

used repeatedly to perpetuate damaging stereotypes (e.g. that disabled students cannot become productive scientists, that women cannot do math as well as men, etc.); there's no reason to

think that they won't be used again for the same purposes. Working hard to ensure that students succeed will produce much better results than will accepting excuses for their failures.

Dyscalculia is already upon us. Let's hope that dysbiologia isn't next.

Randy Moore
Editor

Letters

Education Editorials Draw Varied Reactions

Dear Editor:

I was most delighted to read the many letters expressing such diversity of opinions generated in response to Randy Moore's editorial published in the January 1994 issue of *ABT*. We often forget that *excellent* editorials are often controversial—expression of opinion by the editor on difficult matters of importance to the readership. By their very nature they are provocative!

Unfortunately, many of the editorials published in our professional journals are so bland that they fail to excite interest or spark thoughtful debate. In fact, it is commonplace for more readers to ignore the editorials completely, moving on to the more "important" articles and columns.

Not so Dr. Moore's recent editorials. His comments about grade inflation to enhance student self-esteem and the quality of science education programs for future teachers certainly touched many a raw nerve. Are we indeed compromising course integrity to make students feel better about themselves? Are we providing new members of our profession with adequate knowledge and skills they will need? Do the "scientists" among us still harbor a negative bias against colleagues who consider themselves to be "science-educators" and those who teach college level nonscience majors and "lower level" science courses?

Whether we agree with Dr. Moore's admittedly controversial positions or not is not important. We all owe him a debt of gratitude for raising these issues—and our "intellectual blood pressures." Three cheers for Randy. Keep up the good work!

Best regards,
Nathan Dubowsky
Professor of Biology
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Dear Editor:

Frankly, I am amazed at the near invective response your editorial on

training science teachers received from two of the respondents in April *ABT*. That such a heavy-handed reply comes from a person in a California university, presumably in a teacher education department, however, is not so surprising.

I took my teaching credential from another school in the UC system in 1983. Our "methods" class in science and mathematics education began with the following introduction by the then Science Department Chair: "I am teaching this course because the laws of the State of California require it, and it is my turn to do so." Want to guess how much we learned about good science teaching there?

From another perspective, eight years later, I would like to extol the merits of an entirely different experience. OPE, Operations Physics Excellence, was offered to science educators through the University of South Carolina at Spartanburg over several weeks of the summer of 1990 as the SCOPE program.

A collection of physics and chemistry demonstrations was used to teach a group of trained and experienced science educators how to better teach physical science. The course was team taught by a professor of education and a professor of physics working *very* closely together and with the students.

Every aspect of excellence in science education was not only taught, but modeled in this program. As a joint effort of the National Science Foundation's American Institute of Physics and the University of South Carolina, the courses employed both top quality scientists and professional teacher trainers from the development to the dissemination stages, and serves as a terrific example of just what can be done when these two groups of scholars work together.

I would recommend to all teacher trainers in the sciences, and in particular, through this medium in the biological sciences, that you seriously examine the model of the SCOPE

program. It provides a laboratory and field-based experience of science teaching and learning that focuses on the methods of science by actual participation in the discovery approach to it. Furthermore, a collection of literally thousands of hands-on activities, fully correlated with specific learning objectives, was provided for each teacher, who was then trained to "reproduce" the process by training others like themselves in the "doing" of science.

For more information on the OPE program, and perhaps to stimulate useful dialogue on science education, write the American Institute of Physics at 1825 Connecticut Avenue, NW, Washington, DC 20009. For a faster response, they can be reached by phone at 202-234-1650, or by fax at 202-234-7053.

Please keep those editorials on improving teacher training in the sciences coming. The stimulation of discussion is what an "editorial space" is all about!

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Allelopathy Misconceptions

Dear Editor:

The *How-To-Do-It* by Marcus and Burz (*ABT*, March 1994) contradicted itself in Figure 2. The photo shows numerous lettuce seedlings, yet the caption and text insist that the lettuce failed to germinate! The photos indicate that lettuce seedlings are smaller when grown with radish seedlings than when grown alone. This growth inhibition could be due to allelopathy, but it could also be due to plant competition for water, mineral nutrients, carbon dioxide, or root zone oxygen. It might also be caused by microbes on the radish seeds, or by root zone pH changes caused by radish roots (Hershey 1992). You simply cannot tell which factor(s) is the cause.