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Science and Security Watch: A Threat to the United States from Foreign Graduate Students Training in Physics?

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Abstract. This article critiques concerns of some United States (US) security analysts that foreign graduate students in physics who train at universities within the US present security vulnerabilities for the US.

Do foreign graduate students who are training in physics at universities within the US present a significant security threat to the US? Does this security risk increase as a majority of students training at many elite US universities come from outside the US? So say some US security analysts.

One argument is that these students will develop specialized knowledge and, then, take this knowledge "home" to their countries of origin or yet other countries. The specialized knowledge may be used to develop defense and economic assets of these countries to the detriment of the US. However, this argument seems to be based on the assumption that knowledge is and can be easily transferred in discrete entities--as can the implications and products of knowledge. However, knowledge and its derivatives are more accurately conceived as continuous and ever-changing--the rare becoming common, the sensitive less sensitive, the valuable less valuable, and the converse as well.

The argument also assumes that knowledge and knowledge product boundaries between and among nation-states and other political actors are virtually impermeable--an assumption violated by increasing permeability via telecommunications advances and facilitated human mobility and transport. As well, the argument seems to ignore US proficiencies (and those of many other developed countries) in "reverse engineering" and entrepreneurship with so-called "home-grown" and "foreign-grown" knowledge products. Another difficulty for the argument is the increasing import of multinational corporations in contrast with national governments. In this last case (within the current era of the globalized economy), US graduate students might take and use their knowledge in a manner completely congruent with their foreign colleagues--where the grass and money is greener and more plentiful.

A second argument alleging a US security risk from foreign graduate students suggests that these students present a greater espionage threat. If by espionage threat one is alluding to competitive (business) intelligence and espionage, the counterarguments above seem formidable. On the other hand, if one is alluding to weapons-related espionage--e.g., basic and applied science with weapons technology implications--a case needs to be made for a differential predilection or susceptibility for this activity between US citizens and those of other countries against the US.

Can such a case be made? Too often, consideration of this Issue muddles citizenry with ethnicity. However, one might well conclude--from considering high visibility US espionage cases in the twentieth century--that US citizenry and an ethnicity that is socially constructed as more "American" are no panacea against security shortfalls. Moreover, most personnel security programs used by the US employ some criterion focusing on foreign ties. Thus, individuals with such ties often are viewed--rightly or wrongly--as more at risk and may come under more security scrutiny.

There are other counterarguments against the contention of a US security threat from foreign graduate students. The best basic and applied research is usually that which is vetted in the open among international colleagues. Also, it is becoming more and more difficult to protect sensitive and classified research from the awareness of others--a problem facing spies and counterspies alike. Moreover, there seems to be little argument supporting the position that US elite universities are becoming less elite. Finally, one might posit that a quest for more and better funded professional careers (not just graduate student sinecures) for US citizens--and some US Congressional guilt at contributing to funding reductions--may be behind what could be construed as a security threat scare.

Given a US that is becoming evermore ethnically heterogeneous, one might best conclude with an apt (if too often used) phrase. When it comes to the Issue of security threats from foreign graduate students, we have met the enemy and it is us. (See Chodos, A. (July 23, 1999). Wanted: American physicists. The New York Times, p. A27; Hidden Treasure. (November 25, 1991). The Scientist, 5(23); Moravcsik, M. J. (Summer 1972). The Physics Interviewing Project. International Educational and Cultural Exchange, 8(1), 16-22; Physics community: More foreign students enroll, but only some stay to work. (October 1983). Physics Today, 36(10), 57; Walford, G. (March 1980). Why physics students start doctorates. Studies in Higher Education, 5(1), 77-80.) (Keywords: Graduate Education, Physics, Security.)