

letters

Jeremiah Sullivan, Chia-Wei Woo and Laura P. Bautz.

PETER CARRUTHERS
Chairman

NSF Advisory Committee for Physics
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Vocations vs. avocations

I read with interest the letters regarding employment in November. If I may, I would like to present another view of the employment issue. My comments are not directed at those who entered physics just to become physicists, but at those who study physics because of an insatiable desire to disrobe nature and marvel at her charms on the most fundamental level attainable.

The point I would like to make is best illustrated by an example: my own. I have had experience in both experimental and theoretical physics as evidenced by a few of my publications.¹⁻⁴ Of these papers, three were a matter of survival, whereas the fourth⁴ was an act of love. I was paid only for the first three; the fourth was based on my dissertation (University of Houston, 1977) and was only indirectly supported by a teaching fellowship. Herein lies the essence of the employment problem.

Many of us would like to work on pet projects of our own choosing. However, society is unwilling and unable to support most of these efforts. Consequently the majority of physicists, especially in my generation, must seek means of financial support in areas very often remotely related to our professional interests. These are the facts of life and they are unlikely to improve in the foreseeable future. Grim, isn't it?

No!

There are many professions open to physicists at all levels (BS, MS, PhD) today because of our broad training in the physical sciences. Furthermore, many of these professions pay far better than post-docs or assistant professorships.

Ah, you say, you're listening to a mercenary. Not so, and here's why.

If you'll browse through the want ads at the back of this magazine you'll see virtually every available position is for only one to two years and is to be filled by an individual to do a particular chore. If this chore is your cup of tea and you get the job, great! Usually, however, the chore is just that: a chore. Can you do better than this?

I think you can. When I entered physics I hoped to develop a theory of nature as I understood it. I'm sure many of my colleagues had a similar motive for embarking on the difficult, albeit gratifying, study of physics. I considered myself fortunate that I was able to develop such a theory for my PhD disserta-

tion; however, this permission was granted only after I demonstrated my competence as a scientist by doing work others wanted done. This is as it should be. Unfortunately there are no funded positions for the work I'm interested in, so I turned to industry for my livelihood. The big advantage I now have by working in industry is that I can generate my own resources to achieve my objectives, including publishing a novel.⁵ I have the freedom to select what topics I want to work on as my avocation while my vocation pays for it.

Need I remind you of Albert Einstein's tenure in a patent office? The opportunities available to him then are there for us now, as my case illustrates. Those of you who do not find a job in a government laboratory or academia shouldn't despair. Don't be afraid to go out in industry and make your mark, and while you're at it, do some physics of your own choosing. We may have another Einstein waiting in the wings!

References

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JOHN R. FANCHI
Getty Oil Company
Houston, Texas

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Engineering physics

In the last year there have been a number of articles and statements regarding job opportunities for physicists and about new programs designed to give young physicists an applications orientation. An option not discussed has been in effect at the University of Virginia since the early 1950's. This option requires neither new courses nor additional faculty course loading, but rather an enlightened cooperation between the already existing applications-oriented programs (that is, the engineering programs) and a physics department.

The Engineering Physics program has been producing students in applied physics who have taken roughly half of their courses in engineering and half in physics leading to Masters of Engineering, Masters of Science and PhD degrees. The job opportunities have been excellent, particularly in the classical-physics oriented fields (fluids, mechanics and gas dynamics) as well as in the solid-state

continued on page 80

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