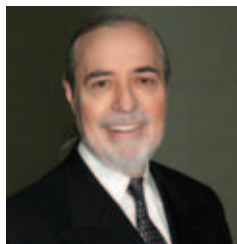


Photo: Foster Henry



## The problem is not declining numbers

A December 2004 front-page article in the *New York Times* featured the headline, "U.S. Slips in Attracting World's Best Students." The *Times* article followed an earlier report of a fall 2004 survey by the Association of International Educators which showed that more than half of the doctoral and research institutions responding to their survey reported a decline in new international graduate enrolment. Among the chief reasons cited for the decline were problems encountered during the visa process, but there were also continued decreases in the numbers of applications by international students.

Many policy makers, business leaders and the educational and scientific communities have expressed great concern about the decline in international talent flow into the United States. Some sectors, such as the undergraduate and masters degree university programs view the decline as a potential loss of tuition and related income; other sectors see the loss of educating foreigners in the United States as a potential deficit in the critical areas of diplomacy and foreign policy. Science and engineering graduate schools view the decline as a direct threat to US world leadership in technology and innovation.

Should the United States be concerned with the drop in applications and enrollment of foreign science graduate students? If so, why?

In my view, there are enough good students in the United States, plus many foreign students (even if fewer than in the past), such that we certainly can meet our needs within the likely (and somewhat reduced) governmental and corporate science spending projections in the immediate and foreseeable future. Past workforce studies have shown the great fungibility among science and engineering disciplines, and the responsiveness of the PhD production enterprise to an influx of new or increased funding in vital areas. For the past 60 years, in spite of many clarion calls of concern about graduate science manpower, there has been no evidence of shortages of high-level scientific talent available for US universities and industry; nor are there likely to be shortages

in the future. Had there been real shortages, the relative salaries of scientists would have risen by supply and demand forces.

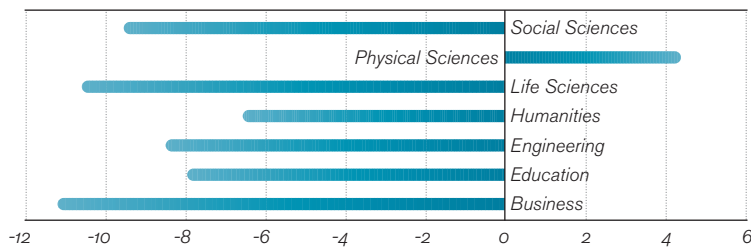
What is new in the current situation is that other regions and countries like the European Union, Japan and Korea, and the relatively new comers to large-scale science, China and India, have considerably strengthened their graduate science education. Thus, the United States faces much more competition in the high tech and science areas. For the United States, it is not the workforce problem that is a threat to our leadership in research (and standard of living). The threat stems from the poor politics of slower science budget increases, plus the rapid advancement by other nations in the quality of their graduate education, and the concomitant improvement in job opportunities for foreign scientists in their native countries. Large US budget deficits (due to tax cuts and military policies) limit funds available for science, while other countries can spend increasing money on science and technology. While their standard of living increases, the US standard of living, on a relative scale, is heading downward, as is the dollar.

The United States still maintains competitive advantages. The freedom and the opportunities presented by our educational system for truly outstanding individuals, plus the relative meritocracy and the capitalistic reward structure, enables unique success stories such as Yahoo and Google. The greatest danger to the United States is not the decline in the number of foreign graduate students, but the poor state of pre-college science education for many Americans and the disgraceful neglect of educational quality in the nation's urban areas for the poor, minorities and, in the case of science, for women.

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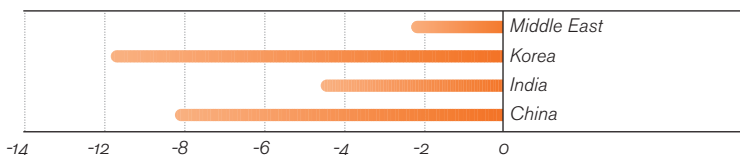
*Brian Schwartz is a Professor of Physics and Vice President for Research at the Graduate Center of the City University of New York. With initial support from the National Science Foundation, he teaches a yearly course titled, "Scientific Career Management: Strategies for Enhancing Job Prospects and Career Opportunities for PhD Scientists and Engineers."*

**Figure 1-**  
**Percent Change in**  
**First-Time International**  
**Enrollment 2003-2004**  
 By Field



Source: Council of Graduate Schools

**Figure 2-**  
**Percent Change in**  
**First-Time International**  
**Enrollment 2003-2004**  
 By Country of Origin



Source: Council of Graduate Schools

## Trends and Findings: Foreign Graduate Admissions

About 450 graduate schools across the United States are members of the Council of Graduate Schools. In November 2004, CGS reported a six percent decline in first-time international graduate student enrollment from 2003 to 2004. Following a decade of steady growth, the number of first-time international graduate students studying in the United States decreased between six and ten percent for three consecutive years, according to CGS data. The following text, which is excerpted from the December 2004 issue of the *CGS Communicator*, is reprinted with permission.

### Assessing a Year of International Graduate Admissions

By Heath Brown, Peter Syverson, and Maria Doulis

The focus of [the Council of Graduate Schools'] analysis was first-time international enrollment, since total enrollment is less likely to change greatly from year to year. Our analysis revealed that 68 percent of responding institutions reported declines in first-time international graduate enrollment, translating to a 6 percent decline overall. Further, the fall 2004 cohort of first-time international graduate students is the group linked to the application class that had the 28 percent decline [reported by CGS in September 2004]. Given previously reported decreases in applications and admissions from China, India, Korea and the Middle East, it was not surprising to see that first-time enrollments from those countries also declined. First-time enrollment from China, the largest source of international stu-

dents, decreased 8 percent; likewise, first-time enrollments from India dipped by 4 percent, by 12 percent for Korea, and by 3 percent for the Middle East (See Figure 1).

Almost all fields of study saw a decline in first-time enrollment by international students. The fields of business, the life sciences/agriculture, and engineering saw the steepest declines, with losses in first time enrollment of -12 percent, -10 percent and -8 percent, respectively. The only exception was the physical sciences, which showed an increase in first-time enrollment of 6 percent (See Figure 2). An interesting aspect of the finding on physical sciences is that the same number of respondents reported increases and decreases, but the relative size of the programs and magnitude of change for those with increases produced an aggregate 6 percent increase.

*From: Heath Brown, Peter Syverson, and Maria Doulis, "Assessing a Year of International Graduate Admissions: Trends and Findings from the CGS International Graduate Admissions Survey," Communicator, Vol. 37, No. 10, December 2004 (Washington, DC: Council of Graduate Schools).*