p. 1295; 6 Aug., p. 511; 17 Sept., p. 1122).

Support from industry tends to be directed toward specific fields, those which are "hot" and of potential commercial interest for the donor. Rarely is support given in a broad enough area to be considered "uncommitted" funding.