Dear Sir:

Arjun Dutta of Howard University takes exception to our article titled, “Doctoral Education: Another Tragedy of the Commons” (Am J Pharm Educ. 2002;66:287-294) for our statement that, “increasing the flow of foreign educated workers and students is likely to be to our nation’s ultimate detriment.” He also questions our suggestion that foreign graduates artificially lower salary levels.

Dr. Dutta is apparently not familiar with Mark Twain’s dictum, “First get your facts straight and then you can distort them.” By choosing not to quote the entire statement, which reads as follows, “There are hidden costs of a brain gain and the maintenance of the science and engineering enterprise in the U.S. by increasing the flow…” (emphasis added) he attributes to us a xenophobia that was neither intended nor present in the complete statement. We believe that the infusion of non-US visitors and immigrants brings valuable cultural and educational advantages to US students in both our undergraduate and graduate programs and to the citizenry at large. However, it is not to the benefit of the United States (or for that matter to any other country) if this results in the dominance of any class of study or employment by non-US workers and, in the specific case of science and engineering education, contributes to a loss of interest in those fields by US students. We might also note, although this was not part of our essay, that excessive efflux of an educated citizenry from a developing country may also be to the economic disadvantage of that country. A recent economic study by Desai, Kapur, and McHale (“The Fiscal Impact of the Brain Drain: Indian Emigration to the U.S.,” http://www.people.hbs.edu/mdesaii/pubs.html, December 17, 18, 2001) indicates that the net fiscal loss to India from the US Indian–born resident population is from 0.24% to 0.58% of the GDP for 2001. A similar and broader point is made by The Economist of September 26, 2002 (http://www.economist.com/ID=1352810). These losses are not insignificant.

Dr. Dutta also challenges our conclusions that foreign graduates are lowering salary and stipend levels. However, this challenge is also a misstatement of our work. We made this argument as a part of a broader context of the net effect of scientists and engineers and we documented it with specific reference to criticisms of the H-1B visa program. These criticisms continue. Additionally, a recent paper by Davis and Weinstein (“Technological Superiority and the Losses from Migration,” National Bureau of Economic Research, http://www.nber.org/papers/w8971) suggests that in a technologically superior nation, the United States, the net consequences of migration are to raise world income in an asymmetric manner, with more than all of the gains going to individuals from the source country and natives of the recipient country suffering actual overall income loss. We would observe quite generally that Adam Smith’s invisible hand¹ does not operate in the presence of a virtually unlimited number of willing workers for a limited number of positions: the net consequence is downward pressure on wages, stipends, and benefits. In this respect both universities and major corporations behave similarly.

We do not believe that our paper denigrated either the quality or the contributions of immigrant scientists and engineers. The sentence following the statement excerpted by Dr. Dutta read, “By this statement, we in no way are suggesting and are not implying that non-US graduate students, post-doctoral fellows and PhD recipients have not or will not continue to significantly and positively contribute to the vitality and strength of this country.” To the contrary, both authors are highly appreciative of the intelligence, enthusiasm, and contributions to research and teaching of our non-US born colleagues, many of which are now US citizens or permanent residents.

In summary, we expressed the concern that if something significant is not done to change the K-12
and higher education environments in science education, that one of them, like one of us (D JT) born in the United Kingdom, will be writing about the lack of interest in science and graduate education in their own offspring in the not too distant future.

David J. Triggle  
University Professor  
SUNY at Buffalo, NY

Kenneth W. Miller  
American Association of College of Pharmacy  
Alexandria, VA

1 The author of *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776 wrote, “Every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the publick interest, nor knows how much he is promoting it. He intends only his own gain, and he is in this, as in many other cases, led by an *invisible hand* to promote an end which was no part of his intention.”