
Efforts to Diversify the STEM Workforce

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Presentation Roadmap

- **Context**
- **NSF projects**
- **Methods**
- **Evidence**
- **Concluding remarks**

Context

- **Goals**
 - To build a STEM workforce
 - To build a more “diverse” STEM workforce
- **National needs (competitiveness, national security)**
- **Changing demographics (January 2003)**
- **Stubborn disparities in STEM representation**
- **NSF goals**
 - To foster science
 - To build a diverse scientific STEM workforce (major funding source in computer science)

NSF STEM Projects

- **Student training (target individuals) v. institutional capacity-building (target institutions)**
- **Undergraduate v. graduate**
- **Target**
 - **Fields (e.g., computer science or STEM)**
 - **Institutions (e.g., HBCUs, TCUs)**
 - **Etc.**

Examples

- **LSAMP—Louis Stokes Alliances for Minority Participation**

Targets minority students; all STEM fields; focuses on undergraduates

- **HBCU-UP—Historically Black Colleges and Universities Undergraduate Program**

Targets institutions (HBCUs); all STEM; focuses on institutional capacity building

- **BD—Bridge to the Doctorate**

Targets minority students; all STEM fields; focuses on graduate students

Methods

Quasi-experimental designs

- **LSAMP** **NSRCG (longitudinal file)**
- **HBCU-UP** **SESTAT**
- **BD** **Matched comparison**

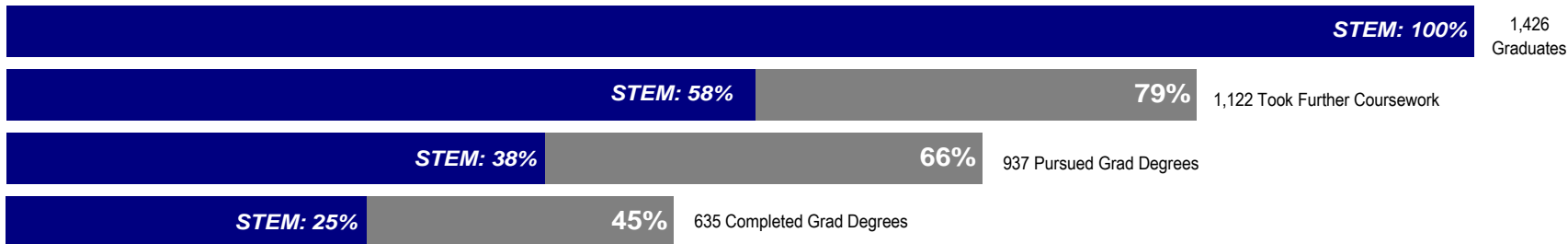
Evidence: LSAMP

- **Student-focused project**
- **Targets minorities**
- **Measured ultimate STUDENT outcomes**

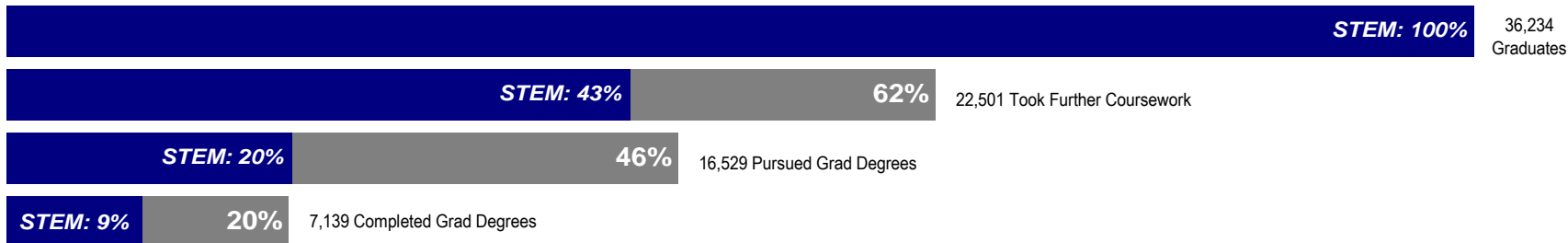
Evidence: LSAMP (cont'd.)

Graduate School Enrollment and Completion

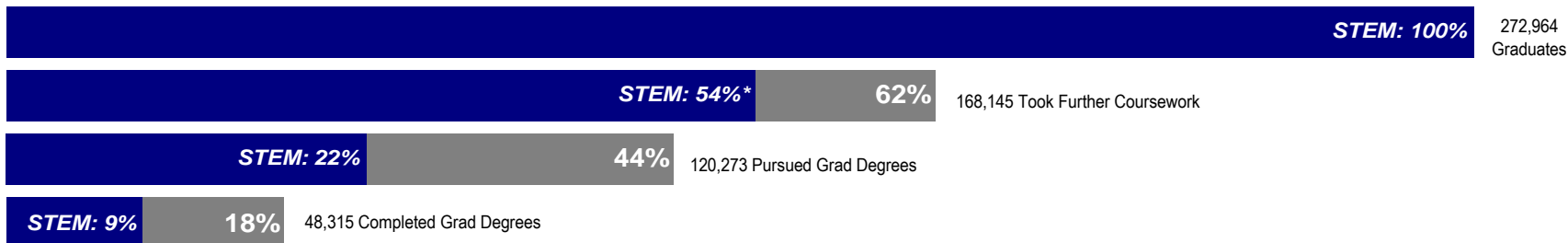
LSAMP Participants



National Underrepresented Minority



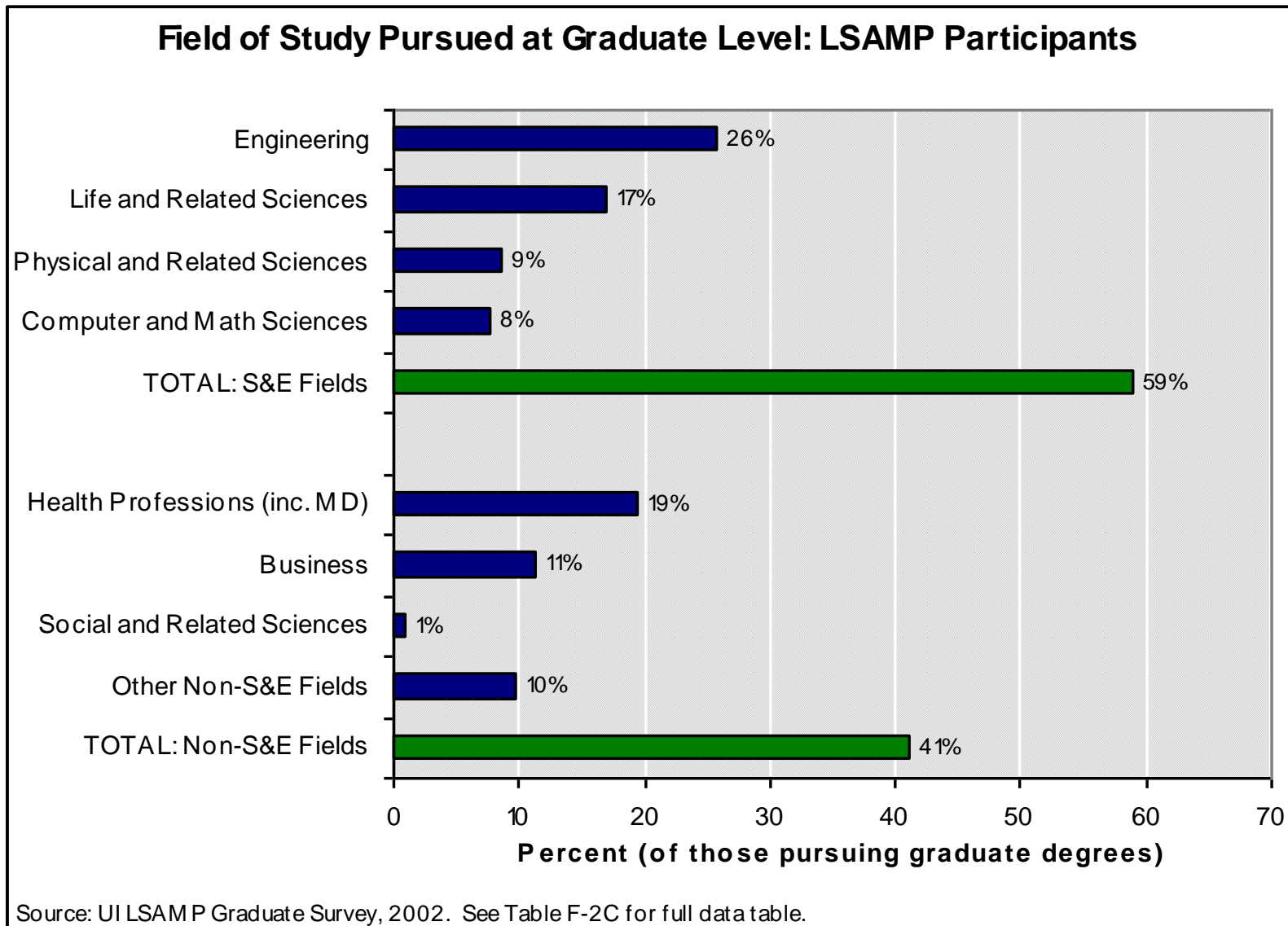
National White and Asian



Sources: LSAMP Graduate Survey (UI) and NSRCG longitudinal file (NSF).

*National comparison group statistic is not significantly different from LSAMP.

Evidence: LSAMP (cont'd.)

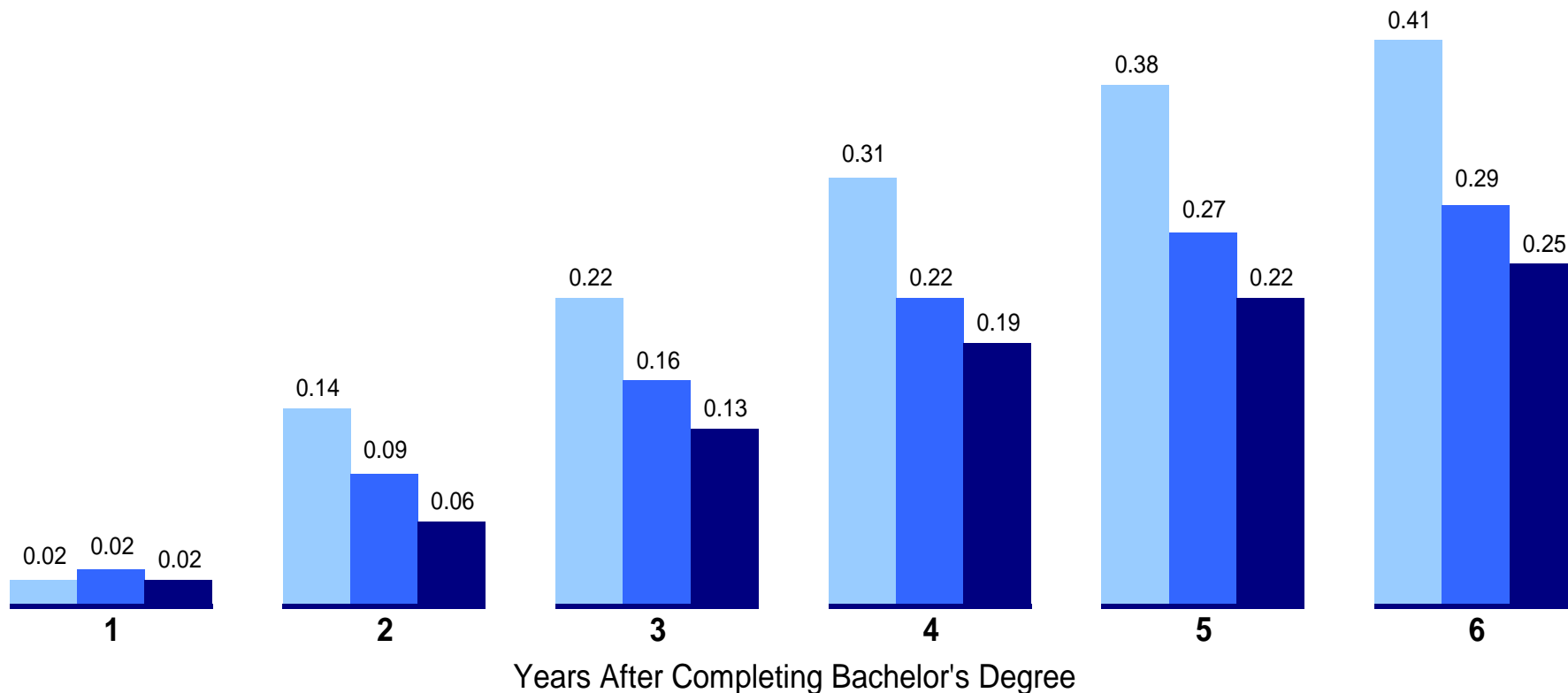


Evidence: HBCU-UP

- **Capacity-building project**
- **Targets HBCUs**
- **Measured ultimate STUDENT outcomes**

Evidence: HBCU-UP (cont'd.)

Cumulative Probability of Completing a Graduate Degree



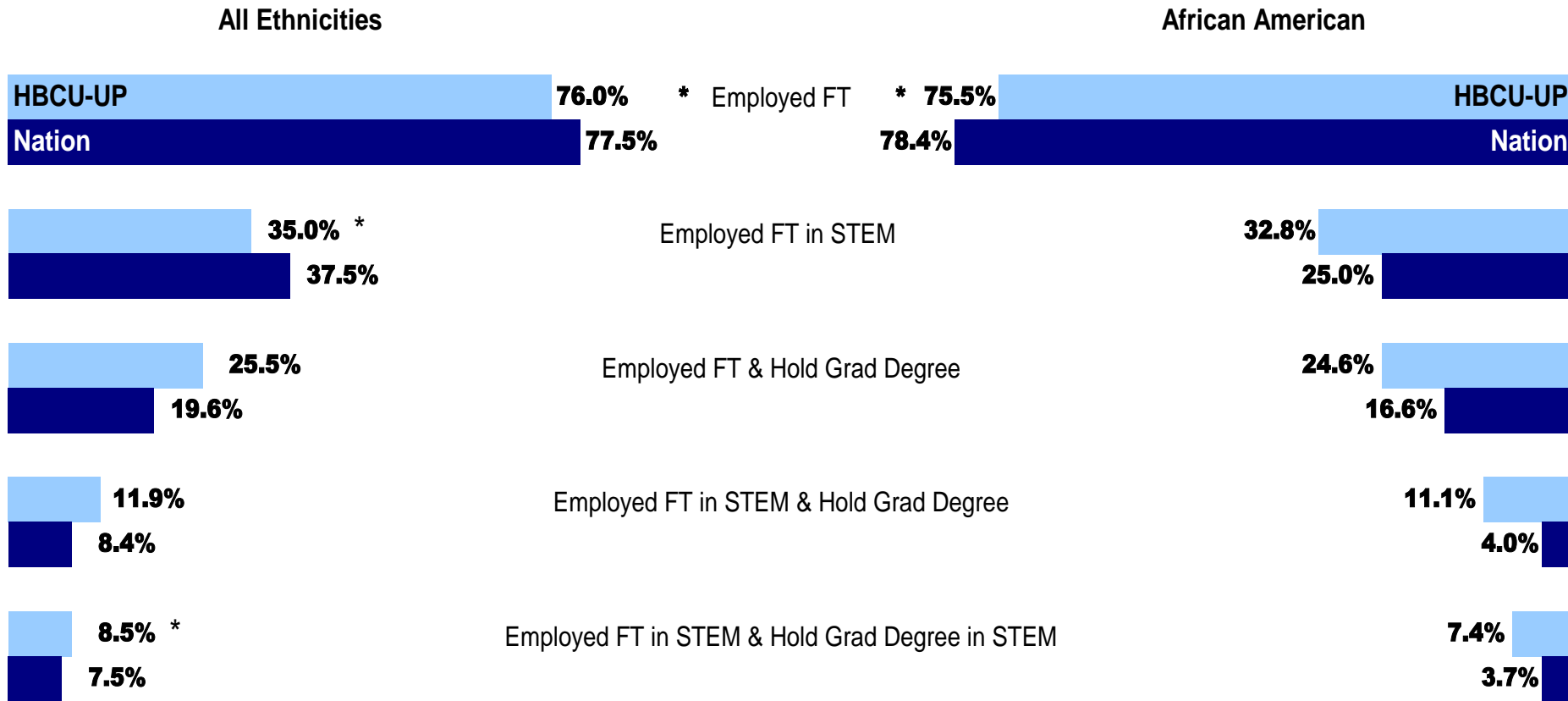
HBCU-UP

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Evidence: HBCU-UP (cont'd.)

Graduate Employment: HBCU-UP v. Nation



* Not significantly different from national estimate. Figure 4-8 in Final Report.

Source: Urban Institute HBCU-UP Graduate Survey and NSF SESTAT 2006.

BD: in Progress

- **Graduate-level funding (M.S. and Ph.D.)**
- **Students from LSAMP programs**
- **All STEM fields**

Concluding Remarks

Goal: Build and diversify the STEM workforce

- **Education efforts are the first step to addressing disparities**
- **Workforce insertion and retention is the next step**

Thank You

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Publicly Available Sources

■ LSAMP

- Brief: <http://www.urban.org/publications/412231.html>
- Report: <http://www.urban.org/publications/311299.html>

■ HBCU-UP

- Brief: <http://www.urban.org/publications/412311.html>
- Report: <http://www.urban.org/publications/412312.html>

■ BD

- http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13646
- http://www.uab.edu/alsamp/BD_file_for_web.pdf