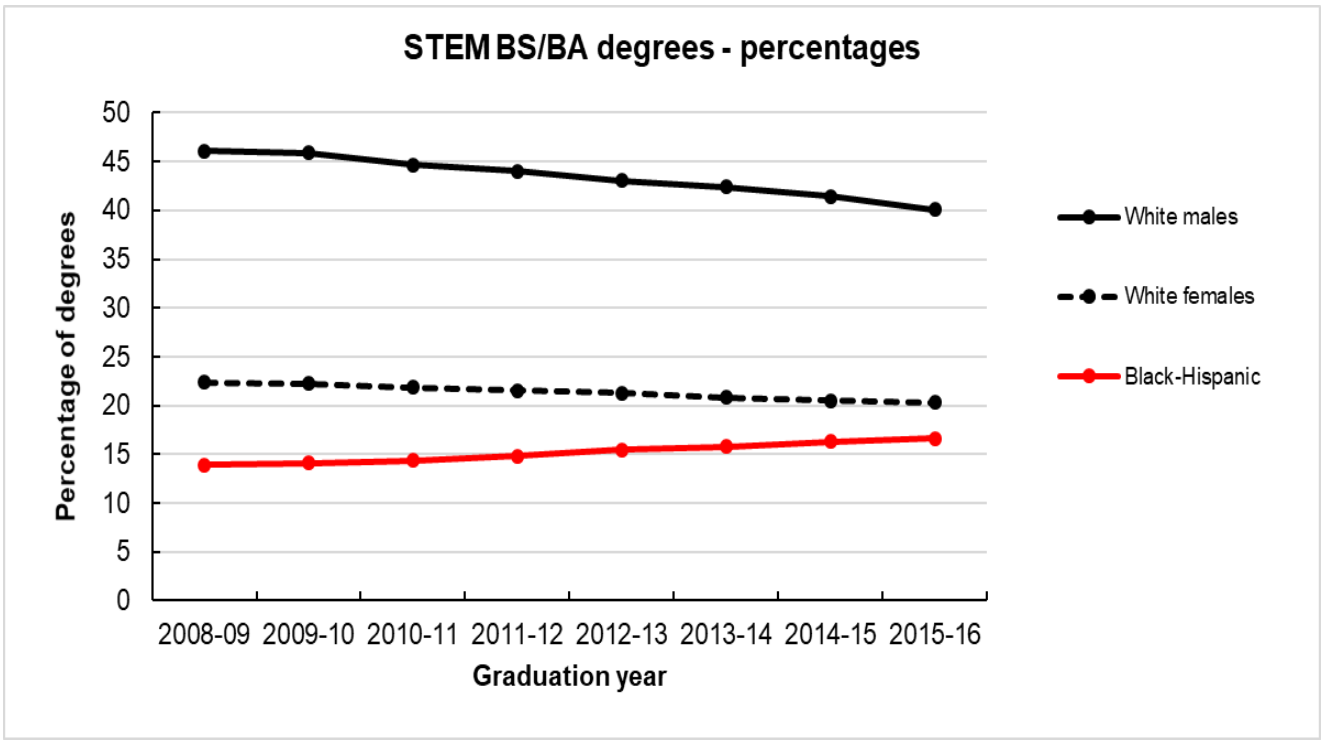
Insight XII Workshop

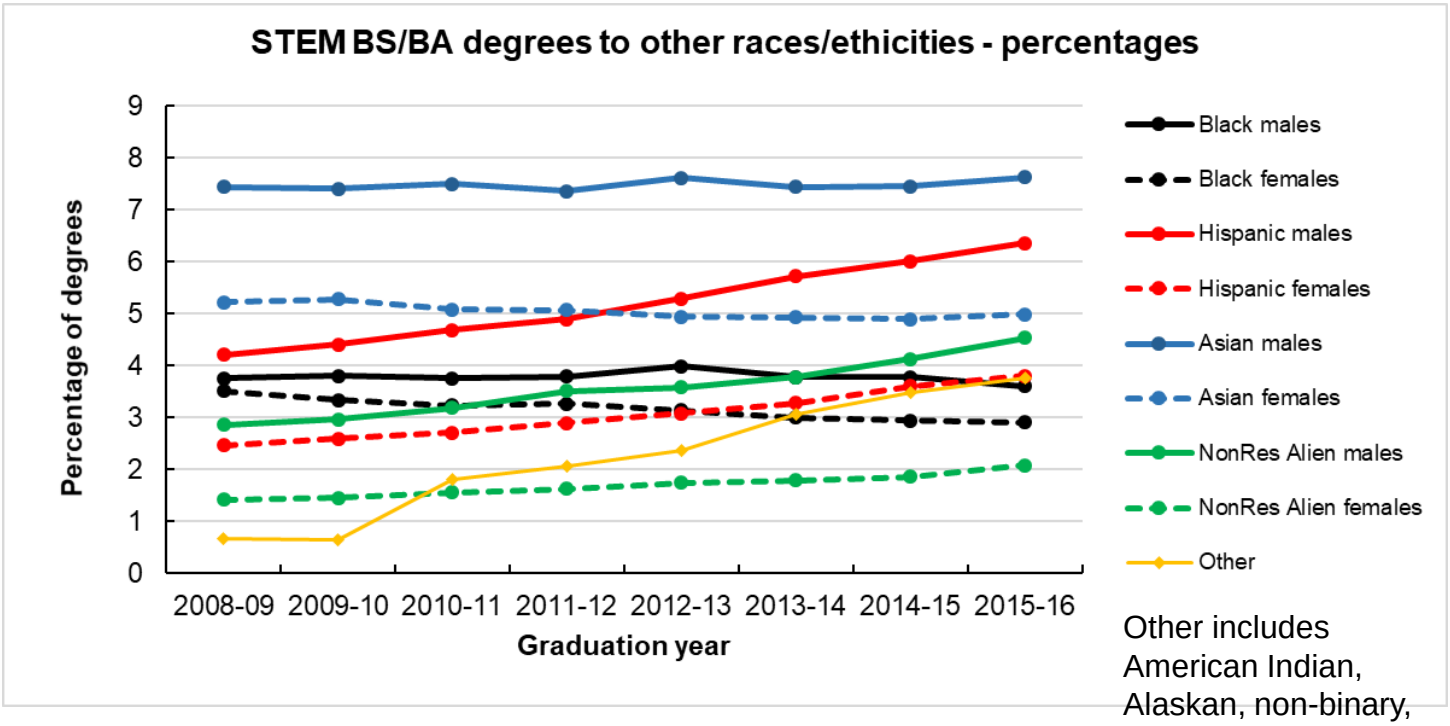
McCormick School of Engineering and Applied Science
December 17, 2019

Selected data on STEM and engineering students and faculty

Compiled by
Robert Linsenmeier and Jennifer Cole
Northwestern Center for Engineering Education Research

NATIONAL STEM DATA

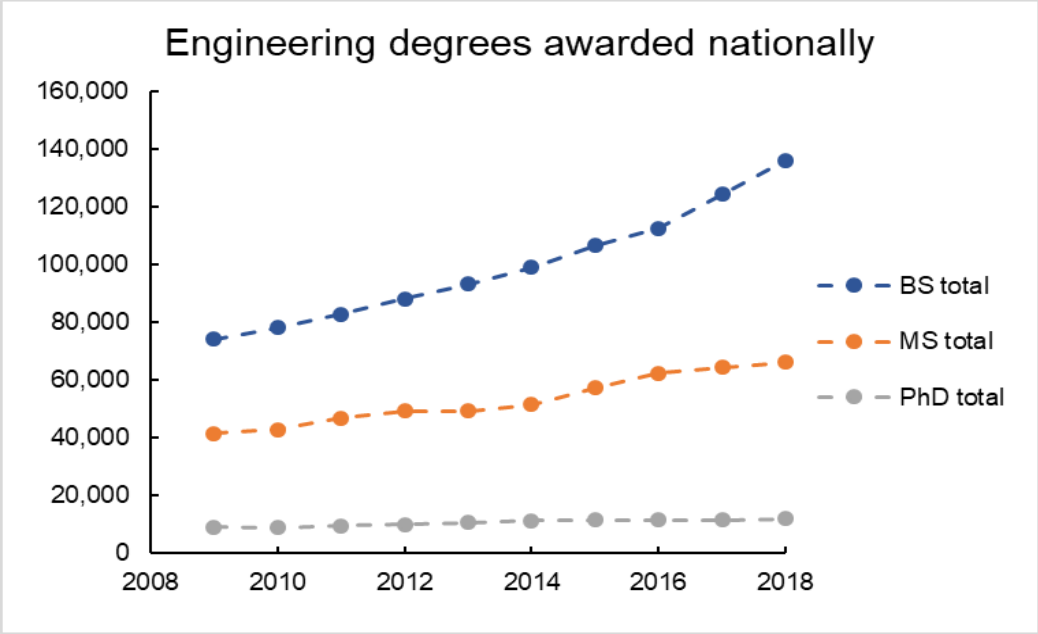


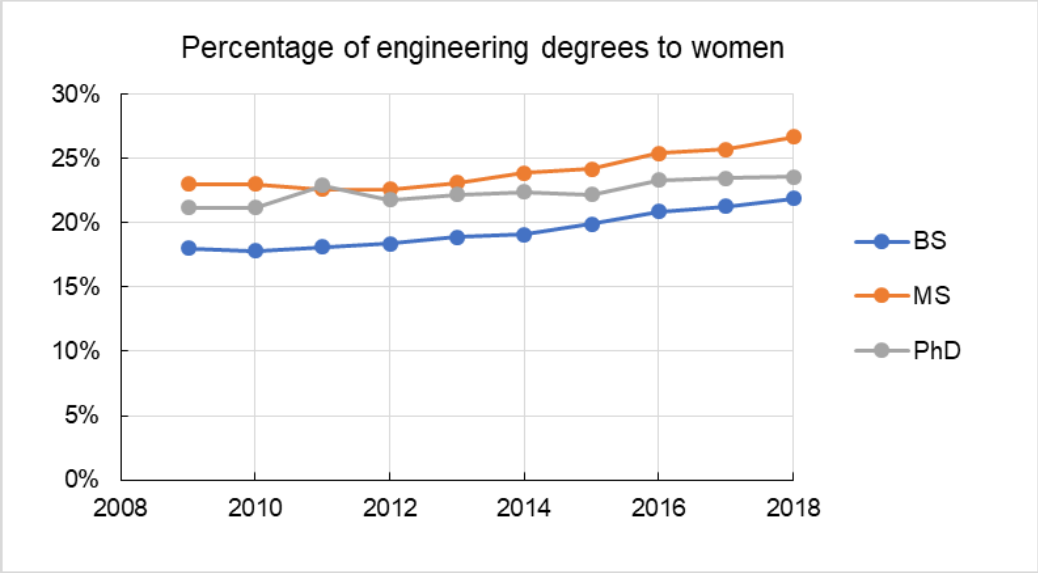


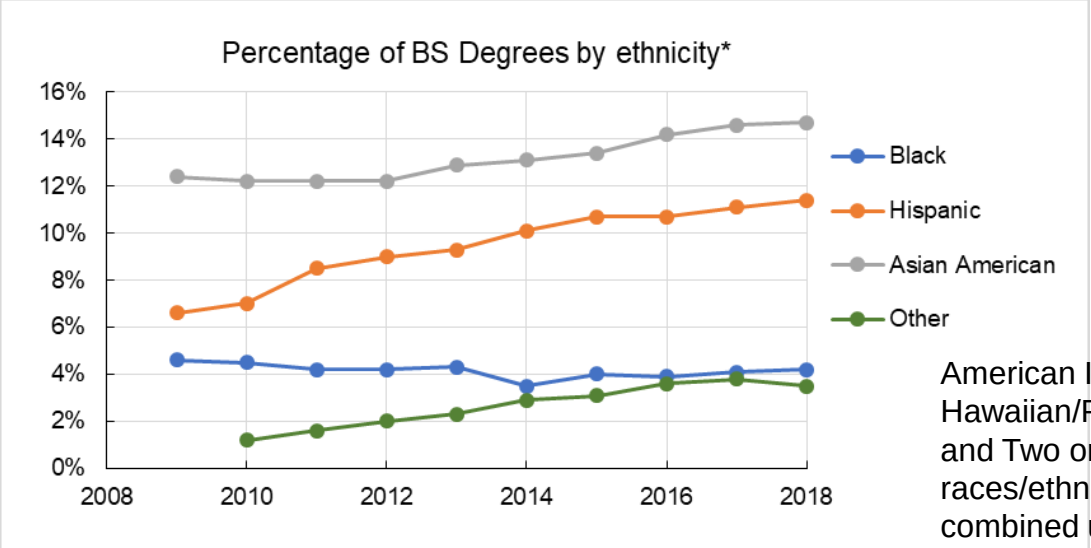
Other includes American Indian, Alaskan, non-binary, and two or more races/ethnicities

National Center for Education Statistics (NCES) Table 318.45

NATIONAL ENGINEERING DATA - Students



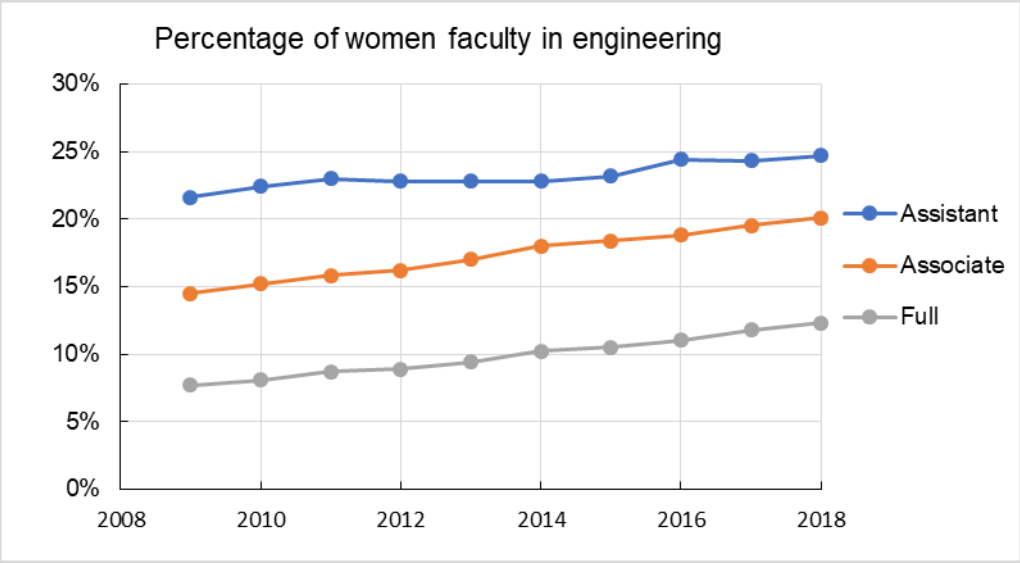


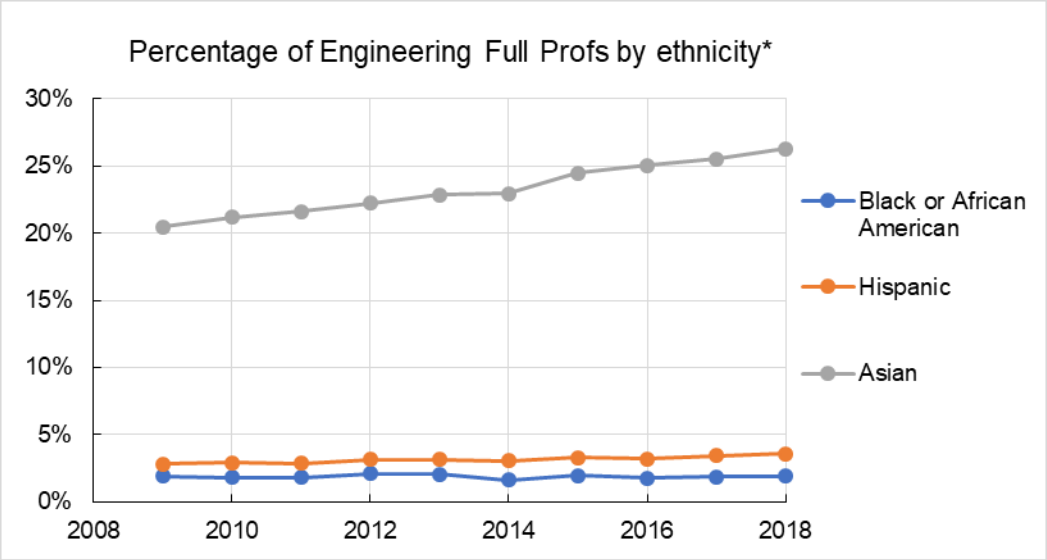


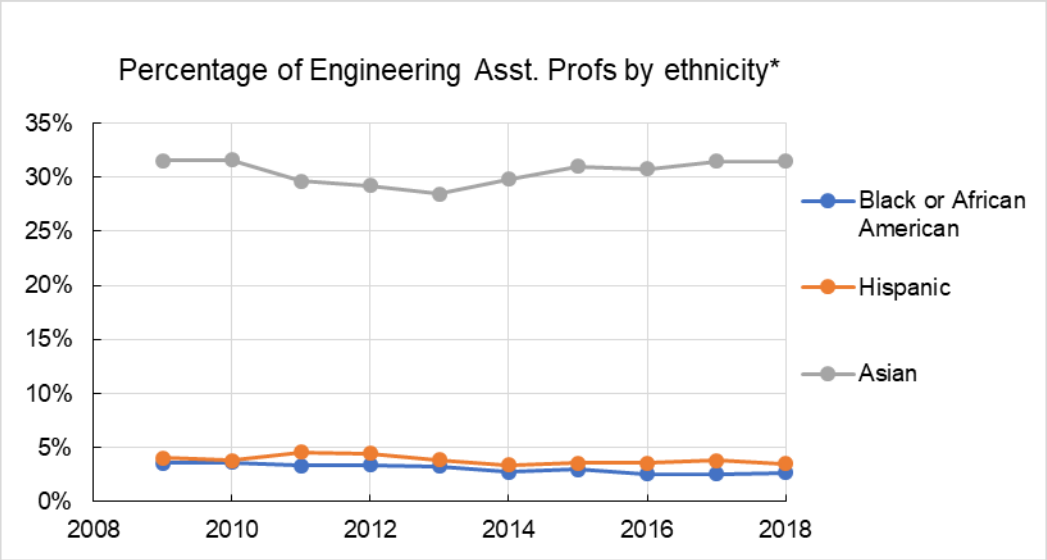
American Indians, Hawaiian/Pacific Islanders, and Two or more races/ethnicities are combined under other.

Whites decline from 65.4 to 61.5% from 2009 to 2018

ENGINEERING DATA - Faculty

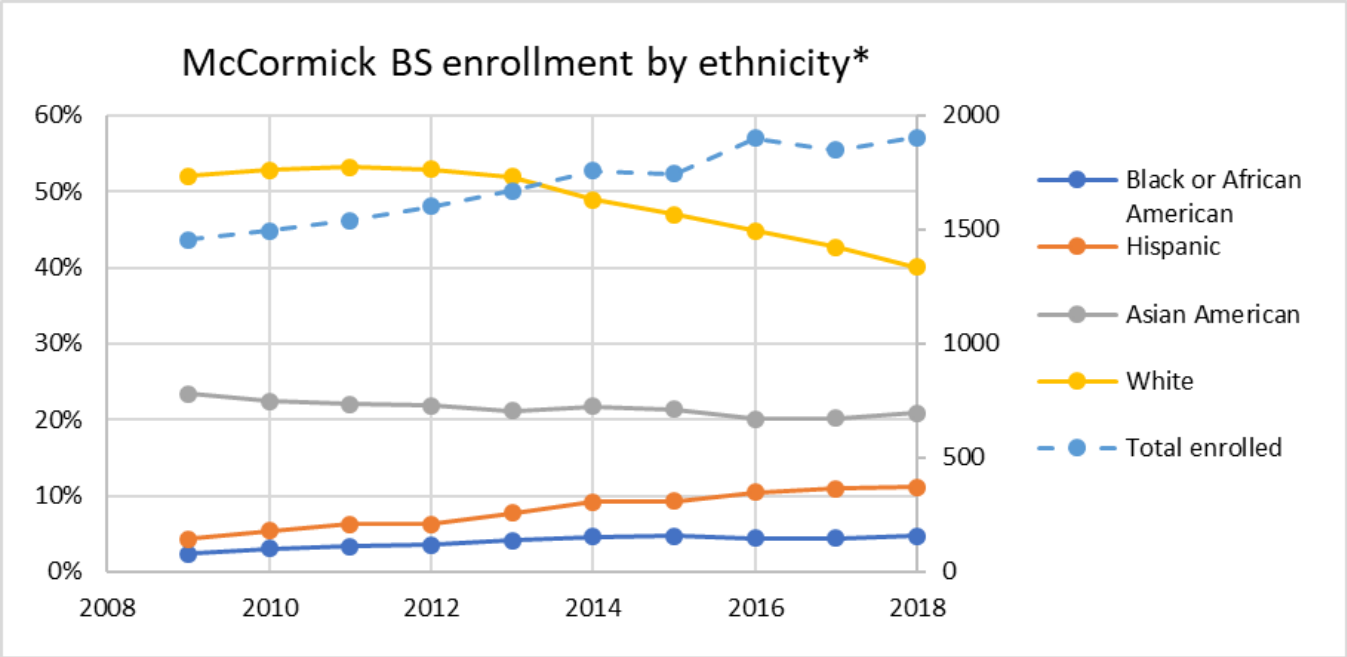


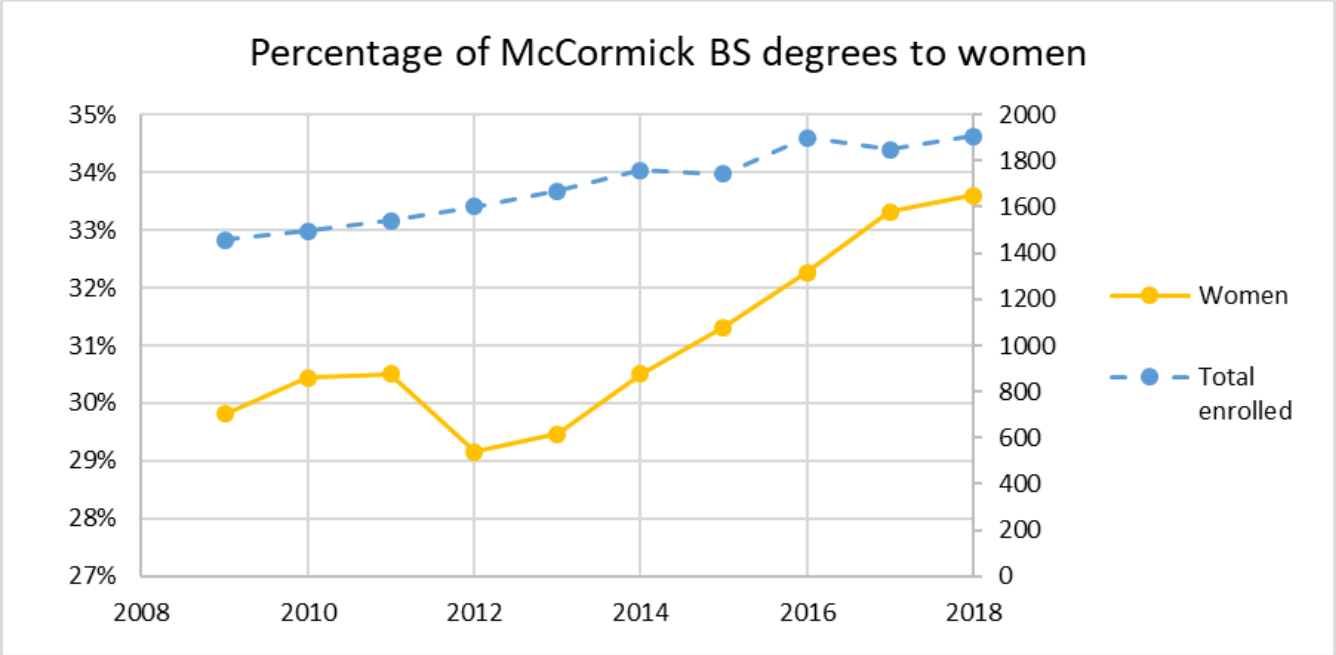




National Center for Education Statistics (NCES) Table 318.45

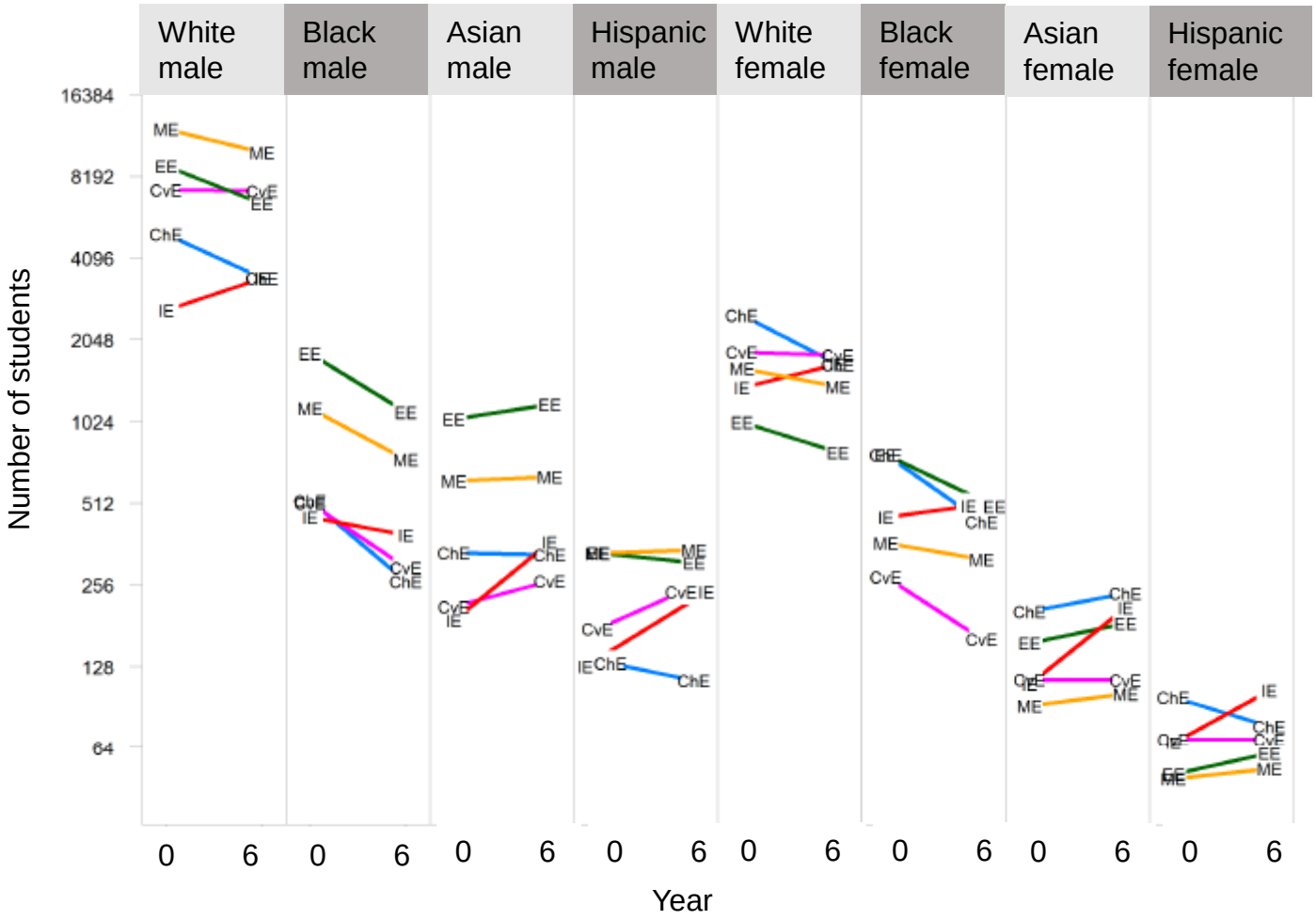
McCORMICK DATA





Data from the Northwestern University profiles posted at ASEE.
profiles.asee.org.
Data on that site are organized by class, but it was supplied with the class according to CAESAR, so the classes there do not correspond well to a student's year in school. Students advance in CAESAR based on units completed rather than year in school.

ENGINEERING RETENTION DATA



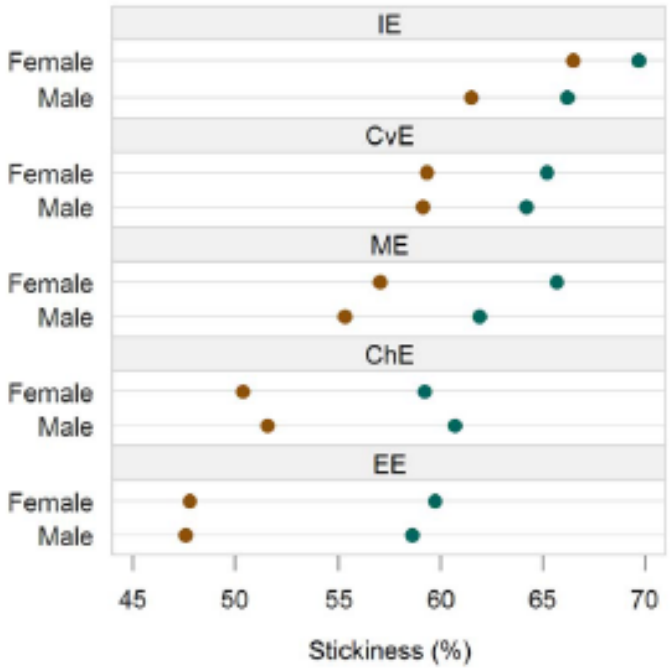
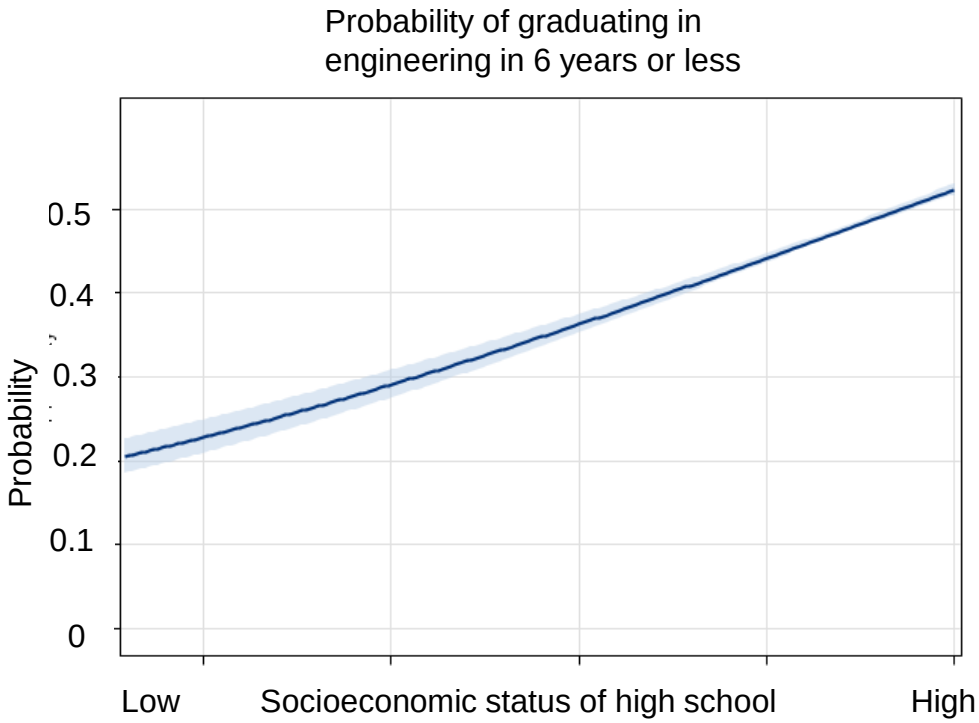


Fig. 3. Stickiness in a major and in engineering by gender. Stickiness in engineering must be greater (to the right) of stickiness in major.

Students at 11 public universities between 1988 and 2009, mostly in the southeast US. MIDFIELD database. **Top**: Number of students who started in a major at year 0 (or on declaration) and who had graduated by year 6. **Bottom:** Percentages who finished a major of they had ever declared that major (red), and percentage who finished any engineering degree who started in that major (green). Lord, S.M. et al. A Disciplinary Comparison of Trajectories of USA Engineering Students. Frontiers of Education Conference Proceedings, 2014

Multiple-Institution Database for Investigating Engineering Longitudinal Development

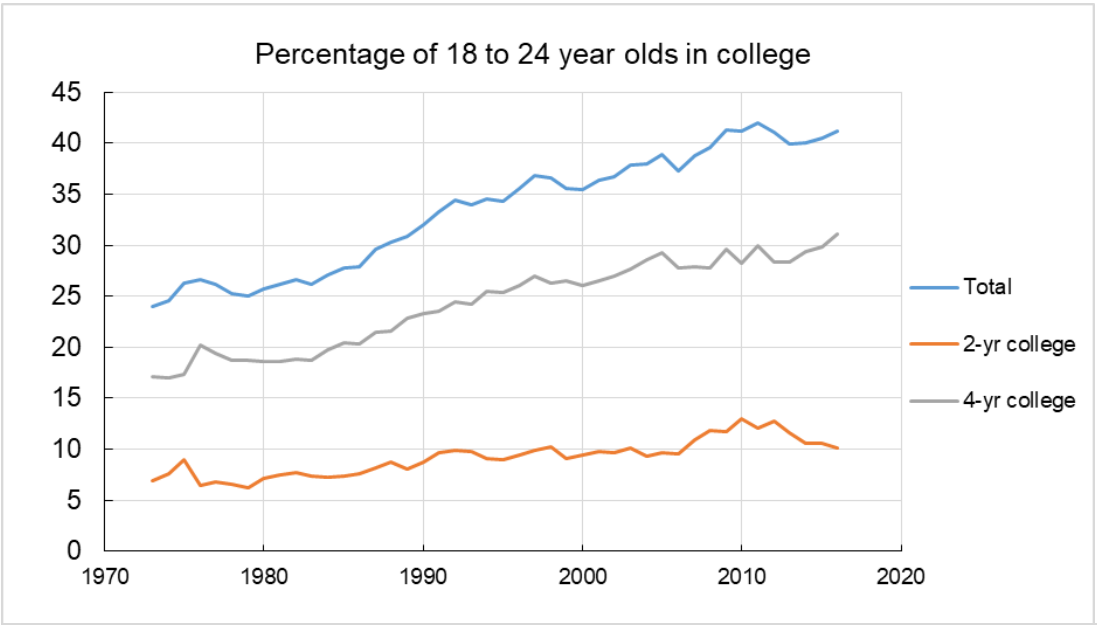


Probability of graduating in engineering in 6 years or less. Data from public universities (MIDFIELD cohort). At lowest SES, all students qualified for free lunch; at highest SES, no students did. This measure of SES is of the students' schools' likely resources and peer cohort, not their own SES

No correlation between this measure of SES and persistence to third semester of engineering, so lower SES students do not drop out during the first year, but low SES students had lower grades.

Orr, M.K. et al, 2011 Socioeconomic trends in engineering: enrollment, Persistence, and academic achievement. ASEE Conference paper 2011

NATIONAL COLLEGE DATA



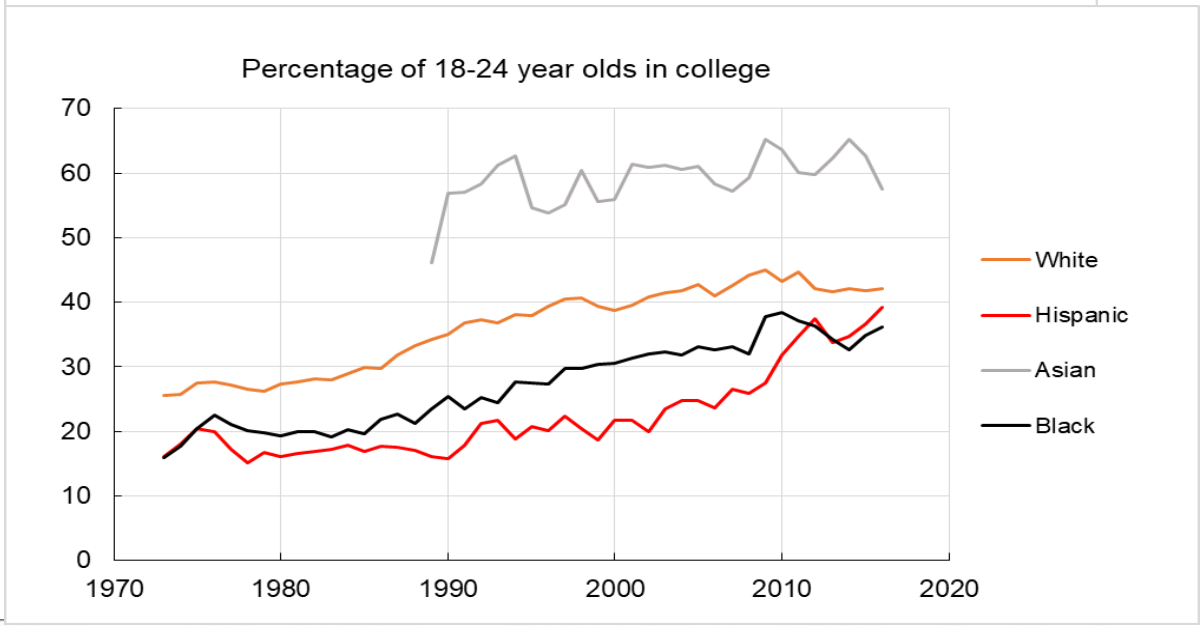
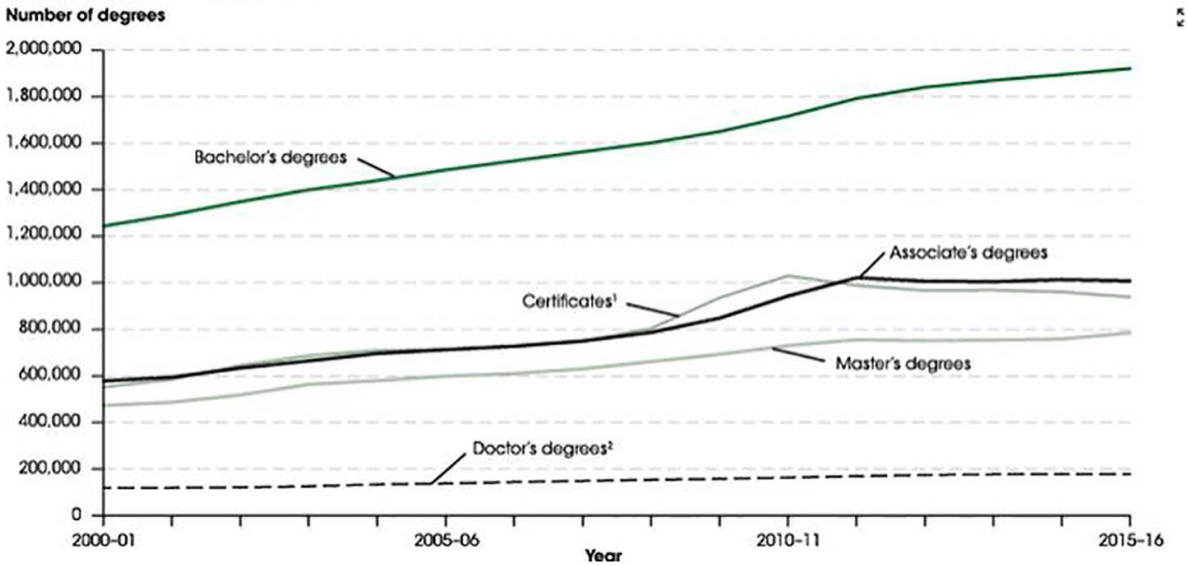


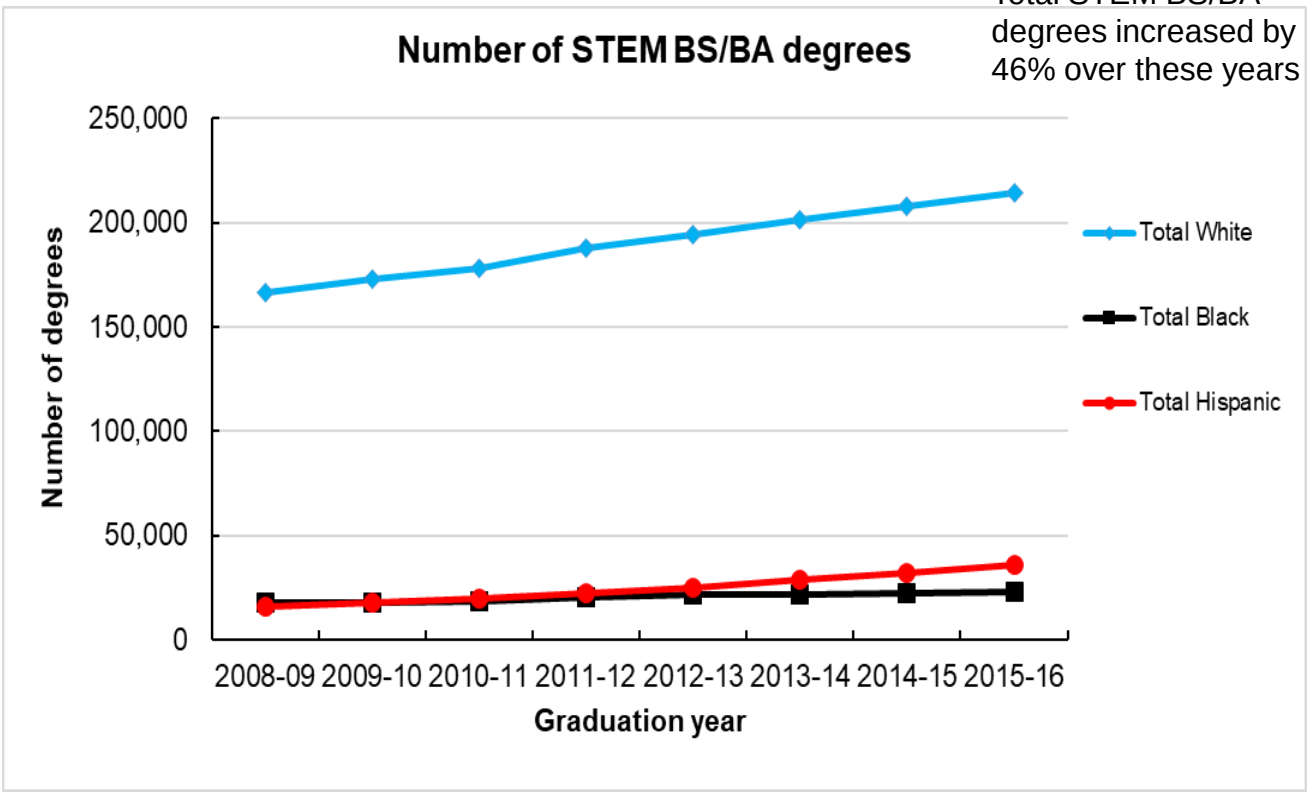
Figure 24.1. Number of degrees conferred by postsecondary institutions, by level of degree: Academic years 2000–01 through 2015–16



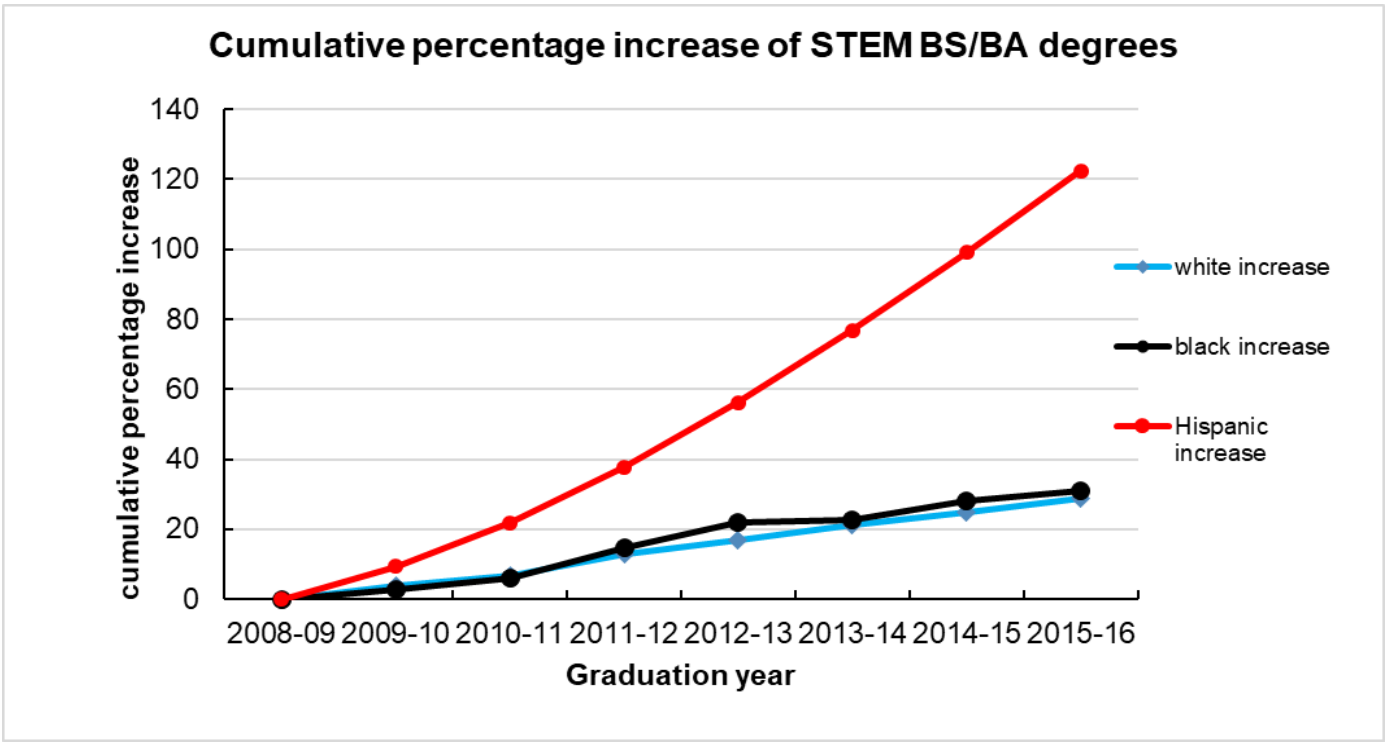
National Center for Education Statistics (NCES)

NATIONAL STEM DATA

Total STEM BS/BA degrees increased by 46% over these years



These are natural sciences, math, and engineering and computer science. Engineering and computer science are about half the totals



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