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DLI Accelerated Data Science Teaching Kit

Lecture 1.10 - Diversity Gaps in Science and Engineering



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Statistical Challenges Faced by Underrepresented Groups

Small Percentage of Students Graduating in CS and Engineering

Small Representation in Science and Engineering Careers

Almost no Black or Latino Representation Among Venture Capitalists

Lack of Enrollment and Funding for Historically Black Colleges and Universities (HBCUs)

Low CS Graduation Rates Among Blacks and Latinos

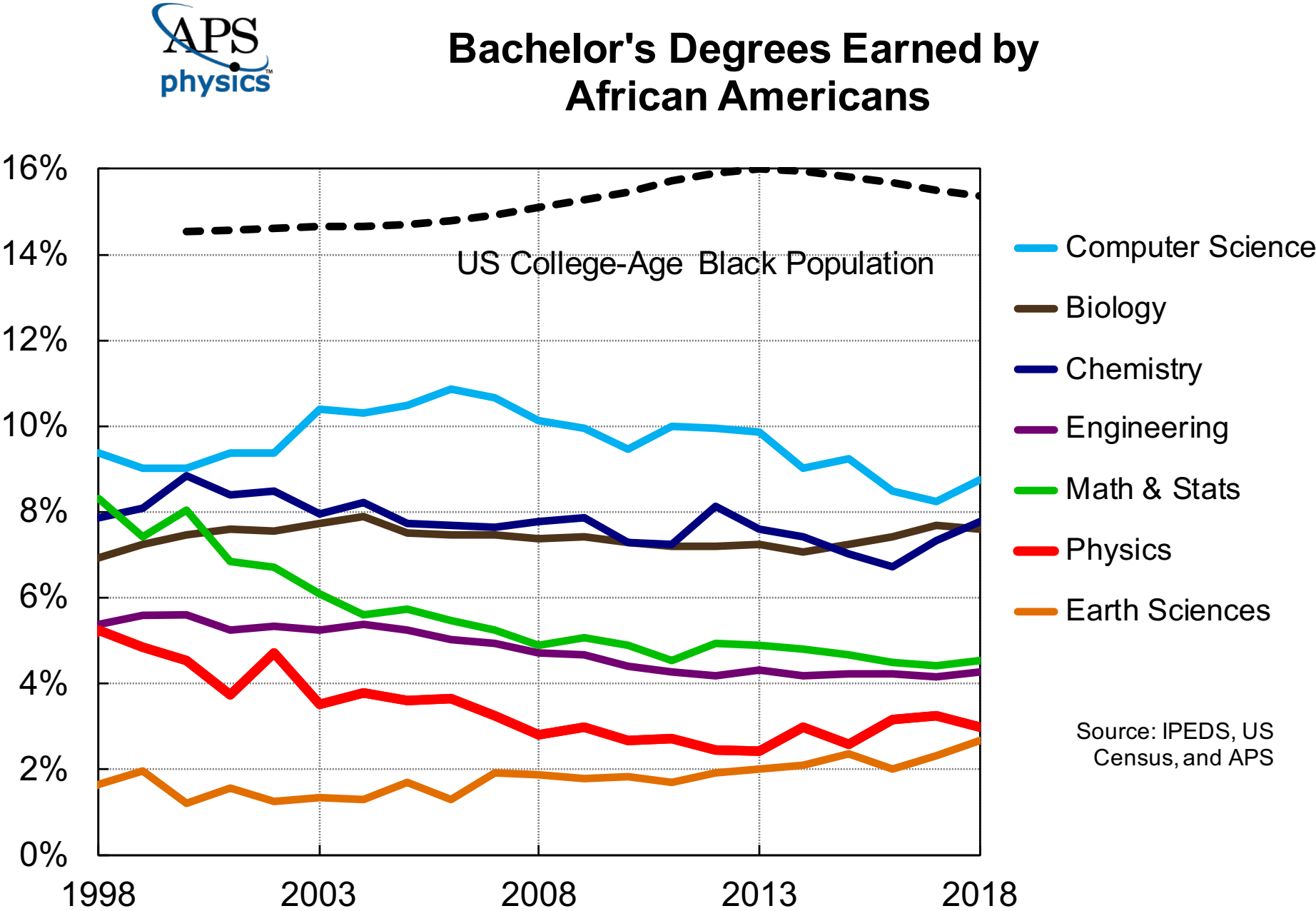
In 2016, 8.6% of graduates with a bachelor's degree in computer and information science were Black and a little over 10% were Latino, according to the National Center for Education Statistics.

Minority Graduation Rates Declining in CS and Engineering

Percentage of US bachelor's degrees awarded to Black and African American students in Science, Technology, Engineering, and Mathematics (STEM) fields

Data on the college age population are collected from the US Census

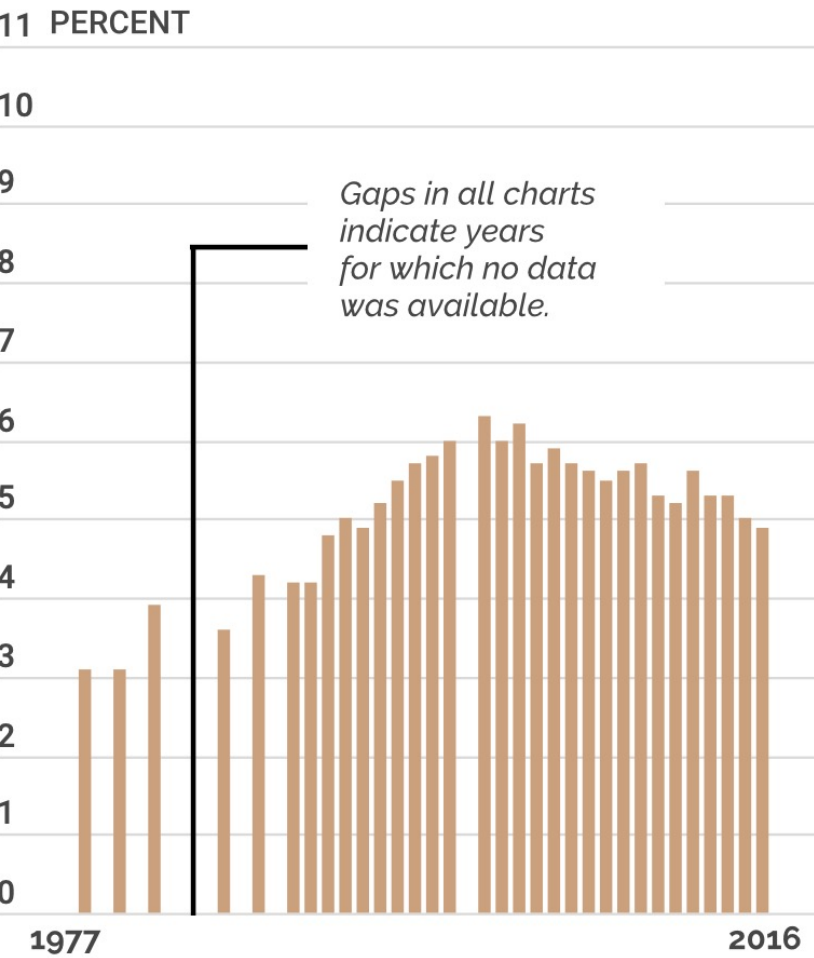
Graduation rates of CS and EE are decreased between 2013 and 2018



Graduation Rates Declining in Important Disciplines

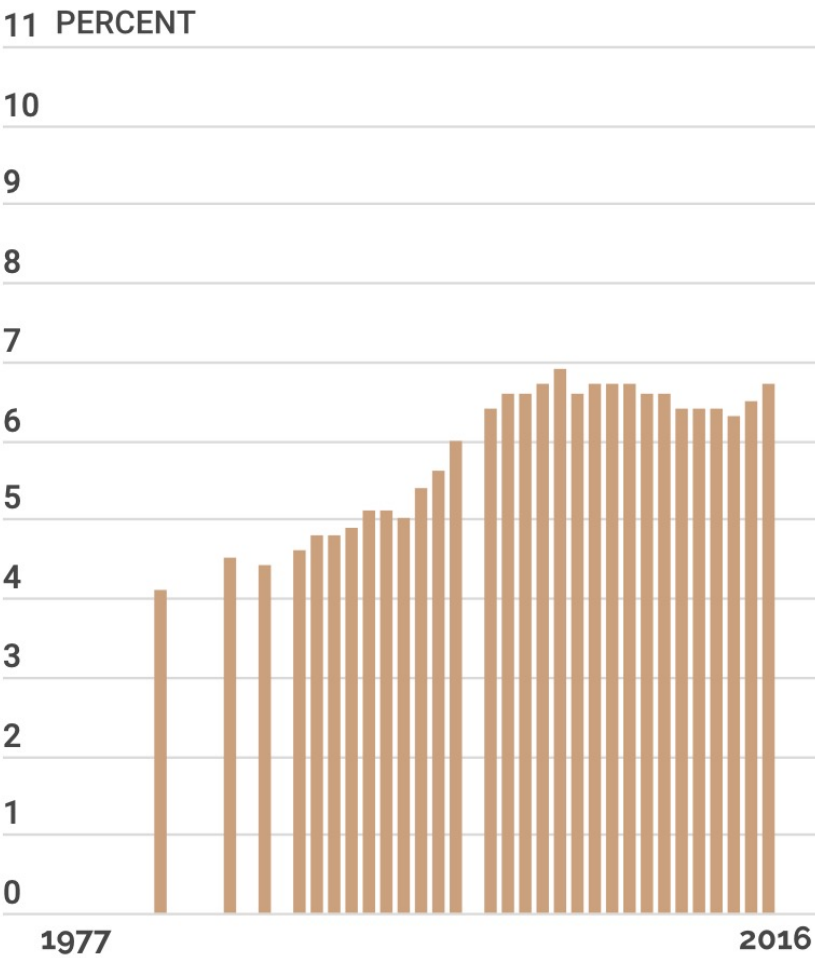
PHYSICAL SCIENCES

Astronomy, physics, chemistry, geology

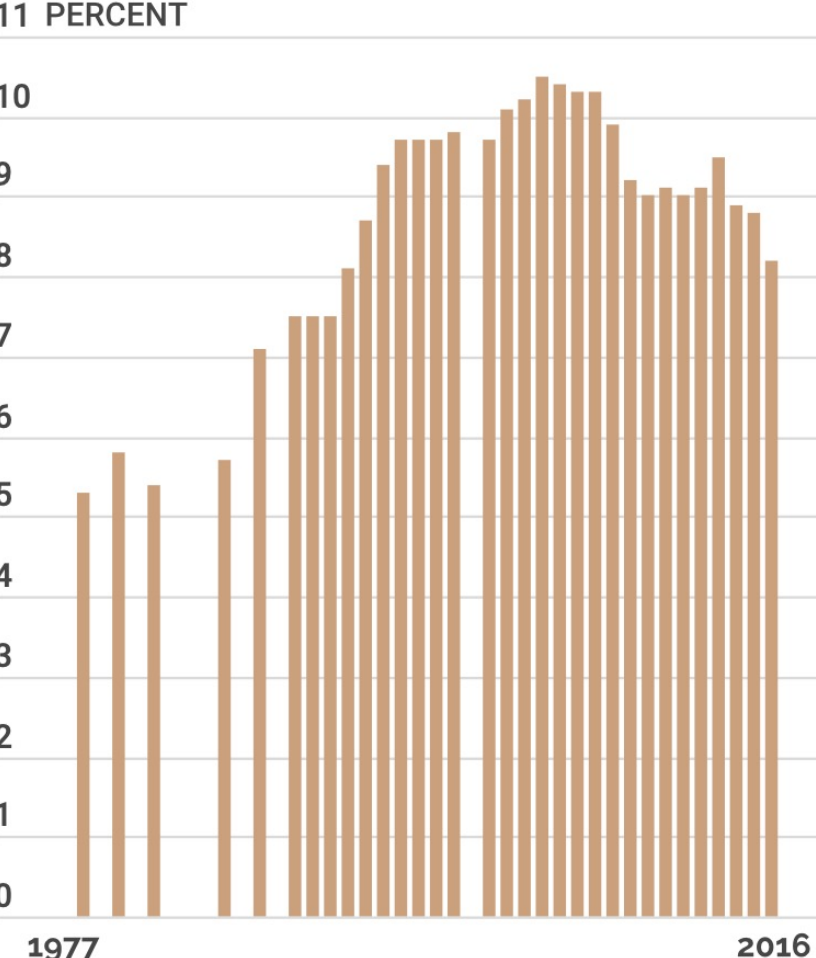


LIFE SCIENCES

Agricultural and biological sciences

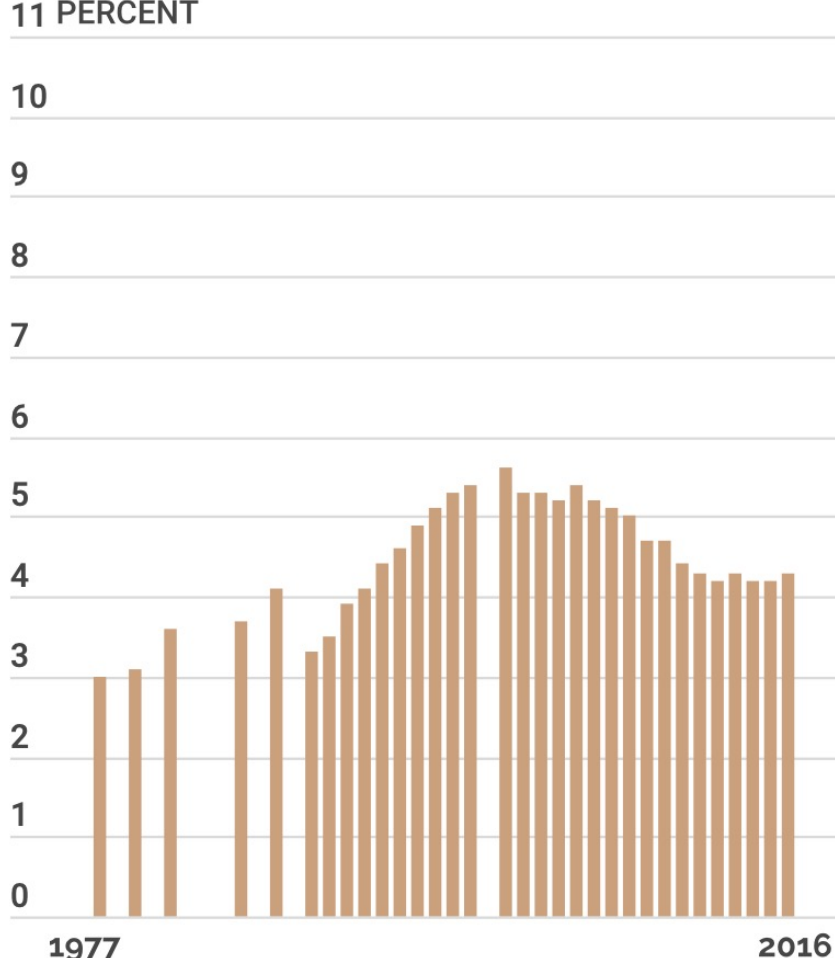


MATH & COMPUTER SCIENCE



ENGINEERING

Aerospace, bio, civil, electrical, industrial, etc.



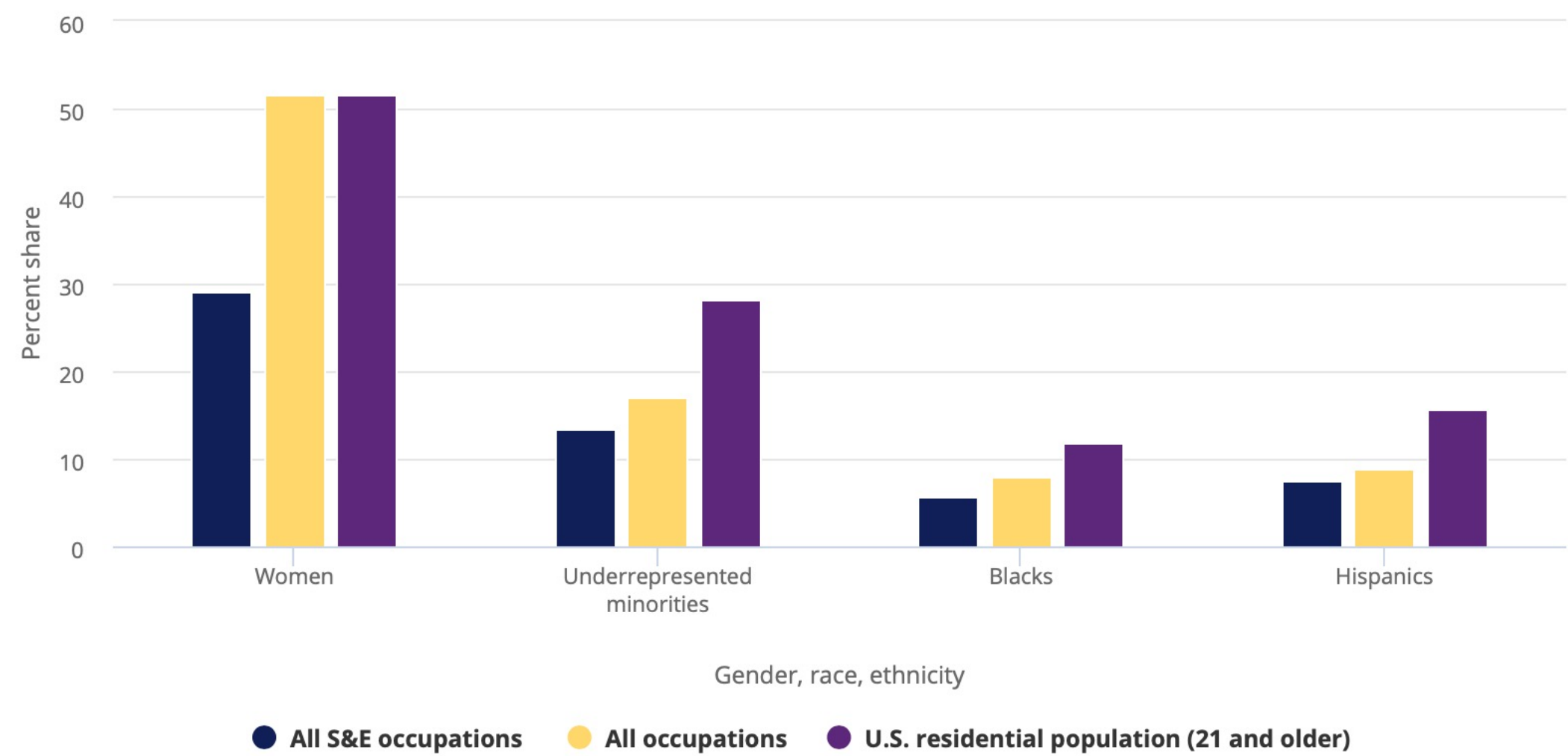
Representation Varies Across Minority Groups

The share of Hispanics among psychologists (15%), political scientists (33%), postsecondary teachers in computer science (13%), and industrial engineers (17%) is large relative to the Hispanic share of science and engineering occupations overall (7%).

The share of black individuals among computer systems analysts (13%), computer support specialists (14%), and network and computer systems administrators (14%) is large relative to the share of black individuals in science and engineering occupations overall (6%).

Proportion of Individuals from URM Groups Remains Small

The proportion of individuals from URM groups in science and engineering jobs, although up from 9% in 2003 to 13% in 2017, remains below their share of the college-educated workforce (17%)



Almost no Representation Among Venture Capitalists

Black investors make up less than 1% of venture capitalists.

- In 2018, just 713 individual investors at large venture funds, defined as having more than \$250 million under management, had the power to lead deals, sit on boards, and write checks to invest in companies, according to an Information survey.
- **Of that group, 11 were Latino and seven were Black.**

Challenges Faced by HBCUs in AI and Data Science

Relatively lower enrollment of well-prepared students in STEM

Relatively less funding support

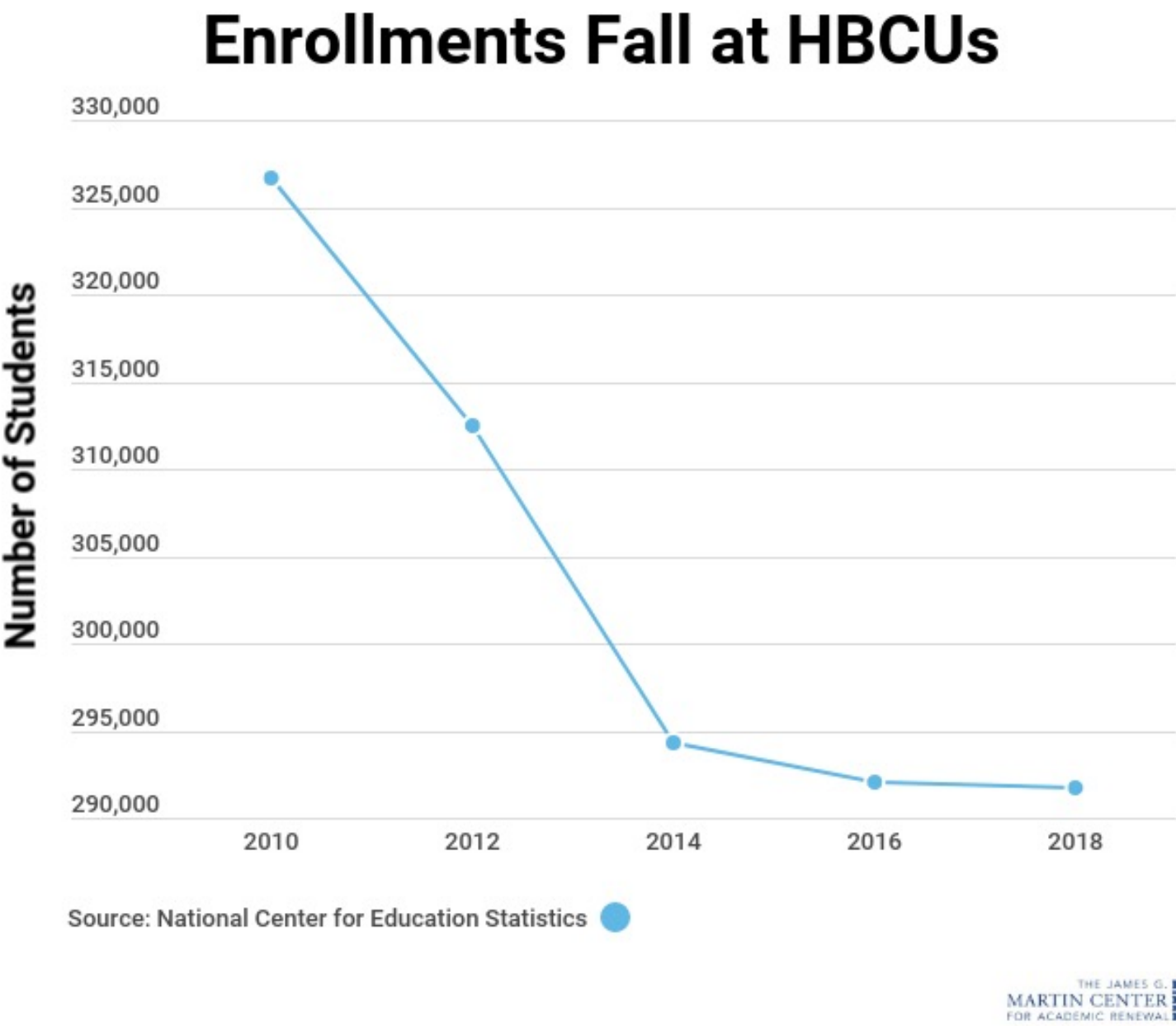
Less opportunities to collaborate with industry

Enrollment Falling at HBCUs

HBCU enrollment fell 11% in last decade

HBCU enrollment also reduced between 2018 and 2019.

Historically black institutions have dealt with issues keeping enrollments predominantly black.

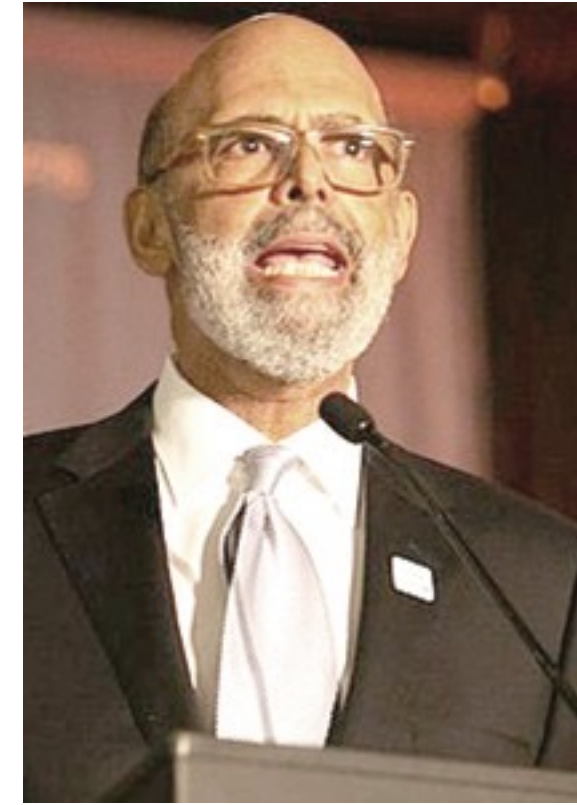


HBCUs Lack Funding Support

Current funding is not enough to support HBCUs

Removal of programs such as federal work study would have large negative impact on HBCU students

Federal government is not the only sector responsible for the inequitable funding of HBCUs, but also “subtler forms of disparate and unfair treatment” by philanthropists, accreditor, corporations and lender



Dr. Michael Lomax



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Thank You