



*Increasing Diversity in
STEM Research and Education*

*EPSCoR 2007 National Meeting
Kona, Hawaii
Panel 5*

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Committee on Equal Opportunities in Science & Engineering

Session Goals

- **Explore the mandate and benefits of broadening participation in STEM**
 - Underrepresented minorities
 - Persons with disabilities
 - Women
 - Institutions serving underrepresented groups
- **Identify challenges, barriers, opportunities, and best practices**
- **Empower EPSCoR leaders to become effective champions and agents for broadening participation in STEM in their jurisdictions**



Facts about STEM

- **Science and engineering are about...**
 - Questions and Ideas
 - Extrapolation and prediction
 - Systematic observation
 - Communication
 - Interpretation, deduction, and understanding
- **Women, minorities, & persons with disabilities in strengthen and enrich the STEM and EPSCoR jurisdictions**
- ! **But they seem to be all but invisible in most EPSCoR RII Projects**



EPSCoR Mandates

- **EPSCoR jurisdictions need more STEM and R&D to be competitive**
 - **EPSCoR & RII**
- **STEM needs more participation by traditionally underrepresented people to be competitive**
 - **An opportunity and mandate for EPSCoR jurisdictions, especially RII projects**



What is CEOSE?

- **The Committee on Equal Opportunities in Science and Engineering**
- **Established by Congress in 1980 to review and provide advice to NSF on**
 - policies, programs, and activities within and outside NSF that
 - promote the **full participation of women, minorities, and persons with disabilities** — persons who are currently underrepresented in America's scientific, technological, engineering, and mathematical (STEM) enterprise.
- **Submit a report to Congress every two years**

National Trends Since 1980

- A significantly larger share of STEM B.S., M.S., and Ph.D. degrees are awarded now to persons from underrepresented groups
 - However, participation is nowhere close to population demographics!
- Very small change in the "face" of the professoriate, especially at the leading institutions
- ❖ The sign is right, but the magnitude is disappointing after ~25 years
- EPSCoR jurisdictions have an opportunity to make a difference, and enhance their competitiveness in STEM

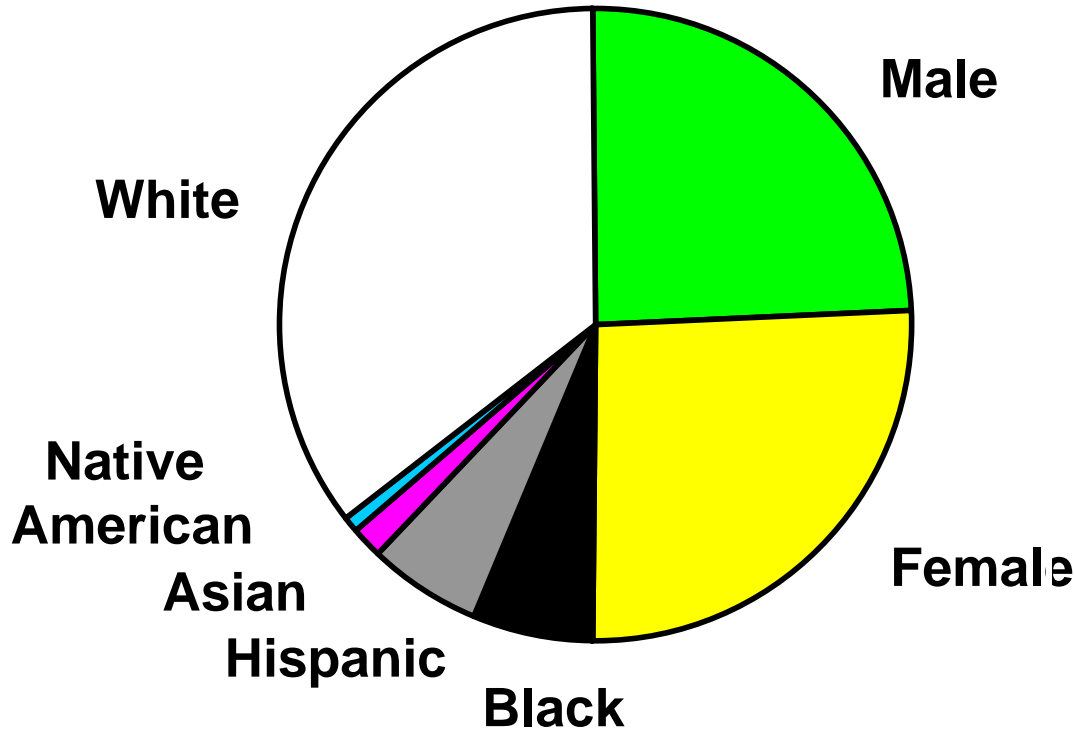


1999 Diversity of US Population and Science/Engineering Workforce

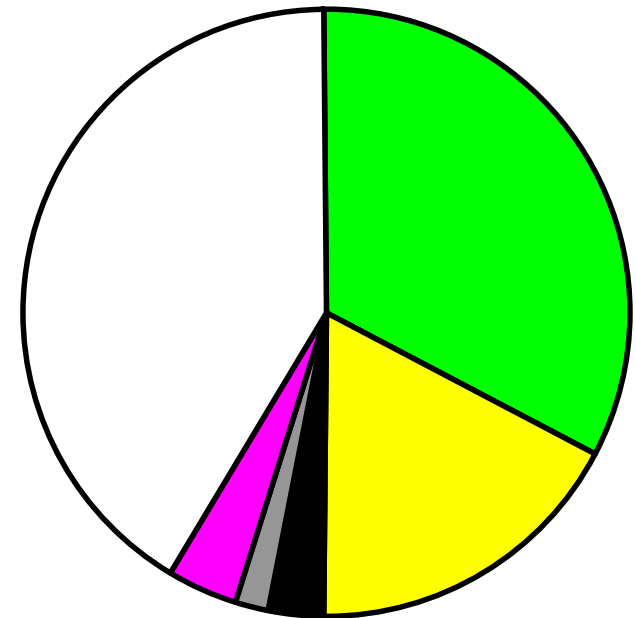
US Population
(273 M)

Ethnicity

Gender



US Sci/Eng Workforce
(11 M)



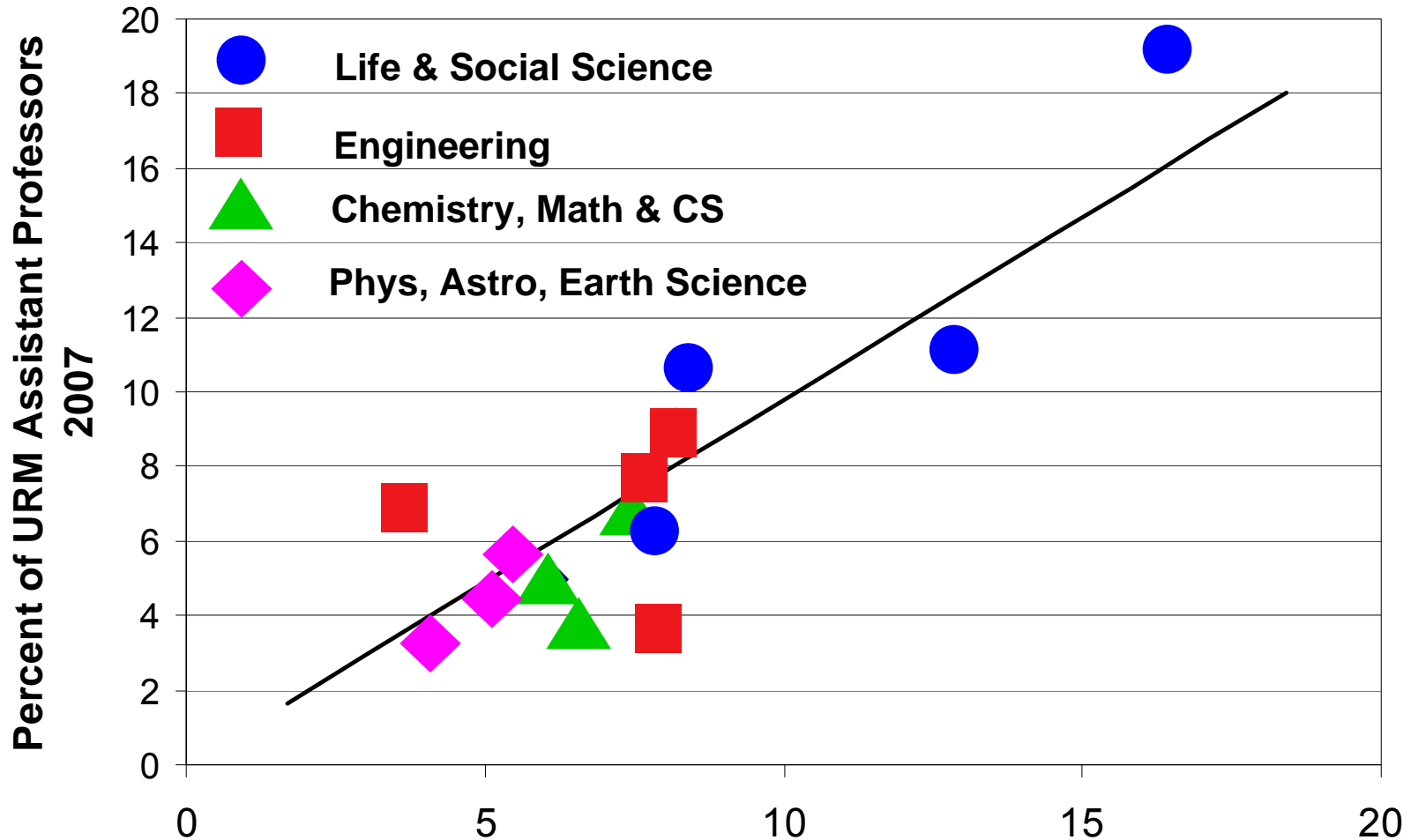
Women, Minorities, and Persons with Disabilities in Science and Engineering: 2002 (NSF 7/03)

Myths and Facts

- **Myth 1: Underrepresented equals underqualified and not competitive: "Our only criterion is excellence..."**
- **Myth 2: There are none available**
- **Myth 3: The only useful focus for broadening participation is K-12**
- **Fact 1: Diverse groups are the most innovative and successful in STEM and the business world**
- **Fact 2: Most universities are graduating many more underrepresented STEM PhDs than they hire as tenure-track assistant professors**
- **Fact 3: Diverse leadership will drive jurisdictional competitiveness faster than diverse school children**



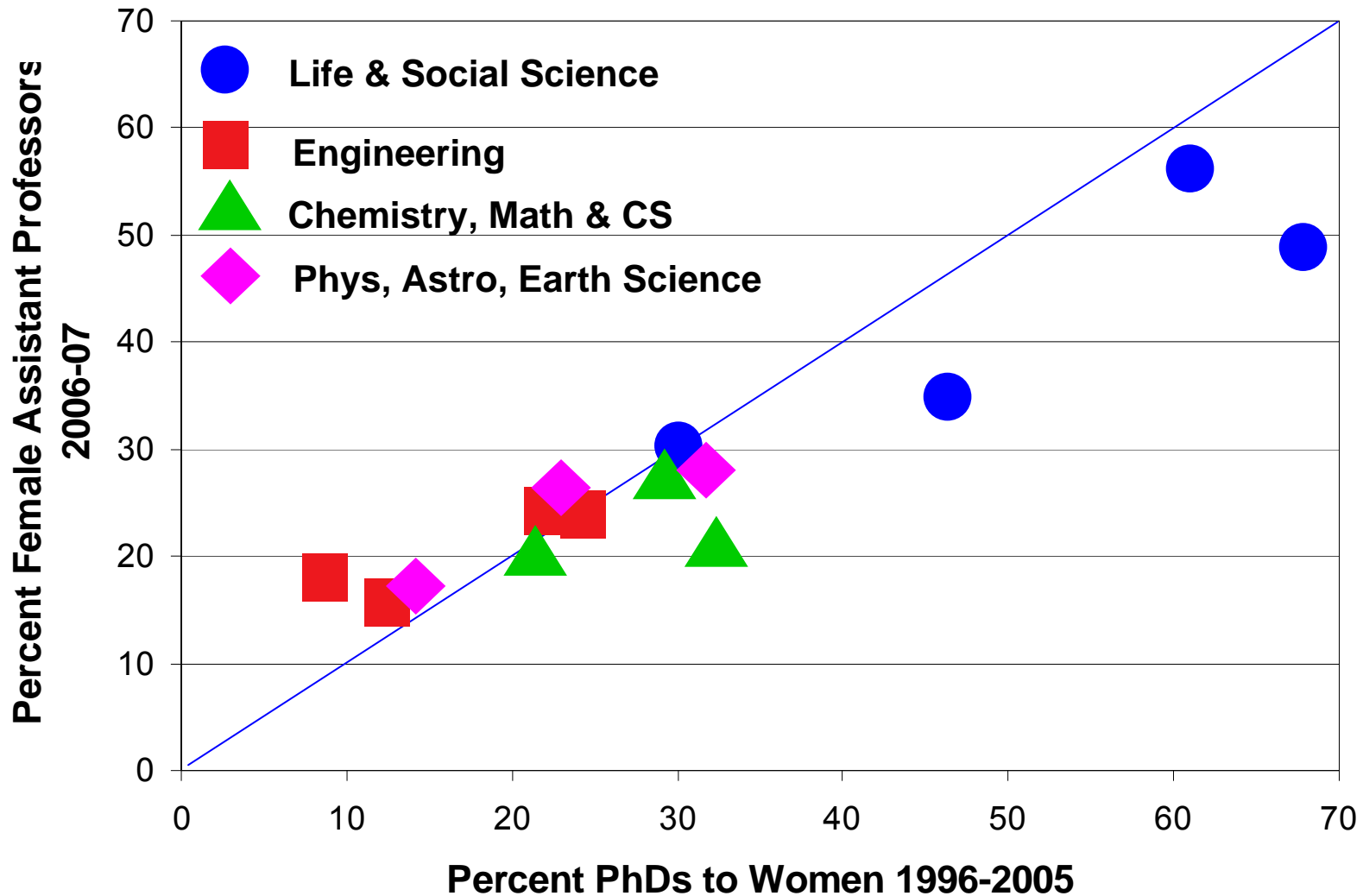
Underrepresented Minorities in Tenure-Track Positions: Top 50



Percent of PhDs Earned by Underrepresented Minorities 1996-2005

Donna Nelson, 2007

Women in Tenure-Track Positions: Top 50



Donna Nelson, 2007

EPSCoR Jurisdictions

- **Only 18% of the US population**
- **BUT**
 - **51 of the nation's 103 HBCUs**
 - **48 of the nation's 139 HSIs**
 - **22 of the nation's 32 Tribal Colleges**
- **Large opportunity for involving and partnering with minority serving institutions of higher education**