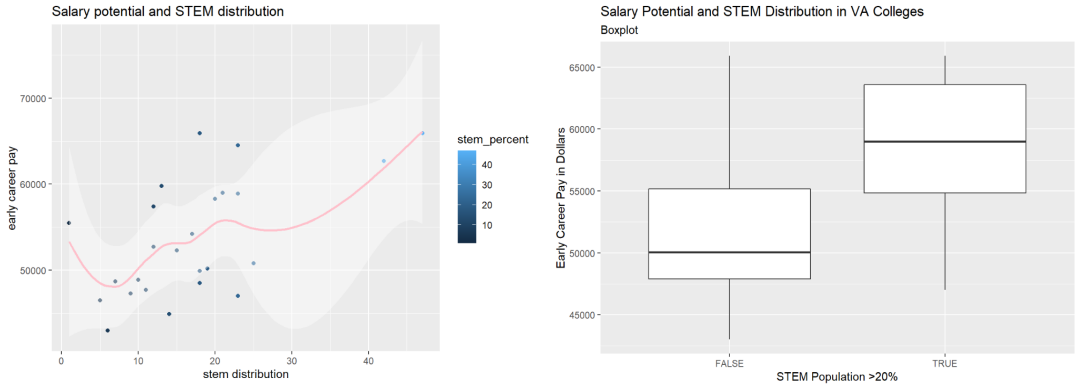
Early-Career Pay and Mid-Career Pay (MCP)

A UVA Data Science Case Study by Emily Feng, 2022



Diagrams of analyzing the correlation between STEM population and early career pay

Prompt: In 2022, a team of UVA students conducted a research on how much of an impact graduating from a public or private college or university with a high proportion of STEM majors students has on the average early career salary of all new graduate students from that college or university. Not surprisingly, the team found a positive, linear, moderate correlation between 'stem_percent' and 'early_career_pay'. Moreover, by setting having 20% of STEM distribution as the minimum requirement of colleges and universities with a high proportion of STEM degrees students in Virginia, the team created a set of box plots that further proved that colleges or universities with greater STEM population groups have higher average early career pay.

Philip Jefferson, Swarthmore College Professor of Economics, used Payscale.com data and reported that "your salary straight out of college sets the tone for the rest of your career — and that your college often sets the tone for your salary." Does a short term success imply a long term success? Maybe not. We would like to know whether or not graduating from a public or private college or university with a high proportion of STEM majors students is associated with a higher mid-career pay.

Deliverable: Produce a plan of action to find **the effect of graduating from a public or private college or university with a high proportion of STEM majors students on mid-career pay**. Also, create at least one plot using the given dataset (the first six rows of the dataset are shown in the picture below) and show the result.

name	state_name	early_career_pay	mid_career_pay	make_world_better_percent	stem_percent
Auburn University	Alabama	54400	104500	51	31
University of Alabama in Huntsville	Alabama	57500	103900	59	45
The University of Alabama	Alabama	52300	97400	50	15
Tuskegee University	Alabama	54500	93500	61	30
Samford University	Alabama	48400	90500	52	3
Spring Hill College	Alabama	46600	89100	53	12

Hints: (1) Suggested Plan One: similar to the prior research on 'early-career pay', find the correlation between stem distribution and mid-career pay in the given dataset. (2) Suggested Plan Two: determine the relationship between 'early_career_pay' and 'mid_career_pay' for each college or university to directly analyze whether or not a short-term success implies a long-term success for this specific analysis.