

Referee policies for *Physical Review Letters*

I'd like to bring up for reader discussion, if possible, the question of the adequacy of the present publication-screening structure for *Physical Review Letters*. The two points I want to focus on here are the question of the suitability of the editorial structure for the selection of referees and the criteria that are in practice used by referees for accepting manuscripts.

At present, there appears to be no formal structure set up between receipt of the article by a very small permanent staff of non-experts and the passing on of the manuscript to the ultimate expert referee or referees. Such an intermediate structure must exist in an informal manner, but by deliberate design of the journal it is a "black box." In the absence of definite knowledge, many interesting but not totally reassuring rumors have circulated. It would seem that such important points as the selection of referees and the range of the editorial function should be better understood by the research community.

My intuitive feeling is that the informal structure probably is not working as well as it should, that its wheels grind too clumsily and erratically to be worthy of the great prestige of the journal. I would prefer a formal intermediate editorial structure, a Board of Editors, as in many international journals, consisting of specialists to whom articles may be submitted directly, and who are responsible for sending the article to a referee. Surely, this would result in a more efficient screening system, which at the same time would be more sensitive to the average research worker and above all be more human and less forbidding.

My second concern is with the criteria for acceptance of controversial results. Most interesting new research is in fact controversial. In practice however, *Letters'* referees often adopt the conservative policy of attempting to "guarantee" the accuracy and completeness of such research results. This is too much of a responsibility for a referee under time pressure and tends to give undue weight to orthodoxy and the institutional credentials of the author.

I suggest that *Physical Review Letters* should explicitly drop some of its "protective" function. The present



conservative policies of the *Letters* have tended to block the creative fluency and openness of frontier research and to substitute for it the notorious bandwagon effect, the prevalent mode, which doesn't do anybody much good. More important than deadweight certainty are originality and heuristic fruitfulness. This is what needs to be protected.

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REPLY FROM APS: Arthur Layzer is right in pointing out that the selection of referees is an important step in the editorial function of a journal. No one knows this better than the editors. However, as I have stated many times, his proposal is not a solution of the problems we encounter.

Let me first mention that *Physical Review Letters* will soon have a group of Associate Editors, designated by the Divisions of the American Physical Society. These will assist the editors in difficult cases in all aspects of the publication of the journal. They are the experts sought by Layzer. We know, however, from past experience that for every active expert there will be a number of authors who consider him biased and a competitor. We often use as an anonymous referee a physicist suggested by the author. When the report is unfavorable, the author complains bitterly that we did not follow his suggestion.

The enormous load of up to 600 manuscripts per month for our jour-

nals, each going on the average to more than two referees, makes it impossible to select always the top expert. This leads to unavoidable inconsistencies. The editorial office has a computerized record of the flow of manuscripts. We know which referee is temporarily not available or already overloaded. This has reduced drastically the delays caused by papers being returned, being forwarded to a traveling reviewer or just lost. A board of editors would have to be guided by our up-to-date information and would frequently find that their favorite referee cannot be used.

Layzer's second concern is that our referee system is biased against controversial, new results. It is true that almost every significant step forward represents a break with past knowledge. However, papers containing such advancements are extremely rare. I am sure that if they are understandable they would not be rejected. On the contrary, we receive and publish too many dull letters—one more bend observed in a curve, one more parameter added to a shaky theory. Unfortunately, the letters that claim to contain that giant step forward are too often written so obscurely that no one but the author sees the point. Many research physicists lack undergraduate teaching experience, they have never learned to explain ideas to those who don't yet know them already.

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Astronomer for Congress

I would like to second the hope of Stanley Ballard (April, page 15) that ways can be found to assist well-trained physical scientists to gain seats in the Congress, and I am happy to report, in response to your November editorial deploring the lack of physicists in Congressional circles, that there is a further candidate making the try. He is George A. Seielstad, a well-known radioastronomer, running for Congress in the 18th Congressional District of California.

Seielstad's research in radioastronomy has been done almost exclusively at Caltech's Owens Valley Radio Observatory at Big Pine, California. He and