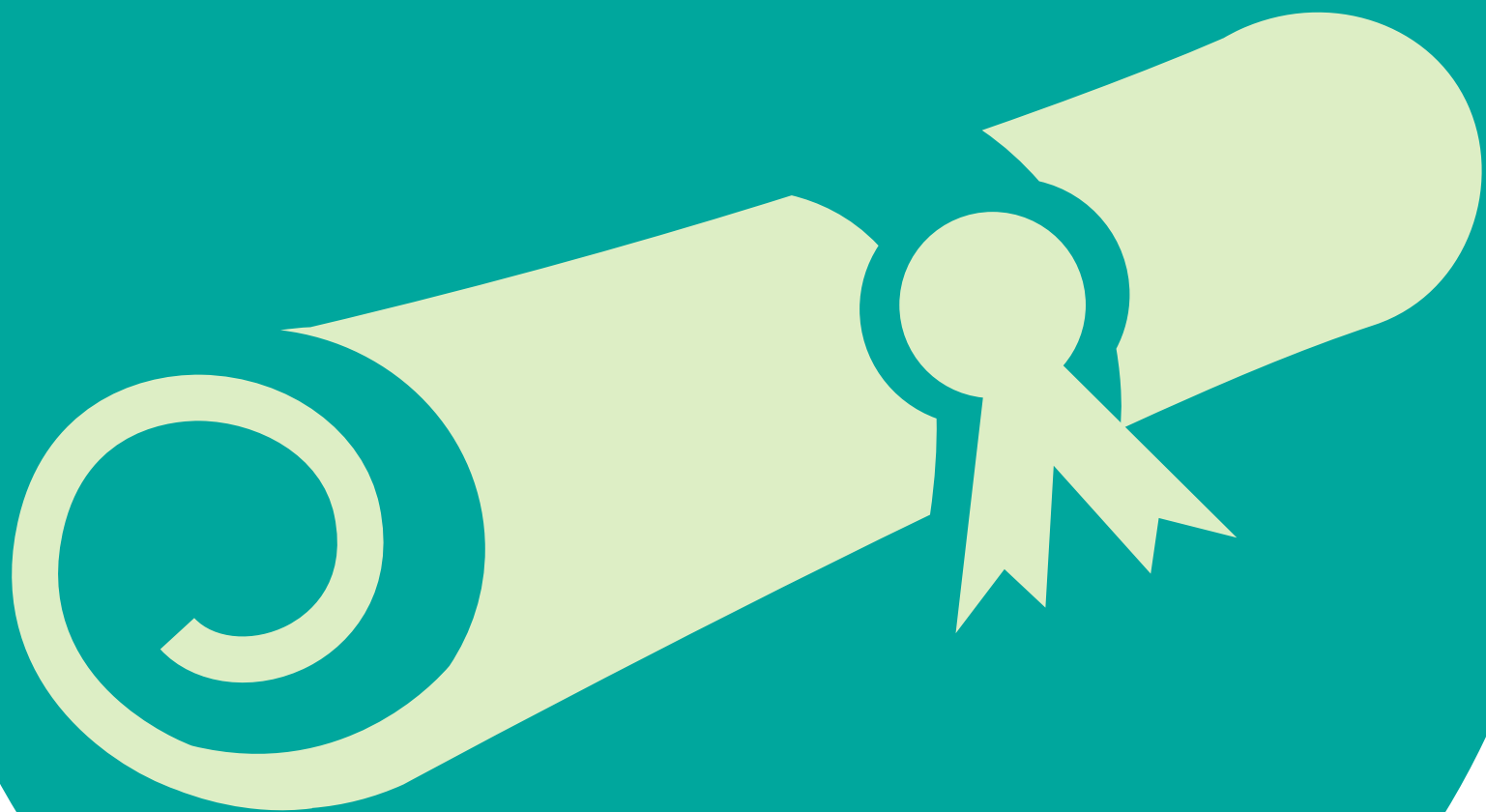


DEAF PEOPLE AND EDUCATIONAL ATTAINMENT IN THE UNITED STATES: 2019



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Introduction

Continuing education and training after high school can play a large role in overall quality of life. Educational attainment is linked to many life outcomes, including physical health, personal stability, political involvement, and much more. Educational attainment also contributes to increased employment opportunities, career advancement, and earnings. For deaf people, continuing education and training after high school appears to be an important component of narrowing the employment gap between deaf and hearing people (Garberoglio, Palmer, Cawthon, & Sales, 2019). Deaf people are increasingly enrolling in a wide range of postsecondary educational opportunities, in large part due to legislation and increased accessibility of institutions. However, educational attainment rates for deaf people continue to lag behind their hearing peers. Current data on educational attainment for deaf people show us some areas of optimism but also identify where further attention is needed.

This updated report provides a comprehensive overview of the most current data on educational attainment trends and trajectories for deaf people in the United States, serving as a resource for community members, advocates, educators, researchers, and policy makers. Data from the 2017 American Community Survey (ACS), a national survey conducted by the U.S. Census Bureau, was used in this report. Data from 2017 reflects current trends, while 2008-2017 data was used to explore how educational attainment trends have changed over time. We limited our sample to people aged 25 to 64 years, except when we were looking at currently

enrolled students (age 18-64). People who identified as having any type of hearing loss were included in these analyses. Further information about this dataset and the analyses are shared in the Methods section of this report.

It is necessary to recognize the many intersecting identities of deaf people when thinking about educational experiences and outcomes.

Key findings:

- Deaf people complete high school and college at lower rates than hearing people.
- Educational attainment rates have increased since 2008.
- 51% of deaf people complete at least some college.
- The bachelor's degree completion gap between deaf and hearing people is 15.2%.
- Younger deaf people are more likely to complete high school than their older counterparts.
- Deafdisabled people demonstrate lower educational attainment levels.
- Deaf women complete college at higher rates than deaf men.
- Income and employment vary across field of degree.

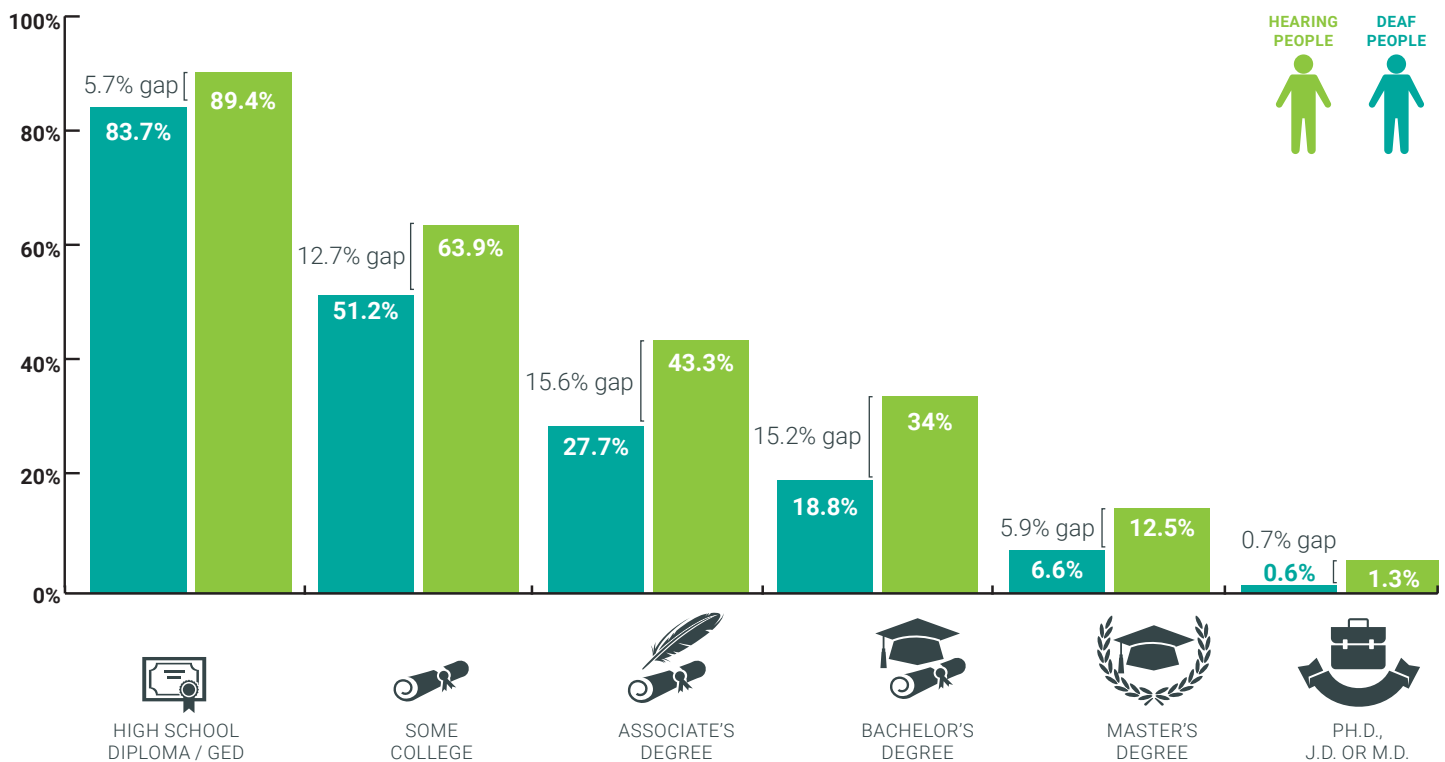
In this report, the term deaf is used in an all-inclusive manner, to include people who may identify as deaf, deafblind, deafdisabled, hard of hearing, late-deafened, and hearing impaired. NDC recognizes that for many people, identity is fluid and can change over time or with setting. NDC has chosen to use one term, deaf, with the goal of recognizing experiences that are shared by people from diverse deaf communities while also honoring their differences.

GENERAL EDUCATIONAL ATTAINMENT DATA

Overall, deaf people attained lower levels of education than their hearing peers (Figure 1). In 2017, 83.7% of deaf adults in the United States had successfully completed high school, compared to 89.4% of hearing adults, an educational attainment gap of 5.7%. The largest gaps in educational attainment between deaf and hearing people are present when looking at associate's or bachelor's degree completion.

This is important because educational attainment narrows the employment gap between deaf and hearing people. The largest employment gaps are among people who did not complete high school, and the smallest gaps are among people with master's or bachelor's degrees (Garberoglio, Palmer, Cawthon, & Sales, 2019). Only 18.8% of deaf adults in the United States had completed a bachelor's degree or more, compared to 34% of hearing adults.

Figure 1
EDUCATIONAL ATTAINMENT



There is evidence that educational attainment may be stronger for younger people. Adults ages 25–34 have the highest rates of high school completion (see Figure 2). Deaf adults demonstrated a significant downward trend in high school completion across age, indicating that younger deaf people were more likely to have completed

high school. College completion is more variable between age groups for deaf people, with no clear demonstrated trends in college completion across age groups. Educational attainment gaps between deaf and hearing people appear to be roughly consistent across age groups.

Figure 2
EDUCATIONAL ATTAINMENT BY AGE

AGE	HEARING PEOPLE		DEAF PEOPLE		HEARING PEOPLE		DEAF PEOPLE					
	HEARING PEOPLE	DEAF PEOPLE	HEARING PEOPLE	DEAF PEOPLE	HEARING PEOPLE	DEAF PEOPLE	HEARING PEOPLE	DEAF PEOPLE				
	HIGH SCHOOL DIPLOMA / GED		SOME COLLEGE		ASSOCIATE'S DEGREE		BACHELOR'S DEGREE		MASTER'S DEGREE		PH.D., J.D. OR M.D.	
25-34	91.4%	86.4%	67.8%	55.1%	45.6%	27.5%	36.4%	18.3%	11.2%	4.8%	1.0%	0.4%
35-44	88.8%	84.1%	65.5%	54.4%	46%	30.1%	36.6%	20.6%	14.6%	6.9%	1.6%	0.7%
45-54	88.6%	82.2%	62%	50%	42.4%	28%	33.1%	18.9%	12.6%	6.7%	1.4%	0.6%
55-64	88.9%	83.8%	59.8%	50.1%	38.9%	26.9%	29.8%	18.4%	11.8%	6.9%	1.4%	0.7%

EDUCATIONAL ATTAINMENT AMONG DEAFDISABLED PEOPLE

In this dataset, 50% of the deaf population had some sort of additional disability, each combination of which results in unique strengths and challenges. Educational attainment rates vary across type of disability (see Figure 3). On average, deaf people with any type of additional disability reported the lowest educational attainment levels.







In our analyses, we were limited to the disability categories that are used by the U.S. Census, which does not recognize group identity preferences or complex differences within broad disability categories. The U.S.



Deafdisabled people are **2x less likely** to complete high school than deaf people without disabilities.

Census focuses on functional abilities and does not attend to more complex issues surrounding identity, which is a limitation of this dataset. However, at a minimum, it is necessary to recognize that educational experiences continue to be significantly more challenging for deafdisabled people.

Figure 3
EDUCATIONAL ATTAINMENT BY DISABILITY

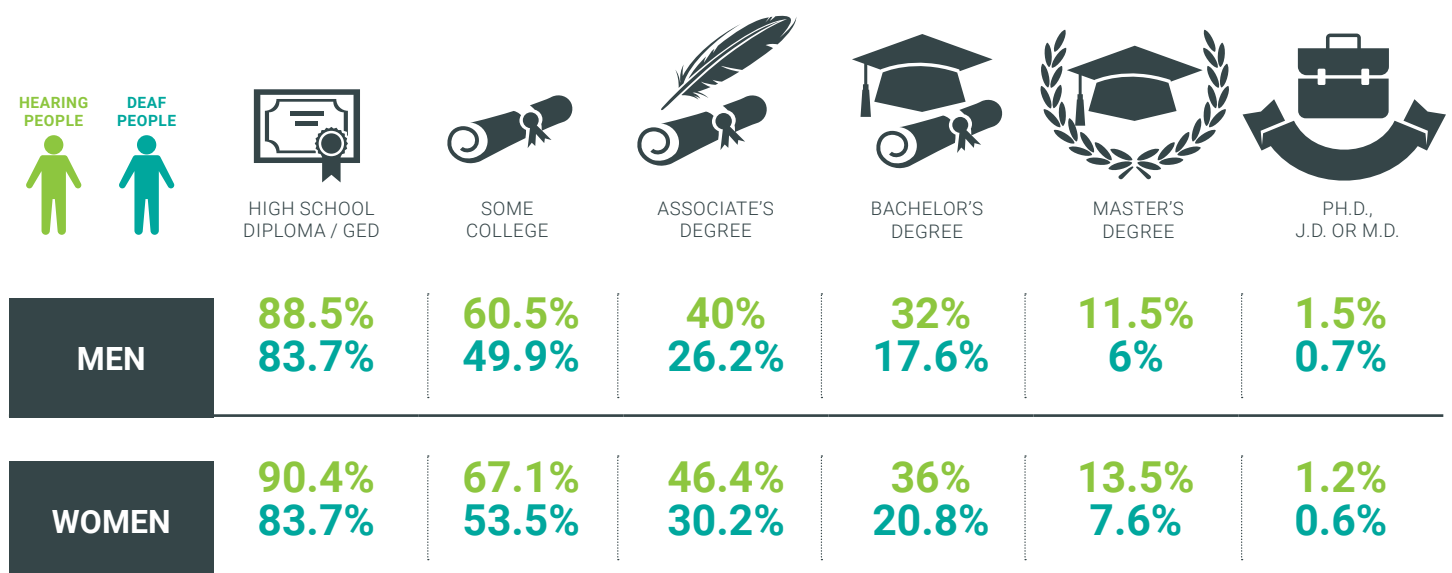
	 HIGH SCHOOL DIPLOMA / GED	 SOME COLLEGE	 ASSOCIATE'S DEGREE	 BACHELOR'S DEGREE	 MASTER'S DEGREE	 PH.D., J.D. OR M.D.
Deaf + no additional disabilities	89.3%	57.9%	34.2%	24.6%	8.8%	0.9%
Deaf + additional disabilities	78.2%	44.7%	21.4%	13.1%	4.4%	0.4%
Deaf + ambulatory disability	75.2%	40.8%	18.2%	10.6%	3.3%	0.3%
Deafblind	73.1%	40.9%	19.7%	12.3%	4.0%	0.4%
Deaf + cognitive disability	73.5%	38.9%	17.2%	10.7%	3.0%	0.2%
Deaf + independent living difficulty	72.5%	36.9%	16.9%	10.3%	3.1%	0.2%

EDUCATIONAL ATTAINMENT BY RACE, ETHNICITY, AND GENDER

Educational attainment varies across gender, race, and ethnicity (see Figures 4 and 5). There are gender gaps in educational attainment in both groups; however, they occur at different stages. Hearing women are more likely to complete high school than hearing men, whereas deaf women and deaf men graduate high school at approximately the same rate. Deaf and hearing women go to college and complete degrees at a higher rate than their male peers.

Deaf people of all races and ethnicities had lower educational attainment rates than their hearing counterparts. Educational attainment rates for deaf Latinx people, while lower than average, were closest to their hearing peers. Across race and ethnicity, deaf Asians were most likely to have completed college degrees, but still underperformed their hearing peers.

Figure 4
EDUCATIONAL ATTAINMENT BY GENDER



FIELD OF DEGREE

People in the United States receive bachelor's degrees in fields ranging from biology to visual arts. The categories used in this report are based on the categories used by the U.S. Census. Deaf people completed their bachelor's degrees in a variety of fields, at comparable rates to their hearing peers (see Figure 6, next page). The top five fields of degrees were the same for hearing and deaf people, with business being the most popular field of degree and education as the second most popular. Employment rates also vary widely by field of degree. Deaf people with degrees in the following fields had the highest employment rates: liberal arts, visual arts, computers, and social science.

5 Most Popular Majors

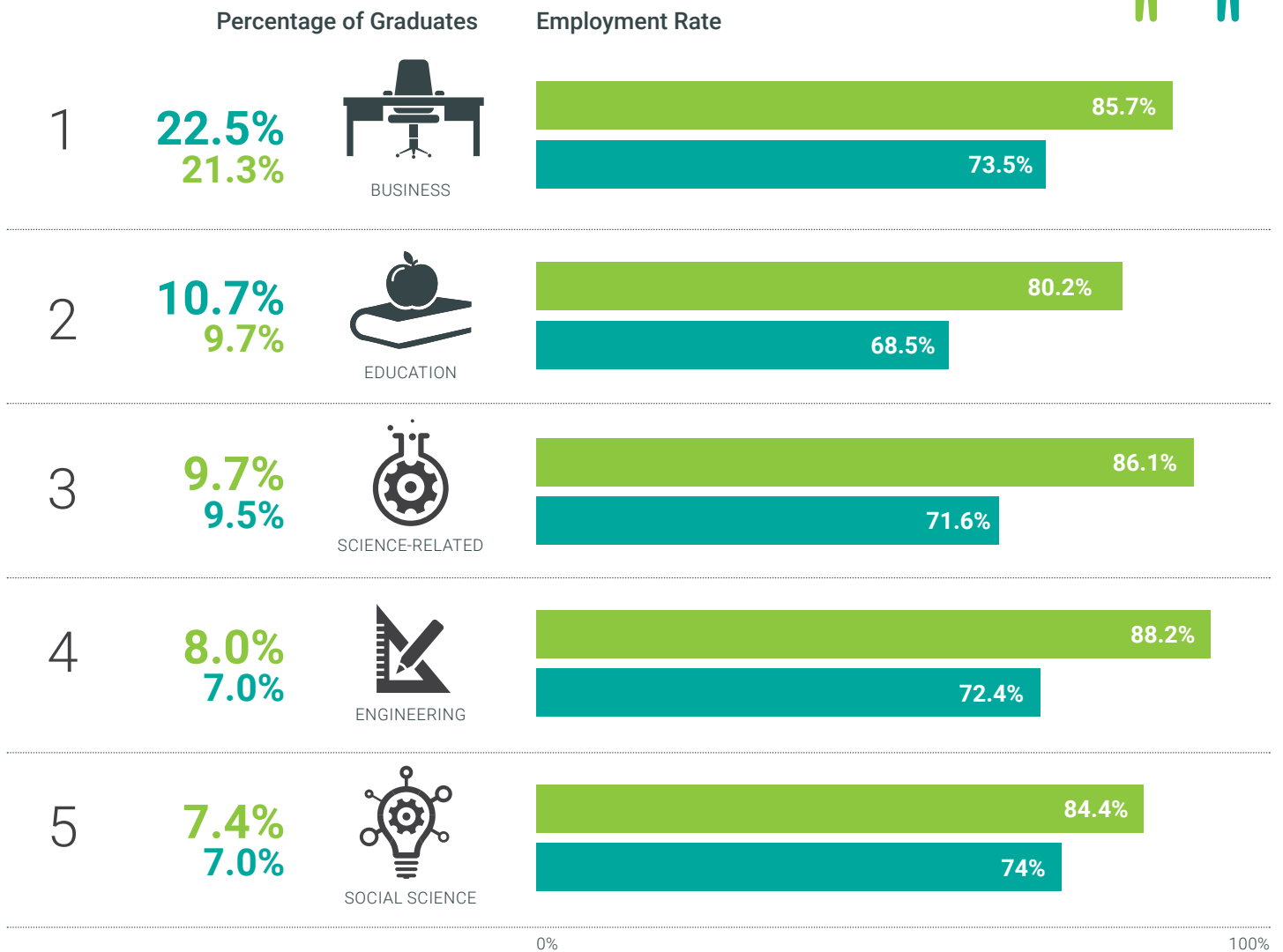


Figure 6
PERCENTAGE OF GRADUATES BY FIELD OF DEGREE

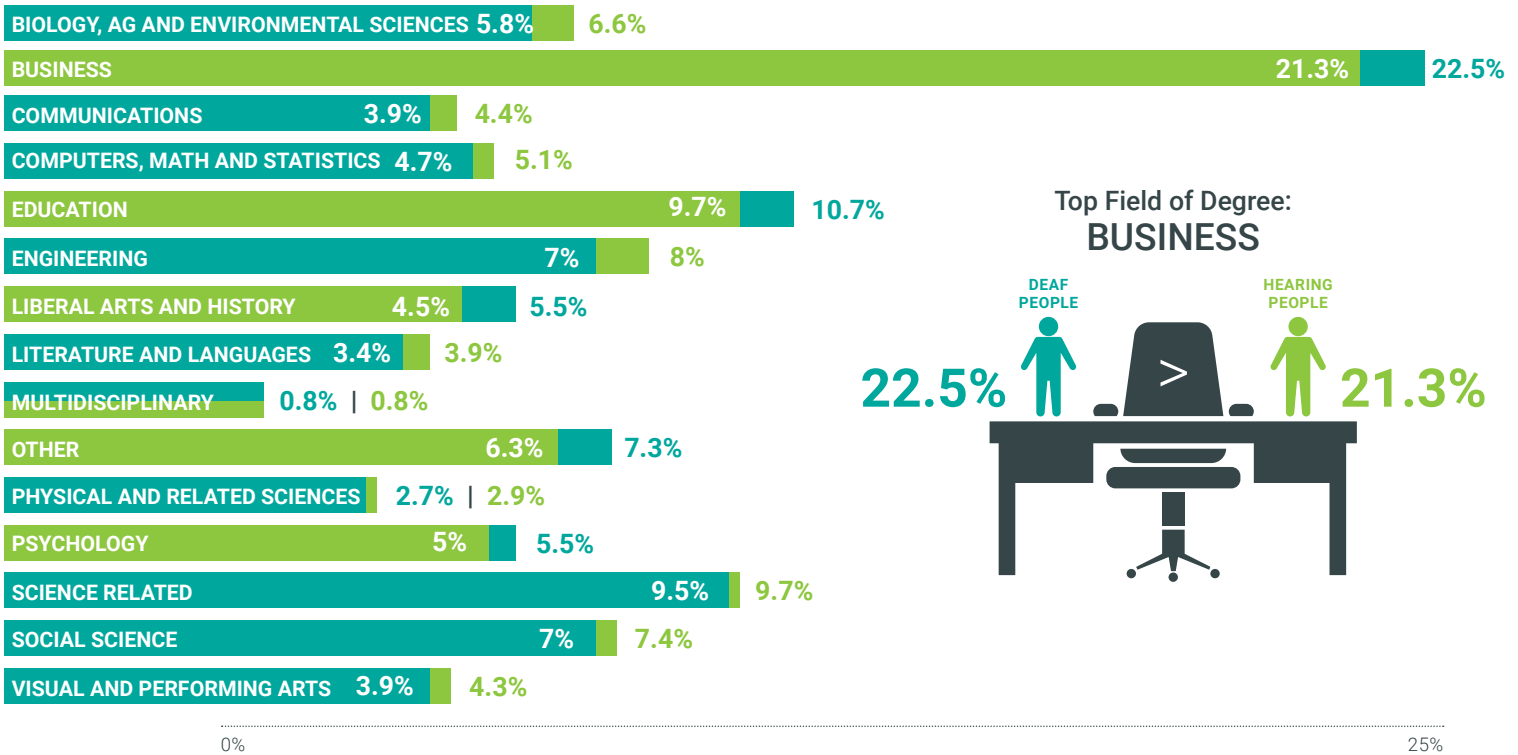
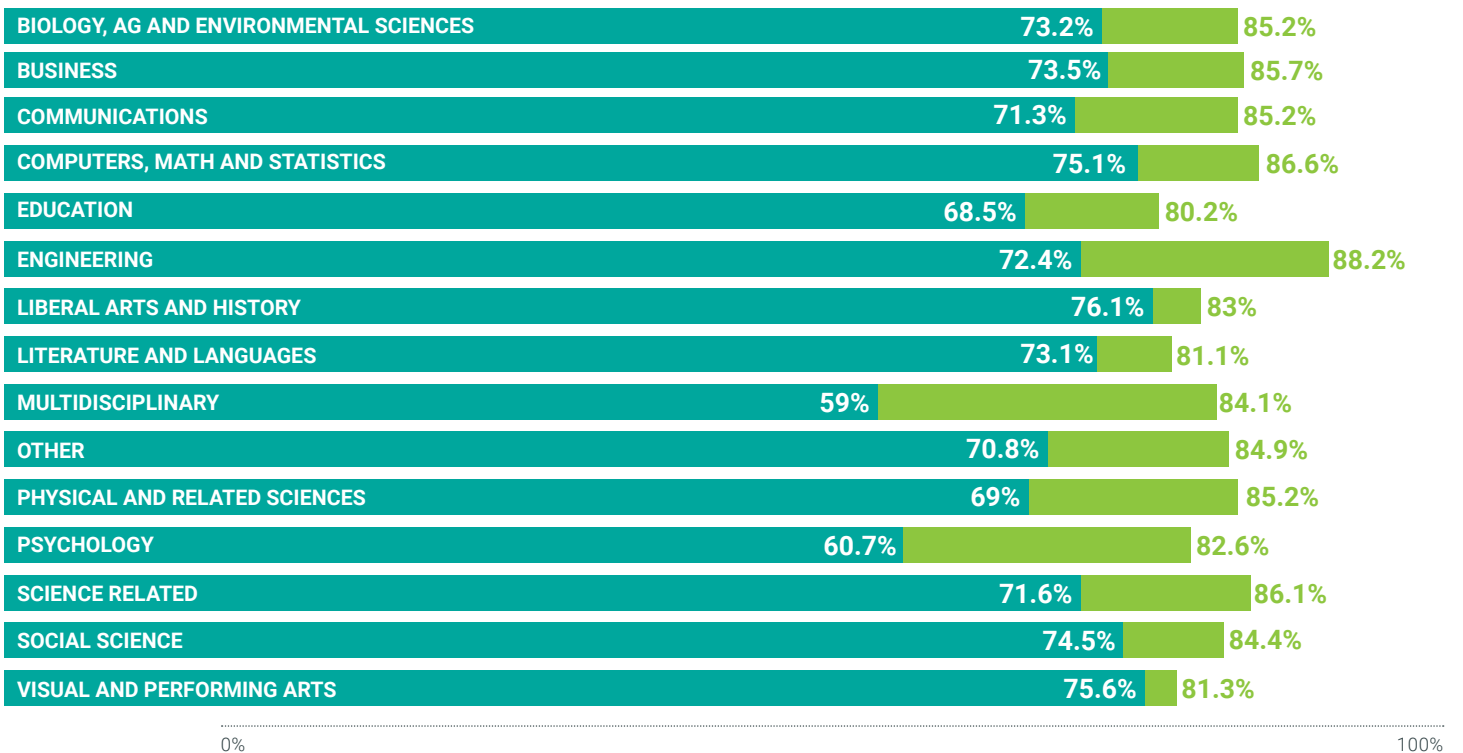


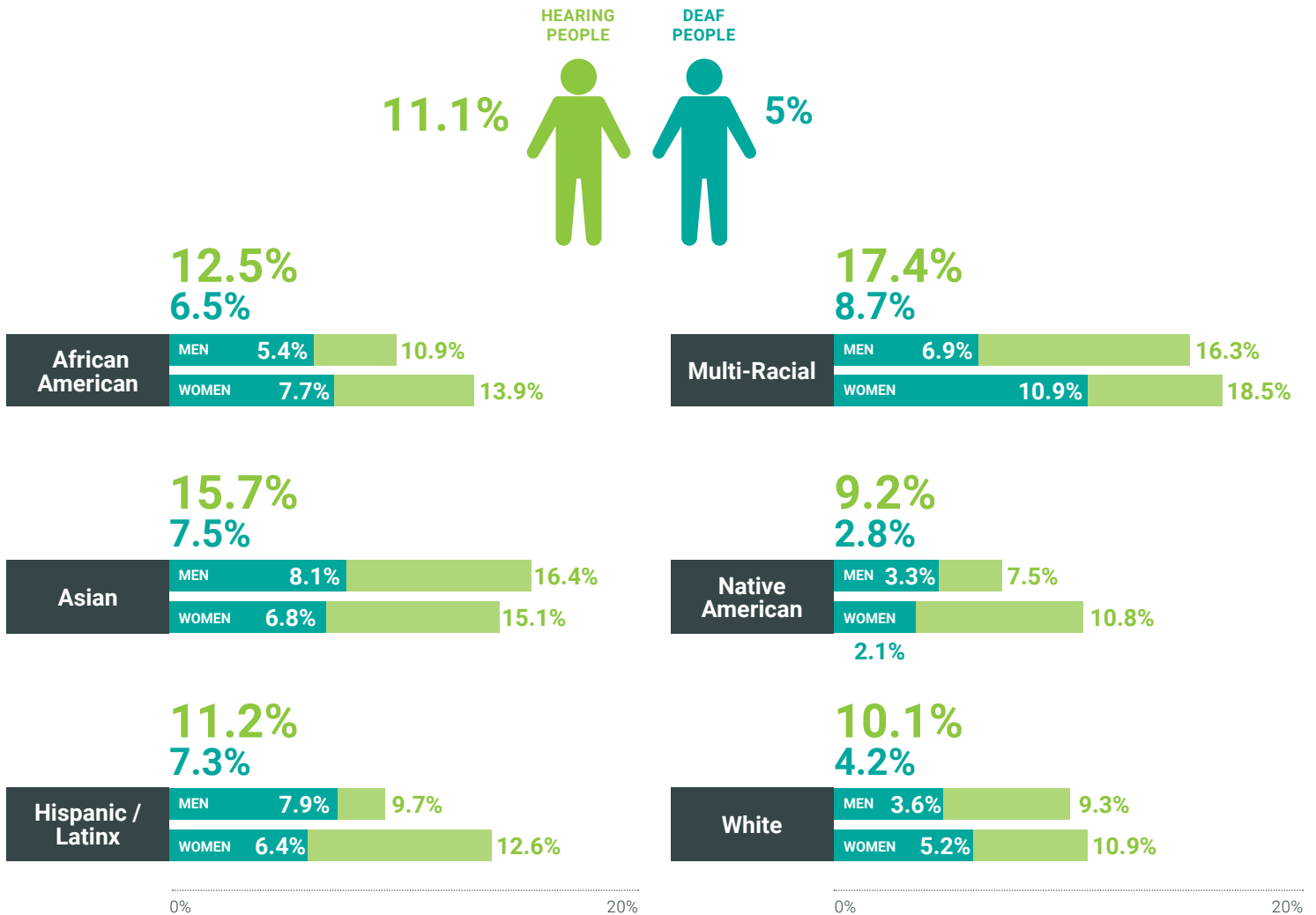
Figure 7
EMPLOYMENT RATE BY FIELD OF DEGREE



CURRENT POSTSECONDARY ENROLLMENT

In 2017, 5% of deaf people ages 18-64 were currently enrolled in postsecondary education and training programs, compared to 11% of hearing people. Enrollment varied across gender, race, and ethnicity (see Figure 8). Enrollment data for Pacific Islanders and people who identified as other races are not included in this section, as the sample sizes were too small.

Figure 8
CURRENT ENROLLMENT BY RACE, GENDER, AND ETHNICITY

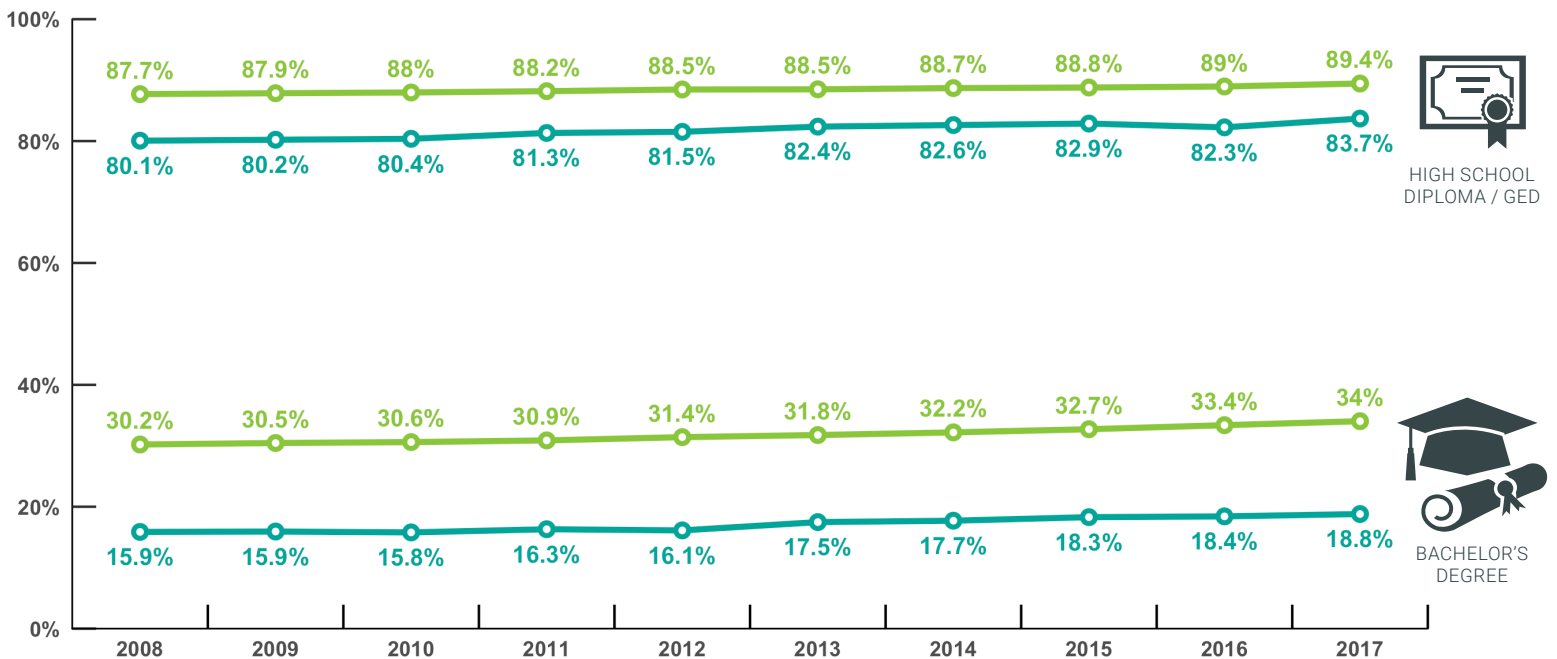


CHANGE OVER TIME IN EDUCATIONAL ATTAINMENT

In the United States, educational attainment rates have steadily increased over the years. This trend is present for both deaf and hearing people, as seen in Figure 9. High school completion over time increased more for deaf adults (3.6%) than for hearing adults (1.7%) from 2008 to 2017, at a significantly higher rate. For bachelor's degree attainment, growth was smaller for deaf adults (2.9%) than for hearing adults (3.8%) from 2008 to 2017, at a significantly slower rate.



Figure 9
EDUCATIONAL ATTAINMENT OVER TIME, AGE 25-64



METHODS

The data for this project were taken from the Public Use Microdata Sample (PUMS) of the 2017 American Community Survey (ACS), conducted by the United States census. The PUMS provides a confidential subset of the ACS for the public to analyze. The ACS is a legally mandated questionnaire sent to a random sample of addresses of homes and group quarters in the US. The questionnaire includes questions about both housing units and their individual occupants. The PUMS dataset includes survey weights, designed to produce estimates that generalize to US people, along with a set of replicate weights used to estimate sampling error. These weights account for the complex probability sample design as well as for non-response. Although the census bureau goes to great lengths to minimize non-sampling error, it is impossible to fully eliminate, so estimates should be interpreted with care. More information can be found at <http://www.census.gov/programs-surveys/acs/about.html>.

The sample of interest in these analyses was non-institutionalized people between the ages of 25 and 64. Recall that the U.S. Census collects data on functional limitations and not disability or identity labels. The disability categories used in the ACS ask respondents to report if they have any serious difficulty in the following areas: a) hearing, b) vision, c) cognitive (remembering, concentrating, and making decisions), d) ambulatory (walking or climbing stairs), e) self-care (bathing or dressing), and f) independent living (doing errands alone such as visiting a doctor's

office or shopping). Survey respondents who stated that they had "hearing difficulties" were used to represent the deaf population in these analyses. More than 37,700 deaf people were in the final sample. The comparison group was those who did not report having any "hearing difficulties," what we label as hearing people. For the most part, the data for the group of hearing people are largely comparable to data for the general population. But for comparison purposes, this analysis focuses on people in the general population that did not report any type of "hearing difficulties," which allows for an understanding of what employment experiences may be unique to the deaf population, and what may not be.

The descriptive statistics in this report are all corrected by the person-level survey weights provided by the census. When numbers are compared to each other in this report, we used a t-test, with standard errors calculated using provided survey replicate weights, to determine if difference in the numbers were due to statistical noise. These statistical tests are purely descriptive in nature, and we do not intend to suggest that any of the associations described are causal in nature. As such, we did not correct for any other variables in providing these descriptive statistics.

The R syntax for all the statistical estimates in the paper can be accessed at <https://github.com/nationalDeafCenter/attainmentAndEmployment>.

THIS REPORT MAY BE CITED AS:

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REFERENCES:

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