external funding are necessarily undeserving of internal support?

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US and Foreign Grad Students Contrasted

I read M. Howard Lee's Opinion column "Foreign Graduate Students in a US University" (June 1992, page 75) with interest. As an American who was a graduate student in physics until I received my degree one and a half years ago, I would like to add my perspective on the diverse graduate student population. Having married one foreign graduate student and studied with many more, I have become aware of the differences in the styles, motivations and goals (among other things) of American and foreign students. While individuals differ significantly, each group follows general patterns. Here I will confine myself to differences in the realms of course work and thesis research so as to complement Lee's column.

Foreign students arrive at American graduate schools with more extensive formal educations in science and mathematics than American students have had. Many foreign students study the sciences almost exclusively as undergraduates, dedicating four years to physics and mathematics. Many Americans, including myself, had liberal arts educations. As a consequence, American students often must work harder to remain competitive with the foreign students. In contrast, my wife told me that her graduate course work here in America was much easier for her than her undergraduate education at Beijing University. (For various reasons I consider a broad education to be superior to early specialization, but that is the topic of a different discussion.)

But course work does not last forever, and I found that American students have an advantage in thesis research. One obvious difference is skill with equipment. Most foreign students did not grow up repairing cars or doing handyman chores for summer jobs. But the difference is much more deeply rooted than that. Lee points out that foreign students are quiet, courteous and respectful, not willing to break the educational ritual ingrained in them. They often lose direction when plunged into the vagaries of thesis research. A thesis project may have well-defined goals, but the daily work is not spelled out in detail. Most foreign students are more accustomed to solving specifically assigned homework problems. American students, in contrast, are more accustomed to jumping headfirst into a project and determining a course of action as the project progresses. American students are more comfortable with self-guidance, and this gives them an advantage in independent research.

American and foreign students benefit by studying together. The foreign students demonstrated to me that I needed a lot of work if I was to understand the fundamentals of physics. And through their generous help I finally understood what I was doing. I hoped to make a contribution to the foreign students by showing them how to operate more independently than they are accustomed to doing and how to use an unstructured environment to their advantage. This mixing of the best traits of each group was as valuable as the specific scientific training in graduate school.

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The Great Priests of the Physics Roundtable?

I very much enjoyed the February 1992 issue of PHYSICS TODAY. However, one thing bothered me about the roundtable discussion of "science under stress" (page 38): So many of the participants seem to view themselves as the Great Priests and the public as the millions of penny groundlings who are too thick to listen to reason. Some other fathers and I started a program in a local public school called Family Math. We love giving it, the parents and children love to attend it, and nobody had to lobby Congress or the Administration in order to do it. People know I'm a physicist, and hence the idea of professional science has become associated, in some of the parents' minds, with direct public service that makes a difference. I wonder if part of the problem of science in this country doesn't stem from its leaders' being unable to roll up their sleeves and do some practical, effective work that helps the public schools. From what I've seen, and especially read in the February 1992 PHYSICS TODAY, our leadership seems to be more interested in Washington, DC, politics than in the welfare of the nation. A less condescending attitude and a greater demonstration of desire and ability to engage in effective public service might go a long way toward ameliorating the "stressed out" condition of science in America.

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