

The Foreign Born in Science and Technology

ABSTRACT

This report looks at the foreign born in detailed STEM (science, technology, engineering, and mathematics) occupations from 1994 to 2002. During this period, the representation of foreign born persons in STEM occupations grew from 12 to 16 percent. Their greatest gains, from 12 to 21 percent, took place among computer scientists and systems analysts, programmers, and related university faculty. The foreign born are most concentrated in the natural sciences and information technology. Compared to other foreign-born STEM workers, those in these two broad occupational groups have spent fewer years in the U.S. and are less likely to be

naturalized citizens. In most STEM occupations, the majority of the foreign born are Asians, while Hispanics are under-represented.

The first report in this series, "Twenty Years of Scientific and Technical Employment," used data from the U.S. Bureau of Labor Statistics (BLS) to document trends in the number of jobs from 1983 through 2003 in over 40 STEM occupations. A second report, "Women in Science and Technology," and a third report, "Sisyphus Revisited: Participation by Minorities in STEM Occupations, 1994-2004," examined trends in these occupations. These reports, along with data archives, can be found at <http://www.cpst.org>.

The foreign born are a significant part of America's science, technology, engineering, and mathematics (STEM) workforce. The number of the foreign born in the U.S. labor force as a whole increased notably in the 1990s, and the increase was particularly pronounced in many STEM occupations. Exhibit 1 below shows that growth was marked in the core STEM professions — those other than the social sciences and science and engineering technology — where the share of foreign born persons grew from 13 to 18 percent of the workforce. The greatest percentage jump for any of the major STEM occupational groups was from 12 to 21 percent for computer scientists, systems analysts, programmers and related university faculty. The foreign born contribution to the STEM workforce is likely to remain important for the foreseeable future.

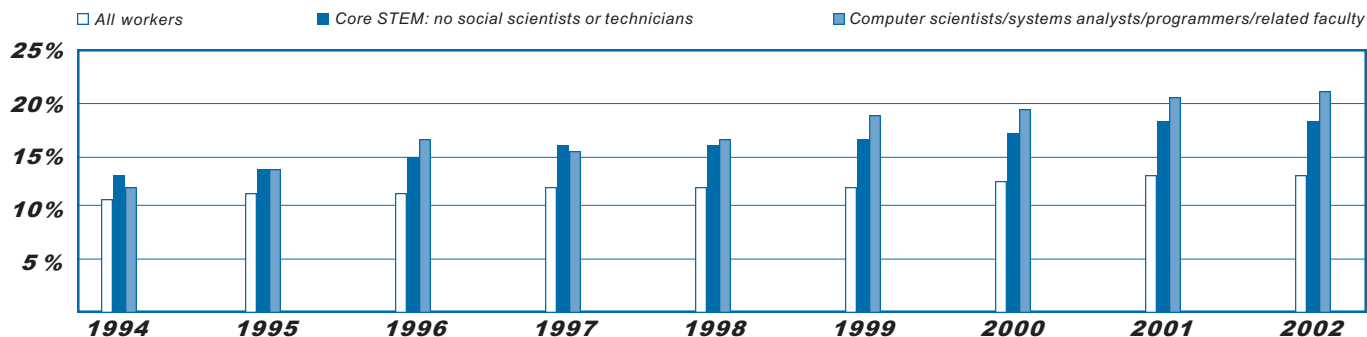
This report looks at data from 1994 to 2002 through the boom years of the "new economy" and the first couple of years of this century. Exhibit 2 on page 3 shows the percentage of the foreign born in detailed STEM occupations, with comparisons to the total labor force and other

professions. Exhibits 3-5 examine only major STEM occupational categories and average the years 1995-96 and 2000-01 to boost sample sizes. Exhibit 3 on page 4 shows age, sex, education, years in the United States, and naturalization characteristics for all foreign born and natives. Exhibit 4 on page 5 examines the race/ethnicity of the foreign born in STEM occupations, and Exhibit 5 on page 6 compares the foreign born by region of birth.

A growing share of the foreign born in core STEM occupations. The total number of foreign-born STEM workers increased from 764,000 in 1994 to 1,200,000 in 2002, accounting for 38 percent of the growth of the STEM workforce during these years. As a result, Exhibit 2 shows that the foreign born increased from 12 percent to 16 percent of all STEM workers during the same period. So the percent of the foreign born in STEM occupations is greater than that of all the foreign born in the total labor force, which grew from 10 percent in 1994 to 13 percent in 2002. The foreign born are also more prevalent among STEM workers than among other professional workers.

Exhibit 1

Foreign born in the U.S. workforce: selected data, 1994-2002



For the numbers used to create this chart, see Exhibit 2 on page 3.

Significant growth of the foreign born took place in core STEM occupations, increasing from just over 13 percent to 18 percent of all core STEM workers between 1994 and 2002. Within the STEM professions, information technology and some of the natural science occupations grew fastest in employment of the foreign born.

The largest percentages of the foreign born occur in the natural science occupations — in 2002, 32 percent of all medical scientists and faculty; 27 percent of all physicists, astronomers, and physics faculty; and 23 percent of all chemists and chemistry faculty. The foreign born are also a significant percentage of all chemical, civil, and electrical engineers.

The foreign born are less likely to be found in social science jobs, where their shares averaged just nine percent over the period. In the social sciences, the foreign born are most likely to be found among economists, averaging 13 percent of all economists over the entire period. Their share of jobs in psychology or in the miscellaneous set of other social science disciplines is only about half this level. There are too few foreign-born sociologists to support estimates with these sample data.¹

But the relative and absolute growth of the foreign born during this period was predominantly a story of the mathematical and especially computer science occupations. The boom in computer science or information technology (“IT”) has been examined in detail in the reports of the IT Workforce Data Project (also available at www.cpst.org). In sheer size, information technology grew more than any other component of science and technology during the “new economy” boom of the 1990s. In fact, about 80 percent of the growth of the entire STEM workforce was driven by IT alone. In turn, the foreign born made up 38 percent

of the growth in the number of all IT workers. The greatest growth in foreign-born shares, from about 12 to 21 percent of the occupational workforce, took place among computer scientists, systems analysts, programmers and faculty. The absolute numbers of foreign born workers in IT increased from 195,130 in 1994 to 539,264 in 2002, an increase of 344,134 people and a phenomenal percentage increase of 176 percent in less than ten years.

Characteristics of foreign-born workers. The remaining exhibits in this report compare changes between 1995/96 and 2000/01 for selected characteristics of the foreign born. Using averaged results across two-year periods doubles the effective sample size and generates more reliable five-year comparisons for the start and finish of the 1990s boom.

Exhibit 3 on page 4 shows basic demographic characteristics of foreign-born and native persons in the STEM workforce. Foreign-born STEM workers were, on average,

about 0.5 years younger than natives in 1995/96 and nearly two years younger in 2000/01. The rapid growth of the workforce is fed by newly arrived foreign born workers as well as by those who have U.S. degrees, but these data cannot distinguish between the two groups. The National Science Foundation estimates that as of 1993, 34 percent of all foreign-born science and engineering workers with doctorates and 49 percent of the foreign born with baccalaureates received their degrees abroad.² Regardless, new foreign-born workers are likely to be young, and this may help to explain shifts in the average age of the foreign born.

Across occupational groups the foreign born are more likely than natives to be male. Social sciences are the exception, where women outnumber men both among the native born and the foreign born. Otherwise, the share of the foreign born and natives who are male has not been all that different in most of the major STEM occupa-

tions. At the same time, in some STEM occupations the share of foreign-born males increased during this period. In the mathematical and computer sciences, the share of the foreign born who were male increased to 76 percent in 2000/01, while remaining unchanged at 69 percent for natives.

Foreign born persons generally have had fewer years of education than natives, but this is not so in the case of the foreign born in STEM occupations. They average 1.5 more years of education, with the foreign born in natural sciences averaging close to two years more. The social sciences are again the exception, with natives and the foreign born having comparable numbers of years of education. There was little change up or down in years of average education among either the foreign born or natives in most STEM occupations over this period.

Exhibit 3 also shows two characteristics unique to the foreign born. In STEM occupations, they tend to have spent slightly fewer years in the United States than the foreign born

Notes on the Data

Our previous reports have used special tabulations made by the Bureau of Labor Statistics (BLS) from the Current Population Survey (CPS).¹ However, these BLS files do not provide the data on foreign born persons needed for this report. Instead, we have developed similar tabulations using public use microdata, in particular the merged outgoing rotation group (MORG) files generated by the National Bureau of Economic Research.² The MORG files combine independent random CPS samples for all 12 months of the calendar year and are larger than individual monthly files. Data reported here are comparable with our earlier reports and reflect yearly averages. Different sample and weighting criteria may generate differences from the estimates shown here.³ The CPS surveys began to include information about the foreign born in 1994. These data do not distinguish persons by visa status, which is why we have limited this analysis to “foreign born,” a group that includes both immigrants and other persons including those with temporary work visas. This report stops in 2002 because changes in CPS occupational coding and sample weights make extensions of the time series to 2003 and beyond problematic. In the future, we plan to release more detailed estimates of foreign born persons using other data sources.

¹ U.S. Bureau of Labor Statistics, “Employed persons by detailed occupation (3-digit census code) and sex, annual averages 1983-2002,” and the BLS AAT39 series of special tabulations available at www.cpst.org.

² Daniel Feenberg and Jean Roth, 2005, “CPS Labor Extracts, 1979 – 2004,” National Bureau of Economic Research, <http://www.nber.org/data/morg.html>.

³ Note that the estimates made here for 1994 and 1995 use adjusted weights provided by Dr. Jeffrey Passel of the Pew Hispanic Center that correct for under-reporting of Asian status (“Problem with March 1994 and 1995 CPS Weighting,” memorandum, November 1996).

¹ Readers should also bear in mind that smaller occupational groups are particularly vulnerable to sampling errors, and so exceptional results for any one year may be due to that factor rather than to some sort of aberrations in the real world.

² National Science Board, 2004. *Science and Engineering Indicators*, Arlington, VA: National Science Foundation, Volume 1 (pp. 3-33).

Exhibit 2**Percentage of foreign born in STEM occupations, 1994-2002**

(Numbers in thousands. Components may not sum to exact value of aggregates due to rounding. See below for additional information. The absolute numbers on which these results are based will be found in the data archives for this project at <http://cpst.org>.)

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Larger aggregates, for comparisons:									
All workers reporting an occupation	10.3%	10.6%	10.7%	11.3%	11.6%	11.8%	12.5%	13.0%	13.1%
All managerial and professional specialty occupations	8.3	8.6	8.6	9.0	9.2	9.6	10.0	10.2	10.2
All professional specialty occupations	8.5	9.0	8.8	9.4	9.8	10.1	10.6	10.8	10.9
STEM summaries:									
All STEM occupations combined	12.2	12.6	13.1	13.9	14.7	14.9	15.9	16.2	16.2
STEM workers, except social scientists	12.5	13.1	13.7	14.3	15.0	15.1	16.3	16.9	16.7
STEM workers, except science/engineering technicians	12.9	13.5	14.1	15.2	15.7	16.1	16.9	17.5	17.6
STEM core, no social scientists or technicians	13.4	14.2	14.9	15.9	16.1	16.5	17.6	18.5	18.4
STEM details:									
Natural scientists and science technicians									
Natural scientists	17.6	19.2	17.5	20.3	20.6	19.4	20.5	20.5	19.8
Agricultural and forestry scientists and faculty	3.5	3.0	5.5	4.6	5.7	5.5	8.1	8.6	6.6
Biological and life scientists, including faculty	22.2	25.4	19.3	18.5	22.1	20.5	22.7	23.3	21.0
Chemists and chemistry faculty	21.3	18.1	17.1	24.3	21.2	19.5	24.6	21.8	22.8
Medical scientists, including faculty	22.2	32.5	33.7	40.0	31.5	36.9	33.1	35.0	31.8
Physicists, astronomers, and physics faculty	27.1	19.7	13.7	13.4	30.5	27.1	32.7	21.5	27.1
Other natural scientists and faculty	8.4	13.1	10.5	12.1	11.5	8.6	4.7	8.6	10.0
Science technicians	10.8	9.5	9.8	9.7	10.0	7.2	9.9	9.2	9.9
Biological technicians	8.7	7.7	6.8	9.1	13.6	7.8	9.2	7.0	9.6
Chemical technicians	11.6	8.3	7.2	10.1	6.9	2.3	8.5	11.3	9.9
Science technicians, n.e.c.	12.0	12.3	14.9	10.1	8.6	10.3	11.7	10.7	10.2
Mathematical/computer scientists & programmers									
Computer programmers/syst. analysts/scientists/faculty	11.6	14.2	16.6	15.3	16.6	18.5	19.2	20.4	21.1
Operations and systems researchers and analysts	6.8	10.4	6.1	11.2	7.7	7.5	6.7	9.0	10.2
Actuaries	—	—	—	—	—	—	—	—	—
Statisticians	12.7	6.9	13.0	21.7	9.5	11.8	5.5	11.6	19.2
Mathematical scientists, n.e.c.	—	—	—	—	—	—	—	—	—
Mathematical science faculty	27.7	19.6	20.6	20.8	29.0	25.8	20.8	29.2	16.9
Engineers, surveyors, & engineering technicians									
Engineers	14.0	13.2	13.7	15.5	15.2	14.4	16.2	16.6	16.0
Aerospace engineers	12.2	10.5	7.2	10.0	14.7	17.5	13.9	8.3	13.5
Agricultural engineers	—	—	—	—	—	—	—	—	—
Chemical engineers	10.3	16.7	24.1	16.3	14.1	13.5	17.5	14.0	17.9
Civil engineers	14.8	15.5	15.4	15.5	14.4	17.3	15.2	17.2	17.3
Electrical and electronic engineers	17.1	13.8	13.4	17.7	17.9	17.2	20.7	19.8	16.9
Industrial engineers	9.2	6.6	8.6	6.8	12.3	7.7	8.5	7.9	11.2
Marine engineers and naval architects	—	—	—	—	—	—	—	—	—
Mechanical engineers	13.7	11.3	16.1	15.9	14.2	11.7	12.7	14.3	14.9
Metallurgical and materials engineers	—	—	—	—	—	—	—	—	—
Mining engineers	—	—	—	—	—	—	—	—	—
Nuclear engineers	—	—	—	—	—	—	—	—	—
Petroleum engineers	—	—	—	—	—	—	—	—	—
Engineers, n.e.c., including sales engineers	13.3	15.0	13.4	18.8	15.2	14.0	17.0	21.4	17.1
Engineering faculty	20.0	41.2	26.3	31.9	22.9	23.3	31.4	38.0	34.6
Surveyors and mapping scientists	—	—	—	—	—	—	—	—	—
Engineering and related technologists/technicians	8.9	9.1	8.7	7.8	10.5	10.0	11.0	10.1	9.4
Drafting occupations	7.8	10.5	7.9	8.6	7.0	9.4	12.9	7.9	9.5
Electrical and electronic technicians	11.6	10.2	10.4	8.4	15.3	12.0	11.8	12.1	11.2
Industrial engineering technicians	—	—	—	—	—	—	—	—	—
Mechanical engineering technicians	—	—	—	—	—	—	—	—	—
Surveying and mapping technicians	6.1	3.9	1.3	—	5.0	6.0	7.9	5.5	6.1
Engineering technicians, n.e.c.	8.0	8.1	9.9	7.9	6.0	7.7	8.6	10.2	7.0
Social scientists and urban planners									
Economists, including faculty	14.4	11.1	7.4	13.6	17.6	14.8	14.2	9.6	14.2
Psychologists, including faculty	6.3	4.6	6.4	7.7	8.7	11.9	8.0	5.9	6.5
Sociologists, including faculty	—	—	—	—	—	—	—	—	—
Other social scientists and faculty	6.4	9.9	3.7	1.1	3.8	6.4	6.1	8.1	7.7

Additional notes: n.e.c. = not elsewhere classified. "Faculty" = postsecondary teachers. Dashes denote cells where data do not permit calculations. Source: tabulations of MORG/CPS microdata; see the sidebar "Notes on the data" on page 2 of this report.

in the labor force at large. Foreign born persons in the natural and computer sciences average the fewest number of years in the United States. At the same time, the foreign born in STEM, like those in managerial or professional jobs, are more likely to be naturalized citizens than other foreign-born workers. In 2002, 46 percent of foreign-born STEM workers, but just 39 percent of all the foreign born, were naturalized. The exceptions are in the natural and information sciences, where less than 40 percent of the foreign born are naturalized citizens.

Asian foreign born most prevalent. Exhibit 4 shows the foreign born in the major occupations by their race/ethnicity, which corresponds to Census classifications

and provides a counterpart to Report 3 in this series on minority STEM workers. Again, the five-year change between 1995/96 and 2000/01 is used to boost sample sizes and generate reliable estimates. The distribution of the foreign born by race/ethnicity varies among the STEM occupations, but Asians form by far the largest group in most STEM professions.

Exhibit 4 shows the foreign born by race/ethnicity both as a percentage of the total workforce within an occupation and by the share of each foreign-born group of just foreign-born workers. Thus, foreign-born Asians made up only three percent of all workers in the United States, but eight percent of the STEM workers. Among just the foreign born, Asians accounted

for 24 percent of the total labor force but 52 percent of the foreign-born STEM workers. Most significant is the increase of the Asian share of all the foreign born in computer science and its related occupations, from 50 percent in 1995/96 to 58 percent just five years later in 2000/01.

The smaller numbers of foreign-born STEM workers, relative to Asians, who are non-Hispanic whites (e.g., from Europe, Canada, Australia, etc.) are disproportionately found in the social sciences, where they account for almost five percent of all social science workers in 2002, and 52 percent of all the foreign born in the social sciences. These persons constitute the second-largest contingent in the STEM disciplines.

Exhibit 3

Selected characteristics of STEM workers by nativity: 1995-1996 and 2000-2001

Year and Occupation	Foreign Born					Native		
	Average Age	Percent Male	Average Years of Education	Average Years Since Entry	Percent Naturalized Citizen	Average Age	Percent Male	Average Years of Education
2000-2001								
All workers reporting an occupation	38.8	59.1%	12.2	16.3	38.5%	39.4	52.6%	13.5
All managerial and professional occupations	39.8	55.9	15.1	18.0	50.1	40.6	49.2	14.7
All professional occupations	39.1	55.2	15.3	17.3	48.2	39.6	46.9	14.8
All STEM workers	37.9	77.6	16.8	15.0	45.7	39.7	73.8	15.5
STEM workers, except social scientists	37.8	79.0	16.8	14.9	45.7	39.4	76.2	15.3
STEM workers, except science/engineering technicians	37.9	77.8	17.2	14.8	44.4	40.2	73.7	15.9
STEM core, no social scientists or technicians	37.7	79.3	17.1	14.6	44.3	39.8	76.7	15.7
Major STEM occupations:								
Natural scientists	40.7	64.3	19.9	14.7	36.3	41.7	66.1	17.7
Science technicians	39.6	62.4	15.0	16.5	54.0	36.2	56.3	13.5
Mathematical and computer scientists	34.8	76.1	16.5	12.7	38.9	38.3	69.2	15.3
Engineers and surveyors	41.0	90.0	17.0	17.5	55.6	41.2	89.5	15.7
Engineering & related technicians	38.3	79.5	14.2	17.1	57.0	38.2	79.2	13.5
Social scientists and urban planners	41.6	43.2	18.1	17.7	47.9	43.5	44.7	18.0
1995-1996								
All workers reporting an occupation	38.3	59.3	12.0	16.2	32.9	38.4	53.3	13.4
All managerial and professional occupations	39.7	56.6	15.0	17.9	45.2	39.7	50.3	14.7
All professional occupations	38.8	54.5	15.2	17.1	42.7	38.8	47.6	14.7
All STEM workers	38.6	75.5	17.0	15.7	43.9	39.1	76.1	15.5
STEM workers, except social scientists	38.5	77.0	17.0	15.6	44.2	39.0	78.9	15.3
STEM workers, except science/engineering technicians	38.7	75.7	17.4	15.5	43.4	39.5	75.9	16.0
STEM core, no social scientists or technicians	38.6	77.4	17.4	15.3	43.7	39.3	79.4	15.8
Major STEM occupations:								
Natural scientists	39.3	70.0	19.5	12.5	30.0	39.8	71.0	17.6
Science technicians	35.1	48.2	14.8	15.2	24.4	36.9	63.7	13.5
Mathematical and computer scientists	36.0	68.9	16.7	14.6	42.4	37.8	69.0	15.3
Engineers and surveyors	41.1	89.3	17.3	17.3	50.9	40.7	91.4	15.7
Engineering & related technicians	38.7	82.7	14.1	17.3	54.5	37.8	81.0	13.5
Social scientists and urban planners	40.4	43.6	18.1	19.0	38.0	40.9	47.6	17.7

Source: tabulations of MORG/CPS microdata. See "Notes on the data" on page 2 of this report.

Foreign-born Hispanics are generally under-represented among professionals and particularly among STEM workers. In 2002, foreign-born Hispanics made up 46 percent of all the foreign born in the total labor force and 22 percent of those in professions, but just nine percent of those in STEM occupations. Only among science and engineering technicians and, to a lesser extent, among the social scientists, did the numbers of Hispanics come closer to their levels of participation in the professions generally.

Exhibit 5 also shows the foreign born in major occupations, but this time the foreign born are grouped by region of birth. Race/ethnicity is self-reported, and it is useful to compare those data

with information on places of origin. The foreign born are often thought of in terms of where they come from; whether terms refer to race/ethnicity or geography, "Asians" are the largest foreign-born group in STEM occupations. But some foreign born more readily identify as "white" than they do with the other Census race/ethnicity categories. When grouped by region of birth, there are somewhat more "Asians" and "Hispanics." So there are more workers "born in Asia" in STEM occupations than foreign workers of Asian ethnicity. At the same time, the classification by region of birth generates a very small increase in the share of STEM workers born in the Americas, compared with no growth for Hispanic STEM workers.

In summary: the foreign born have made substantial contributions to the growth of the STEM workforce during the 1990s and through the year 2002. It is remarkable that IT occupations made up most of the growth in the STEM workforce while the foreign born, in turn, contributed significantly to the growth of the IT workforce. The rapid increase in foreign-born workers may explain the tendency for foreign-born workers, on average, to be yet more likely by 2000/01 to be male and to be younger than natives. Asian workers, whether classified by race/ethnicity or by region of birth, are the largest foreign-born group and are well over-represented in STEM compared to their small share of all U.S. workers. These trends may be

Exhibit 4

Nativity and race/ethnicity of the foreign-born in STEM occupations, 1995-1996 and 2000-2001

Year and Occupation	All Workers						Foreign Born Only, By Race/Ethnicity			
	Foreign Born, by Race/Ethnicity					Native	Asian	Latino	Non-Latino White	Other
	Asian	Latino	Non-Latino White	Other	Total Foreign					
2000-2001										
All workers reporting an occupation	3.0%	5.8%	2.9%	1.1%	12.8%	87.2%	23.5%	45.7%	22.4%	8.4%
All managerial and professional occupations	3.6	2.2	3.4	0.9	10.1	89.9	36.0	21.7	33.6	8.6
All professional occupations	4.0	2.3	3.4	1.0	10.7	89.3	37.2	21.9	31.9	9.0
All STEM workers	8.4	1.4	5.2	1.0	16.0	84.0	52.2	8.7	32.7	6.5
STEM workers, except social scientists	8.8	1.4	5.3	1.1	16.6	83.4	53.3	8.5	31.9	6.4
STEM workers, except science/engineering technicians	9.1	1.3	5.8	1.0	17.2	82.8	53.0	7.3	33.7	5.9
STEM core, no social scientists or technicians	9.8	1.3	5.9	1.0	18.0	82.0	54.3	7.0	32.9	5.8
Major STEM occupations:										
Natural scientists	10.0	1.2	7.8	1.4	20.5	79.5	48.9	6.1	38.1	6.9
Science technicians	4.3	1.6	3.1	0.6	9.6	90.4	44.6	16.8	32.0	6.6
Mathematical and computer scientists	10.9	1.2	5.5	1.2	18.7	81.3	58.3	6.2	29.3	6.2
Engineers and surveyors	8.2	1.4	5.9	0.8	16.3	83.7	50.3	8.5	36.4	4.8
Engineering & related technicians	4.8	2.1	2.3	1.2	10.6	89.4	45.9	20.2	22.2	11.7
Social scientists and urban planners	2.2	1.2	4.6	0.7	8.7	91.3	25.6	14.0	52.1	8.2
1995-1996										
All workers reporting an occupation	2.5	4.8	2.5	0.9	10.7	89.3	23.5	44.8	23.5	8.2
All managerial and professional occupations	2.9	1.9	3.1	0.7	8.6	91.4	34.0	22.2	35.4	8.4
All professional occupations	3.2	2.0	3.0	0.8	8.9	91.1	35.5	22.1	33.4	8.9
All STEM workers	6.0	1.4	4.7	0.8	12.9	87.1	46.4	10.6	36.7	6.4
STEM workers, except social scientists	6.4	1.4	4.8	0.8	13.4	86.6	47.4	10.3	36.0	6.3
STEM workers, except science/engineering technicians	6.6	1.1	5.2	0.9	13.8	86.2	47.5	7.9	37.8	6.8
STEM core, no social scientists or technicians	7.1	1.1	5.4	1.0	14.6	85.4	48.7	7.4	37.1	6.7
Major STEM occupations:										
Natural scientists	9.2	1.3	7.3	0.6	18.3	81.7	49.9	6.9	39.9	3.2
Science technicians	3.2	3.6	2.6	0.3	9.7	90.3	32.7	37.2	27.2	2.9
Mathematical and computer scientists	7.4	1.2	4.8	1.3	14.7	85.3	50.4	8.0	32.7	8.9
Engineers and surveyors	6.2	0.9	5.4	0.8	13.3	86.7	46.5	7.1	40.5	5.9
Engineering & related technicians	3.7	2.2	2.6	0.4	8.9	91.1	41.1	25.2	29.6	4.1
Social scientists and urban planners	1.7	1.1	3.5	0.6	6.9	93.1	24.3	16.1	51.5	8.2

Source: tabulations of MORG/CPS microdata. See "Notes on the data" on page 2. Rounded component values may not sum to exactly 100.0%.

due to demand that was most readily met by Indian and Chinese workers, the largest number of foreign-born Asian workers, with the occupational and language skills for IT and STEM work. In contrast, foreign-born Hispanic STEM workers have been few, and they show little gain in U.S. STEM employment. U.S. immigration policy has remained generous throughout this period toward foreign students and skilled workers, responding to employer demands for their services.

The next reports in this series will address the production of degreed STEM professionals in U.S. institutions of higher education, and trends in the compensation of people in different STEM occupations.

About the STEM Workforce Data Project

The purpose of the STEM Workforce Data Project is to identify and distribute reliable statistics on scientific, technological, engineering and mathematical workers in the United States. Like the similar IT Workforce Data Project (see www.cpst.org for those reports), the STEM project draws on the full range of statistical resources offered by U.S. federal agencies as well as other private sources of information.

This is a project of the Commission on Professionals in Science and Technology (CPST) in Washington, D.C., supported by a grant from the Alfred P. Sloan Foundation. Queries about the STEM project are welcome. The principal investigators are Eleanor Babco, CPST's Executive Director (202-326-7080; ebabco@cpst.org), and Richard Ellis of Ellis Research Services in Carlisle, Pennsylvania (717-218-9818; raellis@earthlink.net).

Dr. B. Lindsay Lowell of the Institute for the Study of International Migration at Georgetown University produced this report on the foreign born in the STEM workforce (lowellbl@georgetown.edu). Dr. Ron Hira of the Rochester Institute of Technology will comment on policy implications of STEM workforce data. Robert Weatherall, retired past director of the Office of Career Services at MIT, is participating in the project as a reviewer of draft reports.

November 4, 2005

Exhibit 5

Nativity and region of birth of the foreign-born in STEM occupations, 1995-1996 and 2000-2001

Year and Occupation	All Workers						Foreign Born Only, By Region of Birth			
	Foreign Born, by Region of Birth					Native	Asia	Americas	Europe	Other
	Asia	Americas	Europe	Other	Total Foreign					
2000-2001										
All workers reporting an occupation	3.3%	7.0%	1.7%	0.8%	12.8%	87.2%	25.8%	54.6%	12.9%	6.7%
All managerial and professional occupations	4.1	3.3	1.9	0.8	10.1	89.9	40.6	33.0	18.5	7.9
All professional occupations	4.5	3.5	1.8	0.8	10.7	89.3	42.0	33.1	17.0	7.9
All STEM workers	9.2	2.8	2.8	1.3	16.0	84.0	57.2	17.3	17.5	8.0
STEM workers, except social scientists	9.7	2.8	2.8	1.3	16.6	83.4	58.2	16.7	17.0	8.1
STEM workers, except science/engineering technicians	10.1	2.6	3.1	1.4	17.2	82.8	58.7	15.3	17.9	8.0
STEM core, no social scientists or technicians	10.8	2.6	3.1	1.5	18.0	82.0	59.9	14.6	17.4	8.1
Major STEM occupations:										
Natural scientists	11.1	2.7	4.6	2.1	20.5	79.5	54.1	13.2	22.6	10.2
Science technicians	4.4	2.9	1.8	0.4	9.6	90.4	46.0	30.6	18.9	4.6
Mathematical and computer scientists	11.6	2.6	3.2	1.4	18.7	81.3	62.0	13.7	16.9	7.4
Engineers and surveyors	9.6	2.7	2.6	1.4	16.3	83.7	58.9	16.4	16.2	8.5
Engineering & related technicians	4.7	3.5	1.4	0.9	10.6	89.4	44.8	33.6	13.1	8.5
Social scientists and urban planners	2.9	2.8	2.6	0.5	8.7	91.3	32.9	32.1	29.6	5.3
1995-1996										
All workers reporting an occupation	2.7	5.7	1.5	0.7	10.7	89.3	25.5	53.4	14.4	6.7
All managerial and professional occupations	3.3	2.8	1.7	0.9	8.6	91.4	38.2	32.0	19.5	10.2
All professional occupations	3.6	2.9	1.6	0.9	8.9	91.1	40.0	32.1	17.9	10.1
All STEM workers	6.8	2.1	2.9	1.1	12.9	87.1	52.9	16.2	22.5	8.4
STEM workers, except social scientists	7.3	2.1	3.0	1.1	13.4	86.6	54.0	15.5	22.0	8.5
STEM workers, except science/engineering technicians	7.5	1.9	3.2	1.2	13.8	86.2	54.4	13.8	23.4	8.4
STEM core, no social scientists or technicians	8.1	1.9	3.3	1.3	14.6	85.4	55.6	12.9	22.9	8.6
Major STEM occupations:										
Natural scientists	10.3	1.9	4.5	1.7	18.3	81.7	56.1	10.2	24.5	9.2
Science technicians	3.9	3.7	1.1	1.0	9.7	90.3	40.0	38.5	11.5	10.0
Mathematical and computer scientists	8.3	2.3	3.0	1.1	14.7	85.3	56.9	15.5	20.3	7.3
Engineers and surveyors	7.2	1.5	3.3	1.3	13.3	86.7	54.1	11.2	24.9	9.8
Engineering & related technicians	4.0	2.7	1.6	0.6	8.9	91.1	45.0	30.0	17.8	7.2
Social scientists and urban planners	2.1	2.2	2.3	0.3	6.9	93.1	30.5	31.6	33.3	4.6

Source: tabulations of MOR/CPS microdata. See "Notes on the data" on page 2. Rounded component values may not sum to exactly 100.0%.