

Commission on Professionals in Science and Technology

The logo for the Commission on Professionals in Science and Technology (CPST). It features the letters "CPST" in a white, serif font, centered within a dark teal horizontal bar. Below this bar is a lighter teal horizontal bar, creating a layered effect.

Lisa M. Frehill
Executive Director

A smaller version of the CPST logo, consisting of the letters "CPST" in white serif font on a dark teal bar, with a lighter teal bar below it.

<http://www.cpst.org>

. . . Your workforce data source.

STEM

- Science

- Technology

- Engineering

- Mathematics

- Life sciences

- Physical sciences

- Engineering

- Social sciences

- Psychology

- Engineering technology

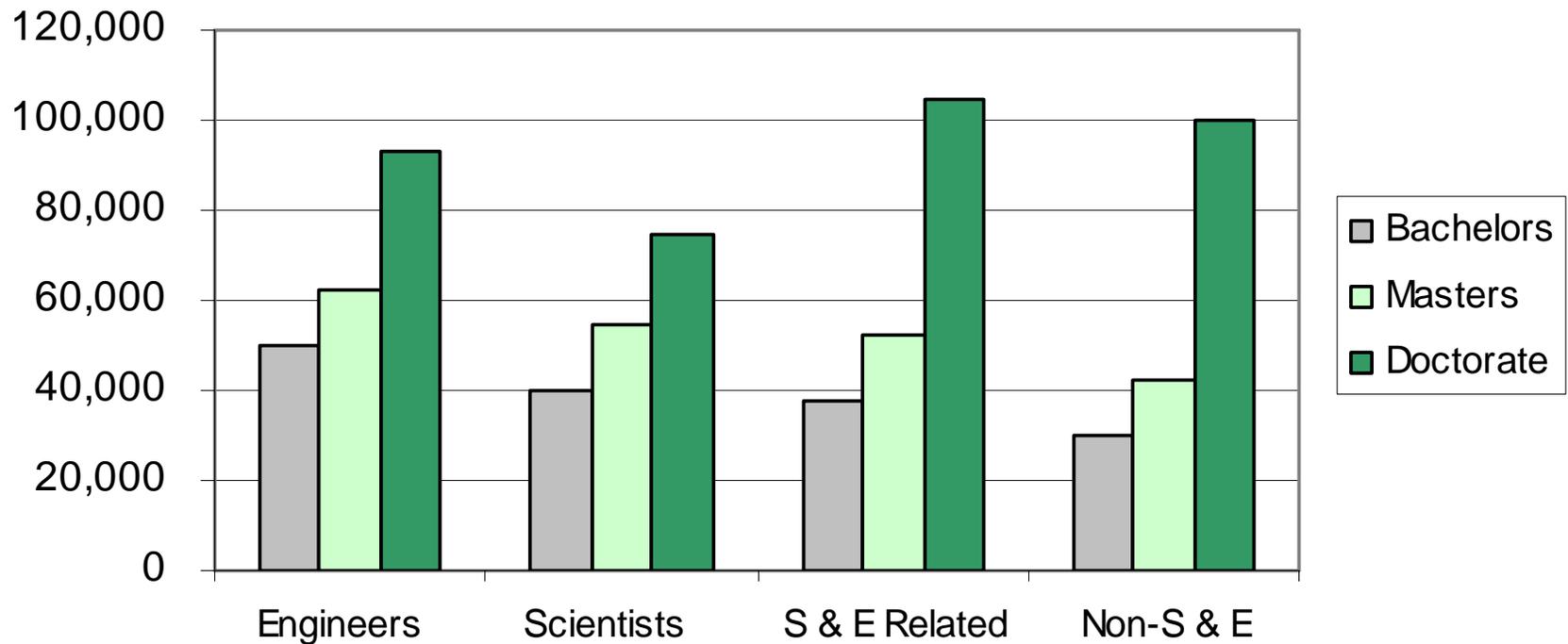
- Science technology

Data Sources

- National Science Foundation
- National Center for Education Statistics
- Council of Graduate Schools
- Discipline-based societies

The higher the degree, the higher the median salary. (NSF, National Survey of College Graduates, public-use data.)

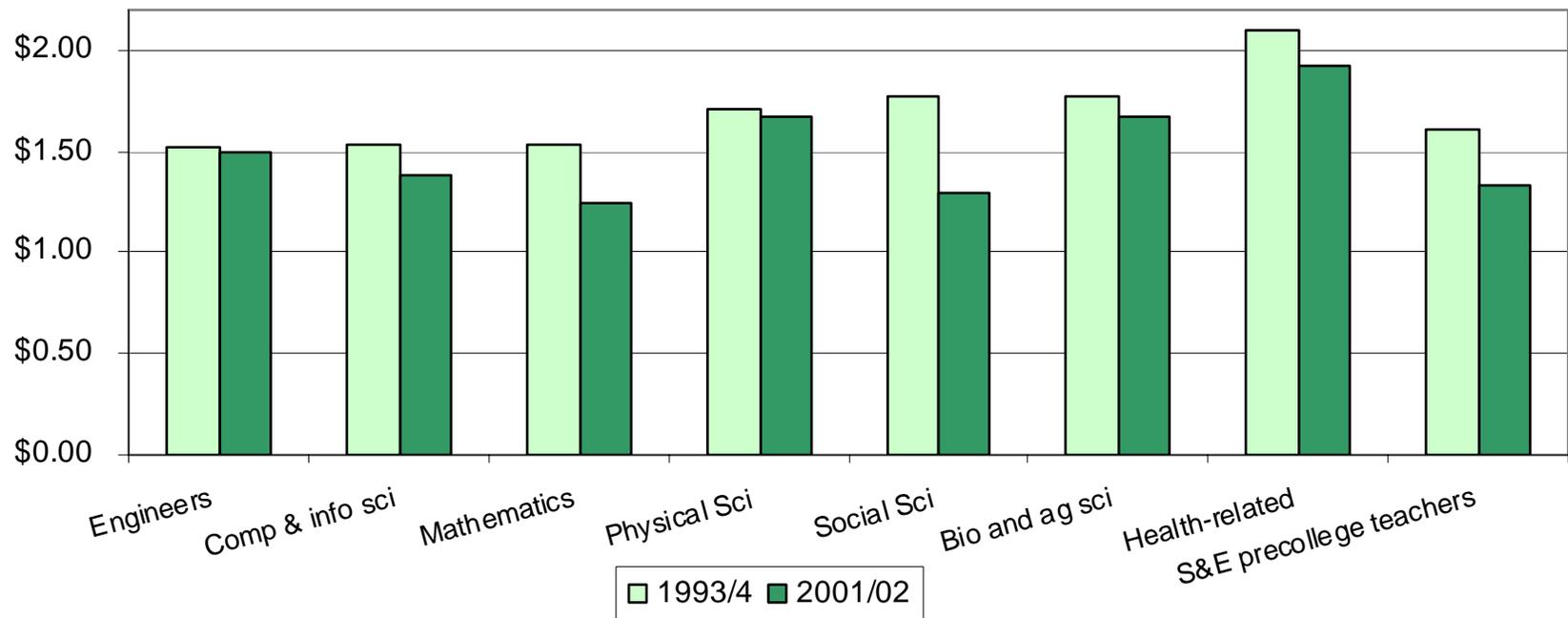
Salaries by Degree Field, NSCG 2003



Source: CPST analysis of NSF data

Earnings were higher for those with doctoral degrees regardless of field, but the value of the PhD in 2001/02 was often comparatively less than in 1993/94.

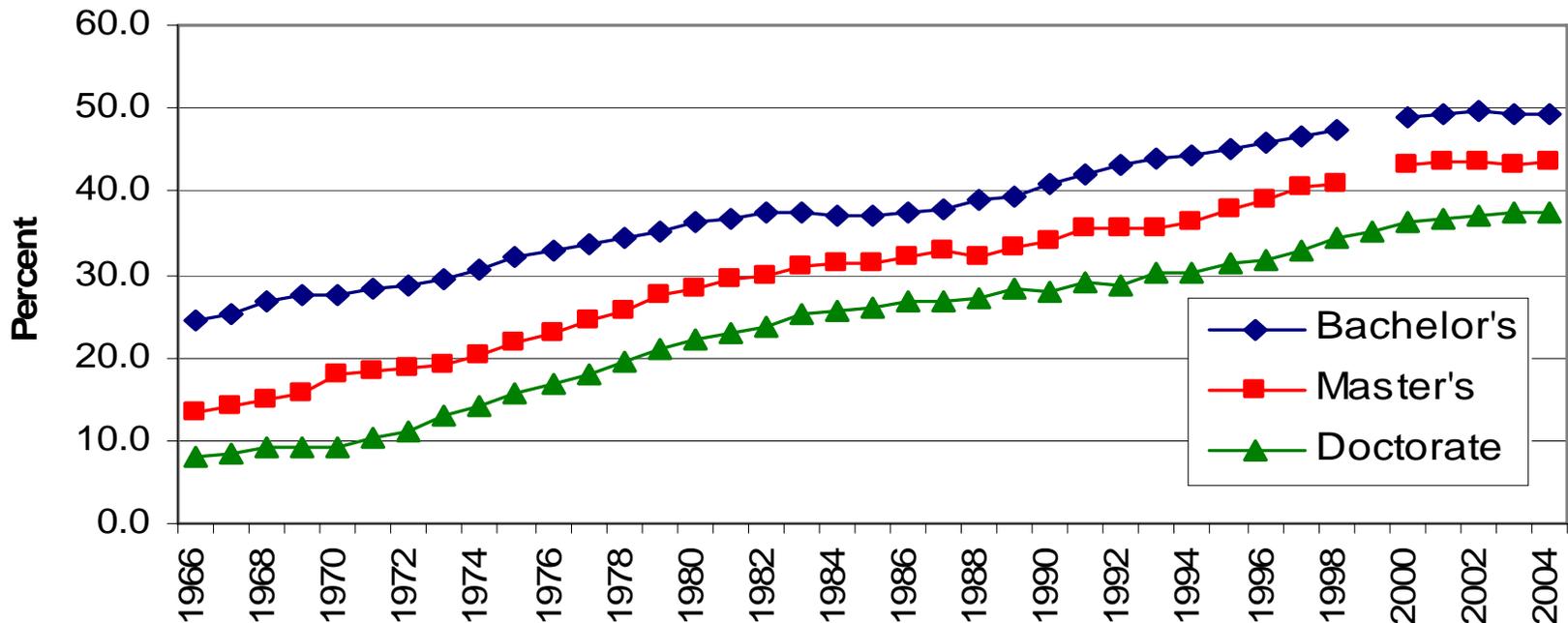
**Ratio of Median Earnings for Doctorate vs. Masters, 1993/4 and 2001/02
by Field**



Source: CPST analysis of National Science Foundation Data from the National Survey of Recent College Graduates, 1995 and 2003. Doctorate data are from the NSF Survey of Doctorate Recipients 1993 and 2003 reported in 1995 and 2005, respectively.

Women's representation among STEM degree recipients has increased at all three degree levels in the past 40 years

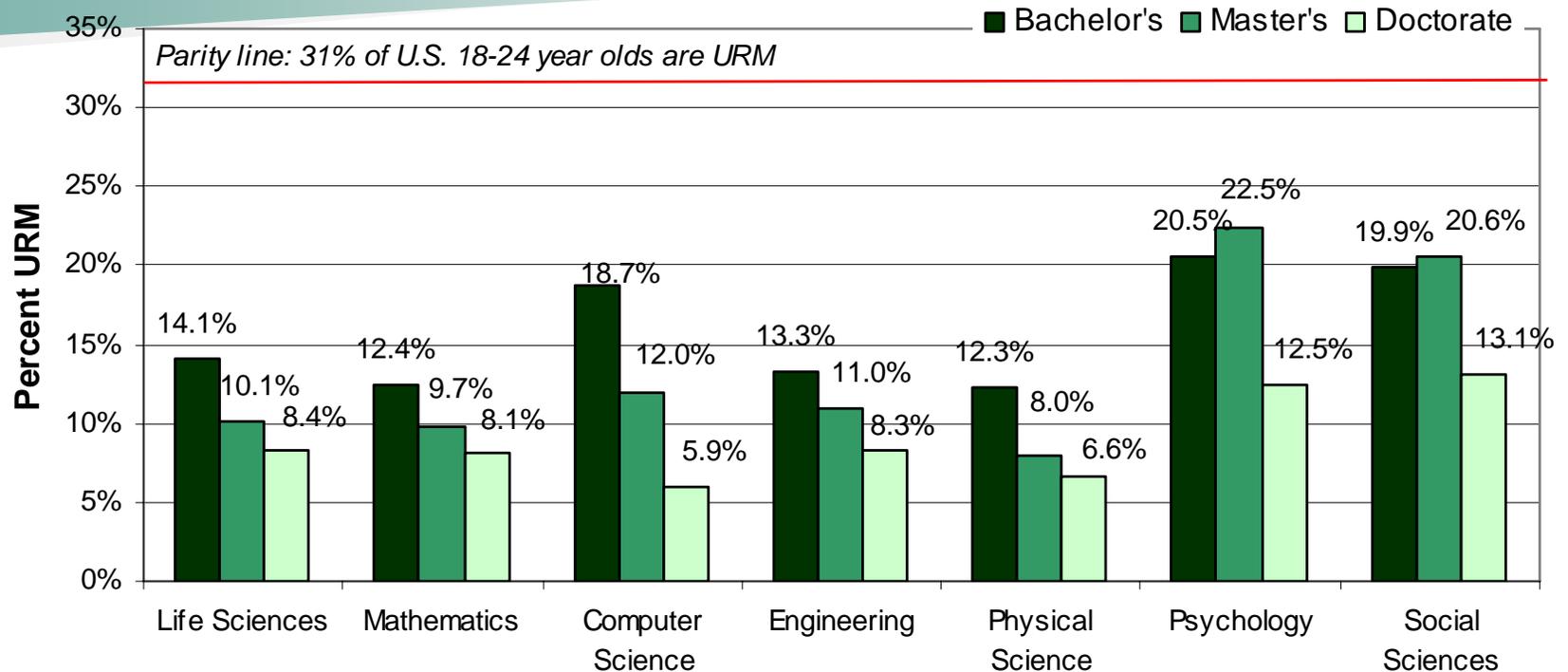
Percentage of Degrees in STEM Fields Earned by Women by Level, 1966 to 2004



Note: No data were available for 1999 at the bachelor's and master's levels.

Source: CPST, data derived from National Science Foundation, WebCASPAR Database

The URM pipeline to doctoral degrees is far from "full" . . . Not at "parity" with representation in the population. (Degree awards, 2005)

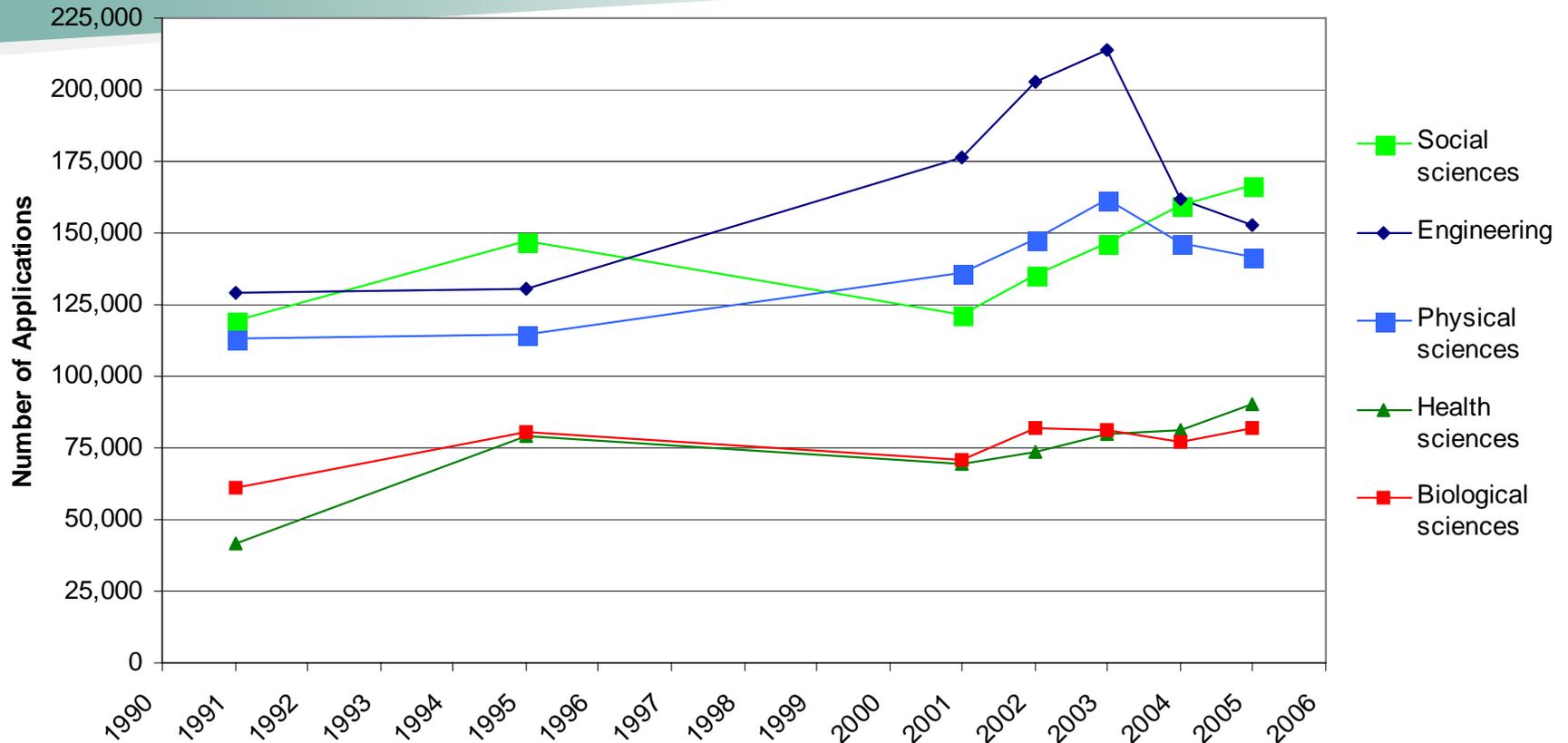


Source: CPST analysis of IPEDS data using NSF's WebCASPAR system. Life Sciences includes biological and agricultural sciences; Physical sciences includes the earth, atmospheric and ocean sciences disciplines. URM = Under-represented minority and includes African American, American Indian and Hispanics.



Total number of applications to graduate school has increased most dramatically in engineering and is showing a recent upward trend in the social sciences and psychology.

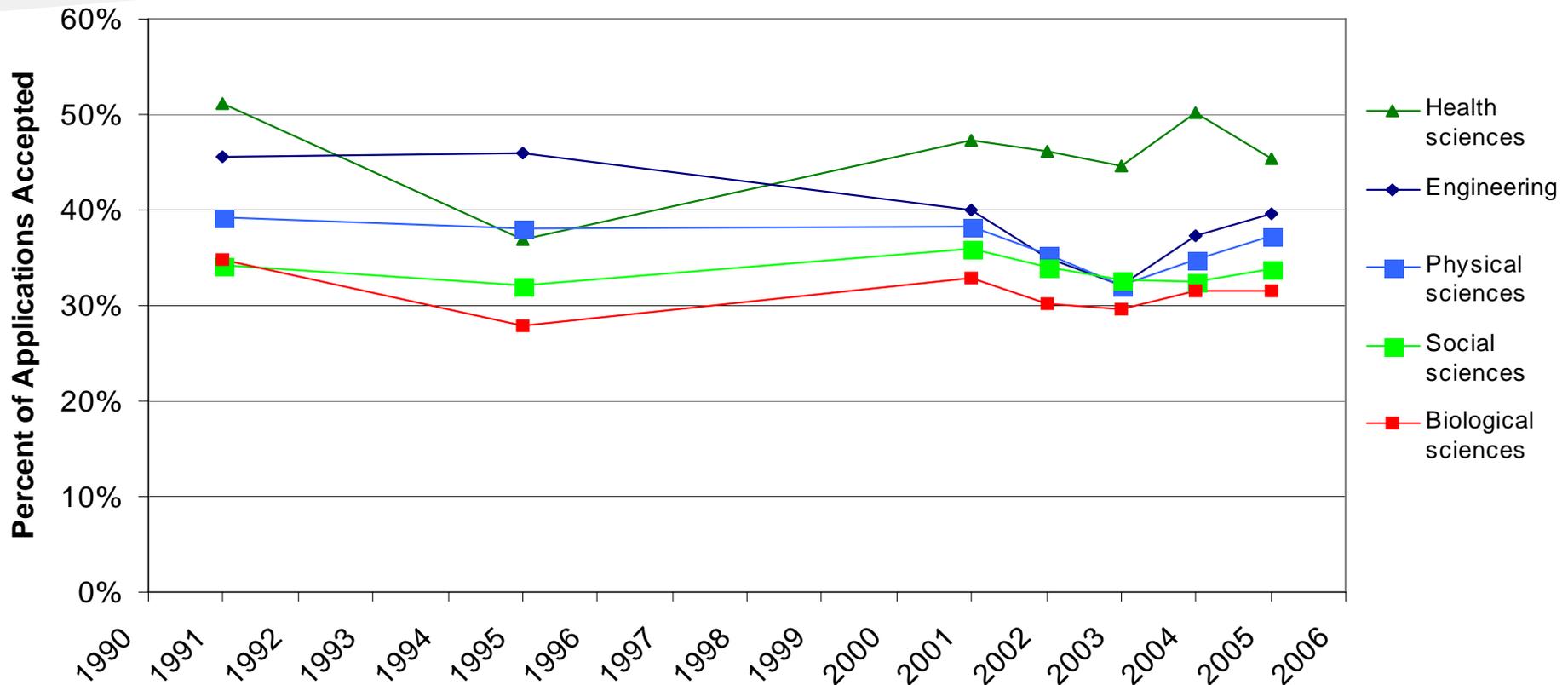
Number of Applications to Graduate Schools, Fall, Selected Years



Source: CPST Analysis of Council of Graduate Schools data in annual report series "Graduate Enrollment and Degrees".

Since 1991 graduate school acceptance rates have followed similar trends across STEM fields, except the Health Sciences.

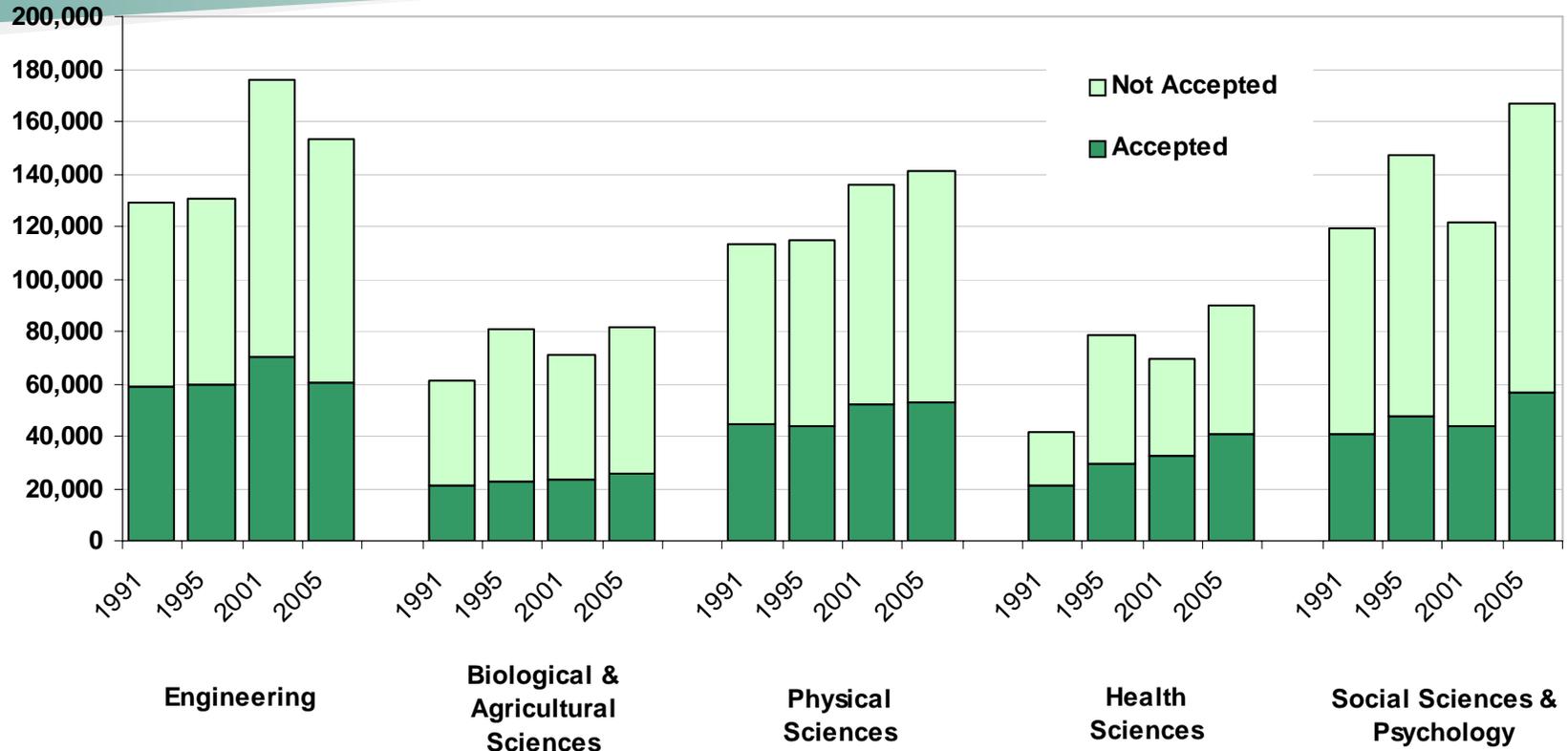
Acceptance Rate of Graduate School Applications, Fall, Selected Years



Source: CPST Analysis of Council of Graduate Schools data in annual report series "Graduate Enrollment and Degrees".

The numbers of accepted applications have remained stable in some fields but have increased in others.

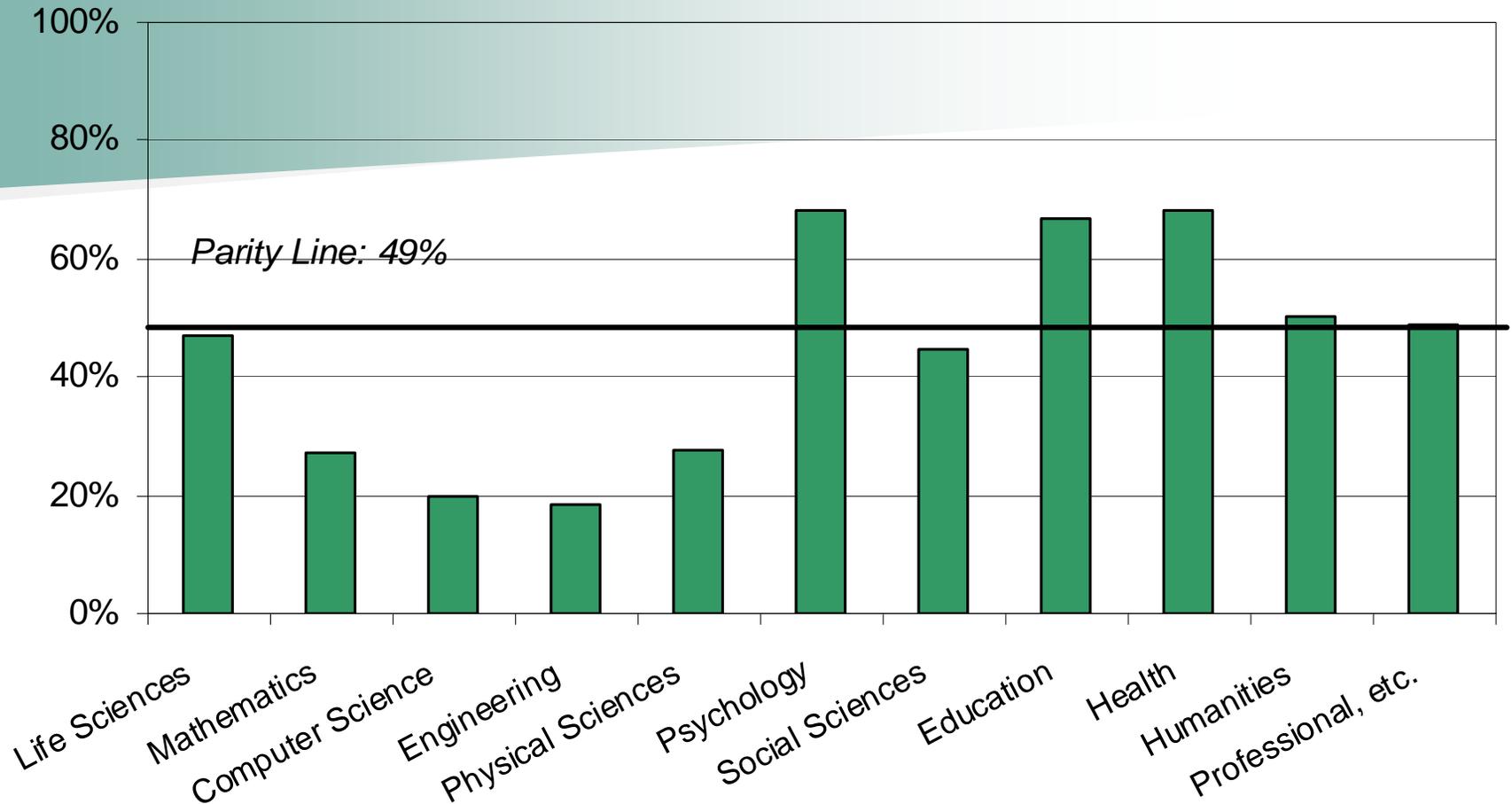
Graduate School Applications, Selected Years (Fall)



Note: Physical sciences includes mathematics and computer sciences.

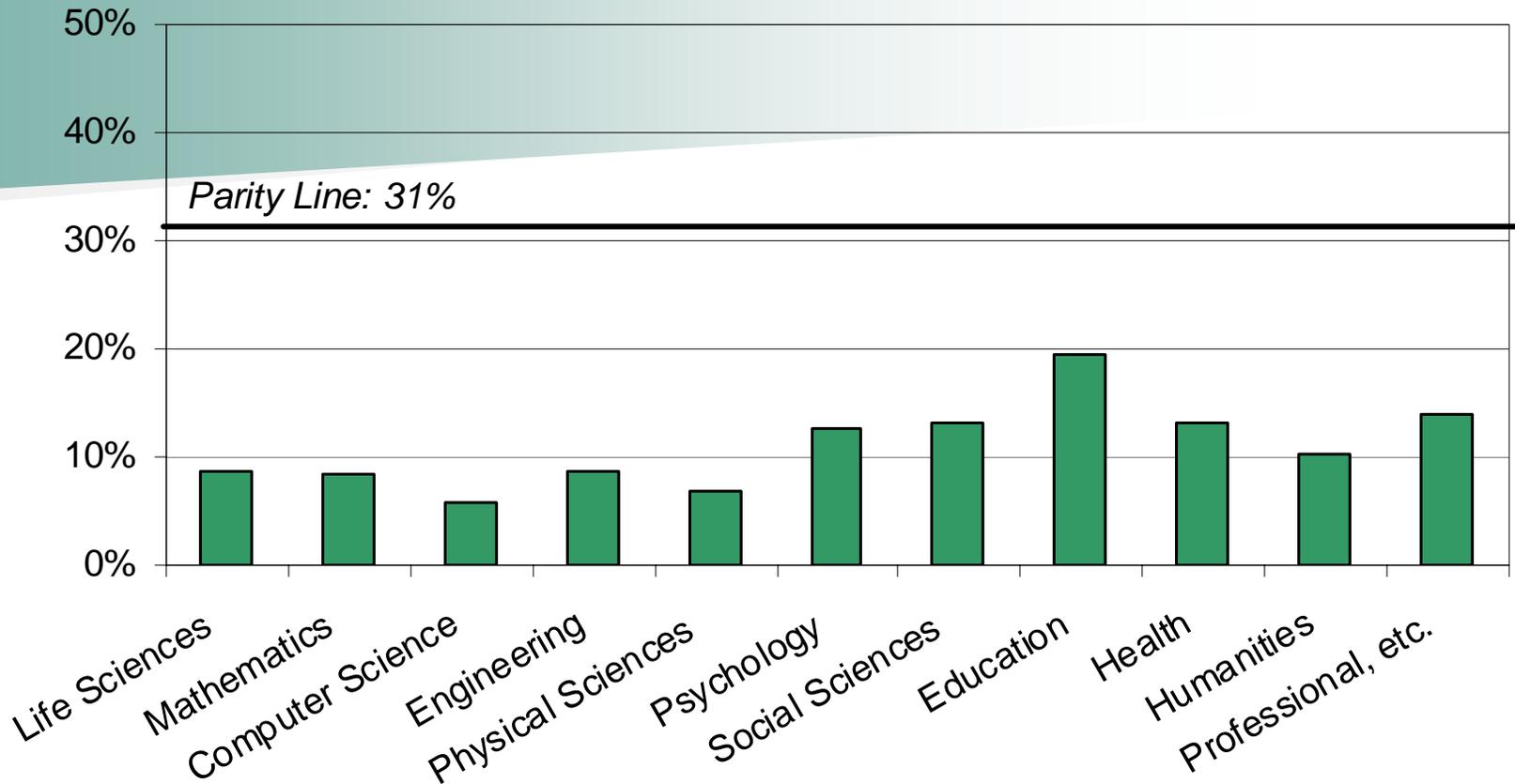
Source: CPST analysis of data from Council of Graduate Schools, report series "Graduate Enrollments and Degrees" (1995, 2001, and 2005).

Percent Female Among Doctorate Recipients, 2005



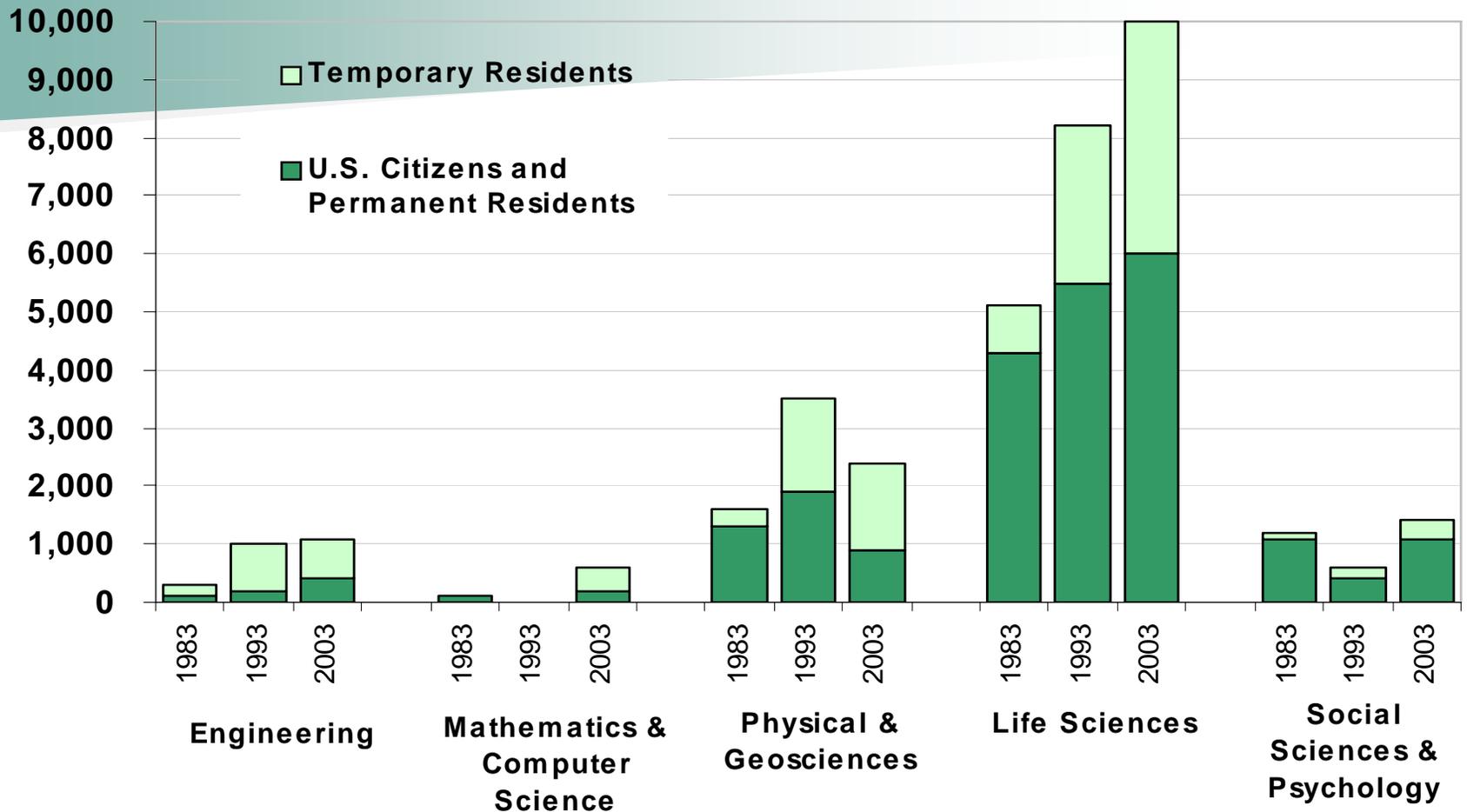
Source: NSF Science and Engineering Doctorate Awards: 2005. "Professional, etc." includes professional, unknown, and other.

Percent URM Among Doctorate Recipients, U.S. Citizens and Permanent Residents, 2005



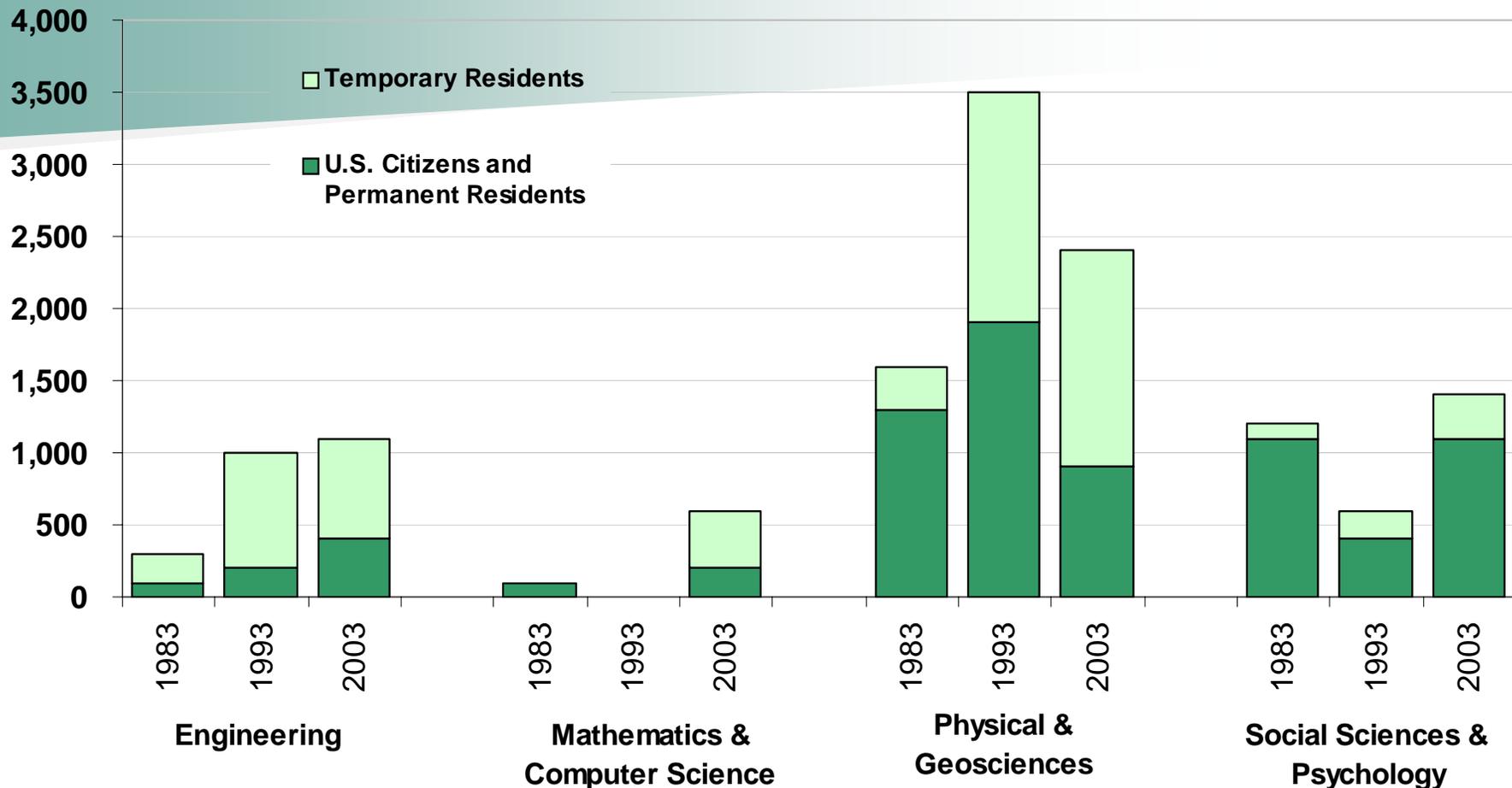
Source: *NSF Science and Engineering Doctorate Awards: 2005*. "Professional, etc." includes professional, unknown, and other. URM includes African American, Hispanic, and American Indian.

Postdocs Employed in 4-Year Colleges and Universities, Selected STEM Fields by Citizenship Status



Source: CPST, data from National Science Board. 2007. *Science and Engineering Indicators, 2006, Table 5-30.*

Postdocs Employed in 4-Year Colleges and Universities, Selected STEM Fields by Citizenship Status



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Who's Missing?

Postdocs who:

- Hold doctorates from non-U.S. universities.
- Are employed outside of academic institutions.

What don't we know about postdocs?

- Career outcomes for non-U.S.-trained postdocs.
- Career outcomes for U.S.-trained postdocs who earned doctoral degrees after 1995.

General Issues

- Definition of STEM / Aggregation of STEM fields
- Source of data: individuals vs. organizational representatives.
- Demographic data availability
 - Gender
 - Race/ethnicity
 - Citizenship
- Timeliness
- Accessibility

National Science Foundation Data

- Survey of Earned Doctorates
 - Annual
 - >90% response rate – all research doctorate recipients from U.S. institutions
 - Intentions, plans, debt, etc.
- NCES IPEDS Completions Survey
 - Completed by all institutions of higher education
 - Annual
 - Degree completions and enrollments by demographic characteristics
- SESTAT (Scientists and Engineers Statistical Data Analysis System) – three constituent surveys:
 - Survey of Doctorate Recipients
 - National Survey of College Graduates
 - National Survey of Recent College Graduates

Thanks!

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