

that taxpayers may understand what they are getting in return for their support of our programs.

Many other groups are performing services similar to the ones listed above. Perhaps each institution or local organization would be able to add just one more item to its present list of public-information programs.

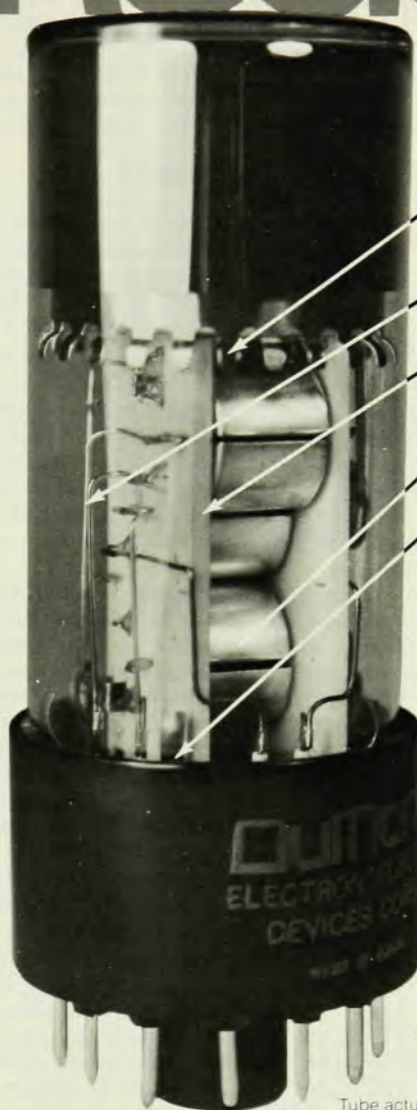
HOWARD E. CLARK
National Bureau of Standards
Washington, D.C.

Jobs for bachelors

Many discussions continue to take place concerning the decreasing number of positions available for young physicists who have recently finished their doctorates. In many of these discussions, mention is usually made of the decline in the number of academic positions available, and this decline is coupled to the decline in undergraduate physics enrollment. But this avenue is usually not pursued any further in such discussions. Rather, it is optimistically dismissed with the hope that undergraduate physics enrollment will return to "normal" accompanied by a "stabilization" in the number of academic positions available in college and university physics departments.

It is my strong opinion that this hope is unrealistic as long as we give low priority to the problems of employment of physics majors with the bachelor's or master's degrees and continue to imply that those not going on to the PhD are not as worthy of our concern. It seems to me that employment of physicists at the baccalaureate and master's levels is actually more important to our physics community than employment at the PhD level. Most of our undergraduate students are extremely job-oriented. They are not about to invest four years in an area of study that does not give a fair degree of assurance of a job at the bachelor's level should they (for economic or other reasons) decide against graduate school. Let us be frank and admit that undergraduate physics departments are competing for students with chemistry departments, engineering departments and mathematics departments. These professions are several orders of magnitude more concerned with preparing their students for jobs at the bachelor's level than is the physics profession. As long as this situation remains, the undergraduate physics enrollment will certainly continue to decline. Such decline will result in further large reductions of faculty positions in colleges and universities. Unless this is what we want to happen, we must make a very large national effort to increase the availability of jobs for baccalaureate physics majors. This may require some changes of emphasis in the traditional curriculum as well as

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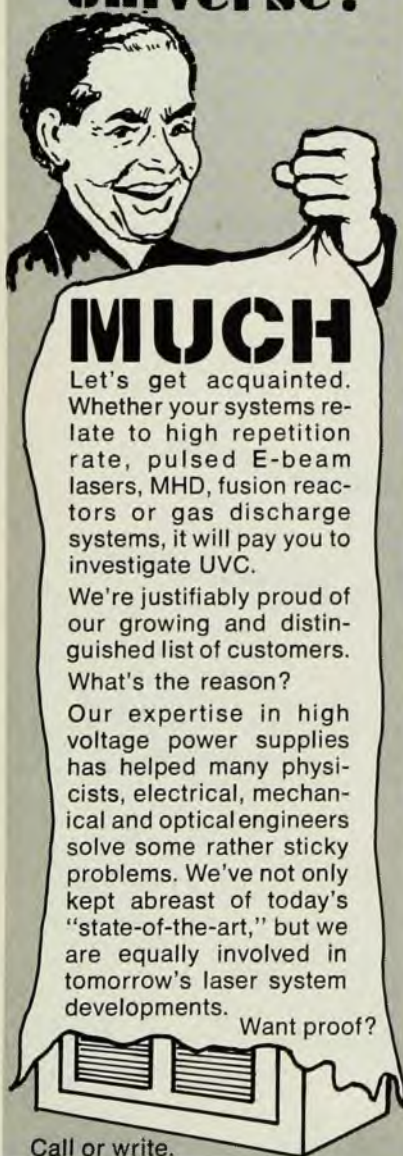
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letters

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.

T. G. STINCHCOMB
De Paul University
Chicago, Illinois

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.

DAVID MONTGOMERY
University of Iowa
Iowa City, Iowa

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 manage- ment	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.

CHARLES E. RIEDEL
Villa Park, Illinois

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-