



**Sixth Iberoamerican and Interamerican Workshop for
Science and Technology Indicators**

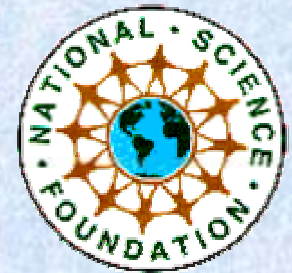
Buenos Aires

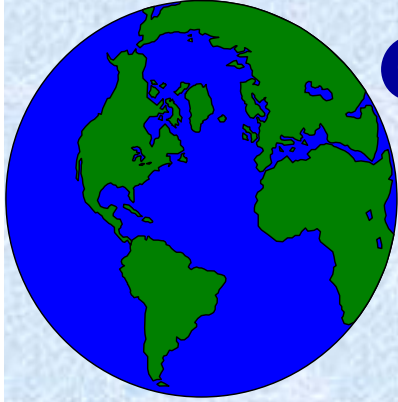
Sept. 15, 2004

**Construction of Indicators on human
resources**

Higher Education Indicators

Jean Johnson- National Science Foundation

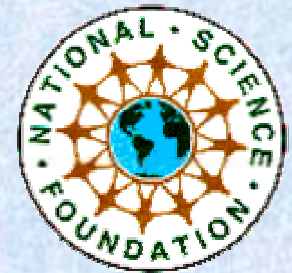




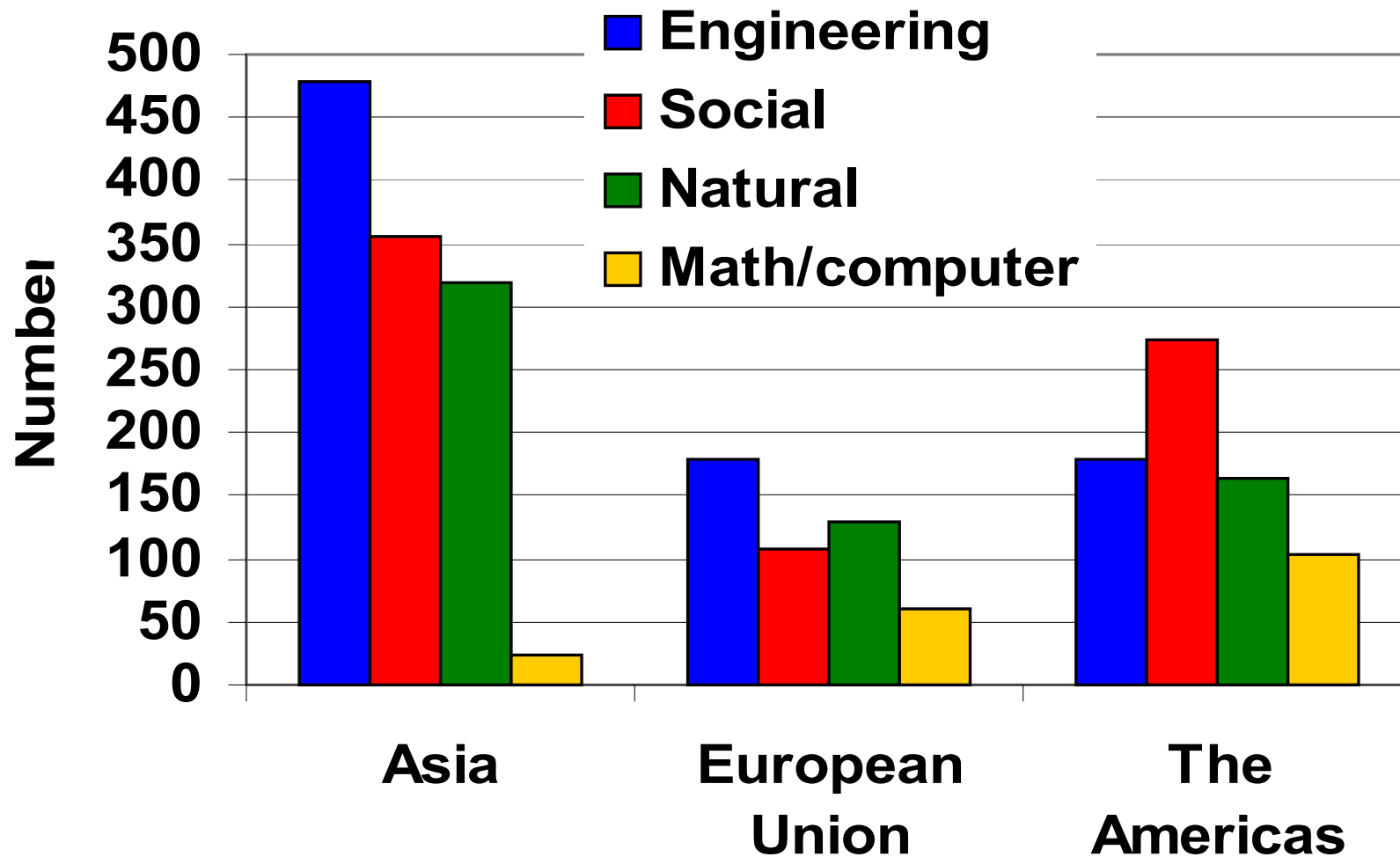
Construction of Indicators on human resources

Higher Education Indicators

- **S&E first university degrees (bachelor's)**
- **Ratio of university degrees to the population**
- **Ratio of science & engineering degrees to the population**

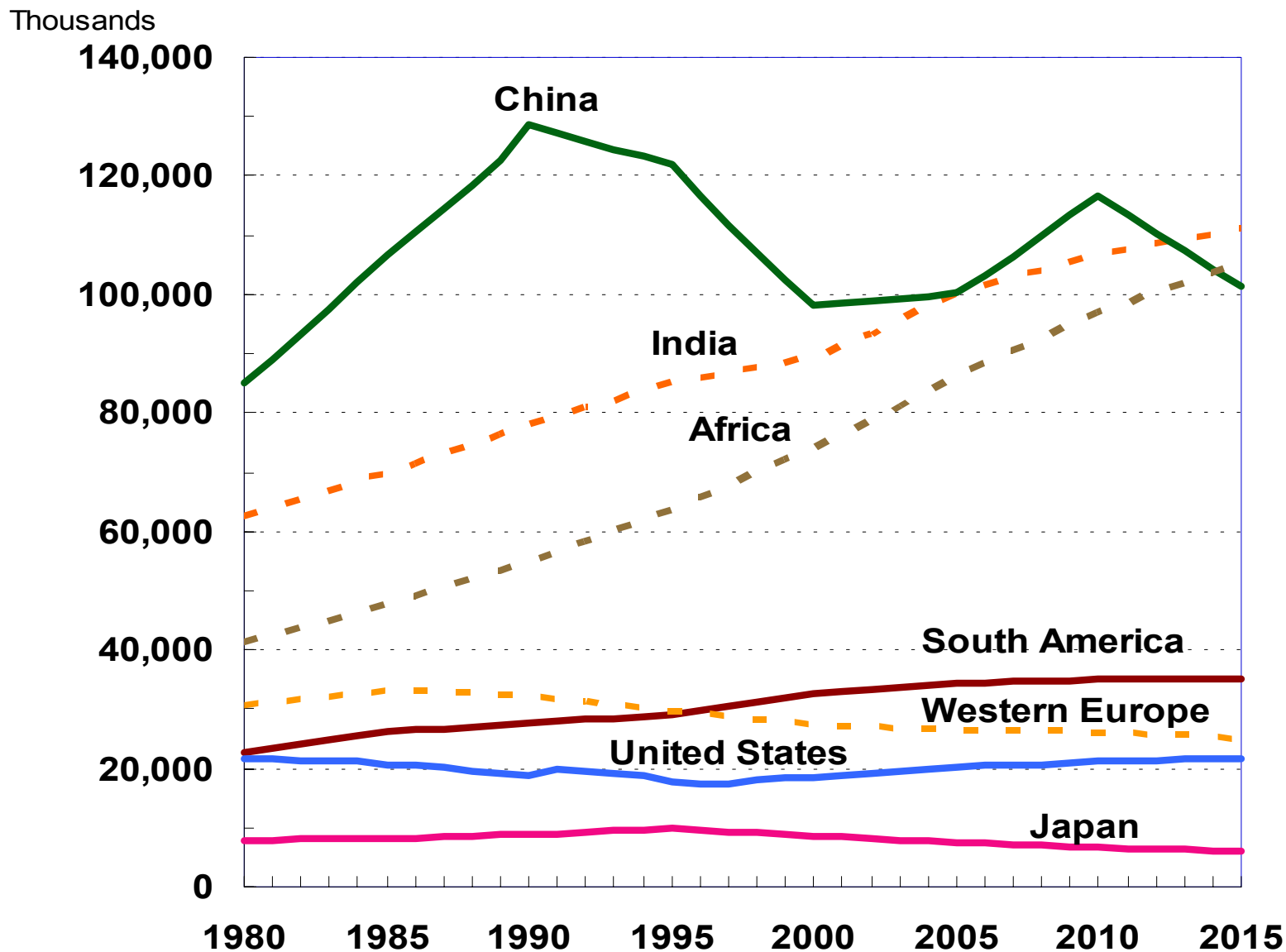


First university S&E degrees earned by region: 2001



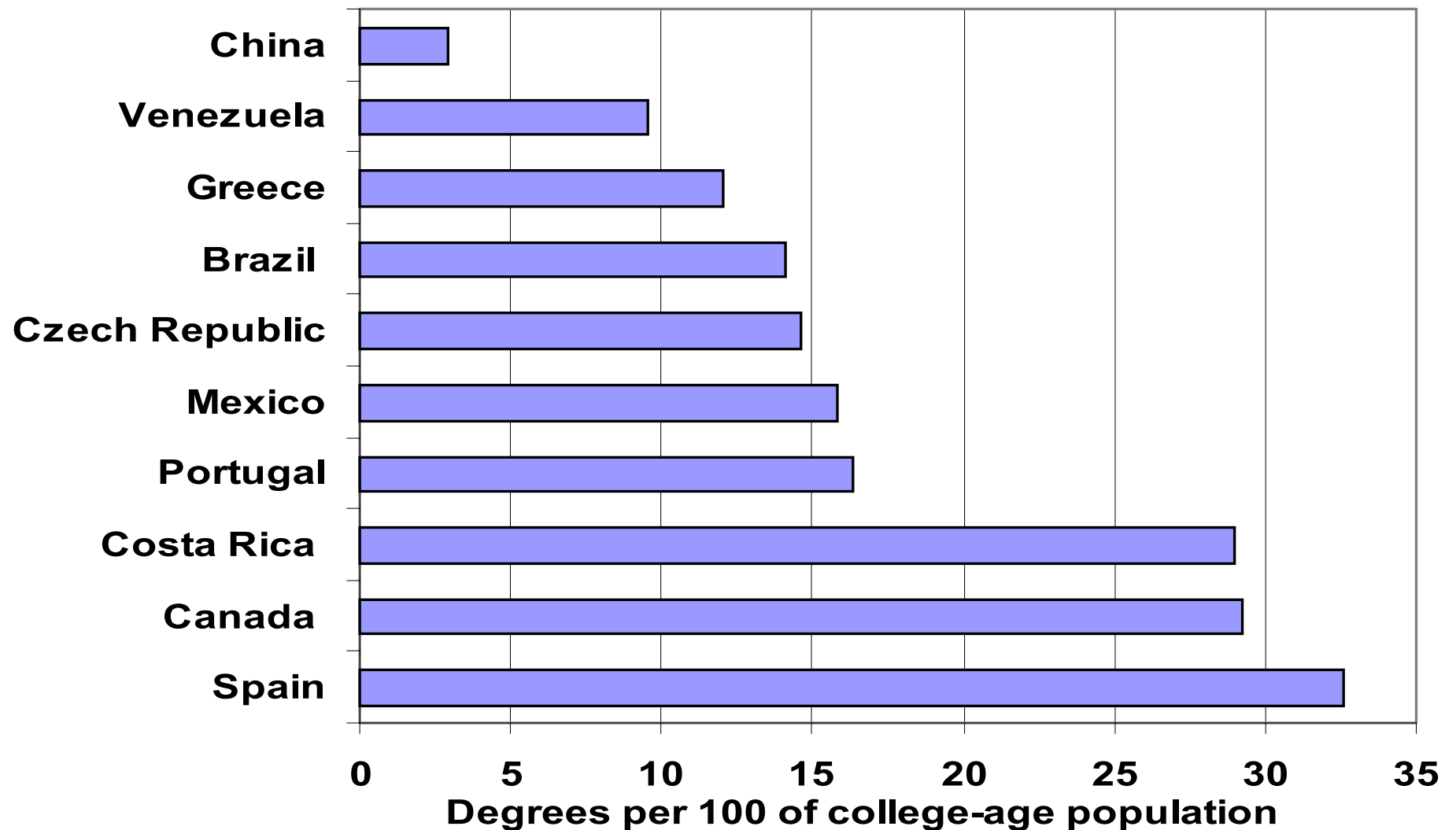
SOURCES: National Science Board, Science and Engineering Indicators 2004, UNESCO Institute for Statistics, and Brazilian Ministry of Education, CAPES.

Trends in population of 20- to 24-year-olds, by selected countries and regions: 1980–2015



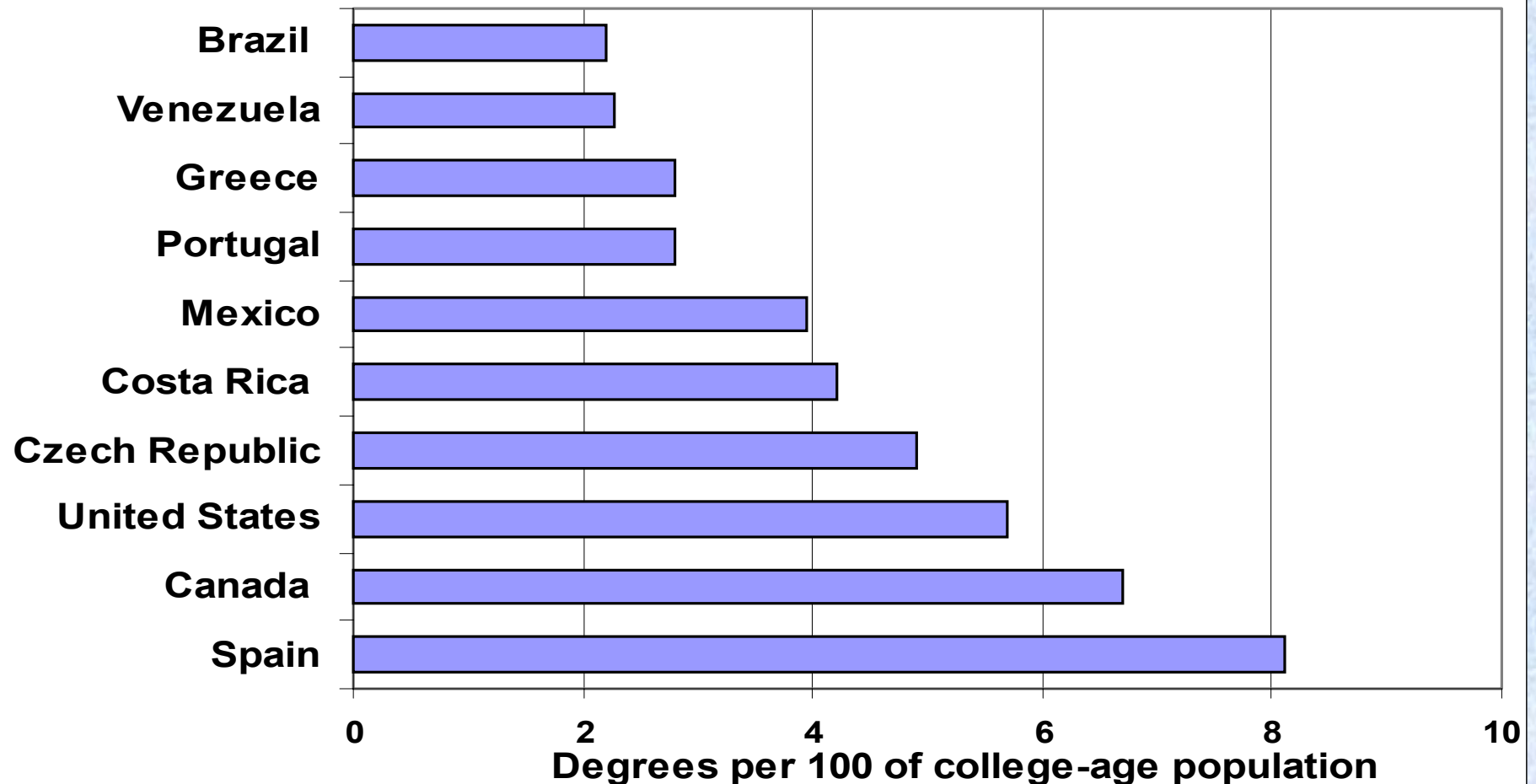
Science & Engineering Indicators – 2004

Ratio of first university degrees to the college-age population, selected countries: 2001



SOURCE: National Science Board, Science and Engineering Indicators 2004

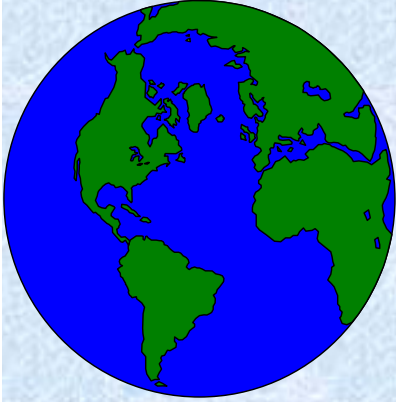
Ratio of first university NS&E degrees to college-age population, selected countries: 2001



NS&E = natural sciences and engineering

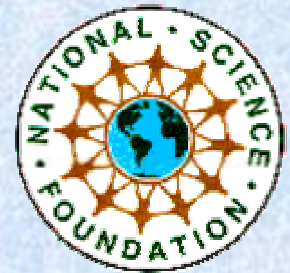
NOTE: Natural sciences include physical, biological, earth, atmospheric and ocean sciences, mathematics and computer sciences.

SOURCES: National Science Board, Science and Engineering Indicators 2004, UNESCO Institute for Statistics, and Brazilian Ministry of Education.

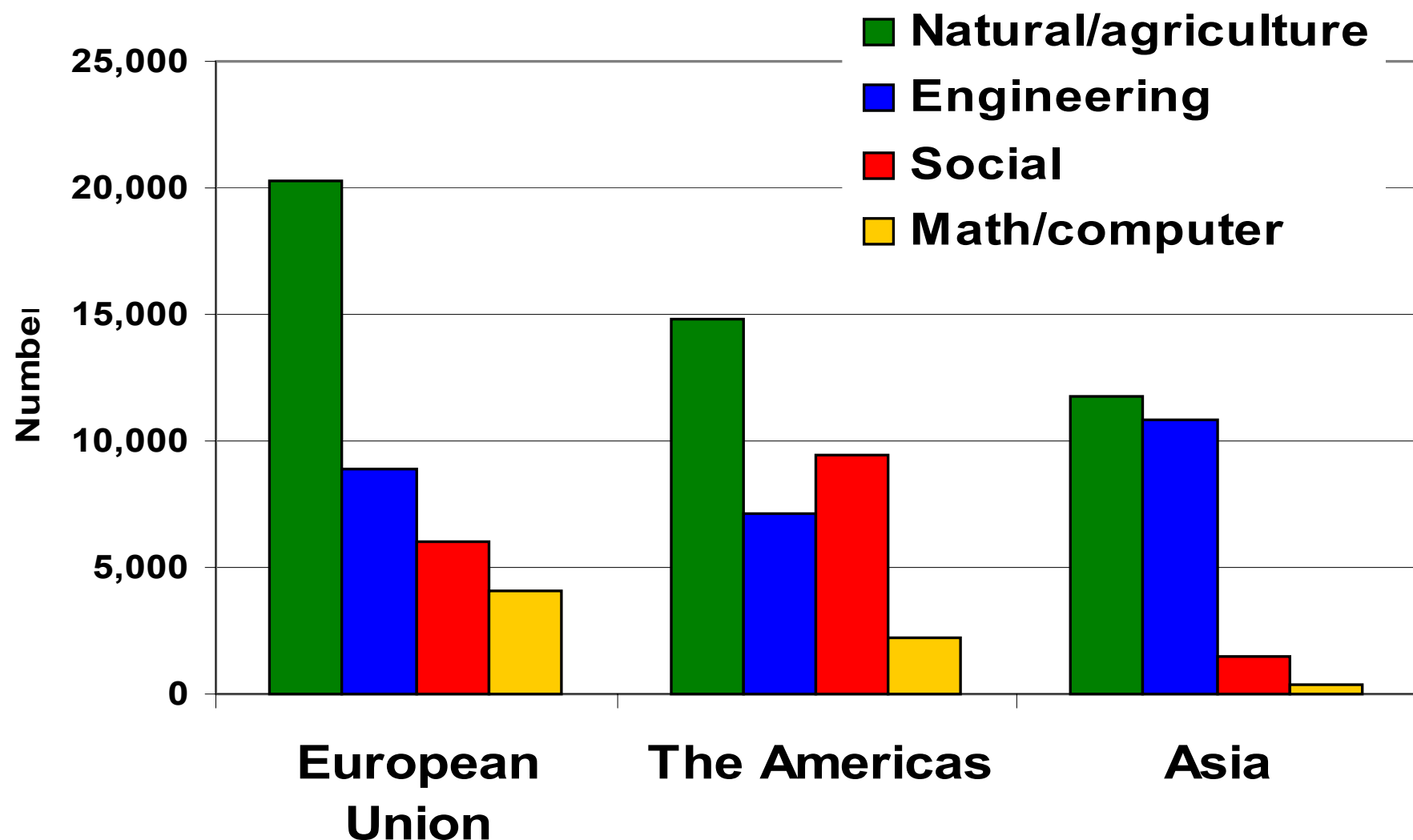


S&E doctoral degrees

- **Snapshot**
- **Regions**
- **Latin American countries**



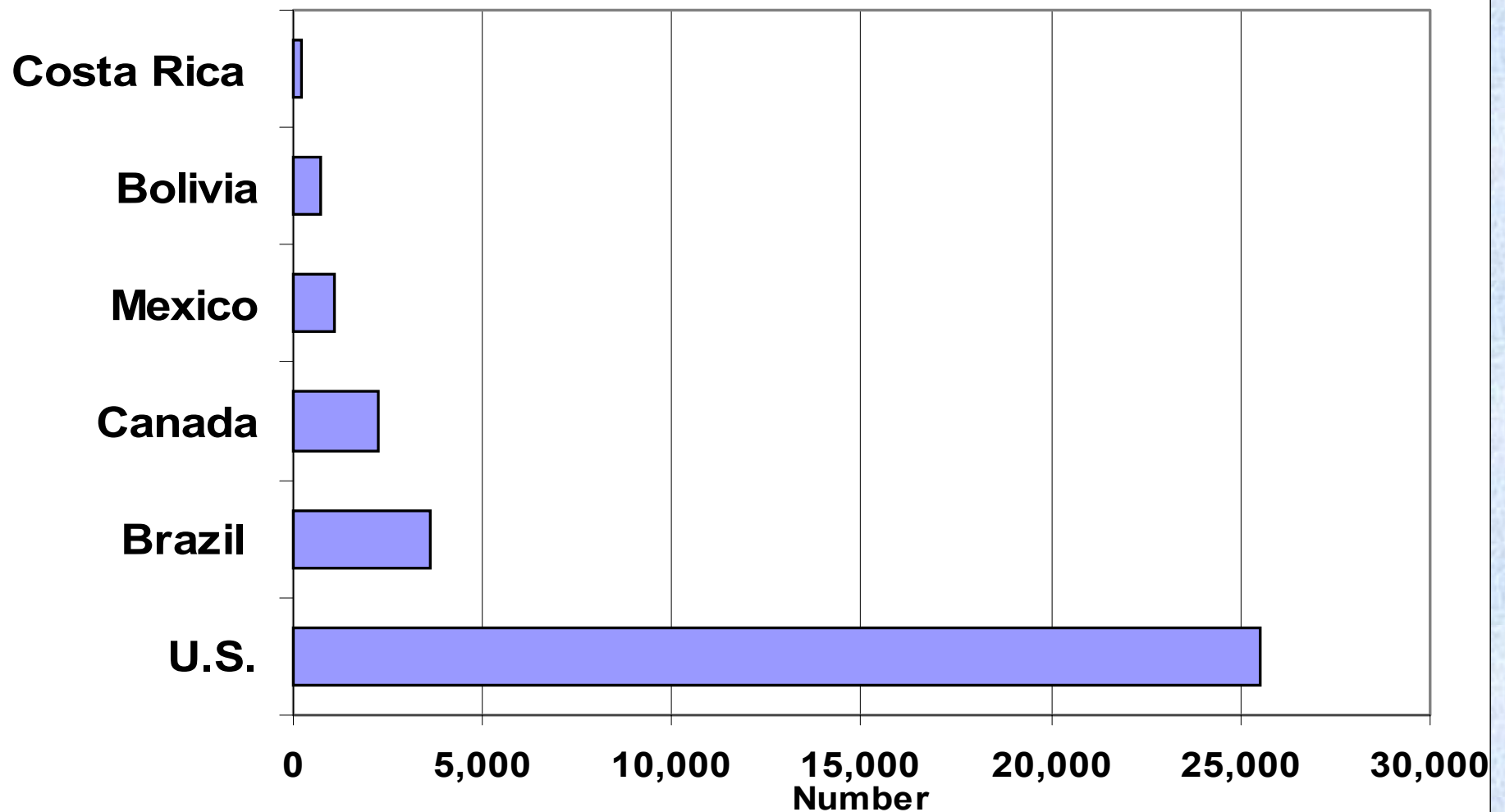
S&E doctoral degrees earned by region: 2001



NOTE: Countries/economies included within each region listed in Science and Engineering Indicators 2004, appendix table 2-36.

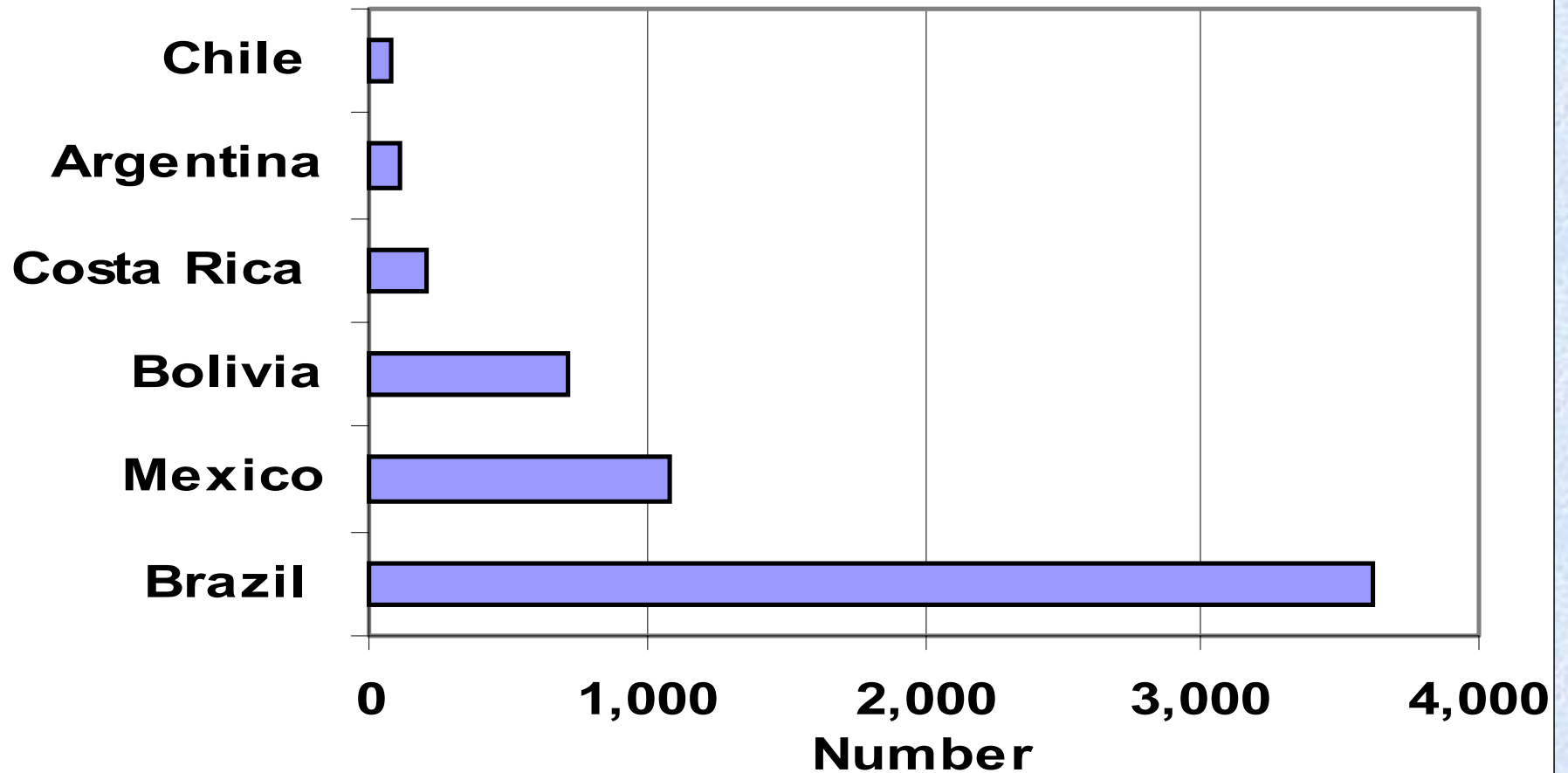
SOURCES: National Science Board, Science and Engineering Indicators 2004, UNESCO Institute for Statistics, and Brazilian Ministry of Education, CAPES.

S&E doctoral degrees earned in the Americas, by selected countries: 2001



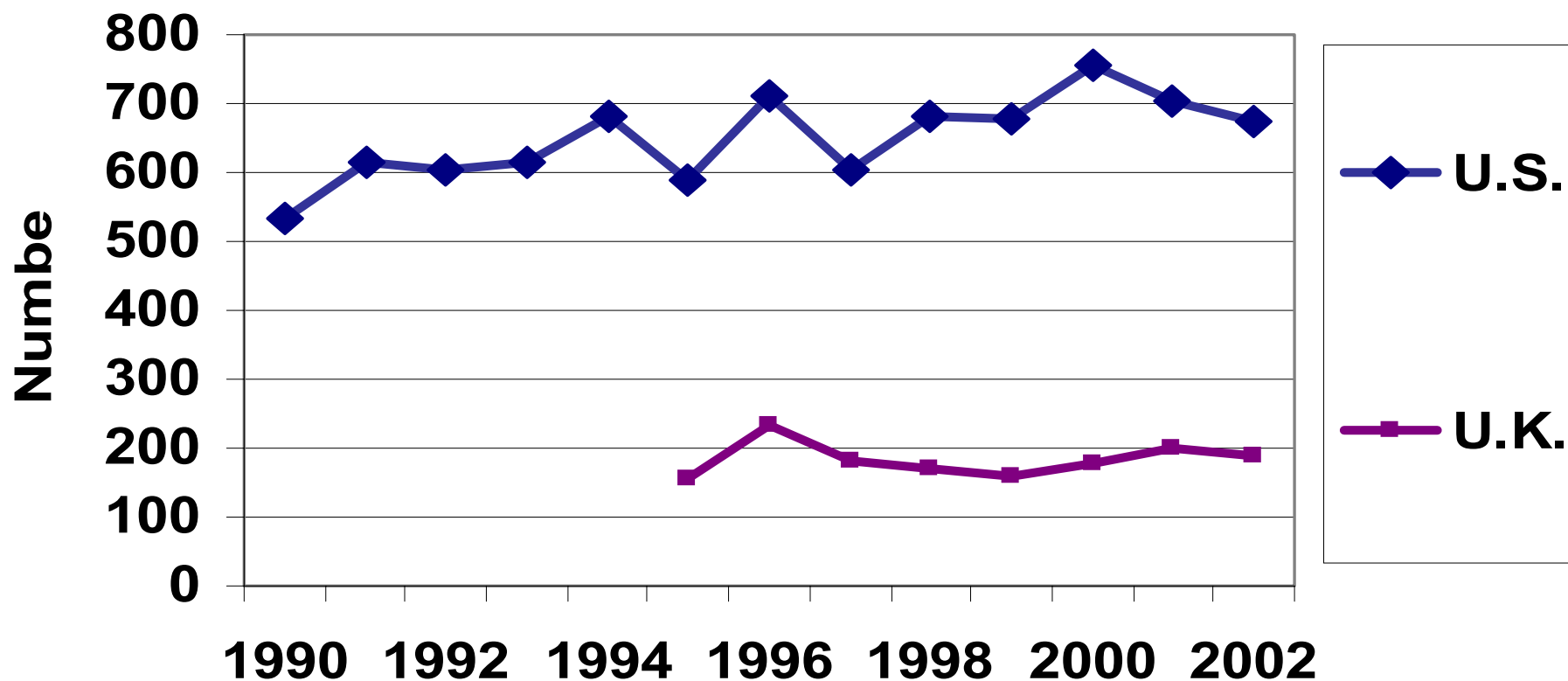
SOURCES: National Science Board, *Science and Engineering Indicators 2004*, UNESCO Institute for Statistics, and Brazilian Ministry of Education, CAPES.

S&E doctoral degrees earned in selected Latin American countries: 2001



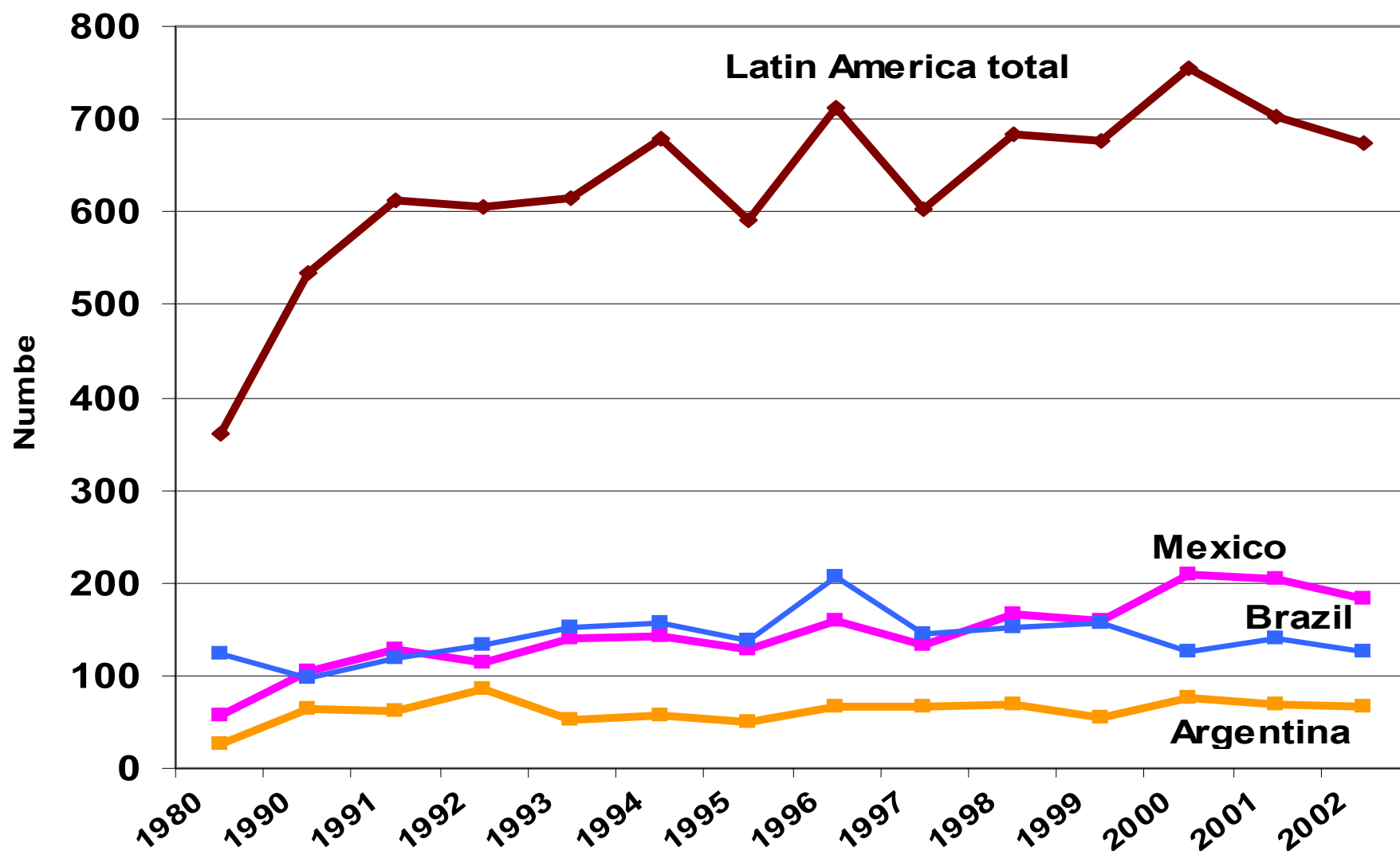
SOURCE: National Science Board, Science and Engineering Indicators 2004.

Latin American S&E doctoral recipients in U.S. and U.K. universities: 1990-2002



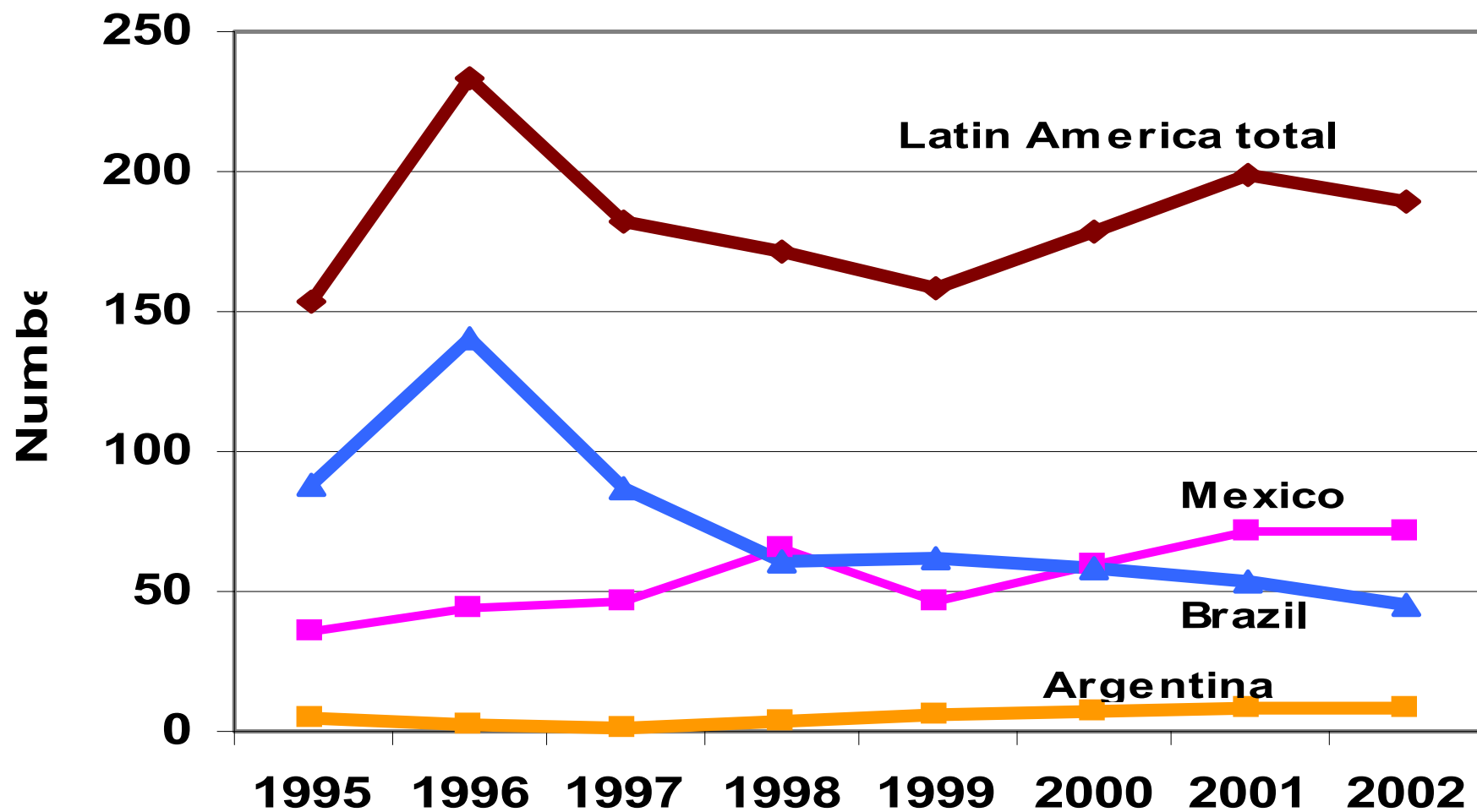
SOURCES: Higher Education Statistics Agency (HESA), Cheltenham and National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates.

U.S. S&E doctoral recipients from Latin American countries: 1980, 1990-2002



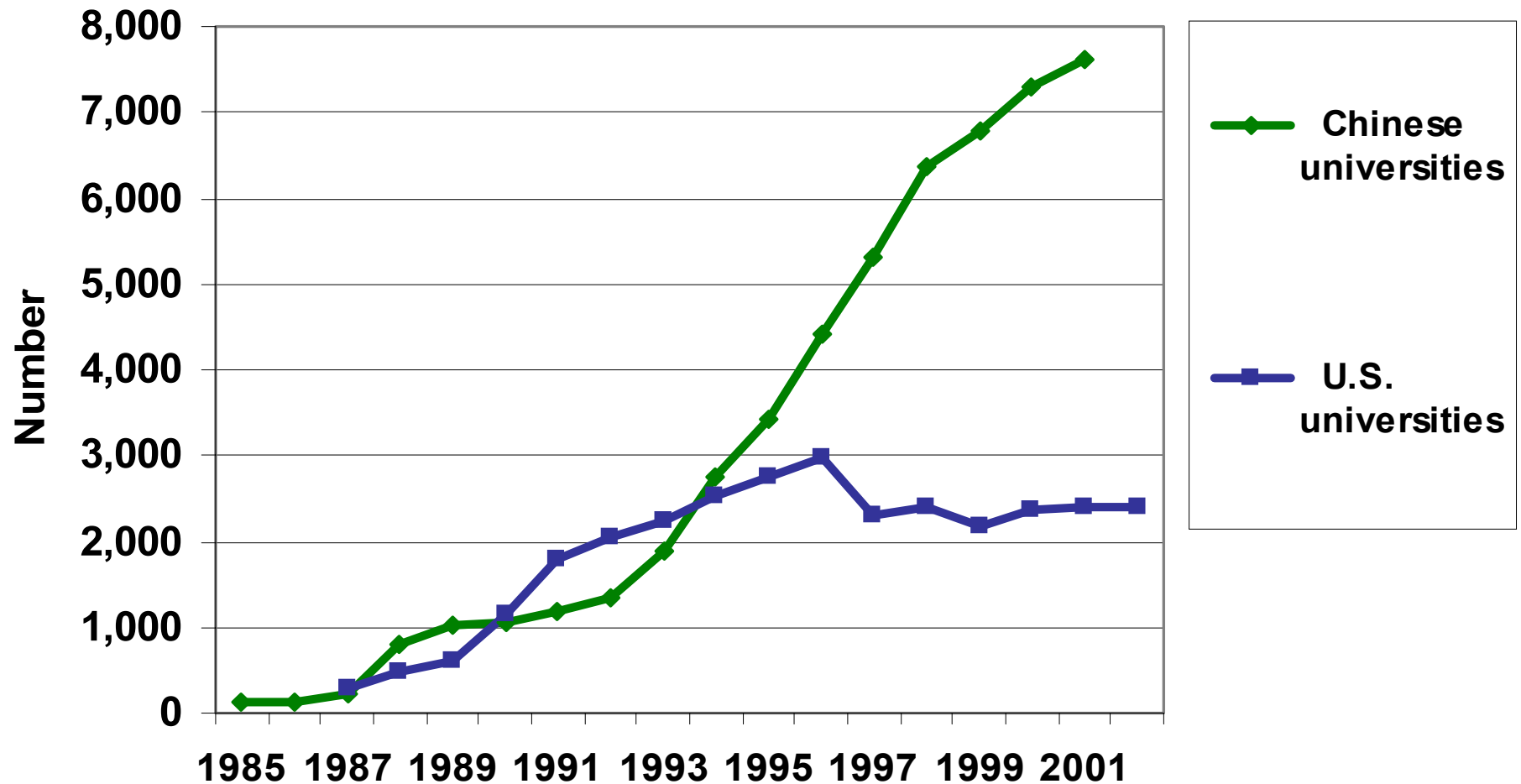
SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates.

U.K. S&E doctoral recipients from Latin American countries: 1995-2002



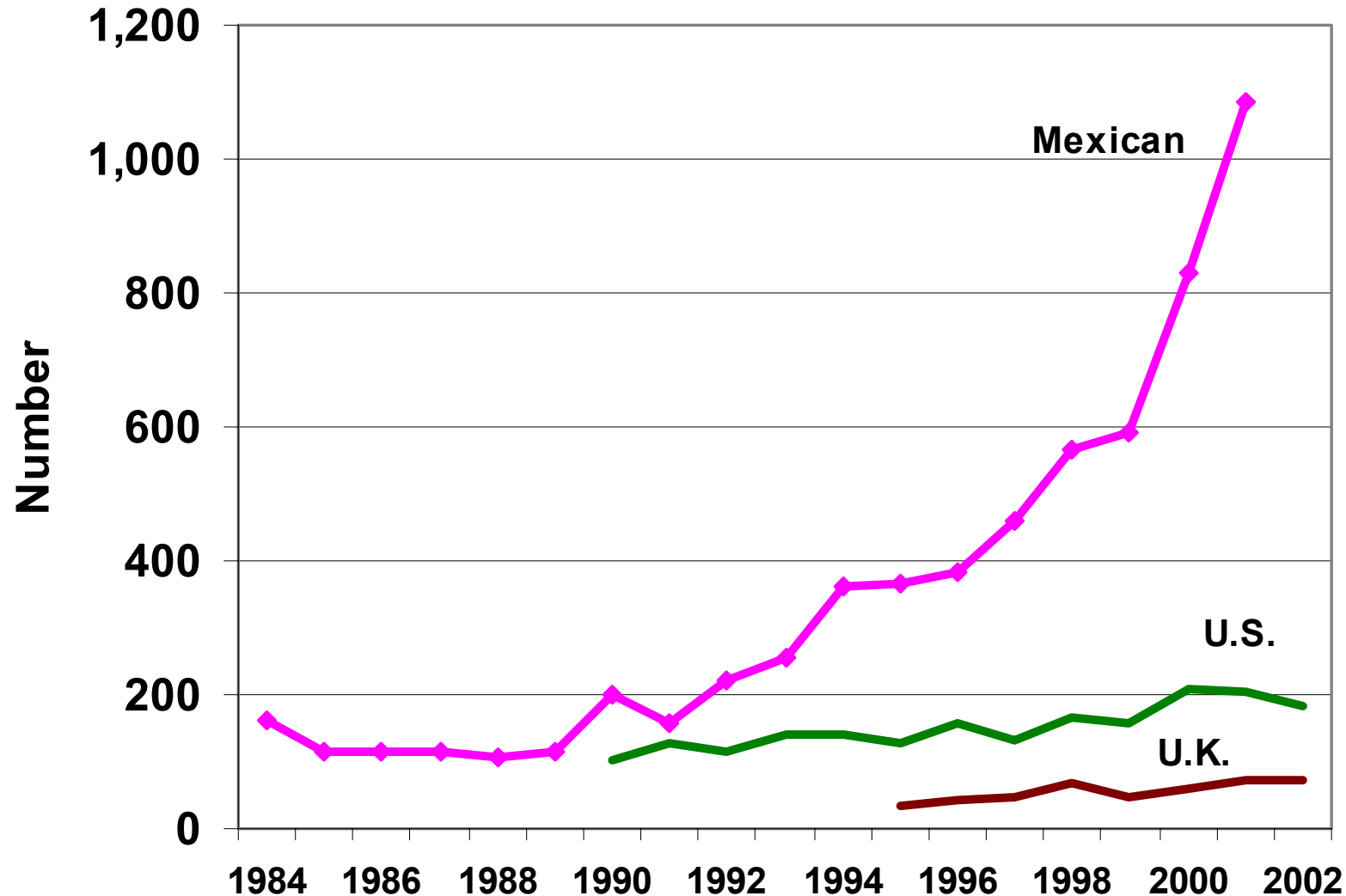
SOURCE: Higher Education Statistics Agency (HESA), Cheltenham

Chinese S&E doctoral recipients in Chinese and U.S. universities: 1985-2002



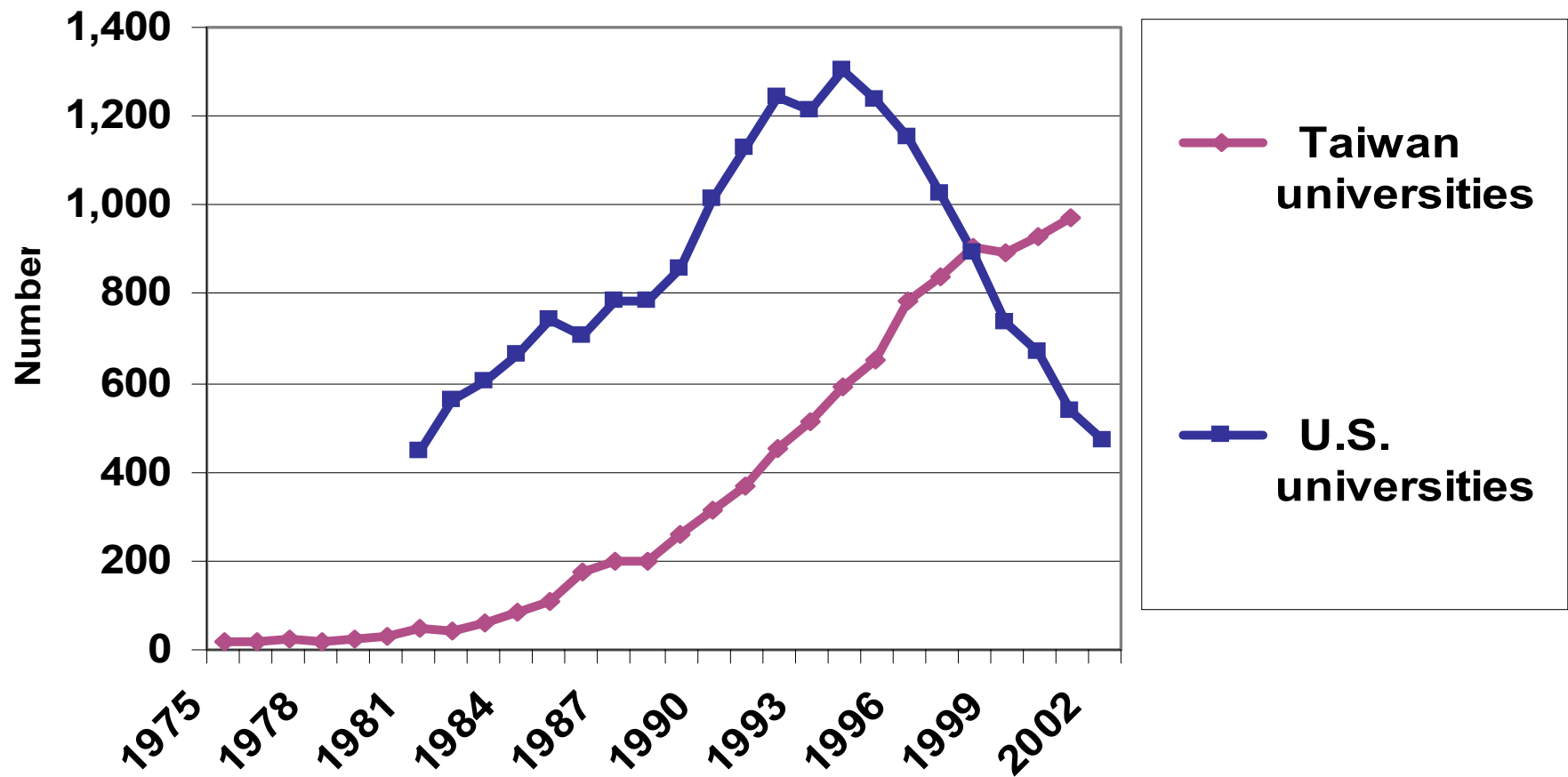
SOURCES: China-Educational Yearbook; National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates.

Mexican S&E doctoral recipients within Mexican, U.S., and U.K. universities: various years



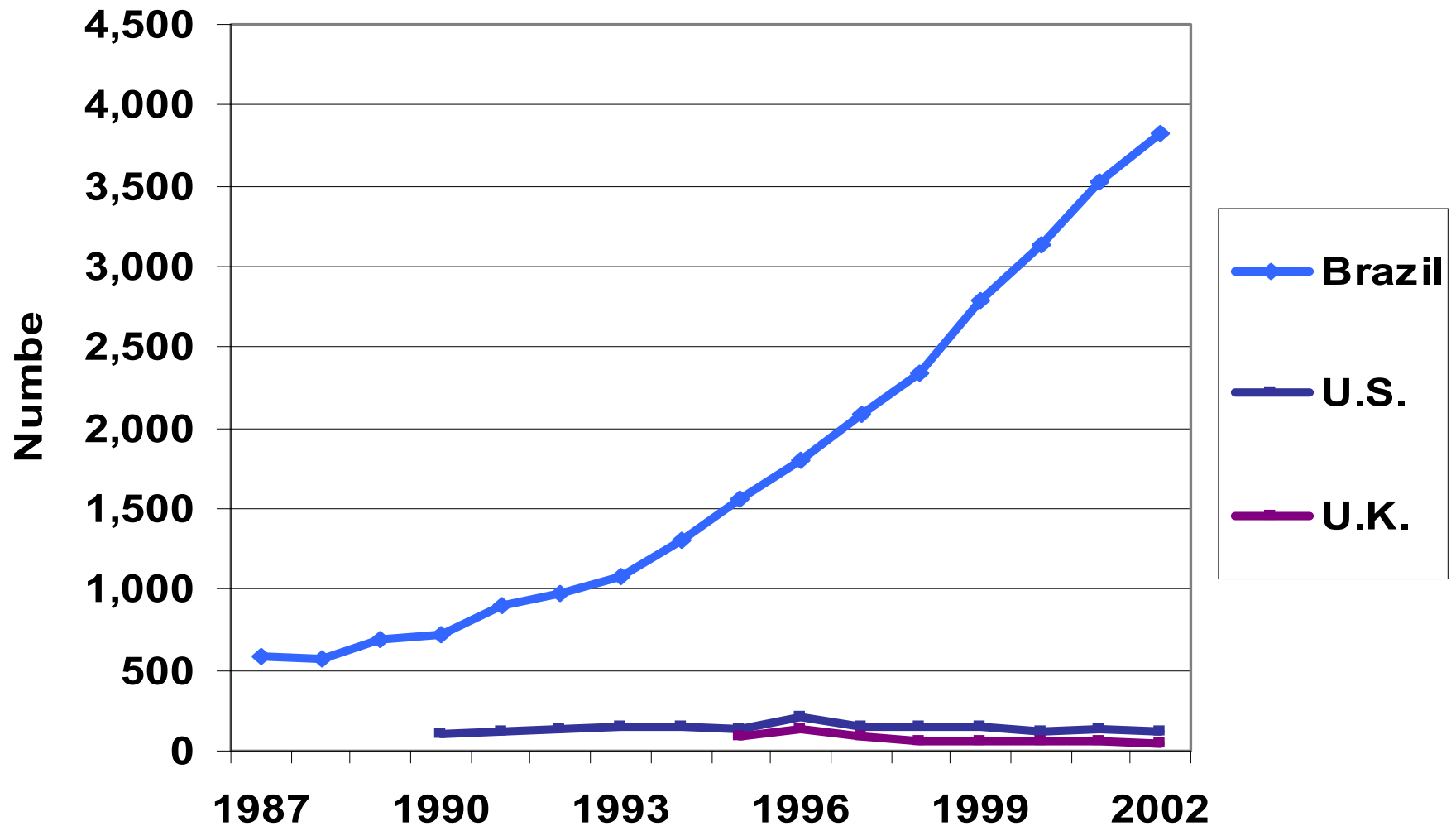
SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates; Asociacion Nacional de Universidades e Instituciones de Educacion Superior (ANUIS); Higher Education Statistics Agency (HESA)

Taiwanese S&E doctoral recipients at Taiwanese and U.S. universities: 1975-2002



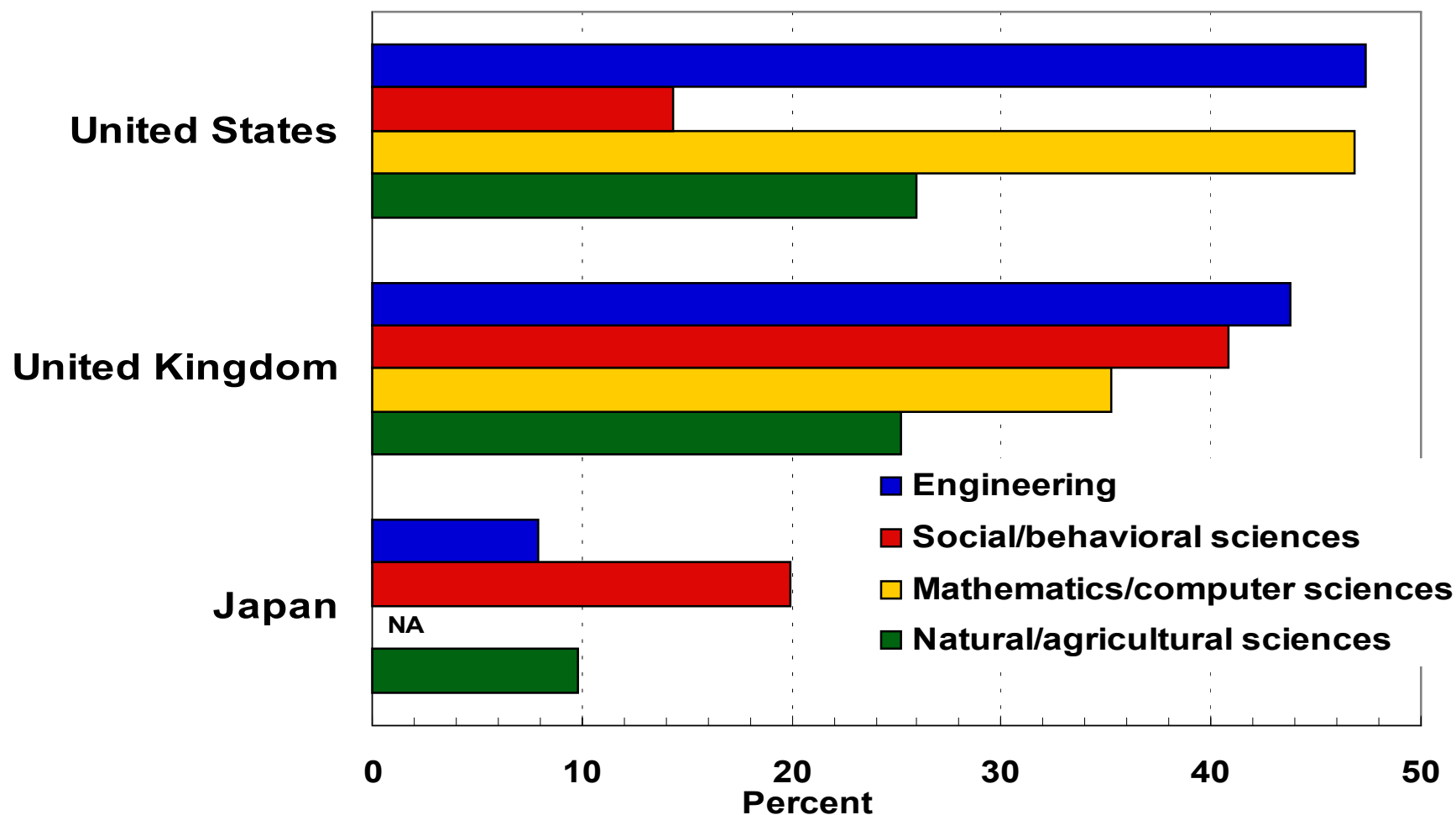
SOURCES: Taiwan-Educational Statistics of the Republic of China; National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates.

S&E doctoral degrees earned in Brazilian universities and by Brazilian students in U.K. and U.S. universities



SOURCES: Brazilian Ministry of Science & Technology, U.K. Higher Education Statistics Agency, and U.S. Survey of Earned Doctorates.

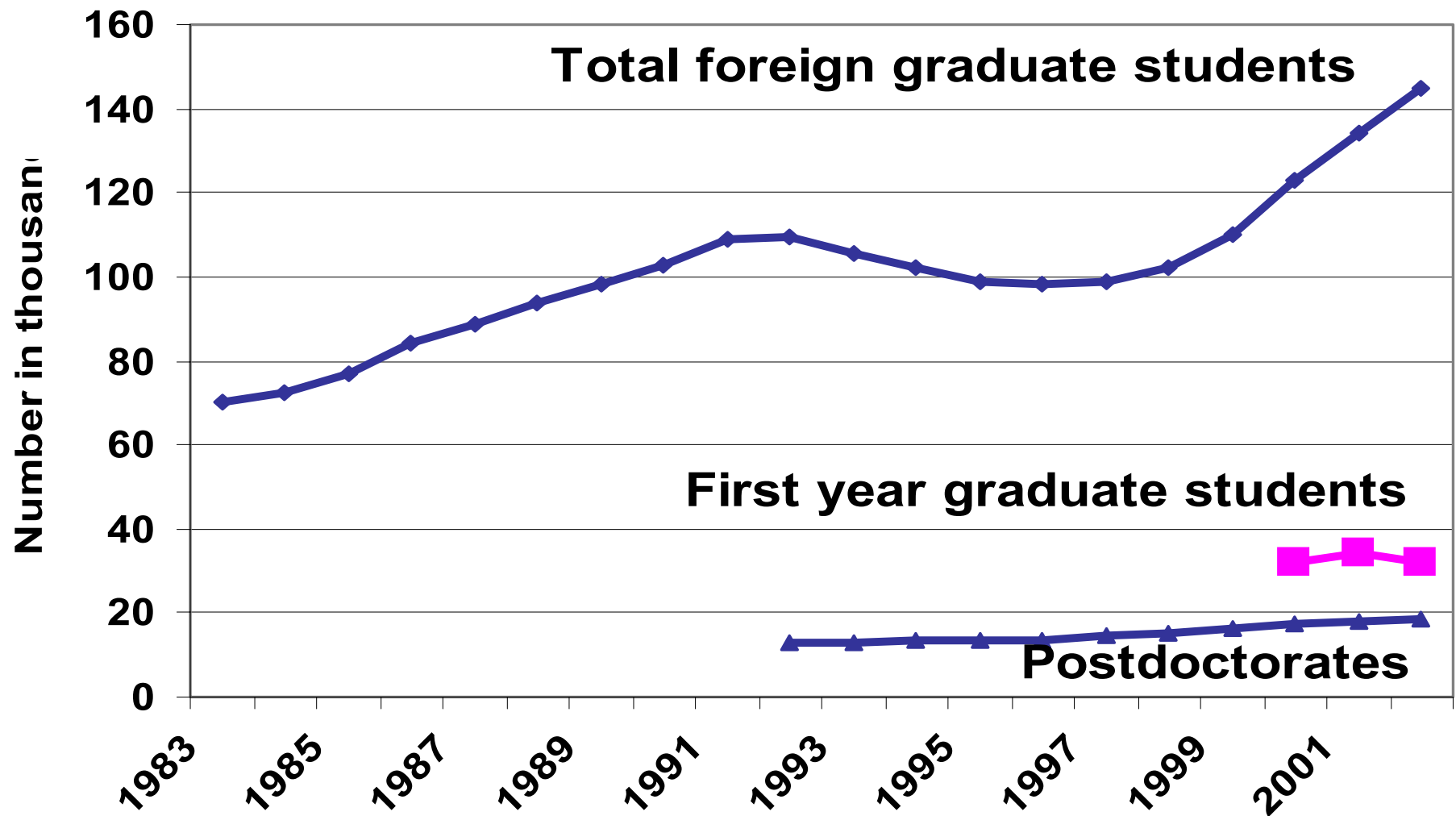
S&E foreign graduate student enrollment in selected countries, by field: 2001



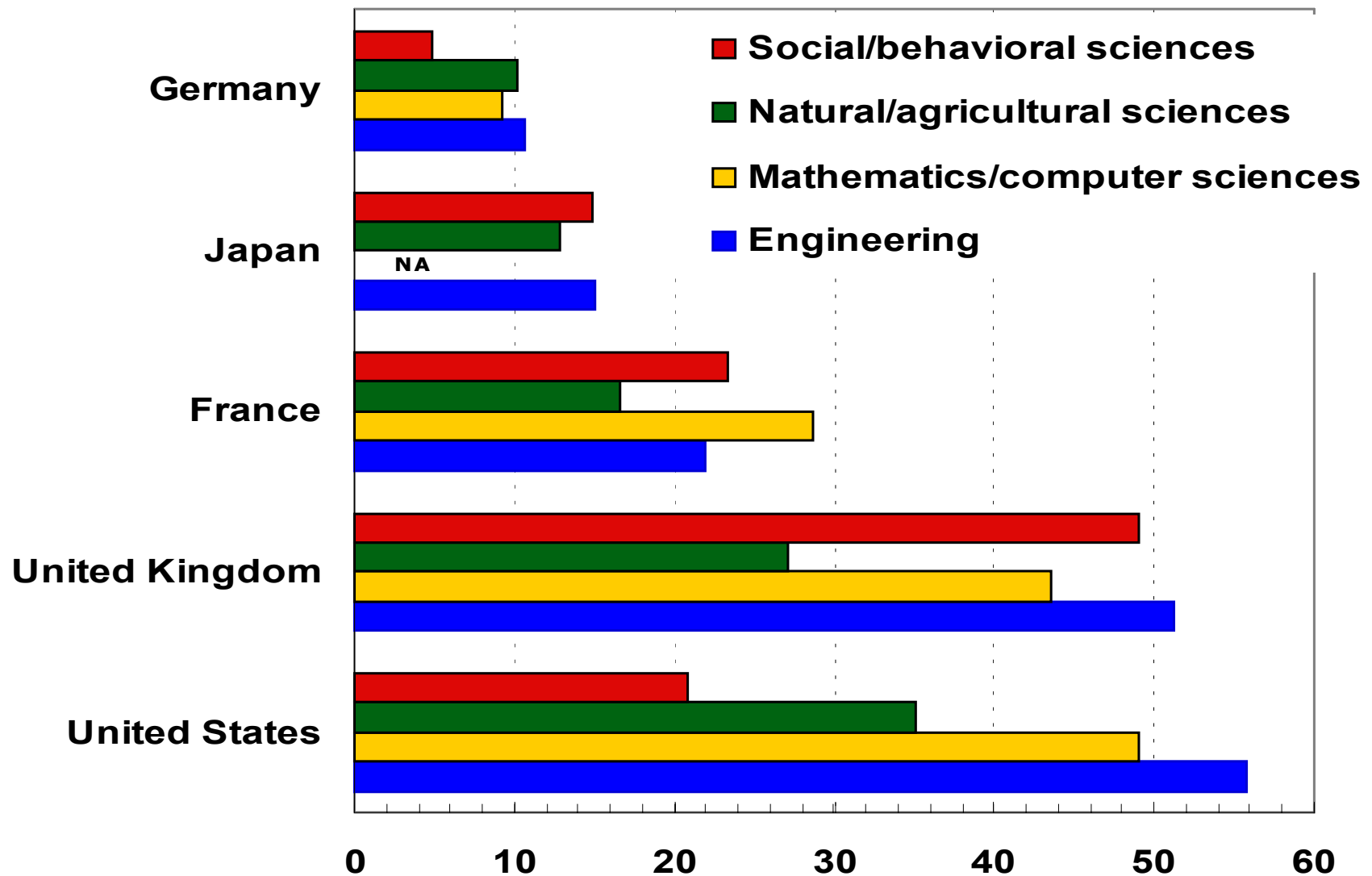
NA not available

Science & Engineering Indicators - 2004

Foreign S&E graduate students and postdoctorates in the U.S.: 1983-2002



Source: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, 2002.

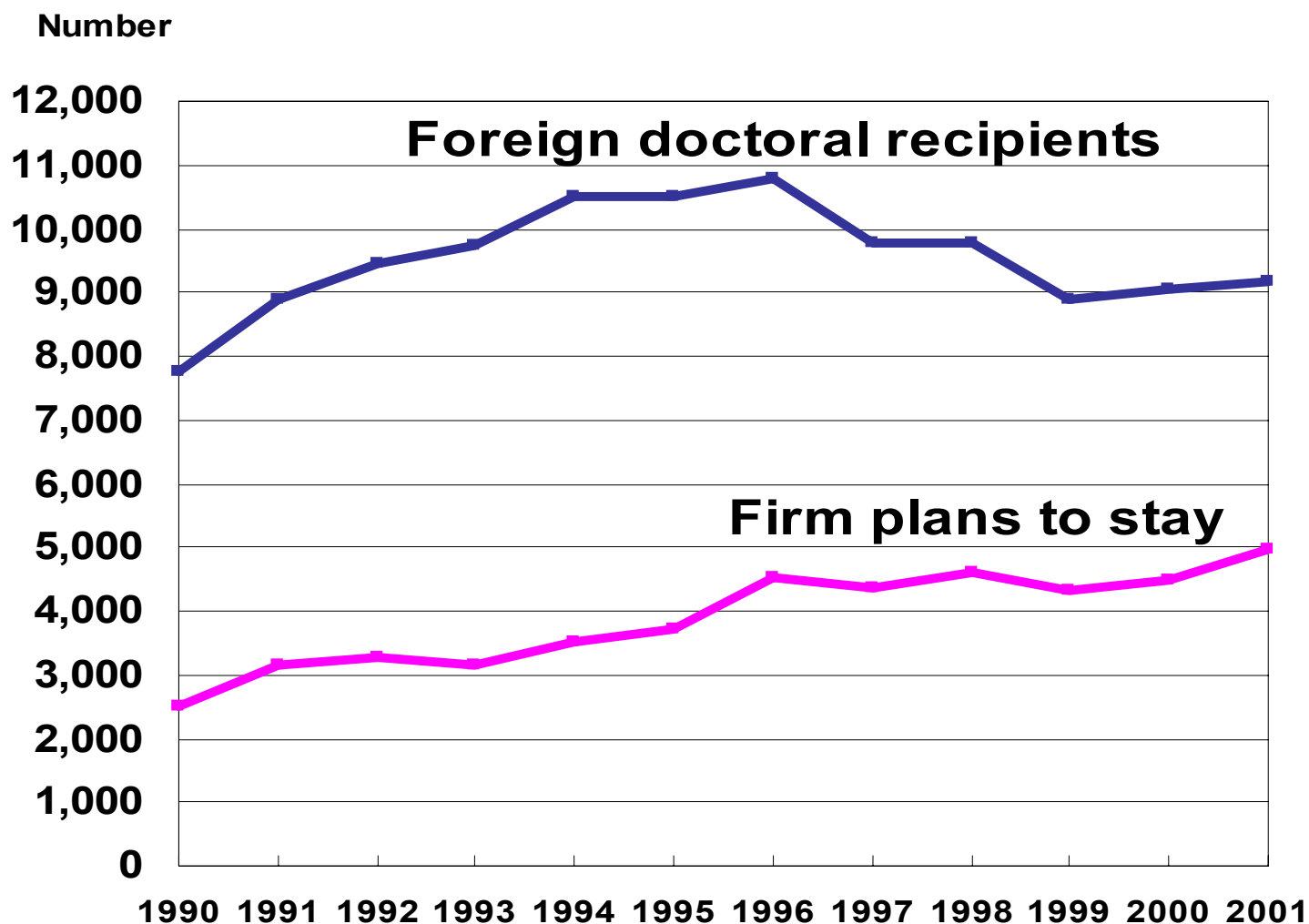


NA not available

SOURCE: *Science & Engineering Indicators* –

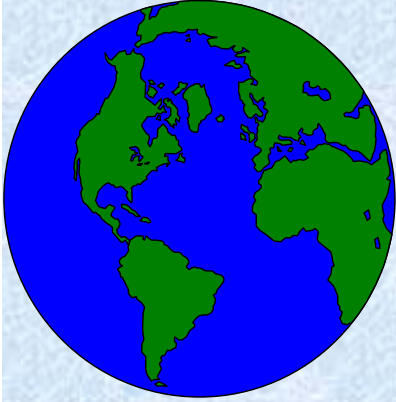
Percent

Plans of foreign recipients of U.S. S&E doctorates to stay in United States: 1990–2001



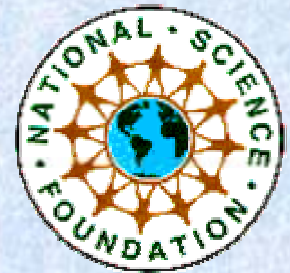
NOTE: Foreign doctorate-holders include permanent or temporary residents.

SOURCE: *Science & Engineering Indicators* – 2004

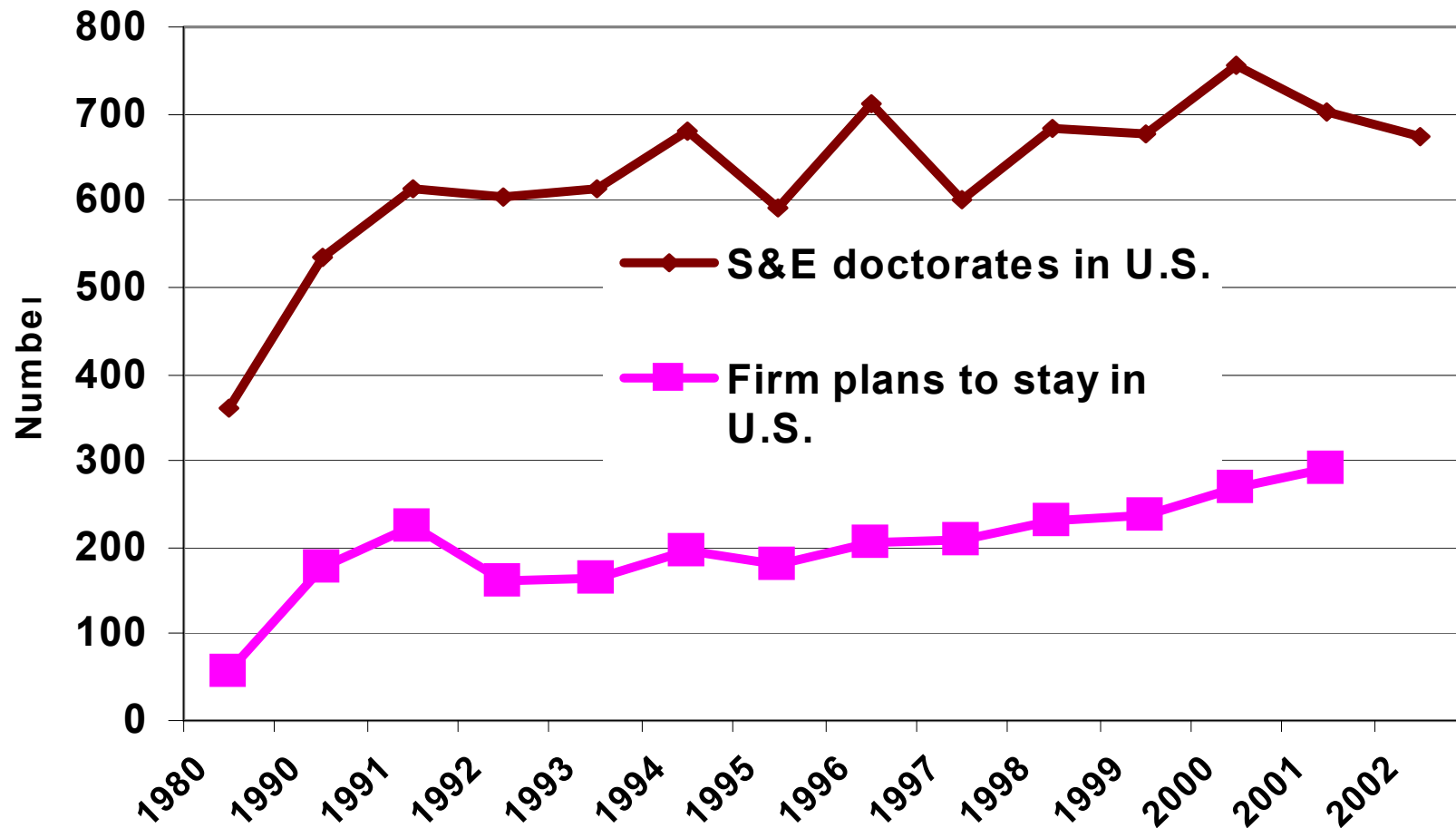


Foreign Student Flows

- Graduate S&E enrollment
- Foreign student share of U.S. degrees
- Foreign doctoral recipients
- Plans to stay

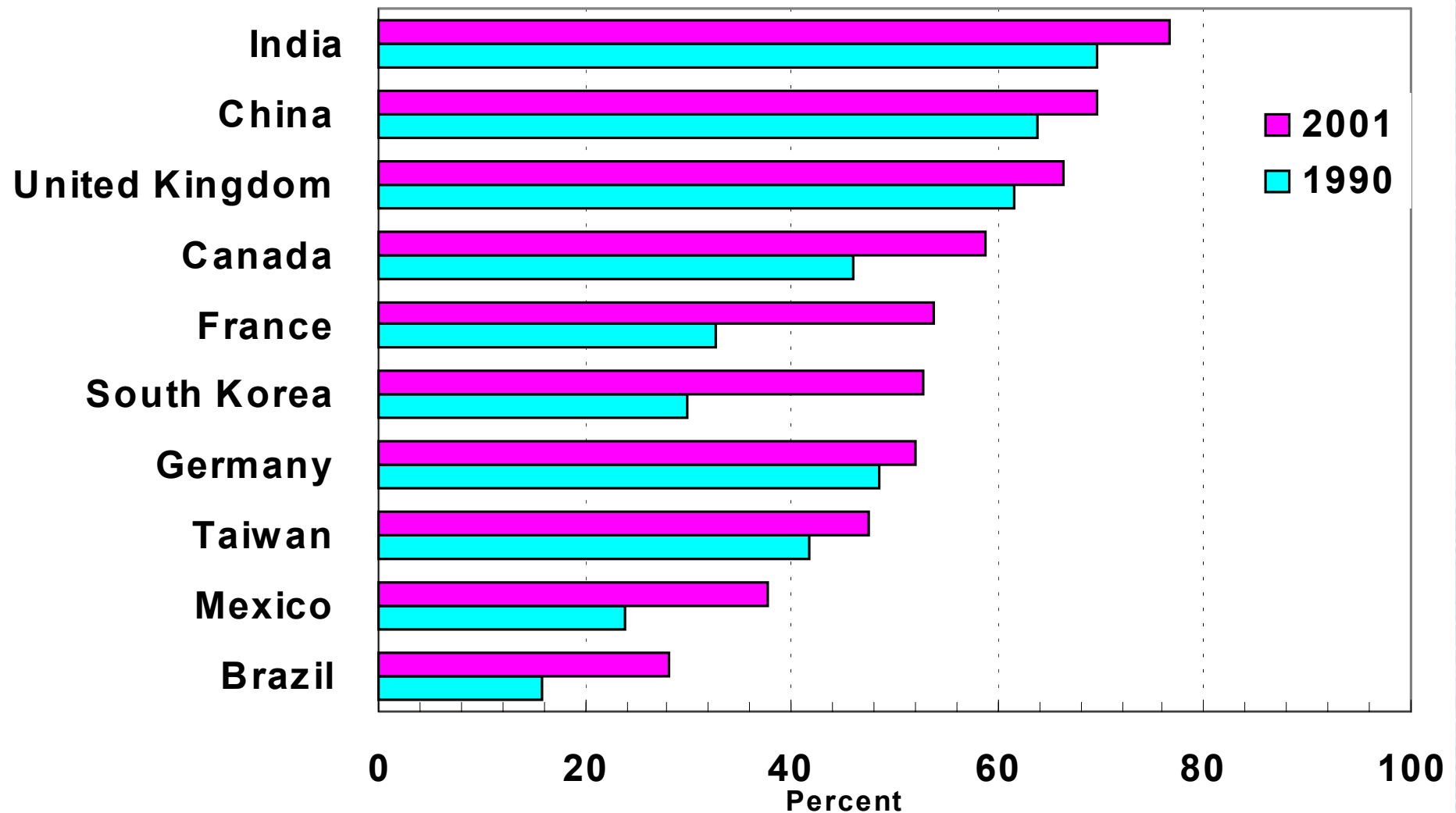


S&E doctoral degrees earned by Latin American students in U.S. universities and their plans to stay: 1980, 1990-2002



SOURCE: National Science Foundation, Division of Science Resources
Statistics, Survey of Earned Doctorates.

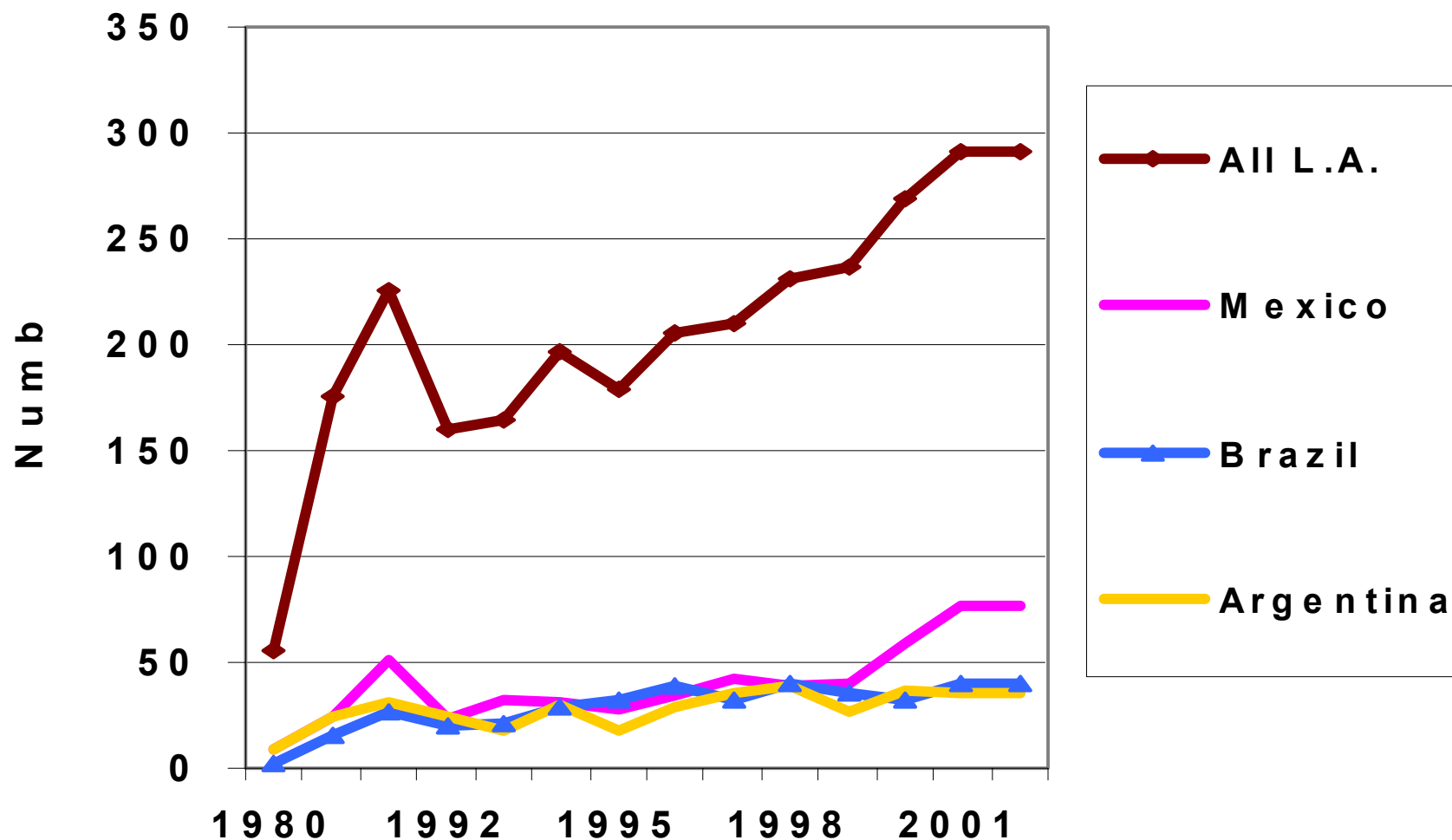
Stay rates of foreign recipients of U.S. S&E doctoral degrees, by place of origin: 1990 and 2001



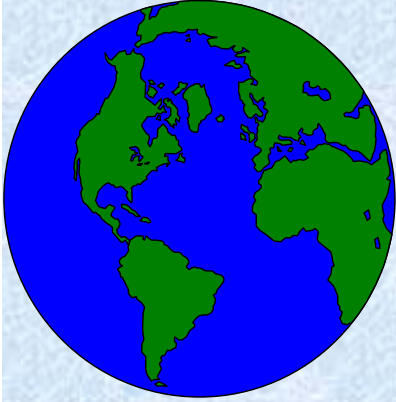
NOTE: Stay rate refers to firm plans to stay at the time of degree conferral.

SOURCE: *Science and Engineering Indicators-2004*

Firm plans of Latin American S&E doctoral recipients to stay in the U.S., selected countries: 1990-2001

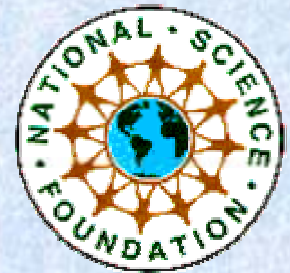


SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates.



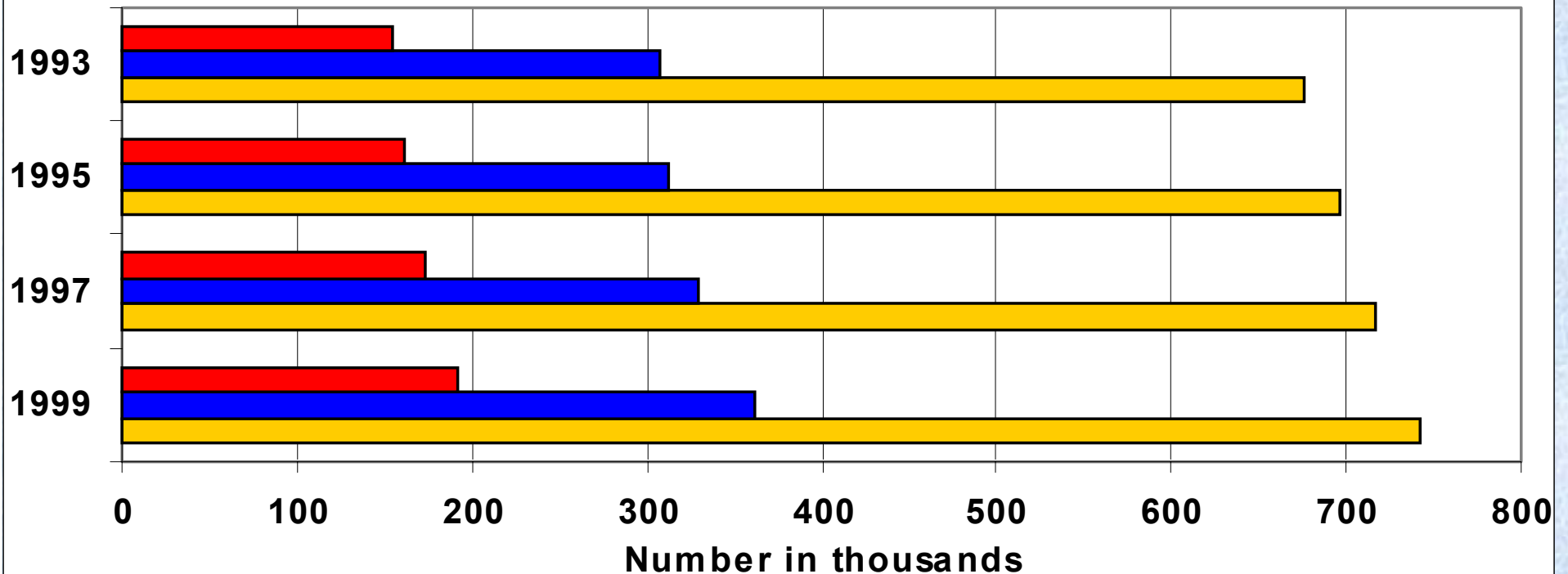
Scientific Mobility

- **NSF SESTAT database**
 - **Foreign-born S&E Degree holders residing in the U.S.**
 - By level of education
 - By occupation group
 - By sector of employment
 - By research activity



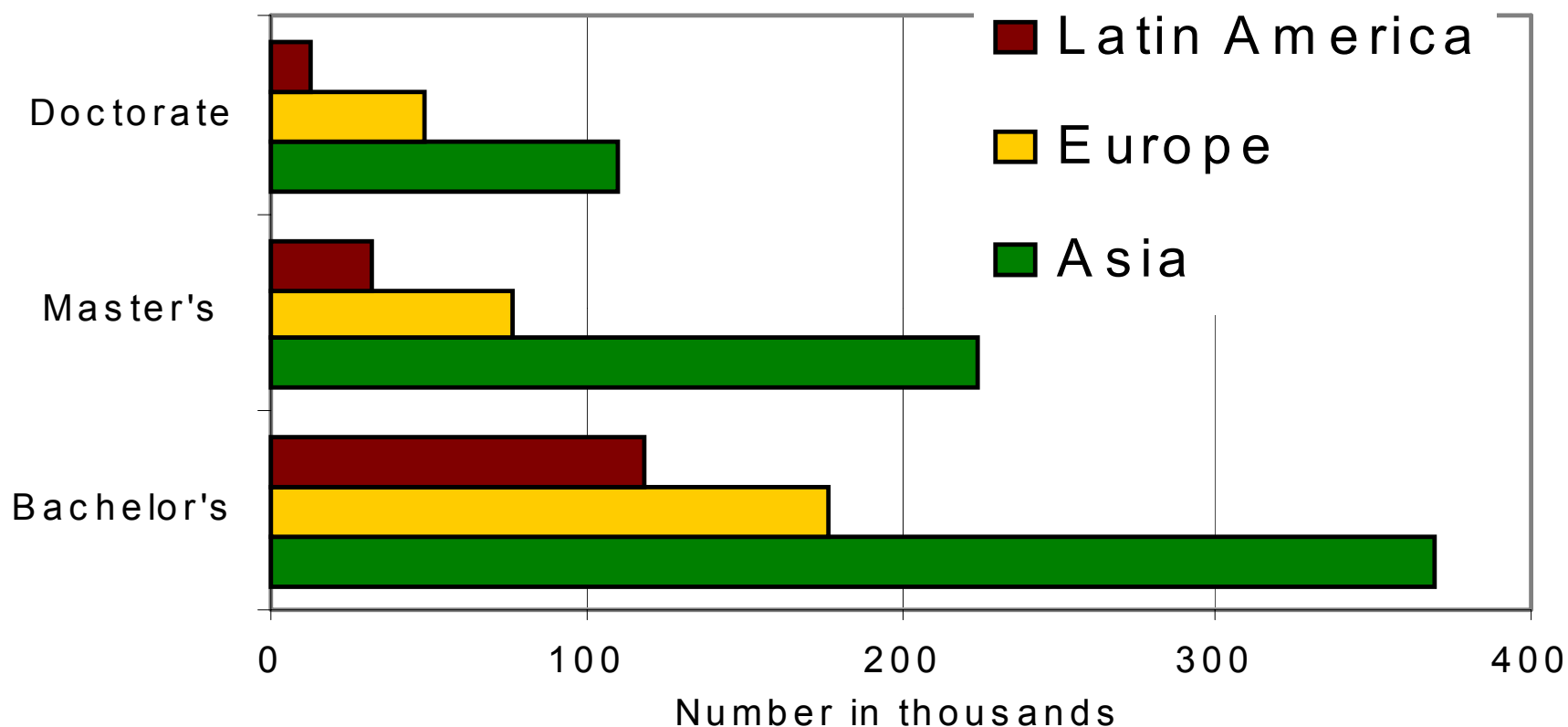
Foreign-born residents in the United States who hold an S&E degree as their highest degree, by education level: 1993-1999

■ Bachelor's ■ Master's ■ Doctorate



National Science Foundation, Division of Science Resources Statistics, SESTAT.

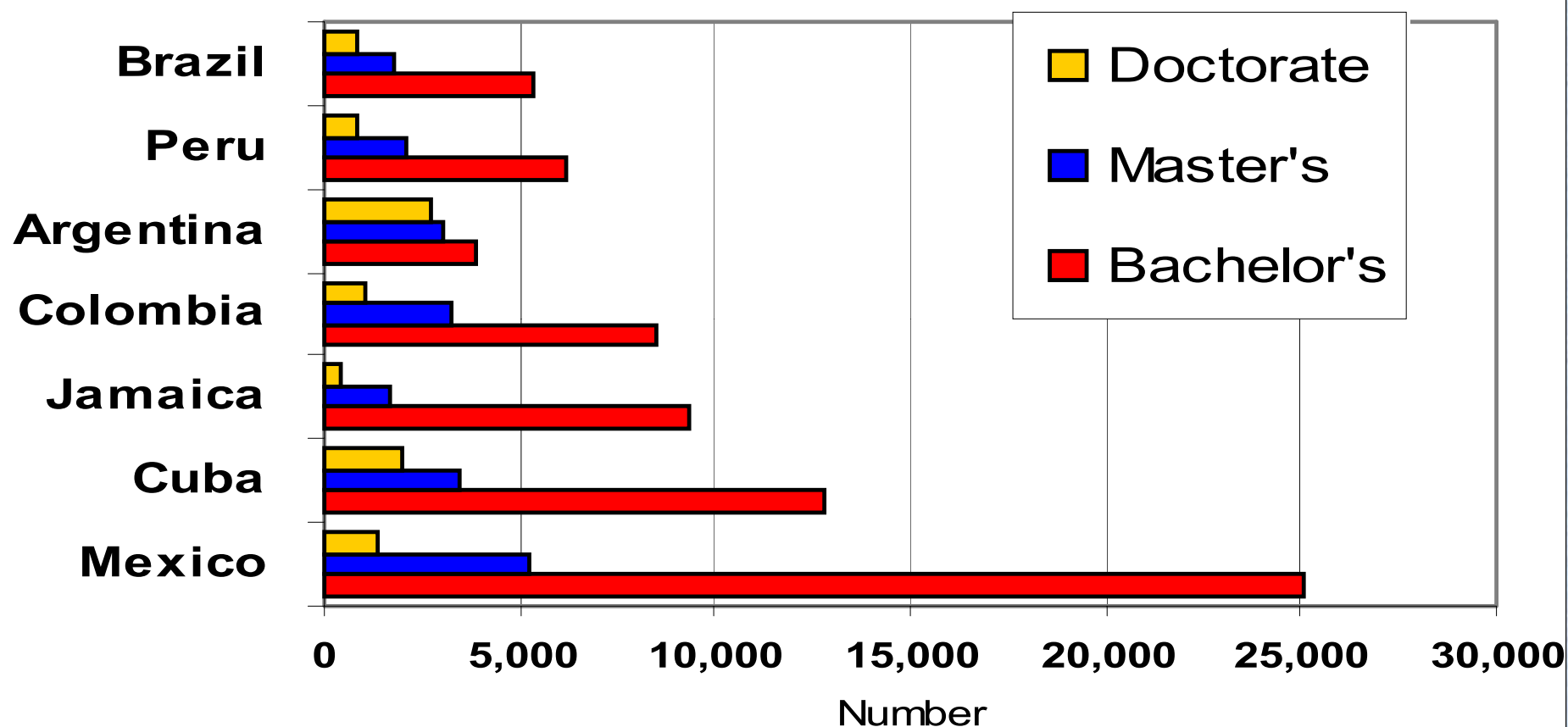
U.S. residents whose highest degree is in S&E, by highest degree level and region of birth: 1999



NOTES: Europe includes Eastern and Western Europe and the Former Soviet Union; Latin America includes Caribbean countries.

SOURCE: National Science Foundation, Division of Science Resources Statistics, SESTAT.

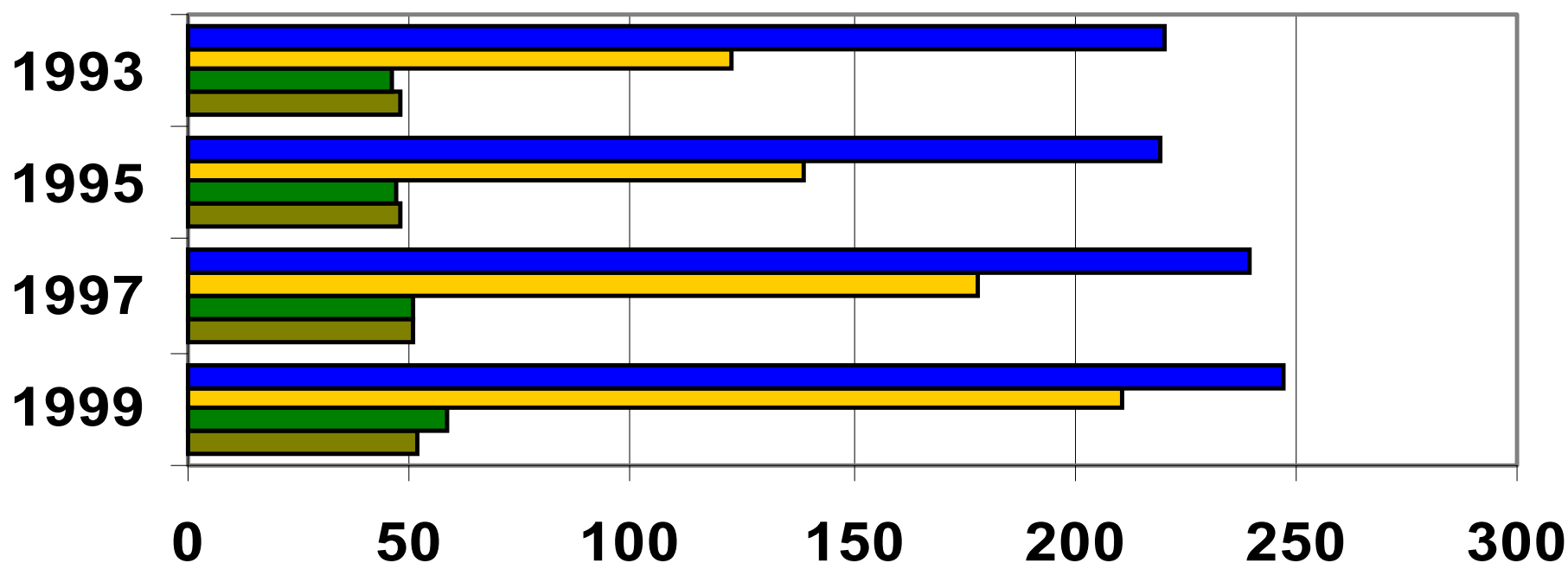
Latin American residents in the United States who hold an S&E degree as their highest degree, by education level, selected countries: 1999



National Science Foundation, Division of Science Resources Statistics, SESTAT.

Foreign-born S&E degree holders in United States, by occupation group: 1993- 1999

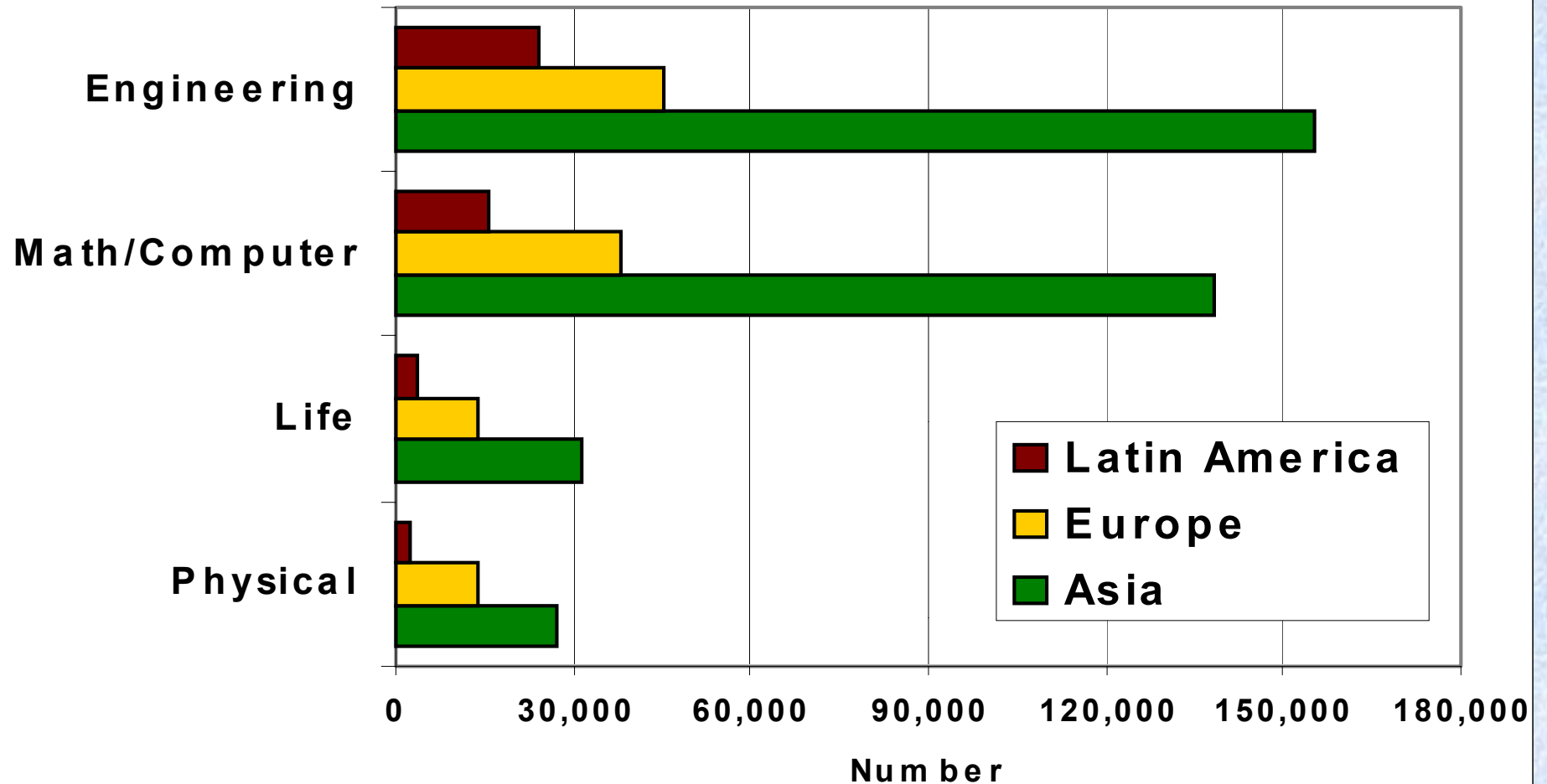
■ Physical ■ Life ■ Math/Comp ■ Engineering



Number in thousands

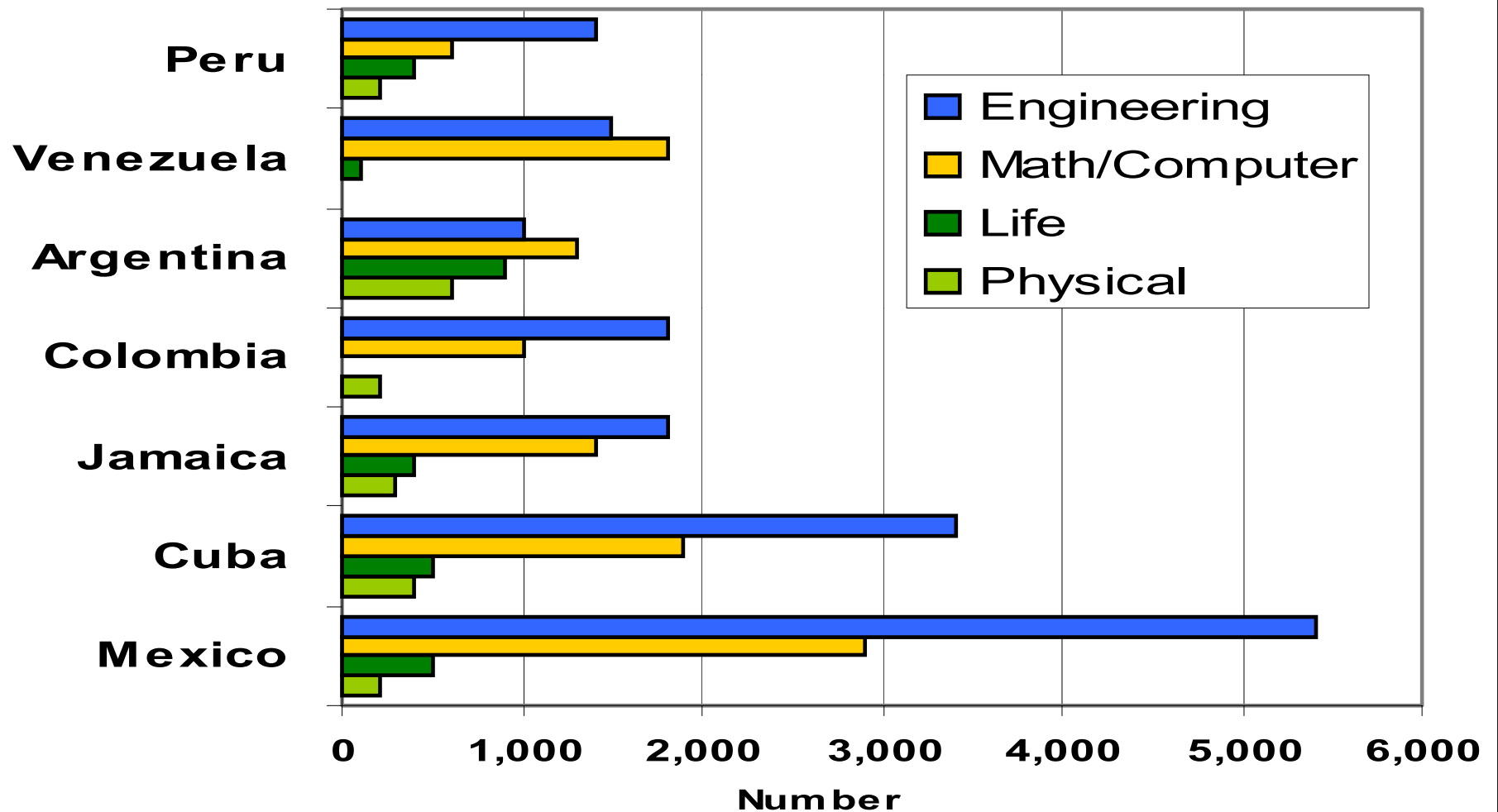
National Science Foundation, Division of Science Resources Statistics,
SESTAT

Foreign-born scientists and engineers in the United States, by occupation group and region of birth: 1999



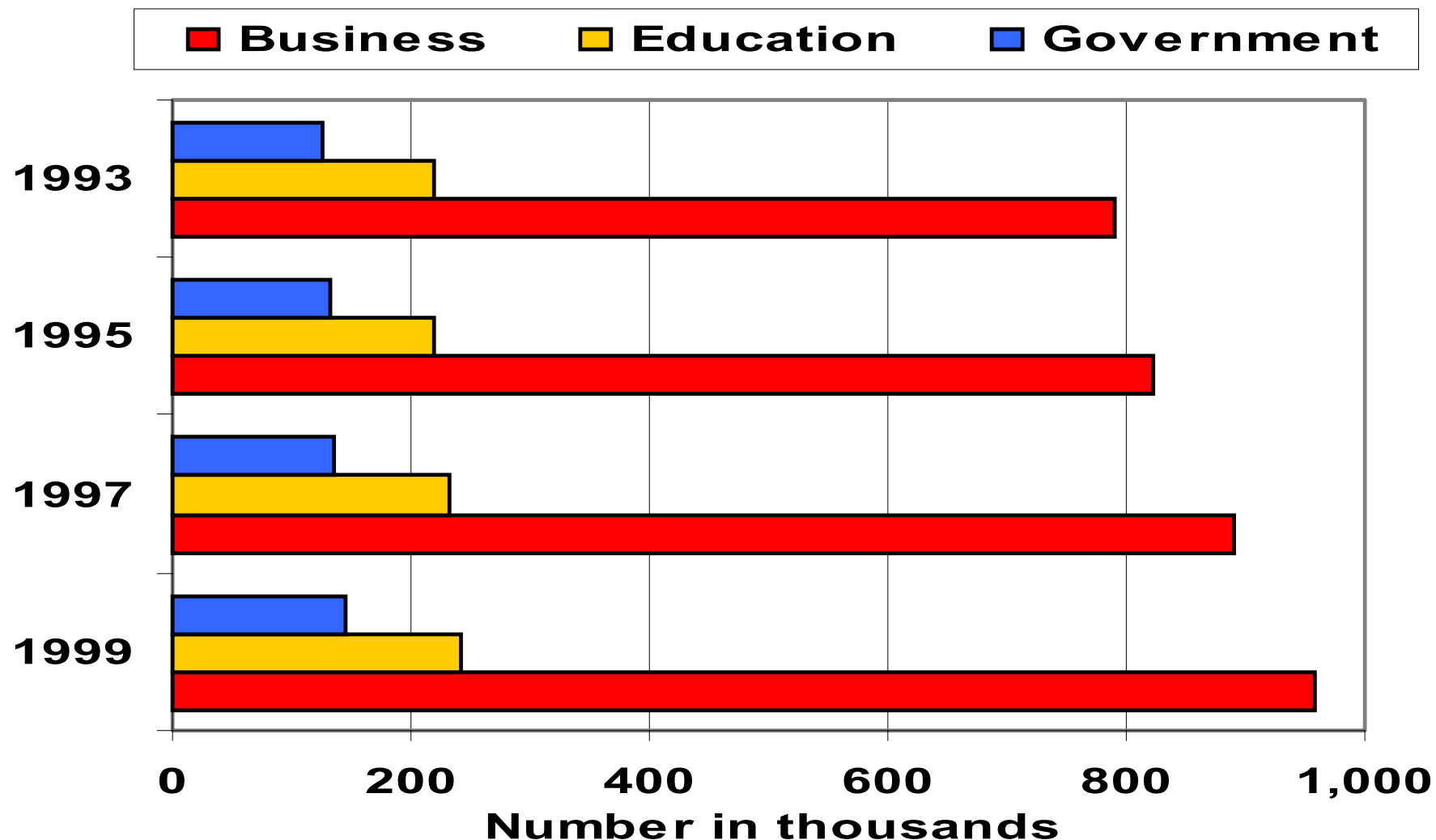
SOURCE: National Science Foundation, Division of Science Resources Statistics, SESTAT.

**Latin-American born scientists and engineers
in the United States, by occupation group,
selected countries: 1999**



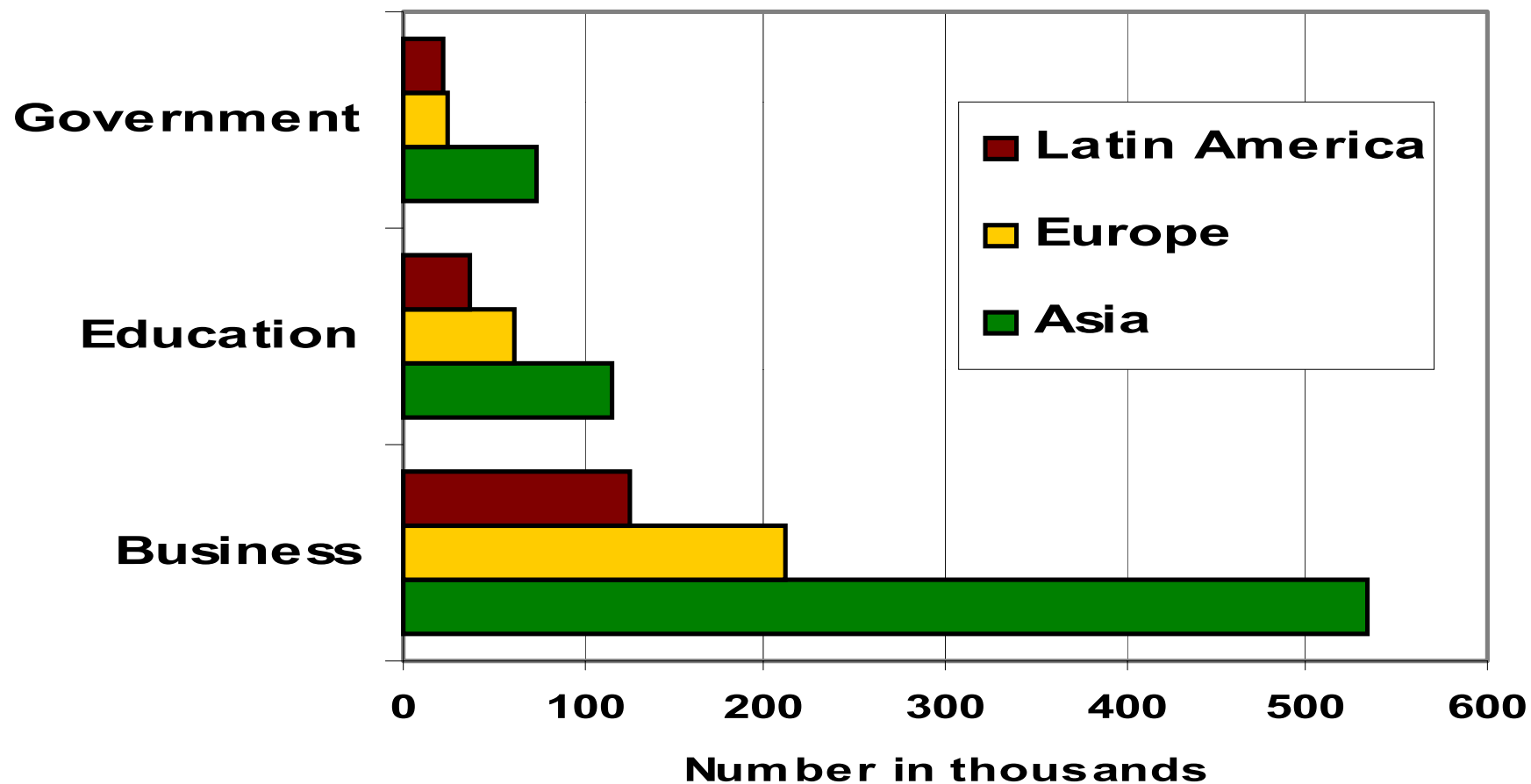
SOURCE: National Science Foundation, Division of Science Resources
Statistics, SESTAT.

Foreign-born scientists and engineers in the United States by sector of employment: 1993-1999

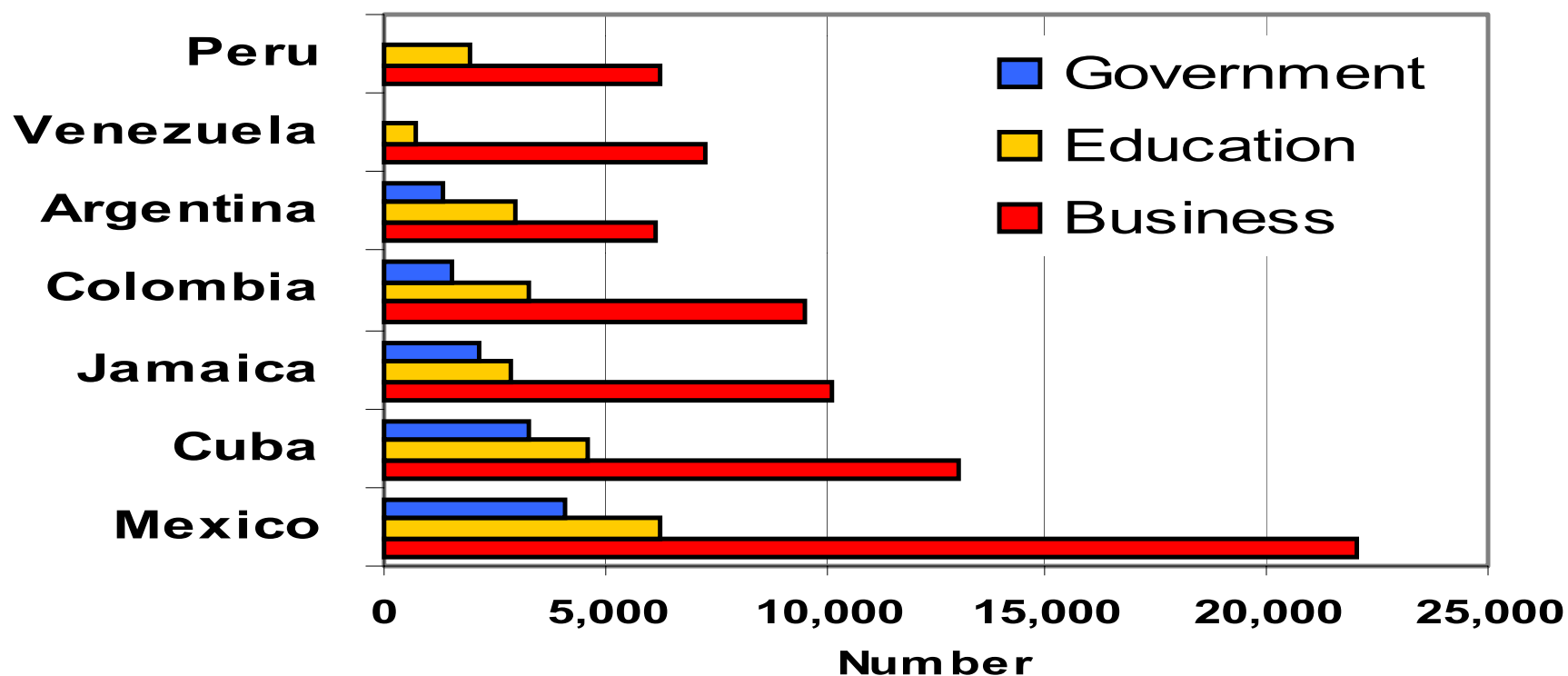


National Science Foundation, Division of Science Resources
Statistics, SESTAT

Foreign-born scientists and engineers by sector of employment: selected regions, 1999



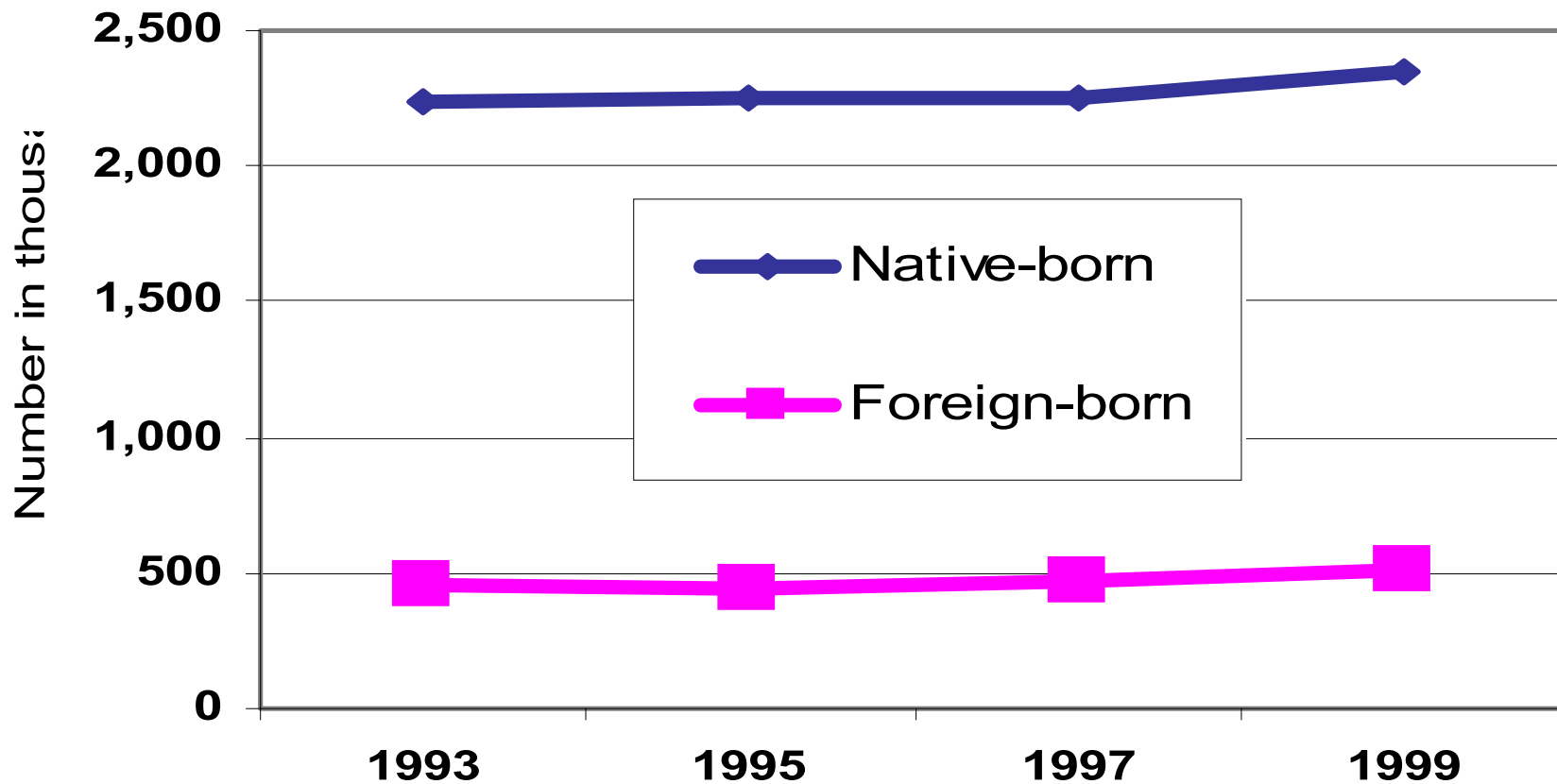
Latin American scientists and engineers in the United States, by sector of employment: selected countries, 1999



NOTE: Data on government for Peru and Venezuela are suppressed for small numbers.

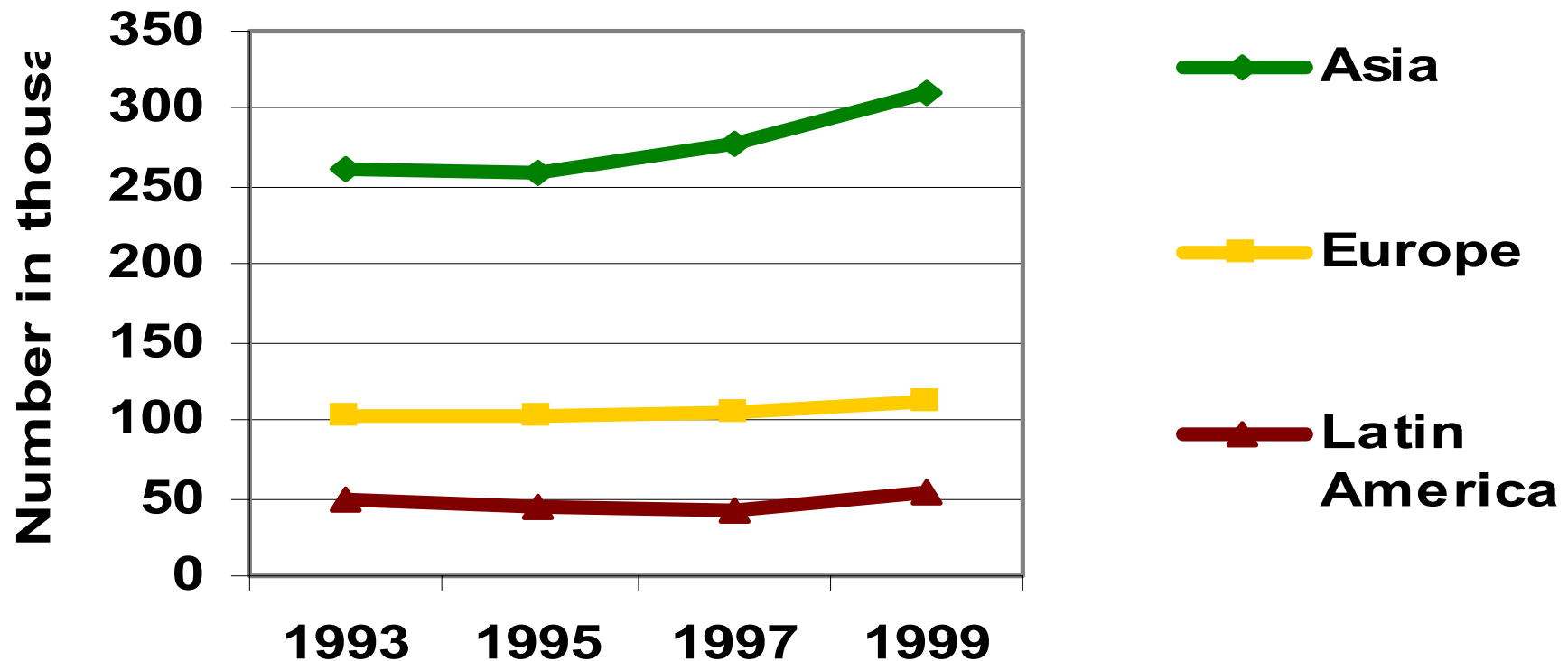
SOURCE: National Science Foundation, Division of Science Resources Statistics, SESTAT

U.S. scientists and engineers who perform R&D as a primary activity, by place of birth: 1993-1999



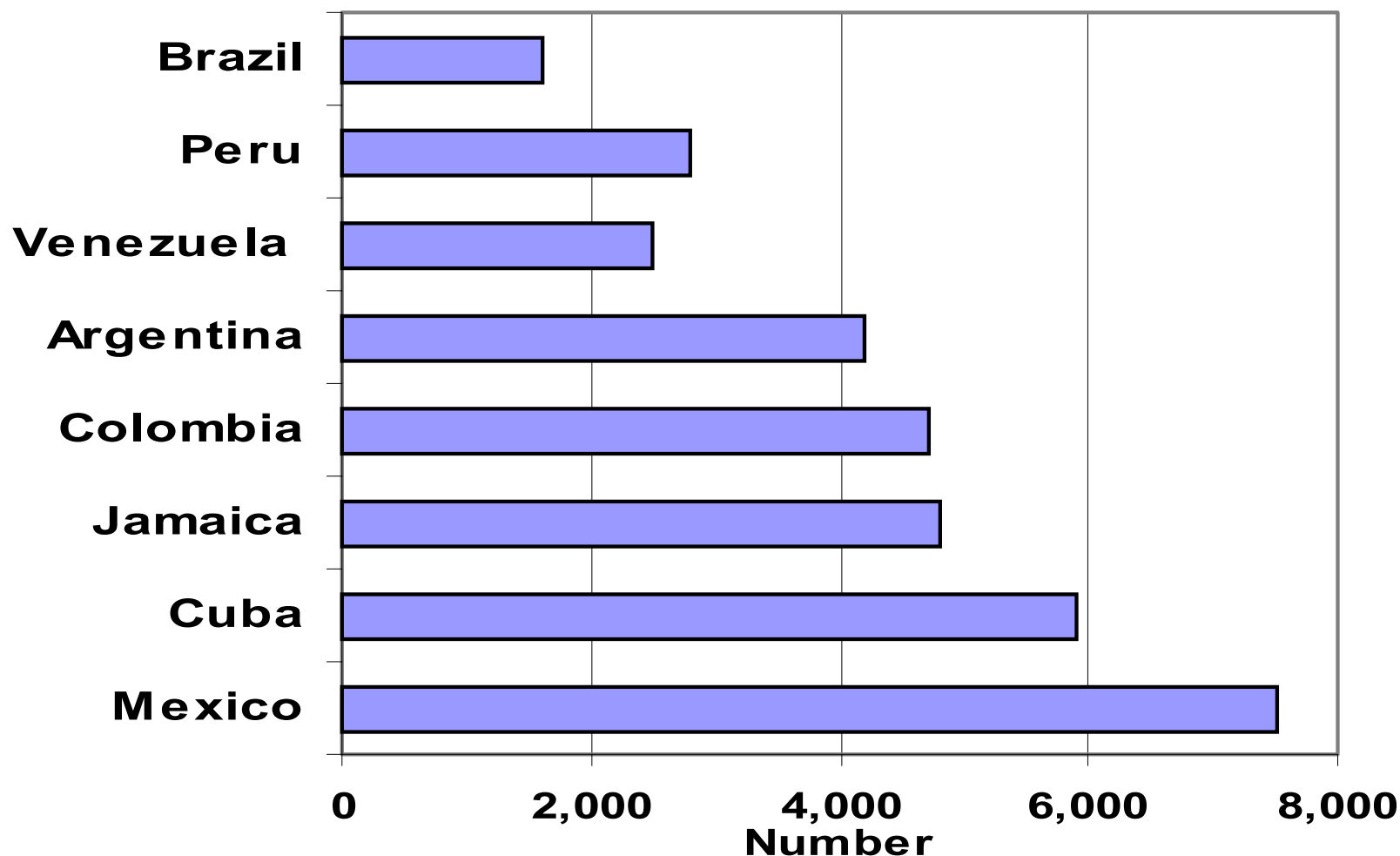
National Science Foundation, Division of Science Resources
Statistics, SESTAT

Foreign-born scientists and engineers in the United States who perform R&D as a primary activity, by selected regions: 1993-1999



National Science Foundation, Division of Science Resources Statistics, SESTAT

**Latin American-born scientists and engineers
in the U.S. who perform R&D as a primary
activity, selected countries: 1999**



SOURCE: National Science Foundation, Division of Science Resources Statistics, SESTAT



For further information:

International Degree Data and Foreign
Student Flows in:
Science & Engineering Indicators 2004,
Chapter on Higher Education
Methodology section for all reports
available on web:

National Science Foundation
Division of Science Resources
Statistics

<http://www.nsf.gov/sbe/srs>

