U.S. Competitiveness in the Global Market for STEM Scholars

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Overview

- What does the global educational marketplace look like?
- How does the U.S. stack up against the competition?
- What is being done to remain competitive?

Rapid growth in the post-secondary educational marketplace

- Growth in the demand for educational attainment
  - 166% increase between 1980 and 2000 in number of people with a post-secondary education
    - 1980 = 73 million, 2000 = 194 million – World Bank
- Growth in the supply of international students
  - 138% increase between 1980 and 2000 in number of students enrolled outside their country of citizenship
    - 1980 = 0.8 million, 2000 = 1.9 million – OECD
- Increasing rate of growth in supply of international students
  - 2004 = 2.7 million – OECD
    - 1.1m added 1980-2000, 0.8m added 2000-2004

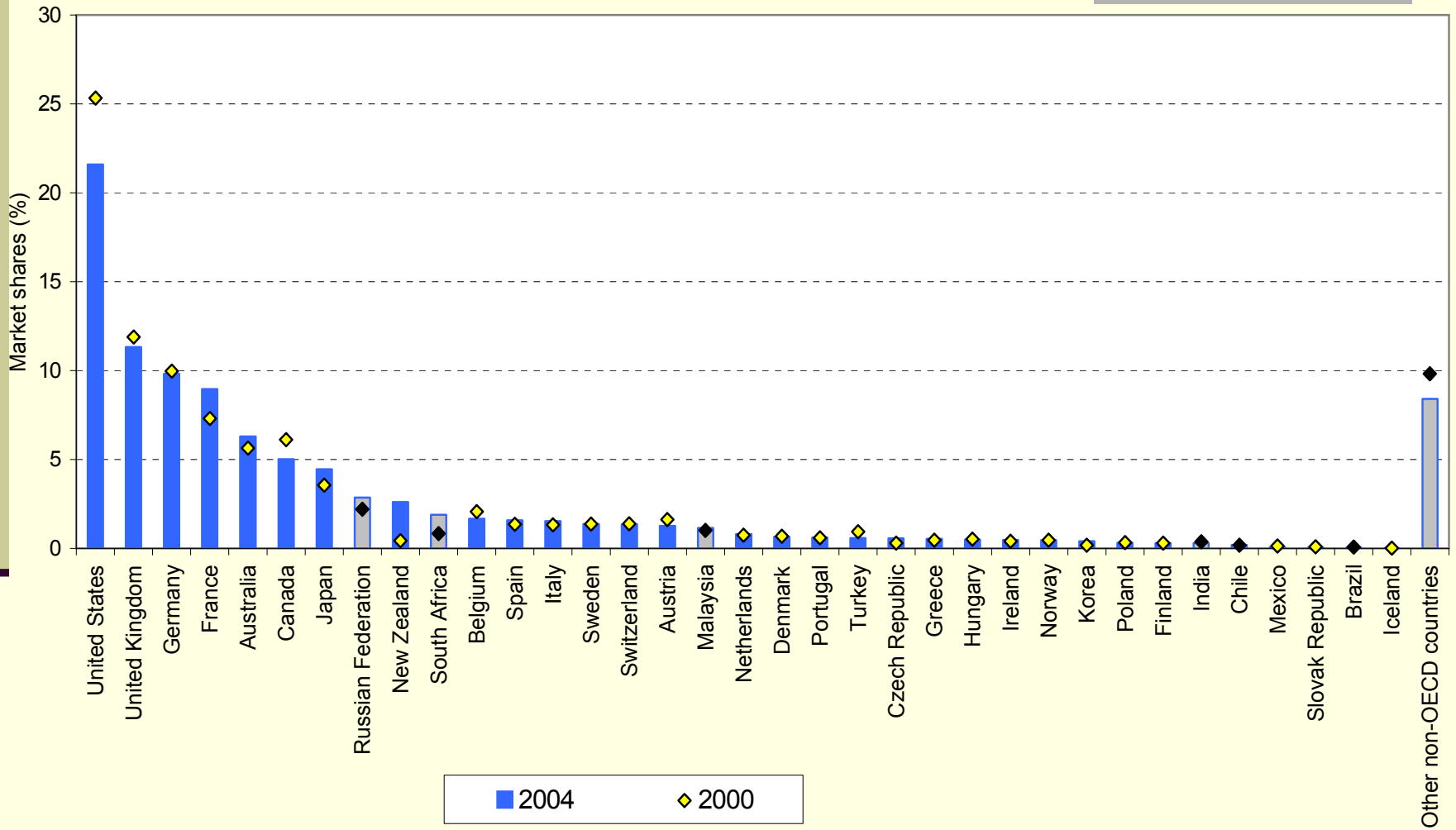
Advanced economies lead, but developing countries catching up

- Worldwide average years of schooling was 6.6 in 2000 – up 12% from 5.9 in 1980 – World Bank
  - Greater increase in developing countries (46%) than advanced (10%)
  - India increased 55% from 3.3 to 5.1
  - U.S. increased 2% from 11.9 to 12.1

Some countries are closing the gap fast

- 2/3 of the world's population with a post-secondary education live in 5 countries
  - United States = 27%, China = 11%, India = 8%, Russia = 7%, and Japan = 6%
- 2 percent of those living in China and India in 2000 had some post-secondary education
- In 1980, 7.5 million people in the two countries held a post-secondary degree – in 2000, the number had grown to 36 million.
- The U.S. went from 23 million to 53 million and Japan went from 7.2 million to 12.5 million

U.S. loosing its lead as the place to study

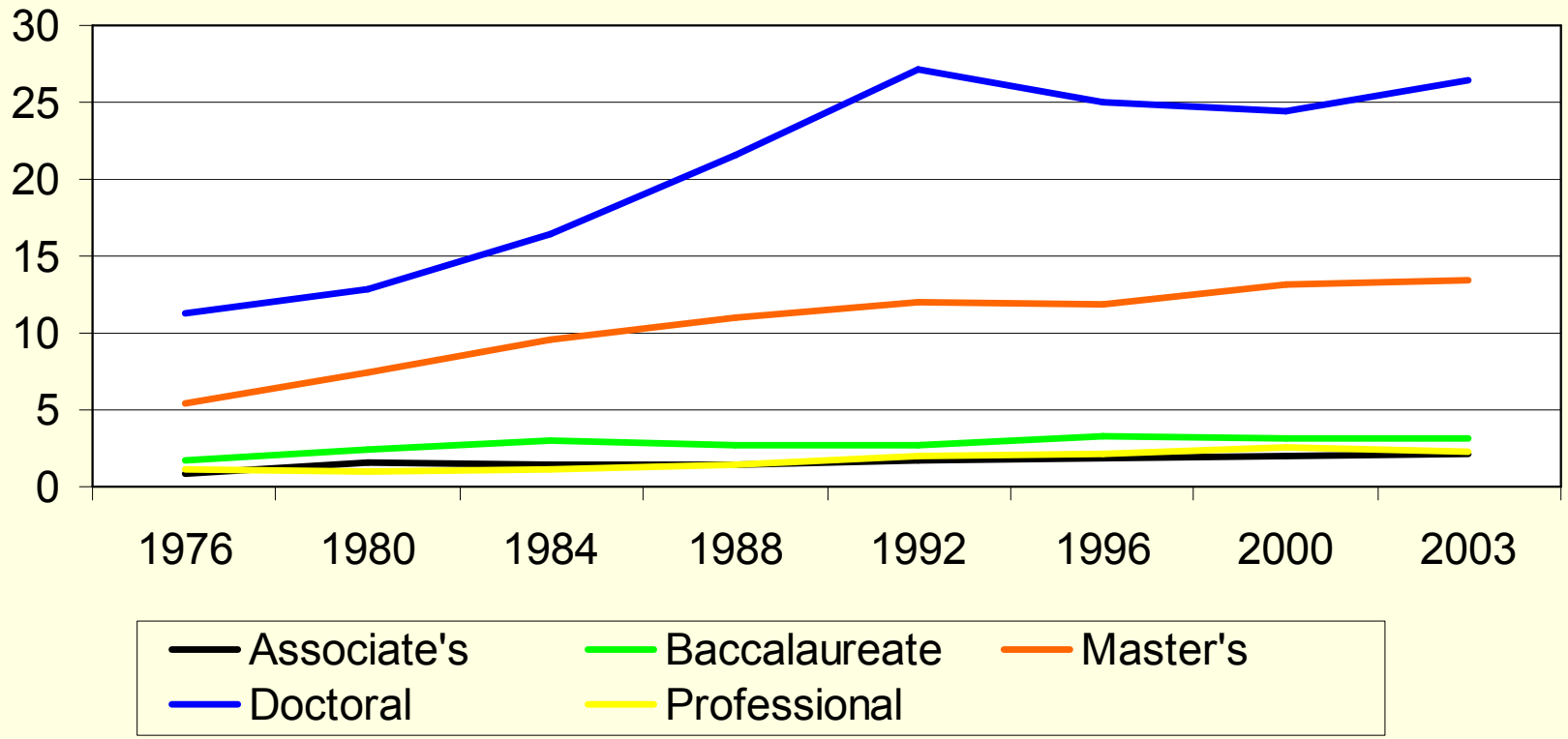


Countries are ranked in descending order of 2004 market shares.

Source: OECD and UNESCO Institute for Statistics for most data on non-OECD countries. Table C3.8. See Annex 3 for notes (www.oecd.org/edu/eag2006).

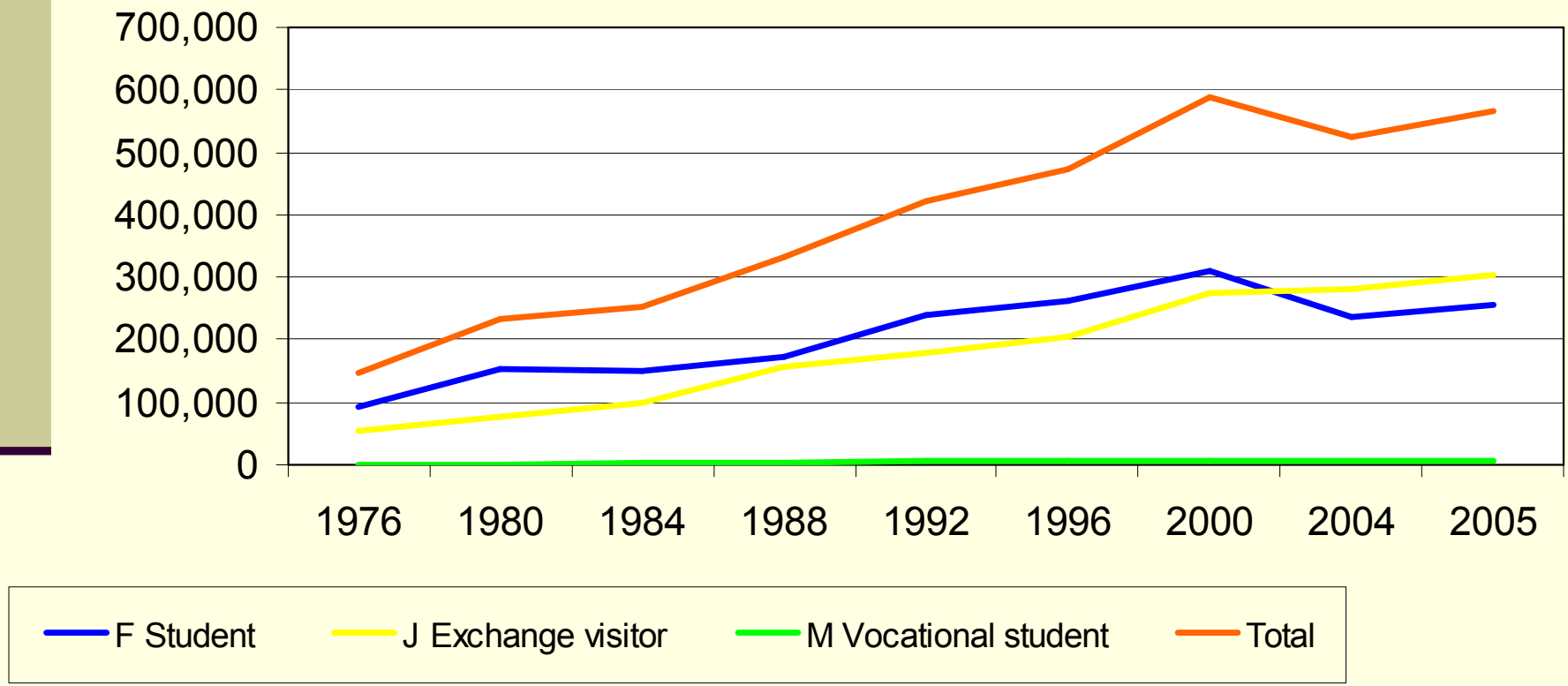
U.S. degrees to international students

Percent of Degrees Conferred to Foreign Students, by Level of Study, 1976 to 2003



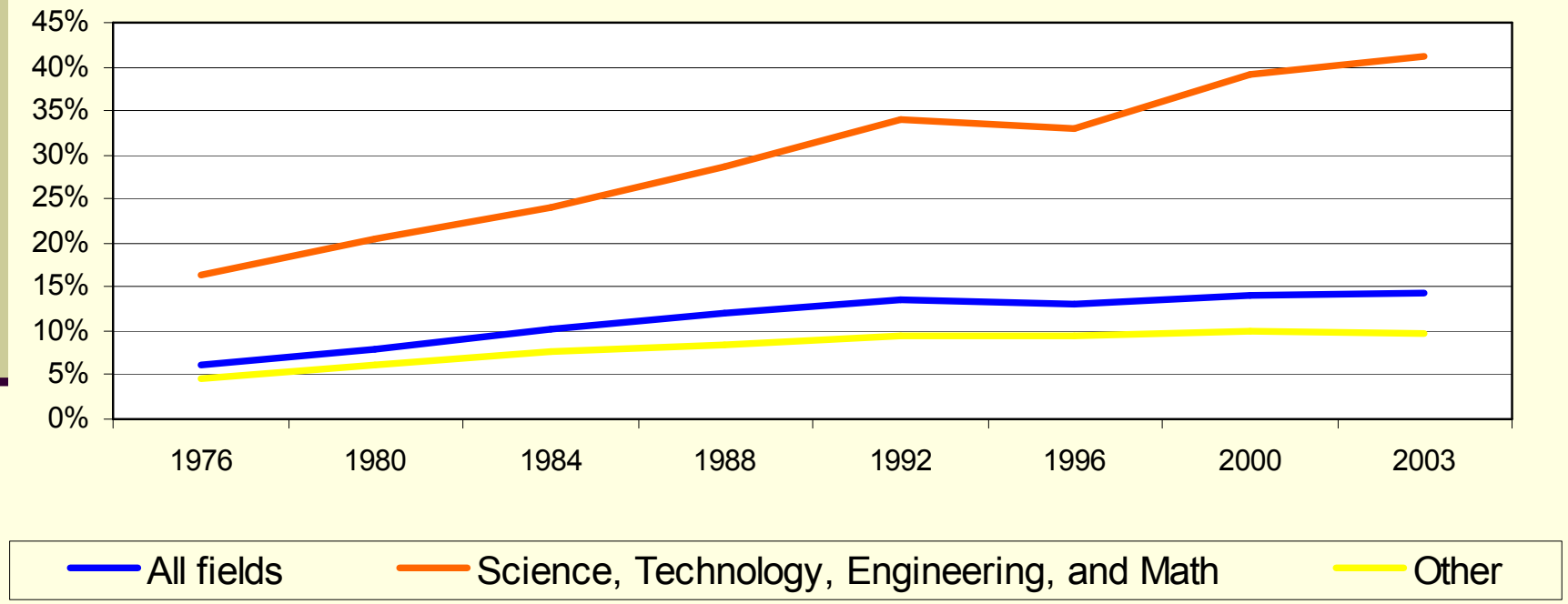
Growth in visas granted for study in U.S.

Student, Exchange, and Vocational Education Visas Issued, 1976 to 2005



STEM Degrees to foreign students

Percent of Advanced Degrees Awarded to Foreign Students, by field of study, 1976 to 2003



Math and science outcomes of U.S. students

- Elementary and middle school students - TIMSS
  - 4th-grade students ranked 12th in math and 4th in science
  - 8th-grade students ranked 9th in math and 7th in science
- High school students - PISA
  - 15-year olds ranked 24th in math and 19th in science
- College Students - GRE
  - On the quantitative portion of the test, non-citizens outscored U.S. citizens by 118 points out of a total of 800 – 672 to 554

Recommendations from scientific, academic, and business organizations

- Advanced Placement and International Baccalaureate exams
- Scholarships for STEM majors who teach
- Teacher professional development
- Scholarships for STEM majors and fellowships to STEM graduate students
- Tax credits to employers for career-long learning
- Visa processing and rules
- 1-year extension on F visas

Recent Congressional Action

- Higher education provisions in the Deficit Reduction Act of 2005
- Expanded student loan forgiveness for STEM teachers
- Established two new grant programs
  - exceptional students in their first two years of college
  - upper-class students majoring in STEM fields
- Established the Academic Competitiveness Council

Proposals currently under consideration in Congress

- Summer school programs for middle and high school students
- Scholarships for STEM majors who teach high-need schools
- Relief from interest payments on student loans teachers
- Programs for STEM majors with teacher certification
- Part-time master's programs for current teachers
- Scholarships for teachers to pursue master's degrees
- Professional development and bonus pay
- Adjunct Teacher Corps
- Scholarships and fellowships for STEM students
- Grants to early-career scientists and engineers
- Standing committee on STEM education under the OSTP

Bills to reform U.S. immigration policy

- New F-4 visa for STEM students – no intention to leave
- New J-STEM visa category – not required to leave before reapplying
- F visa students allowed to work off campus for prevailing wage
- No numerical limits on visas to those granted advanced STEM degrees by U.S. institutions

What happens next?

The November election, a new Congress,

...and then, back to work.