

U.S. visa policy effects on S&T participation of foreign scientists
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For the last many decades, the U.S. has led the world in attracting the brightest and most qualified international students, scholars, and scientists to contribute to its higher education research, and entrepreneurship endeavors. In recent years, however, visa restrictions and delays faced by foreign students, scholars and highly-skilled S&T workers have caused concerns that the U.S. may be losing its competitive advantage in attracting the 'best and brightest' to study and work.

A November 2008 Science article highlighted the increasing delays on visa applications for foreign scientists to attend conferences in the United States [1]. Before 9/11, visas were automatically granted to foreign students, scholars, and scientists unless one of the reviewing agencies raised an objection. Under current procedures, the Department of Homeland Security and other agencies dealing with national security are required to intensify their screening processes for anyone attempting to enter the U.S. from countries that are not a part of the Visa Waiver Program. Additionally, each reviewing agency is given an unlimited period of time to approve a visa application. While processing times seem to be improving, some reports maintain that visa delays and disruptions remain an issue of grave concern [2,3].

Visa- related delays for foreign students (F visa holders) and foreign workers (H visa holders) were also an issue after 9/11. Concerns that other nations are attracting good talent away from the U.S. due to prohibitive visa policies continue to exist. There are growing implications that unless these visa issues are resolved, the U.S. will face decreasing enrollments at universities by foreign students, and decreased participation by foreign workers and scholars in S&T research and business activities [3].

Key Questions

Our research seeks to determine if/how U.S. visa policies affect foreign scholars, workers, and students, and the S&T activities that include them. Specifically, we hope to address the following concerns:

- Are U.S. immigration policies disrupting U.S.-based S&T conferences?
- Are international meetings being moved to locations outside the U.S. because of delays or other difficulties in obtaining a visa? Is this harming the perception that the U.S. is still the destination for 'cutting edge' research?
- Are the current U.S. immigration policies prohibitive or attractive for foreign students and/or foreign workers to study and work in the U.S., or does the U.S. continue to

attract “the best and brightest”?

Methodology

There are no systematic data on visas for foreign scholars coming into the United States. Therefore, to determine the effect that changes in visa policies might have on the attendance of international scholars at U.S.-based conferences, we selected a set of conferences and interviewed their organizers regarding the impact of visa policies on these conferences. We chose to focus on the Institute of Electrical and Electronics Engineers (IEEE) international conferences because it represents a well-respected community within science and technology and provided a useful foundation to understand conference trends. Of all international IEEE conferences, we only included conferences with 1000 or more participants. We then created a database to track the conference locations for about fifty representative IEEE conferences over from mid-1990s to 2010 (and beyond where data was available). We also interviewed organizers of these conferences, anecdotally assessing the effects of visa policies on foreign conference attendees.

In addition to examining conferences, we are currently collecting data from the Department of Homeland Security and the State Department to assess the trends in non-immigrant student and work visas over time.

Preliminary Findings

The purpose of this study is to understand trends in foreign participation in U.S. S&T activities through scientific conference attendance, higher education enrollment and workforce participation. Of the 53 IEEE conferences analyzed, 26 (49%) were located only in the U.S. and showed no indication of moving outside the U.S. Six of the 53 conferences were located internationally and have never taken place within the U.S. Several conferences (21 of 53) have alternated between the U.S. and international destinations. Of those 21 conferences, 6 appear to have some shifts in conference locations over time. We are continuing to follow up with these 6 conferences to understand the cause of these changes and to identify if the decision to move the locations of these conferences is linked to U.S. visa policies.

Initial discussions with conference organizers indicated that despite the acknowledgment of difficulties with U.S. visas, several organizers noted the visa issue was not the cause of meeting locations moving outside the U.S. While they generally believed that the visa policies did not affect conference location, organizers did observe that visa policies are affecting conference ‘quality’. To accommodate conference attendees who must submit visa applications in advance, sometimes at least 4 months prior to a conference, abstract deadlines have been moved forward. As a result, the science

accepted at the time of the abstract deadline can become 'stale' by the date of the conference. We would like to investigate these claims that visa denial and delays are damaging S&T relationships with foreign scholars by conducting a systematic set of interviews with scientific conference organizers.

To supplement the conference findings, we plan to use DHS and State Department visa data and further examine the competitive position of the U.S. in recruiting foreign students and workers. In determining whether the U.S. is still an attractive location for foreign students to study, one metric indicates that the U.S. may be losing ground. The OECD's 2008 Education at a Glance Indicators report data indicates that though foreign student enrollments in the U.S. are rising, the share of foreign students studying in the U.S. is declining [4]. This finding suggests that the issues of global foreign student mobility are much more complex, and we intend to conduct more analysis to better understand these issues.

1. Stone, Richard. "U.S. Visa Delays on the Rise, Scientists Abroad Report." Science. 21 Nov 2008: 1172-1173.
2. GAO Report. "Global Competitiveness: Implications for the Nation's Higher Education System." Jan 2007. GAO-07-135SP.
3. Matthews, Christine. "Foreign Science and Engineering Presence in U.S. Institutions and the Labor Force." 23 Jul 2008. CRS Report 97-746.
4. OECD. "Education at a Glance 2008: OECD Indicators". Indicator C3.