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University-school cooperation

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Letters

University-school cooperation

We have a growing concern with the deterioration in both the quality and quantity of secondary physics education in the US. These concerns have recently been addressed by an APS panel chaired by Gertrude S. Goldhaber. The recommendations of this APS panel, supported by both the APS Council and the AAPT Executive Committee, are as follows:

We are convinced that the cause of physics education can be strengthened greatly by establishing much closer ties between the physics departments of colleges and universities and the secondary school science teachers of the country. A small but continuous and visible commitment by the college physics research and teaching community to the training and upgrading of physics teachers will not only improve the quality, in content and presentation, of physics taught in the schools, but will also strengthen the hands of able physics teachers struggling with school boards and communities to maintain current physics courses, as well as to create new courses to attract a wider variety of students to help combat the public's illiteracy in science.

Both those who teach physics to science and engineering majors and those who teach required courses in physics to non-science majors seem agreed that the secondary school exposure of these two groups to physics has not been uniformly positive and effective. It is also recognized that only a fraction of the students who could take physics in high school have done so.

The closer ties we propose between school and college teachers can dramatically alter these mismatches. It may also serve as an effective recruitment tool for colleges seeking a wider pool of able potential majors, and be an advantage for high school students who by taking physics retain wider career options.

We see two major roles that university and college physics departments can play in the support and training of teachers. One, which will be played by only a small number of

deeply committed institutions, is to offer a residential full-time program of graduate training for teachers who take sabbatical or other leaves of absence and programs for those undergraduates preparing for careers in secondary teaching. We believe that such programs require a "critical mass" of participant students, teaching faculty and university resources. If regional physics teaching centers can be established with AAPT-APS and foundation encouragement at a dozen receptive universities across the country, the need for physics teach training, now woefully undermet, will be addressed.

A second and equally pressing need is for in-service, non-residential part-time training for teachers at locally accessible colleges and universities. Interested individual physics faculty members can provide this sort of support if they are able to devote a portion of their departmental teaching load to such efforts and if those efforts are recognized as valid professional activities, along with undergraduate teaching, research and the training of research students. This category of local physics teacher support may include reading or seminar courses for graduate credit reviewing typical undergraduate physics areas but with emphasis on the special problems of teaching those subjects to secondary school students. It may also include non-credit minicourses and workshops offered for local teachers on topics of timely interest.

Both efforts would help address the present and future physics teacher shortage and provide appropriate support for the present teachers.

We hope physics departments will discuss these matters and take appropriate actions. Departments should contact us if we can be of assistance.

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