pened to discover several names of my fellow countrymen we consider to be top physicists. I checked with numerous scientists in the field and found a general confirmation of my own first impressions of the Federal offices. The system was fair, it was skillfully administered, and the physics community seemed to have great confidence in it.

When I returned to Holland, where the review of grant proposals was done by committees with all those involved present, we tried to incorporate some NSF techniques in our system. (My study was triggered by the feeling in Holland that current techniques, fit as they were at times with rapidly growing funds, completely broke down when the budgets were frozen and extra support to Dr A would mean less support for Professor B.) We merely used the comments and criticism obtained through mail review to initiate debate in the committees where silence would have prevailed otherwise.

Since then much change has taken place. As in NSF not all our decision making is uniform for different programs. However, there is one characteristic that is very common to our review system, which I think is missing in US procedures. After we have collected all comments and criticism on a proposal through mail review and other means, we sum them up in a so-called "protocol", which may be a document of one or more pages. These protocols do not mention names of advisers. We keep these off the record just as NSF does. I believe names are unimportant in most cases, primarily the contents of the statements should be counted. Eventually the difficult job of weighing the advisers' judgment is done in the preparation of the protocol. To make sure this summary of advice does not contain mere mistakes or biased notions and so on, we allow the principal investigators to learn the contents of these papers. They have the opportunity to deny certain points or defend themselves as they may deem necessary. These comments are added to the protocol before it is sent to the committee which makes the final decisions.

After all, the common practice even before Justitianus authorized the Roman Code of Justice was to allow the accused to learn about the accusations and to defend himself before the sentence was passed. For this reason I feel NSF procedures could be improved and that is also why I do not understand NSF critics who believe the judgment by referees should be made public after a decision is made. What use is the knowledge of grounds for refusal after refusal?

Our experience in Holland with the new method is favorable. We do not have serious problems with either the loss of confidence in our advisers or a rise of tensions within our scientific community.

A last point I would like to make concerns the difficulties Stever mentioned (September 1975, page 77): "The quality of rejected proposals had improved significantly, because of the current squeeze on basic research" (stress also results from this situation). In our system final advisory bodies deal with the completed protocols and then hand out grade marks to the proposals. Although it does not help the proposer of a rejected request much in practice, since a "no" still remains a "no," he feels better on hearing that his grant is refused because it was "very good" (and not because it is considered lousy research) and that budget constraints allow only for those graded "excellent" to be supported.

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Physicists as engineers

I should like to endorse the idea put forward by Charles Riedel in your January issue (page 96) that physicists should consider employment in an engineering field. I myself began to make that transition many years ago soon after graduation, when I applied for membership in one of the engineering institutions. Passing the Engineer-In-Training and Professional Engineer examinations should not be difficult for a physicist after a review of the subject matter. (Though this can conveniently be done by attending a formal review course, it is possible to study the material at home.) Registration provides the degree of "respectability" that the engineering employer desires, though for most types of employment it is not a legal requirement. I have found that my physics background, which inclines me to work everything out from first principles, sometimes has given me an advantage over my colleagues when something out of the ordinary has to be done, though they are quicker when it comes to applying existing technology. Perhaps this is the principal difference between a physicist and an engineer; the former is brought up to believe in a quest for knowledge for its own sake, the latter to apply existing knowledge to everyday problems (including that of earning his own bread and butter).

Riedel does not mention classical physics and acoustics in his list of parallel subdisciplines. Acoustics, with its related fields of vibration and noise control, though sadly neglected by many physics departments, is providing opportunities for both physicists and engineers.

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