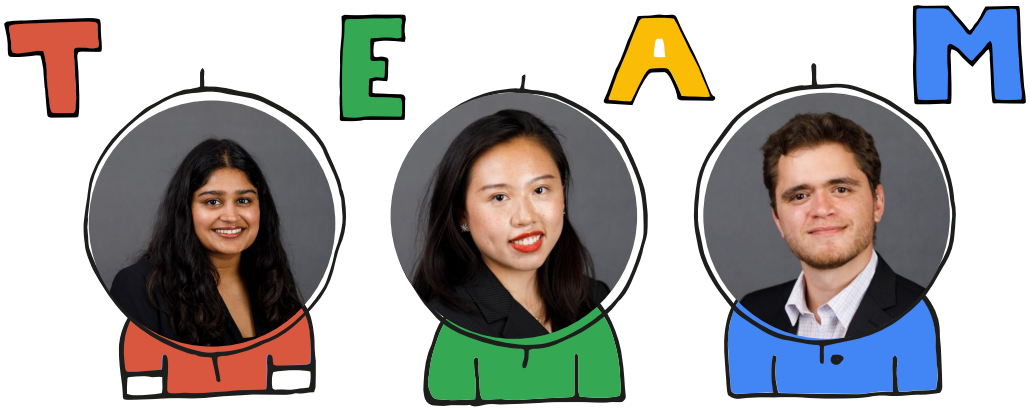
# Dismantling Inequality in STEM with Data

UC Davis MSBA Hackathon
With Google Cloud

# OUR DISMANTLERS

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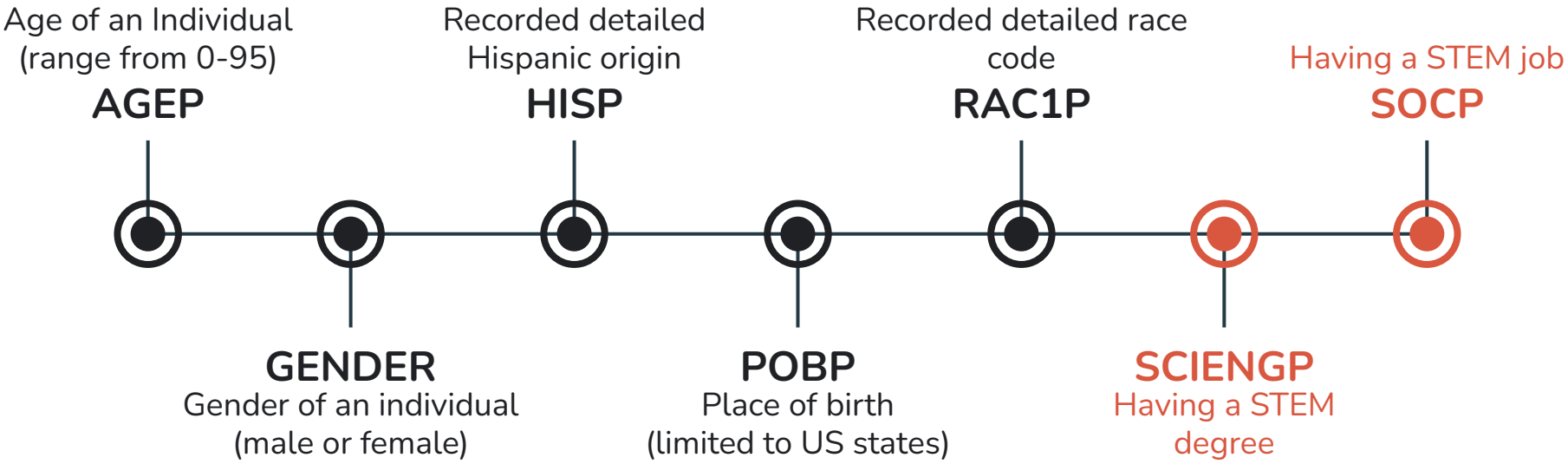
# OBJECTIVE

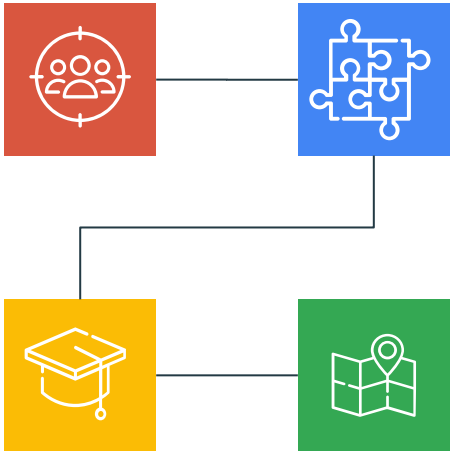
Explore demographic factors that influence the likelihood of having a degree and working in a STEM career.

# Data Description



# Initial Hypothesis / Exploratory Data Analysis

Is there a gender gap in the STEM workforce?



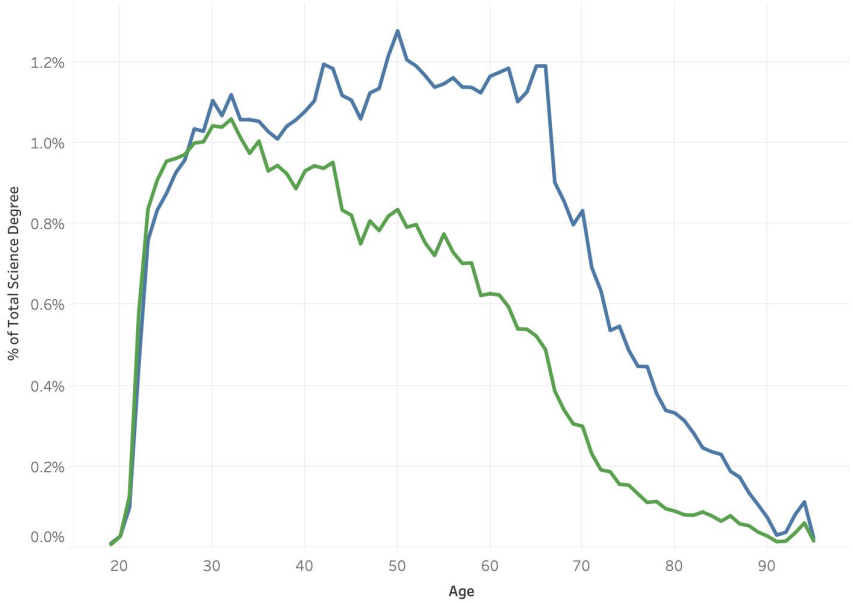
Is there a race gap in the STEM workforce?

Does a stem education lead to a STEM role, and how does this vary between men & women?

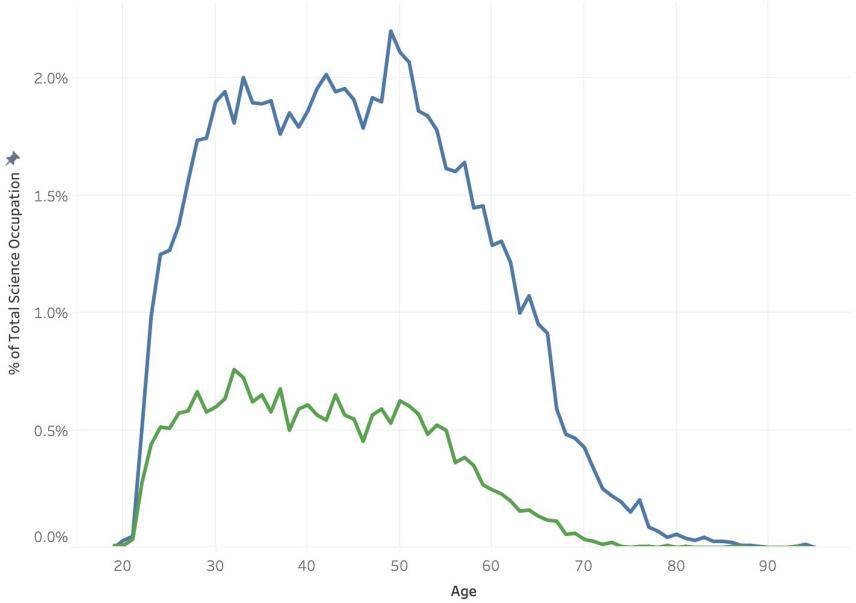
Does your birthplace influence your chance of being in a STEM job?

# The gender gap of STEM degrees is closing among younger people. However, this does not reflect on STEM careers

Percentage of STEM Degree per Gender




Percentage of STEM Occupation / Gender




Male Female

# There is a gender gap in STEM occupations even among people who obtained STEM degrees.

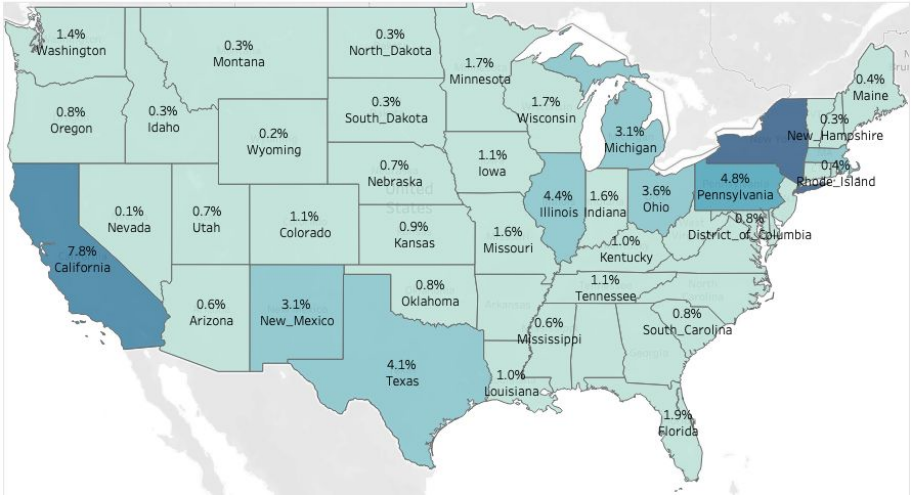
| Male | Science Occupation | |
|---|---|---|
| **Science Degree** | No | Yes |
| No | 98.72% | 1.28% |
| Yes | 87.59% | 12.41% |

| Female | Science Occupation | |
|---|---|---|
| **Science Degree** | No | Yes |
| No | 99.52% | 0.48% |
| Yes | 94.80% | 5.20% |

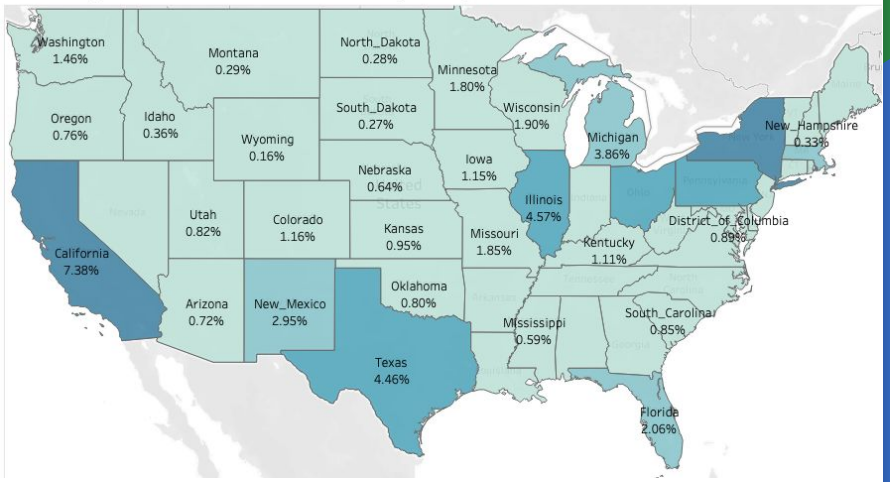
**12.41% of men with a STEM degree pursue a STEM occupation compared to only 5.21% of women.**

# Place of birth influences the chance of having a STEM career

Percentage of Individuals with STEM Education per State



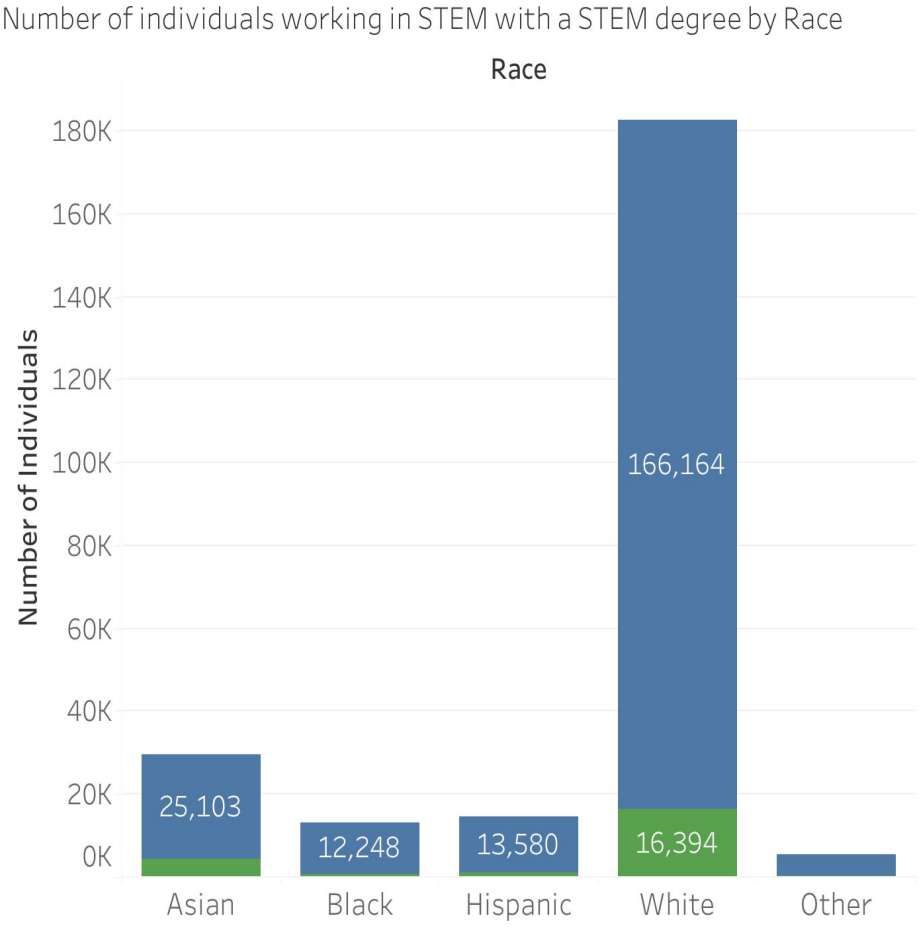

Percentage of Individuals with STEM Occupation per State





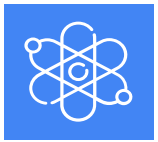
**Specific states, such as California, Texas, and New York tend to produce more individuals that pursue STEM degrees and roles compared to rest of the US.**

**Asian Americans with a STEM degree are almost 2x more likely to have a STEM occupation than other races.**

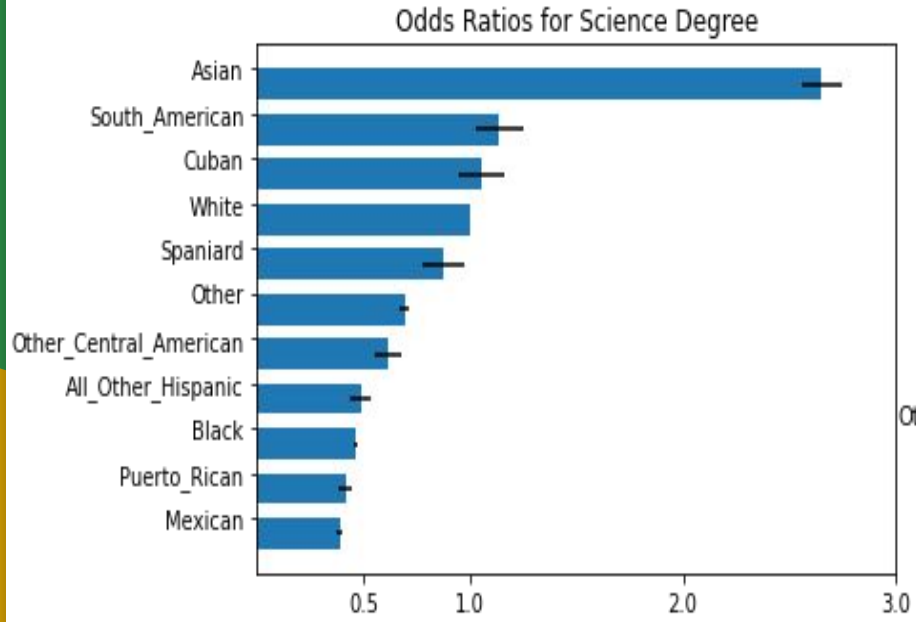


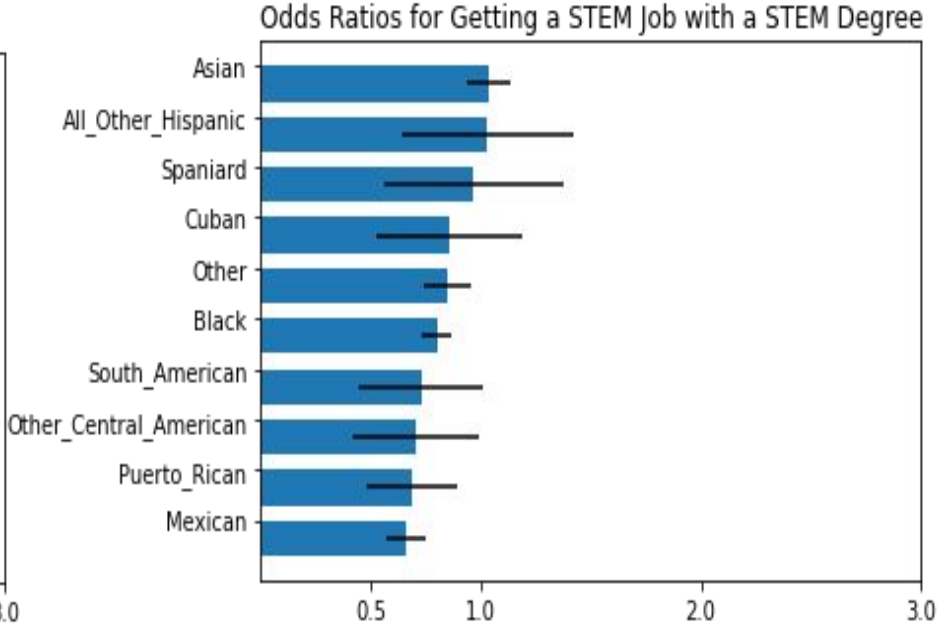
# Model Building

We used Logistic Regression to quantify the effects of race, place of birth, and gender on the chances of having a STEM degree and occupation.

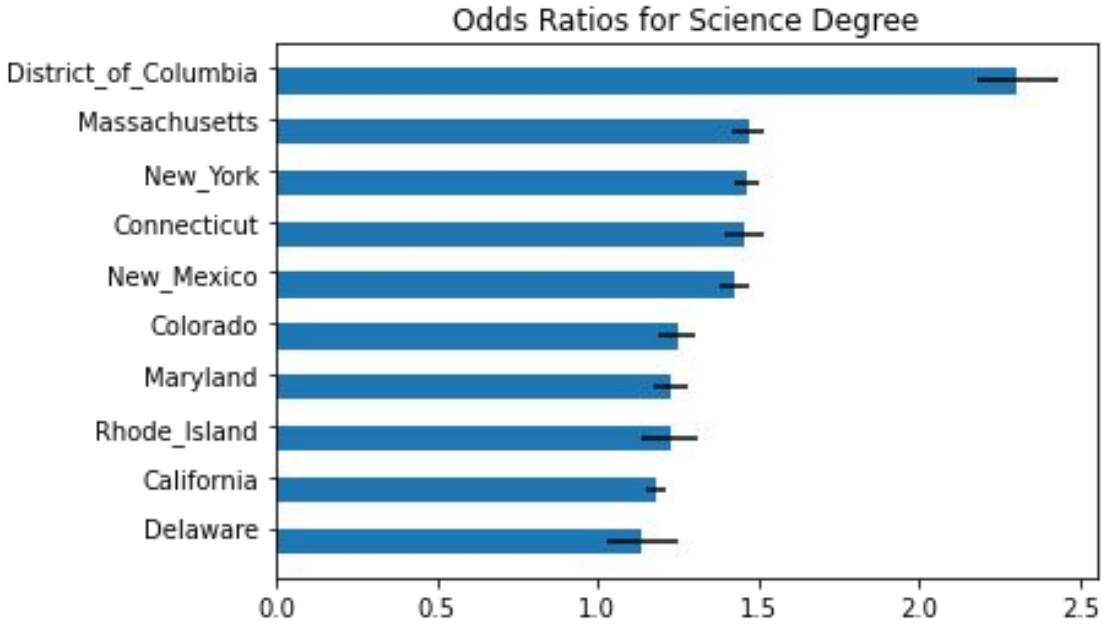


# Underrepresentation of Certain Races Exists in STEM Education and Career Placement



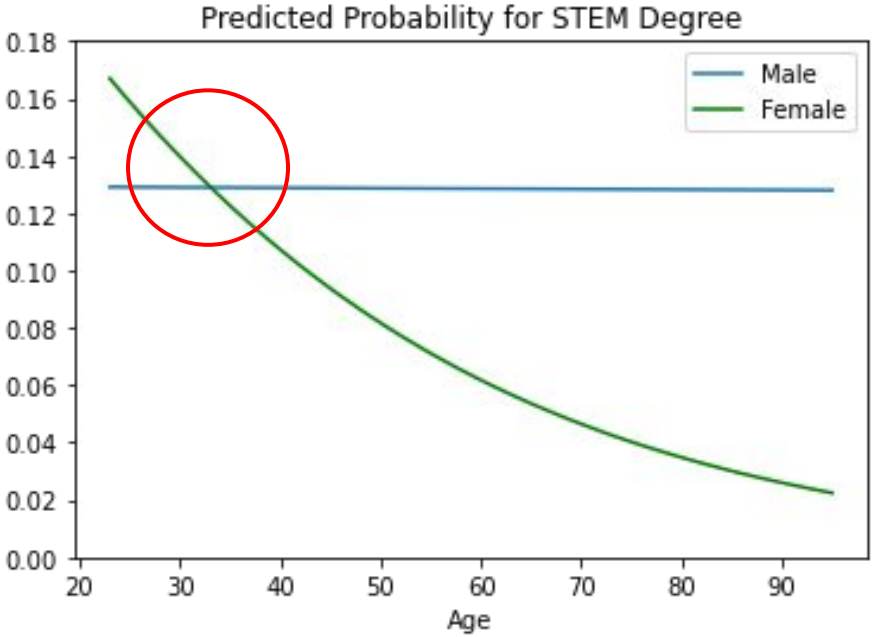



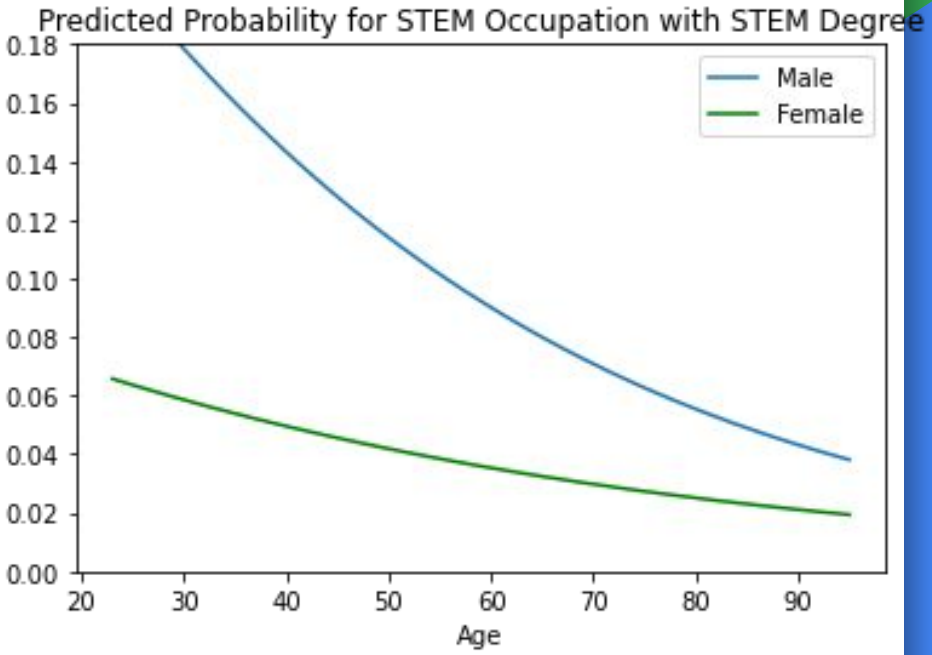
# Place of Birth Influences Getting a STEM Degree




- **Being born in certain states increases the likelihood of getting a STEM degree.**
- **If you were born in DC, you are twice as likely to have a STEM degree as people born in Delaware.**

# Gender Gap in STEM Fields Exists



# Conclusion and Recommendation

| DISPARITY LEVELERS | KEY INSIGHTS / RECOMMENDATIONS |
| --- | --- |
| GENDER | The gender gap of STEM degrees is closing. But, this does not reflect on careers.<br>➔ Invest in university recruiting programs that support women for STEM careers. |
| AGE | The gender gap in STEM is more relevant among mid-career women.<br>➔ Target mid-career women, providing STEM training to help the transition. |
| RACE | The race gap predominantly affects the Black and Latinx population.<br>➔ Expand partnership with minority-serving institutions, such as HBCUs. |
| PLACE OF BIRTH | Place of Birth influences the chance of having a STEM career.<br>➔ Leverage remote work to get talents from non-traditional regions. |

# Thank You

# References

American Community Survey (2013). Retrieved February 20, 2022, from https://www.kaggle.com/census/2013-american-community-survey.