letters

some changes in attitude on the part of the physics community. Otherwise the number of universities having departments of physics will become less than Epsilon where Epsilon is the number having departments of Greek today.

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Letters overrated?

I would like to add a remark to the Layzer–Goudsmit exchange (September 1974, page 9) on the refereeing policies for *Physical Review Letters*. Most people I know who try to publish in *Physical Review Letters* agree that submission of a manuscript to PRL is, except perhaps for very famous and highly esteemed physicists, indeed simply a disagreeable "black-box" experiment, with no way of predicting in advance what the reaction to the manuscript will be. Irritation on this point runs very high.

I suggest that the reason is that there is in fact no way of ascertaining, in the time scale allowed for refereeing, whether a manuscript really does represent work of extraordinary significance. Even assuming that one wants a journal that publishes only work of extraordinary significance, how many such contributions will there be? Surely not fifty or sixty a month. Some months there may not be any.

The inevitable result is that most of the papers that appear in PRL, particularly after a year or two have gone by, clearly do not meet the standards of novelty and importance that have been set for them. Then everyone who has done just a good, solid-quality piece of research feels he has as much right as the next man to appear in PRL, and feels discriminated against when his contribution appears to be arbitrarily (and, of course, anonymously) rejected.

My suggestion is to revive the old pedestrian category of "Letters to the Editor" for short communications in *Physical Review*. The inflated criterion of extraordinary significance, a child of the euphoria and hot air of the late 1950's and early 1960's, has outlived its utility.

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Physicists as engineers

With reference to the letter by Wesley Aman in your May issue (page 9), I want to question the self-defeating reluctance of physicists to seek employment in allied fields, such as engineering. In many states the refresher course, study, and testing that leads to registration as a Professional Engineer costs about $50 and minimal part-time effort. In my experience, a registered Professional Engineer or Engineer-in-Training still has very good job prospects, certainly above janitor or cab driver. Industrial line and staff salary levels are comparable between engineering and physics, with engineers starting perhaps 33% lower until some patents (or other evidence of value to society) are obtained. Certainly there are potential job-satisfaction and skill parallels between engineering and physics, depending upon individual interest and background:

Physicist	Engineer
particle	solid-state electrical engineer
high energy	lightning or power electrical engineer
physical chemistry	chemical engineer
geophysics, rheology	civil engineer
meteorology, plasma	pollution, chemical engineer
research management	industrial engineer, business administrator
optics, astronomy	industrial engineer, photography
mechanics	mechanical engineer, aerospace engineer
crystallography	materials, metallurgy
in any field	cost estimator, design

As a hint, the physicist should practice using the term "engineer" both in describing himself and in referencing jobs he has held or for which he is applying. This may help remove the stigma that he might leave as soon as a proper physics job is offered.

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Inadequate communication

Your editorial "Basic science in jeopardy" decries the current de-emphasis on basic research and pleads for a more responsive long-term federal policy towards science. The Mansfield Amendment, placement of the RANN Program in NSF, and the dismantling of the White House advisory position are cited as evidence that "not only is the honeymoon over but there are imminent prospects for separation or divorce." I prefer to think of the present situation as the end of a love affair during which the Federal government sought to keep Mistress Science in a manner to which she soon became accustomed. It is to be hoped that this experience will lead to a more rational and enduring relationship between science and public purpose. Science re-

quires the nation's support as much as the nation needs science. This view, of course, may offend those who would seek to keep basic research pure, requesting support of science for its own intrinsic rather than extrinsic merits. The growing estrangement between the scientific community and our society is proving harmful. The scientist's argument of "technology push" is no more an appropriate answer than is the bureaucrat's reliance on "demand-pull." It is time the scientific community and the government decline together that which neither can do alone.

For too long there has been inadequate communication between the academic scientist, those involved in industrial applications, and federal administrators. Much of the present situation is traceable to a lack of understanding of purpose and several decades of undelivered promises (both real and imagined). The Joint Economic Committee of Congress will soon be holding hearings to examine the process of research, technology development, and innovation in industry and the efficacy of federal policies to foster their progress. I expect these hearings will provide ample evidence of the most primitive form of cultural gap among participants.

The PHYSICS TODAY editorial is a remarkable example of such a gap. It suggests "the first steps towards achieving (a rational science policy) should be to make sure scientists themselves are fully aware of the perilous situation for basic research and motivated to seek action." I would propose rather that the scientific community should seek to understand better the role and importance of basic research in the nation. Individual scientists should transform themselves into the rest-frame of the policy-maker and industrialist to seek to appreciate their perspective and their expectations. From such a "consciousness-raising" experience, the physics ccmmunity might be better able to determine its responsibilities, articulate its "rights," and communicate with those outside—and in the long run, play an important role in defining a more responsive science policy so necessary for its continued welfare.

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Corrections

October, page 62—The author of *Physics and Chemistry in Space, Vol. 8: Plasma Instabilities and Nonlinear Effects* is A. Hasegawa.

November, page 50—Photo at top shows Gordon Baym on the left and Douglas Scalapino on the right. □