Anatoly Schmidt gives us an interesting and poetic glimpse of the life of a Soviet physicist and says it all much better than I did. It is heartwarming to encounter a PHYSICS TODAY letter on my side!

Having said all this, I would like to agree with the respondents on one important issue, and that has to do with the current health of the academic science enterprise. There is no question that science in our universities is in very poor shape and that this can be traced to an underinvestment by the Federal government in basic and applied research. If not soon reversed, this policy could have devastating consequences for science in the US. I believe solving this problem requires concerted political action on the part of (older!) scientists. A continuation of this academic malaise will certainly make the life of science less appealing. However, I made my own decision to go into science during the Great Depression, when, to first order, there was 100% unemployment. I would have given the same "advice to an undergraduate" then as I did in January.

Reference

1. R. Atkinson, Science **248**, 425 (1990).

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8/90

Mitogenetic Radiation: Pathology, or Biology?

The inclusion of "mitogenetic radiation" as an example of "pathological science" in Irving Langmuir's 1953 talk on that topic (October 1989, page 36) may or may not have been appropriate at the time he delivered his speech. The references cited by Robert Hall, who edited the talk for publication, are quite old. Several more modern citations should bring Hall up to date on mitogenetic radiation.[1]

The gist of these articles is that many cell systems emit ultraviolet light during or immediately before cell division and that the total effect of this emission on neighboring cells is still not known. The 1985 article has many recent references on mitogenetic radiation in yeast cell strains. Giuseppe Cilento has written an excellent overview of ultraweak bioluminescence.[2]

References

1. T. I. Quickenden, S. S. Que Hee, Biochem. Biophys. Res. Commun. **60**, 764 (1974); Photochem. Photobiol. **23**, 201 (1976); Radiat. Res. **46**, 28 (1971). T. I.

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2. G. Cilento, in *Chemical and Biological Generation of Excited States*, W. Adam, G. Cilento, eds., Academic, New York (1982), p. 250.

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5/90

Bringing the *Citation Index* up to the Past

The *Science Citation Index* has proved an enormously valuable tool in researching the present-day literature and in conducting historical research on how science has developed. (Granted, caution must be exercised in its use, but some of the precautionary steps to be taken are clear, provided one is willing to put in the effort and time required to do the job properly.)

There is, however, one problem in using this resource, namely its comparatively late start. Many of the major developments in science this century preceded the beginning of the *SCI*. I would therefore like to make the following proposal: that at least within the physics–astronomy community, a systematic effort be made to extend the *SCI* backwards in time to fill the gap. The coverage of the *SCI* has in fact in recent times been extended back to include the period after the second world war; the proposal here is to continue back to cover essentially all of modern physics.

This might seem a daunting proposal until one recalls the exponential expansion of science in recent decades. The total published works of this century prior to the second world war will probably produce the equivalent of one year's citations at the present rate, and all previous physics and astronomy published since, say, 1600, probably half of that. Thus the cost should not really be prohibitive.

Why not set a goal of incorporating all the missing years into the *SCI* within the next five years? Setting some suitable starting date for the sources covered would require some research; I would guess that somewhere about 1850 might be a good time to choose (significantly before the major rise in physics and astronomy understanding toward the end of the 19th century). The choice of which journals to cover would be an issue, and access to some of them might pose difficulties, but both problems should be easily overcome. One