

Roundtable on the Science and Technology Workforce



The National Science Board

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Science and Engineering*

A briefing to the:

House Science Committee

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Rayburn House Office Building, Washington, DC

About the National Science Board

National Science Board was established by the NSF Act of 1950:

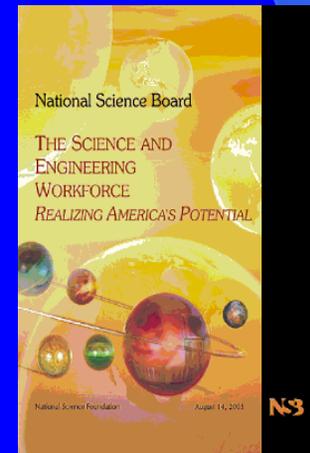
“...to promote the progress of science; to advance the national health, prosperity, and welfare; and secure the national defense.”

The National Science Board provides:

- **Oversight and policy-making** for NSF, and
- **Advice to the President and the Congress** on matters of national science and engineering policy.

National Science Board Recent Reports on the Workforce

- *The Science and Engineering Workforce—Realizing America's Potential (2003)*
- *An Emerging and Critical Problem of the Science and Engineering Workforce (2004)*
- *Broadening Participation in Science and Engineering Faculty (2004)*



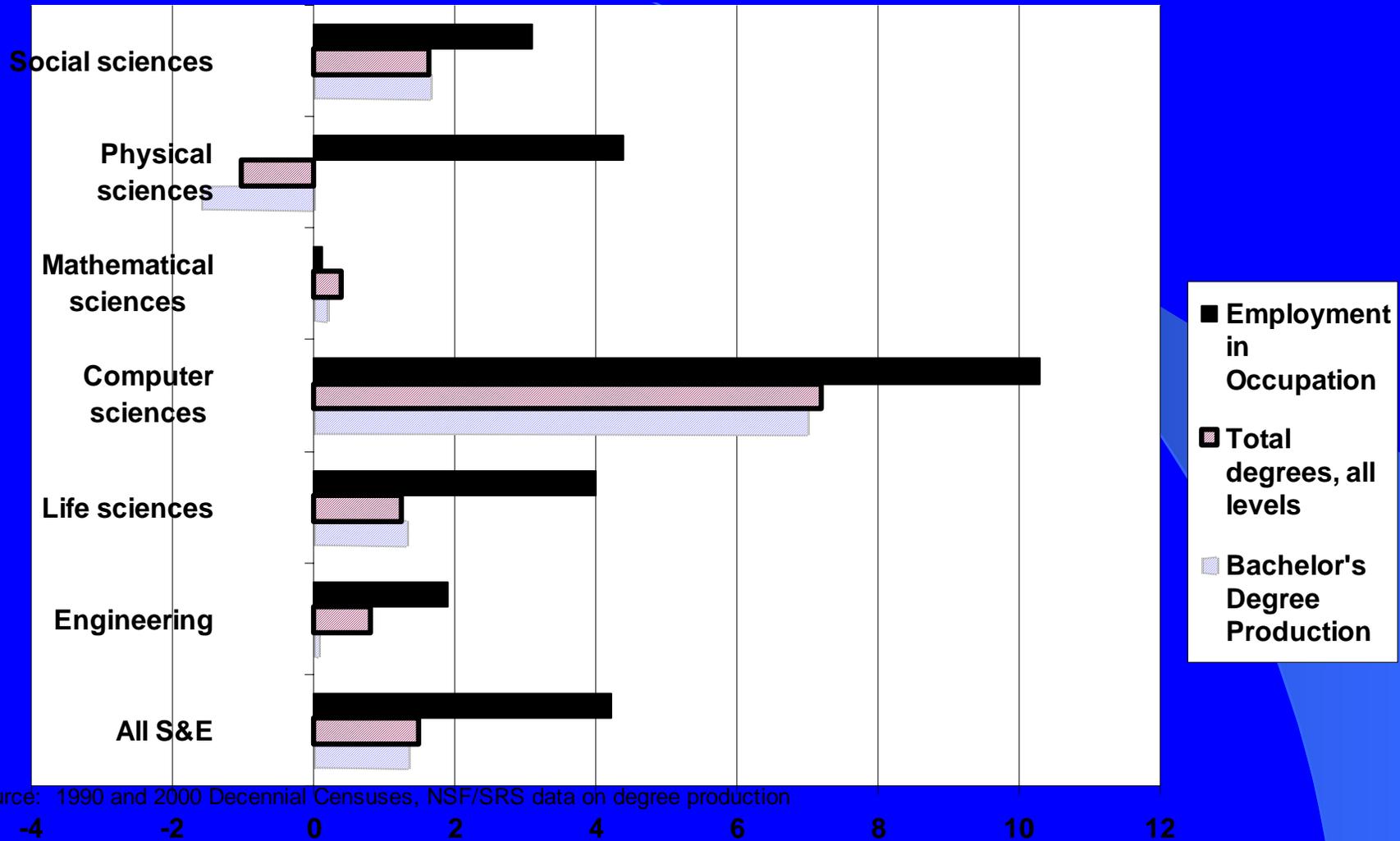
What Will It Take for U.S. to Maintain Global Leadership?

Recent NSB studies led to our conclusion that to **maintain U.S. global leadership** in innovation and discovery it will be necessary to:

- Increase the participation of **all** U.S. citizens in science and engineering careers.
- Maintain the opportunities for **foreign-born** to pursue U.S. education and employment in science and engineering.



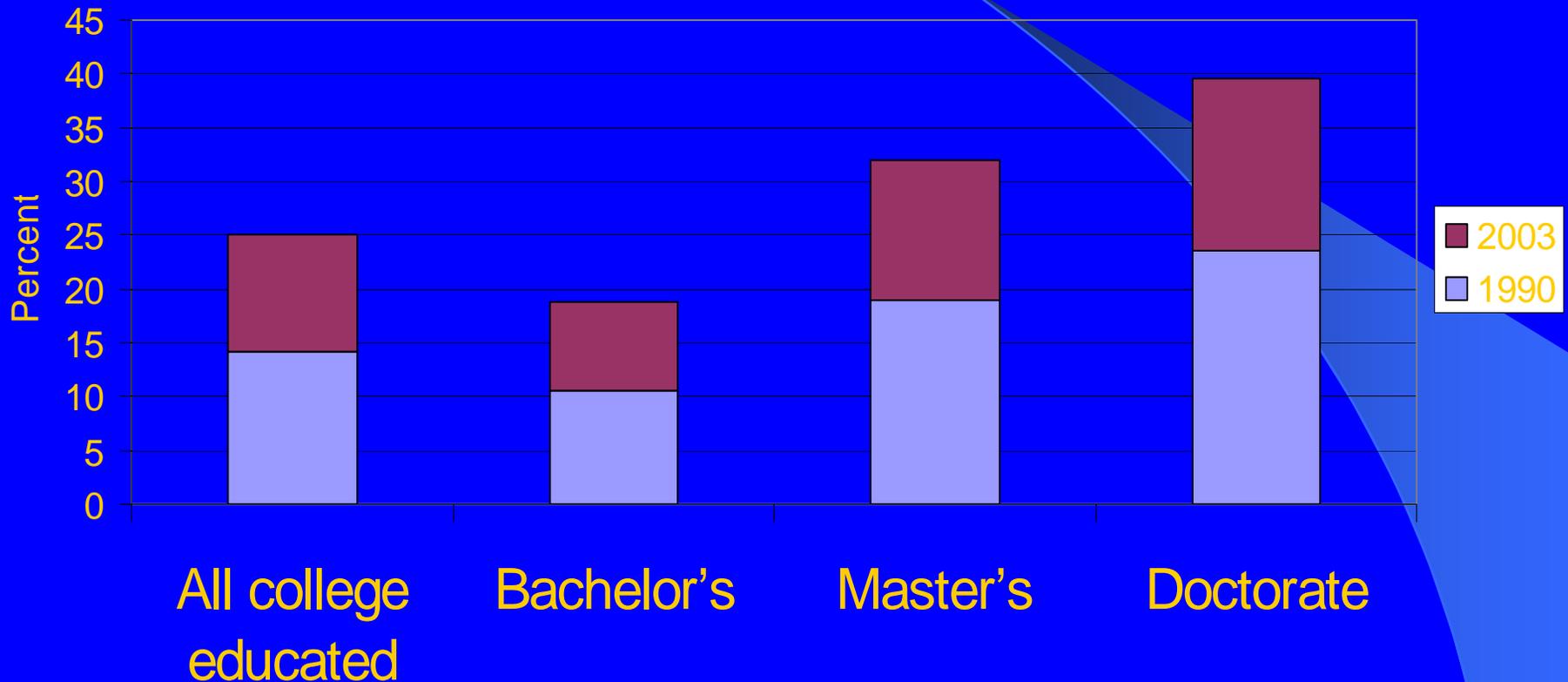
Growth of Degrees and Jobs: 1980-2000 Average Annual Rates



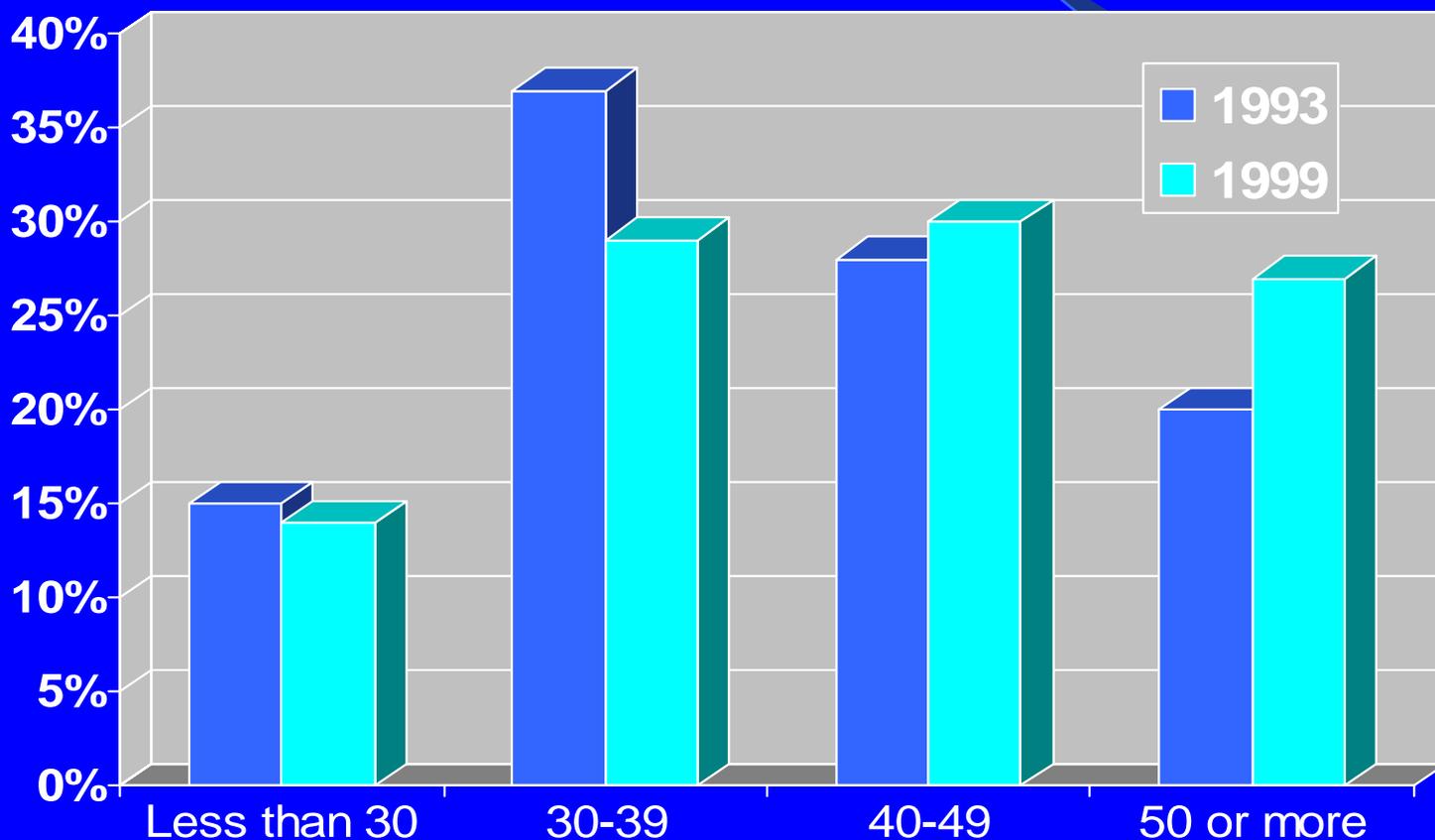
Source: 1990 and 2000 Decennial Censuses, NSF/SRS data on degree production

Rate is calculated as growth over 20 years if each year the growth were the same

Foreign Born Scientists and Engineers Increased as a Share of the Workforce at all Degree Levels: 1990 and 2003

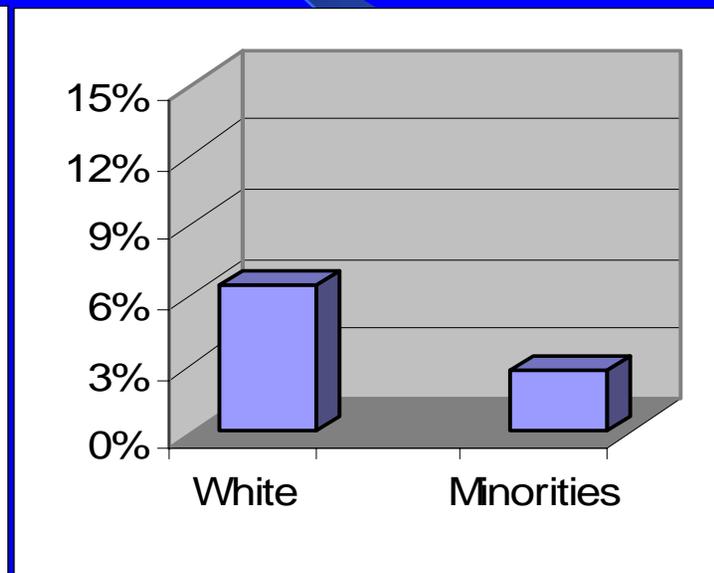
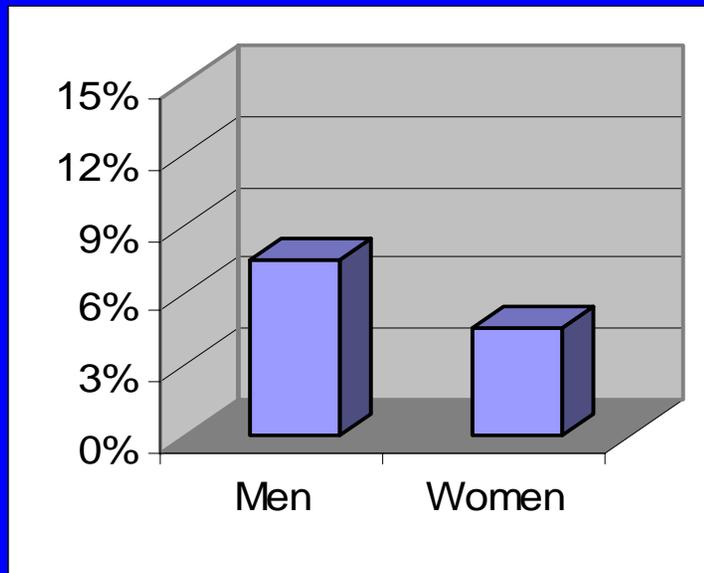


Science and Engineering Occupations' Labor Force Aged in the 1990s



Source: *Science and Engineering Indicators 2002*, Appendix Tables 3-34 and 3-35, pages A3-102 and A3-108.

Women and Underrepresented Minorities Are Less Likely to Earn Bachelor's Degrees in Natural Science and Engineering



Source: *Science and Engineering Indicators 2002*, Text Table 2-9, page 2-23.

NSB Policy Activities to Strengthen S&E Education Infrastructure

- **Engineering Education**: A Workshop focused on the need for change in engineering education, October 20, 2005.
- **NSB Commission on Education**: To be established this year on STEM K-12 and undergraduate education.
- **Science and Engineering Indicators 2006**: Extensive external review to increase utility for an expanded base of users;
- **Companion Piece to S&E Indicators** is planned on K-12 education.

Long term Issues for Federal Policy

- **Trends**: No immediate crisis is apparent, but long term trends are **disturbing**.
- **Global workforce**: Both **domestic and international talent are needed** to continually renew the US workforce.
- **Global leadership**: **All stakeholders must act now** to retain the US advantage in human resources for S&E, given the long-term lead time required to build global leadership.
- **The Federal role**: The Federal government is uniquely qualified to **coordinate activities at the national and global levels** to benefit the national workforce.