

Take Physics Local

Good, timely article! ["Take Physics Local," 3/98, pp. 30-32]. The Golf Division of Wilson Sporting Goods has the same image problem as physics. We are one of the oldest golf companies in the country. We once enjoyed life at the top of the heap, but did not keep up with the times. That is changing now that we have a clearer view of the "local environment." In order to regain a prominent position in our industry, we not only have had to deliver good products, but we have had to polish our image. To accomplish the latter, we have chosen a grass-roots approach. The physics community may have to try the same. The American Institute of Physics' (AIP's) efforts are aimed at the senior high school and university level. Perhaps AIP should aim some of its efforts at the elementary school level. If the kids aren't "turned on" to physics until they get to be seniors in high school, the task may be too tall. My wife is a second grade teacher. Her class gets excited when they do projects with magnets, study the weather, and try to figure out why things happen the way they do. A good test of how well a physicist is connected to the "real world" might be to have students select articles from the daily paper to use as examples for whatever physics concept is up for discussion that day. Those examples WILL stick with the students. My grandkids (ages 3, 5, and 7) are learning math on their computer. I haven't seen any physics CDs for their age. Wouldn't it be terrific if kids would sneak on their computer and try to learn some physics?

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I just received a copy of *The Industrial Physicist* (March 1998). I find it a very informative and interesting publication. The article entitled "A Laser-Based Thin-Film Growth Monitor" caught my eye since it is related to laser metrology—an area with which I am involved. After reading the article, I realized that Figure 3 depicts a laser spot distance of 1 nm (1×10^{-9} m). To gen-

erate a laser spot of about 0.1 nm and resolve it requires very sophisticated optical equipment (which is not depicted in Figure 1). So I reached the conclusion that the laser spot distance should be "mm" rather than "nm." Is my conclusion correct?

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[You are right. The equipment is good, but not that good—Ed.]

Back in December 1996, you had an excellent article on the fundamentals of heat exchangers. Because my branch of Honeywell is launching a new project involving heat exchangers, that issue has been passed around and can no longer be found. (I suppose this means misplacement is the sincerest form of flattery.) Is it possible to get back issues or reprints of the article? I enjoy your magazine and wish you continued success.

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The March 1998 issue of *The Industrial Physicist* contained two letters dealing with grade inflation. I did not read the Leonard article ["Physicist Transformed the Quality of Management," *The Industrial Physicist*, 9/97, pp. 46-48], so I cannot comment on the contents. However, there is grade inflation. I can speak from experience. Part of the inflation is due to the lack of preparation of the students entering universities. We are fighting a culture trend in which knowledge is deemed unimportant. The big money is made by TV show hosts with opinions. This results in the need to offer remedial courses as well as dilution of the rigor of the material covered in introductory courses.

Professors at my university are required to submit student evaluations, which are usually negative if any attempt is made to increase rigor in a course. This presents a problem for junior faculty who are reviewed

on an annual basis and want their students to pass.

As a department, we decided to fight this trend by recruiting students to take part in the Cessna Electric Airplane Contest. We offer them equipment, CAD systems, and faculty sponsorship. We have even sought grants and industrial sponsors. So far, the department has four students interested in the contest. Many students cannot take time from work to be involved or simply do not want to engage in this noncredit activity. I would have given a great deal to have had such an opportunity as an undergraduate. This shows how much times really have changed. Grade inflation is simply a symptom of a much deeper problem. For this cultural trend I can offer no solutions.

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There is no doubt that Mr. McLane (Letters, *The Industrial Physicist*, 3/98) passed a rigorous curriculum and is rightfully proud of it. I too passed such a curriculum a decade earlier, but hope I have learned a thing or two since then.

First, as systems have gotten more and more complex, teamwork is absolutely vital to program success, not a crutch for weak employees. The Apollo capsule would still be sitting at Cape Canaveral if team efforts had not been successful. Teams worth their salt ignore noncontributing members.

Tough college curriculums are one way to sort people, but in the long haul they probably are not the most effective measures of future success. I found years ago that many students who were forced out of tough technical curriculums recycled themselves through programs better suited to their total abilities and more often than not ended up in career positions ahead of those who stuck with overfocused academic rigor.

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