

The Pipeline Problem

Analyzing and Visualizing the
Underrepresentation of Women in STEM

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Definitions

STEM stands for **S**cience, **T**echnology, **E**ngineering, and **M**athematics.

Example Majors:	Aerospace Engineering Chemistry	Example Jobs:	Statistician Software Developer
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STEM-related fields are those that may benefit from STEM skills, but do not quite fit the strict definition of the field.

Example Majors:	Medical Technology Architecture	Example Jobs:	Registered Nurse Dentist
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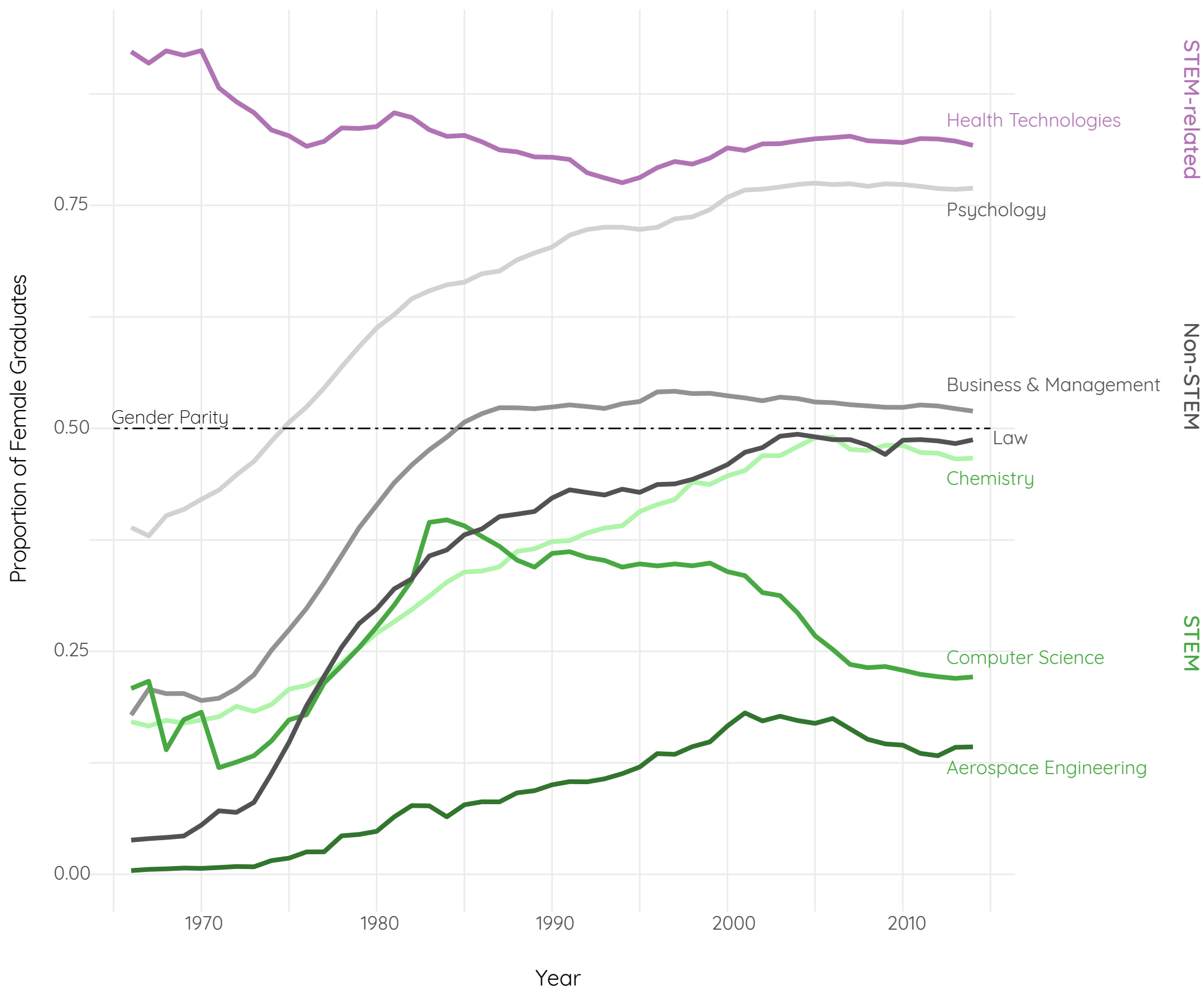
Non-STEM is everything else, from manual labor to financial planning.

Example Majors:	Art and Music History	Example Jobs:	Bank Clerk Journalist
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This analysis uses the National Science Foundation's definitions for STEM degrees, and the Census Bureau's definitions for STEM jobs.

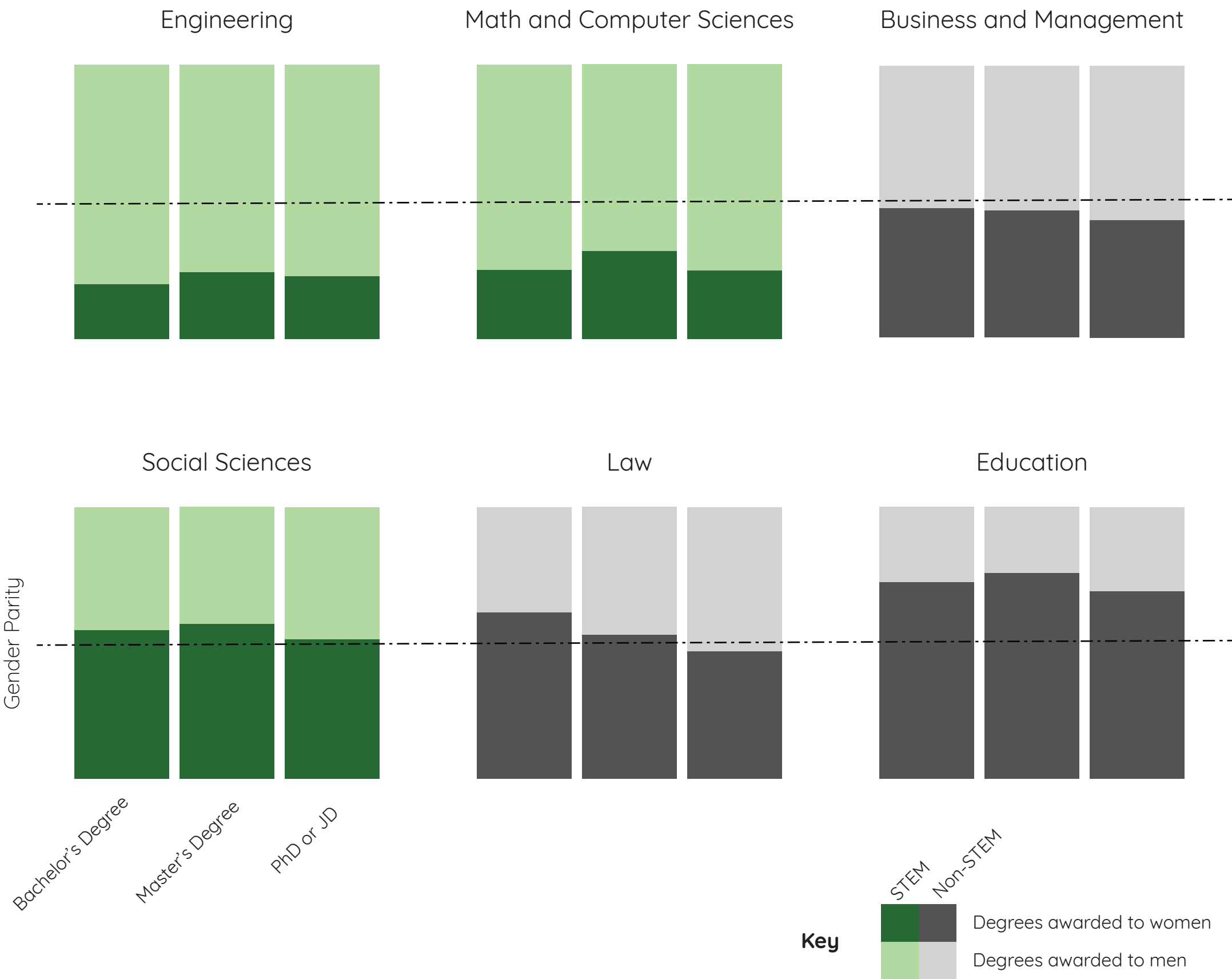
Some STEM Fields Have Faltered on the Way to Parity

Selected degree programs, 1966 - 2014



The Pipeline Effect is Inconsistent in Higher Education

Some programs approach parity at higher levels, others diverge or stay constant



STEM Undergraduate Degree Programs Skew Toward Men

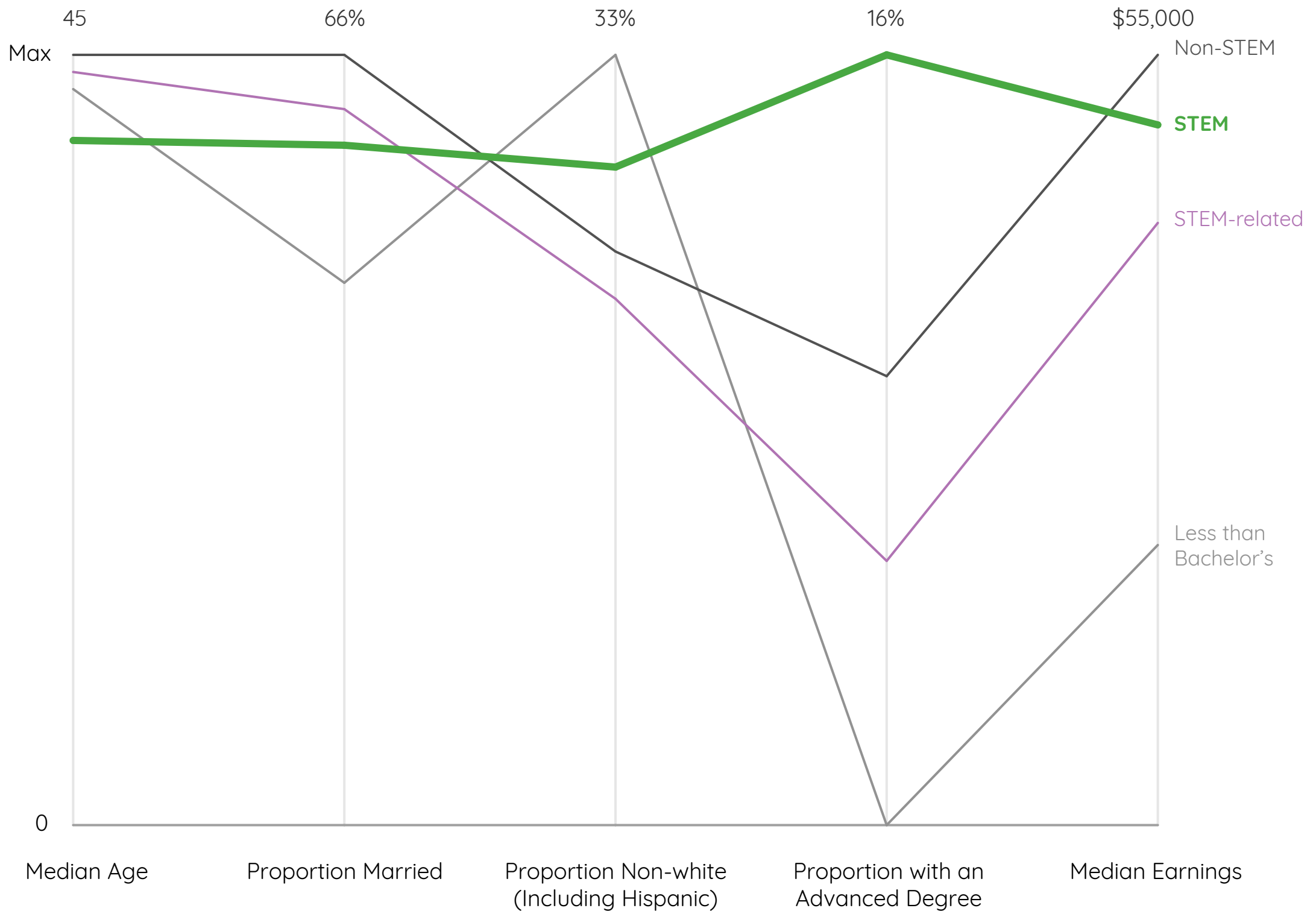
Engineering and applied science programs are the worst offenders



Note: Each grid represents the proportion of women in the program, but programs are not of equal size.

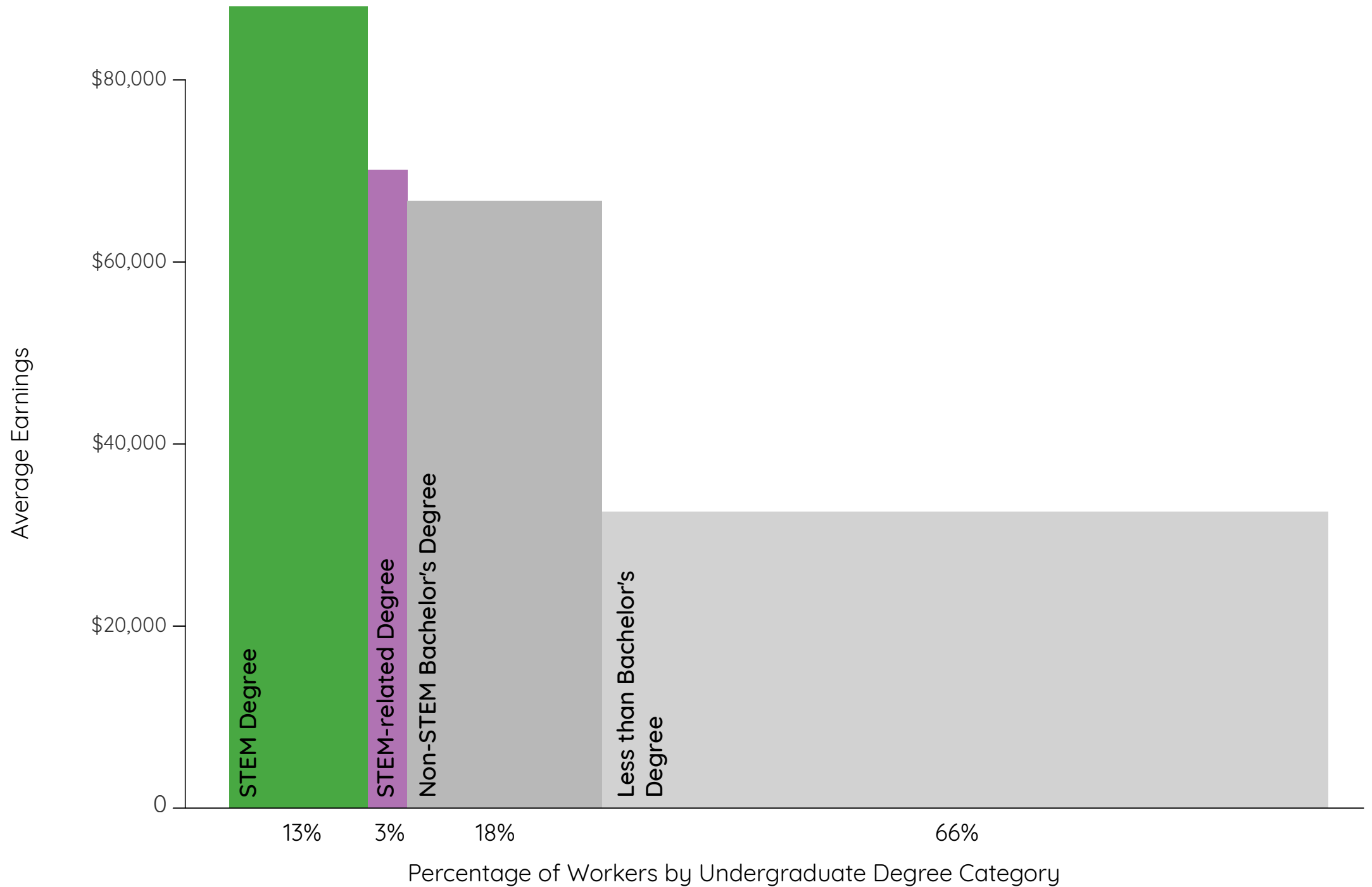
STEM Women Are Not So Different from Their Peers

With the exception that they are much more likely to hold advanced degrees



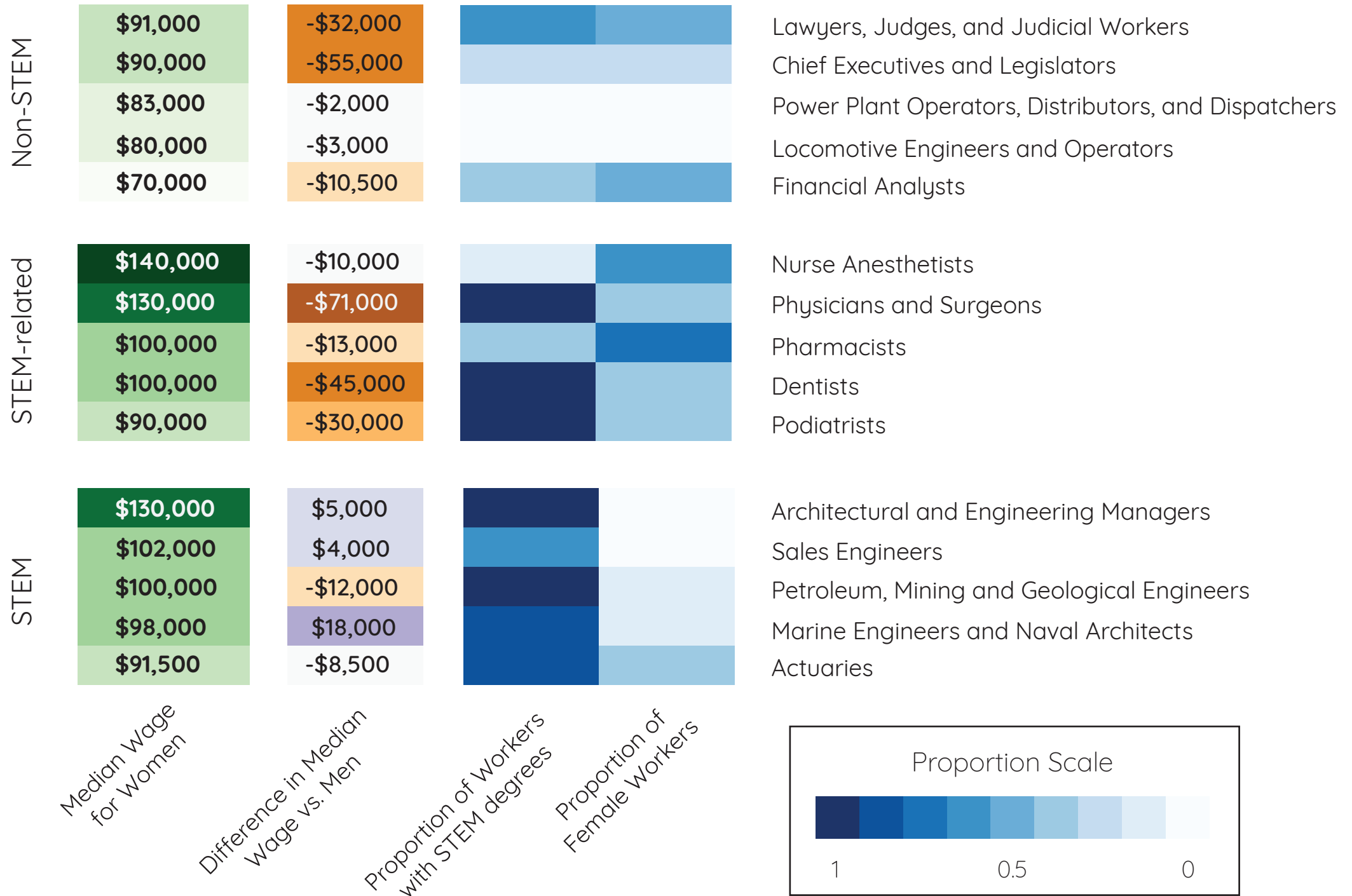
STEM Degrees Earn Higher Wages

But they represent a small minority of the total workforce



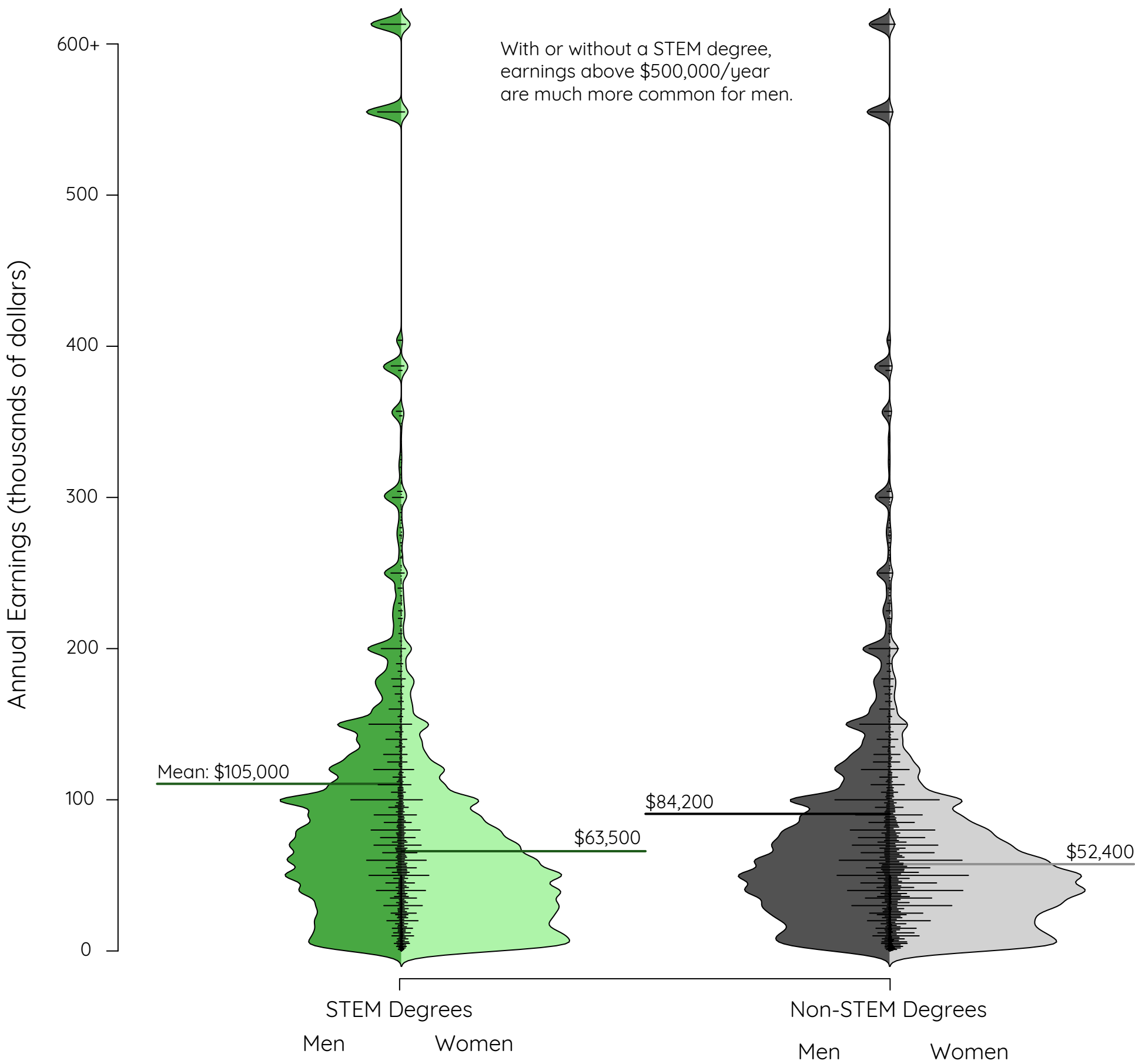
Top-Paying Jobs for Women in Each Field

Even outside STEM occupations, STEM degrees are in high demand



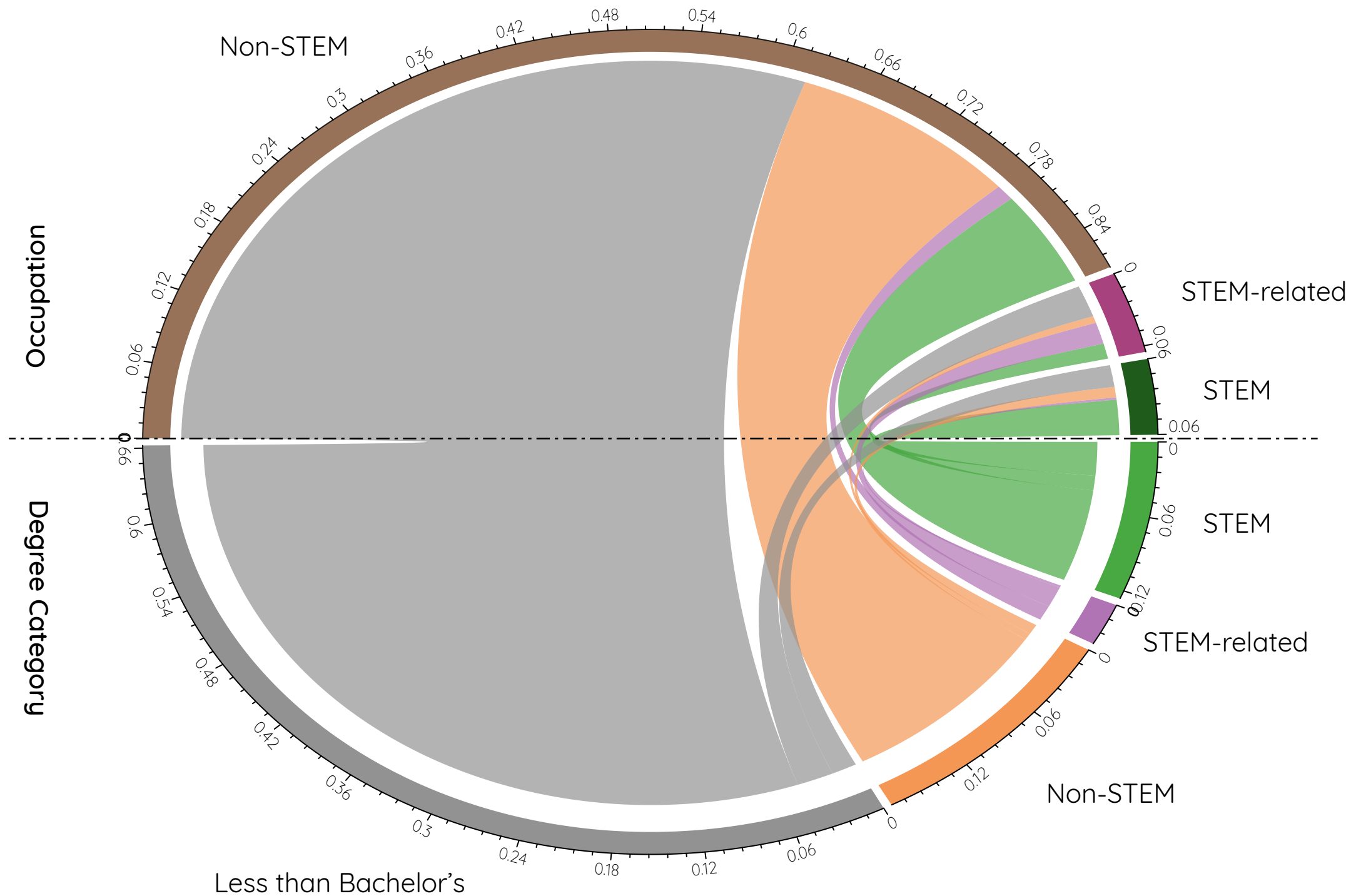
Even With STEM Degrees, Women's Earnings Lag Behind

Relative density of salary per group, by gender



For the Educated, It's Not A Pipeline Problem

Only half of STEM workers have a STEM degree, and more than half of STEM degrees work elsewhere



Data Sources and Disclaimers

American Community Survey: PUMS

The American Community Survey (ACS) is an annual survey distributed to American households by the US Census Bureau. The creators of the survey release response information in the anonymized form of Public Use Microdata Sample (PUMS).

The 2015 PUMS data used in this analysis consist of responses from over three million respondents, but are not necessarily a fully indicative random sampling of the entire US population.

All analysis in this portfolio included only those respondents who reported a nonzero amount of earned income, to omit those not in the labor force.

Unless otherwise stated, any reported measurement of “size” or “number” represents the number of respondents, not the number of total Americans.

National Center for Education Statistics IPEDS Completion Surveys

Accessed via the NSF WebCASPAR database, which emphasizes science and engineering education data.

<https://ncesdata.nsf.gov/webcaspar/>