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Abstract

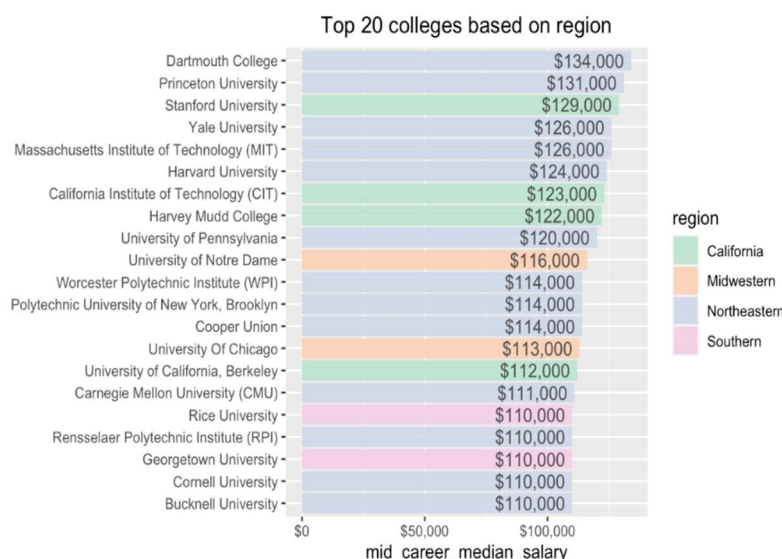
Choosing a college requires balancing a number of goals and determining which are most important. Is it true that a good location is more important than a high graduation rate? Is it more important to have a distinguished name than to have life-changing new experiences? The "best" option is determined by a family's priorities. And there have never been so many instruments to find it out as there are now. Detailed statistics are now just a mouse click away for anyone looking to compare schools' educational achievements in terms of graduation rates, post-college incomes, or alumni debt loads. Information regarding the genuine costs of colleges, including financial help, is also plentiful. The United States is at the forefront of this data boom. Department of Education, which first released a draft of its College Scorecard in 2013 and has been fine-tuning the 7,700-institution database ever since.

We're breaking down the dataset into 4 sections for our analysis.

1. We will perform Visualization on the study of Incomes in the first section, where we will find the distribution of starting and mid-career salaries, as well as the relationship between them.
2. In the second phase, we will visualize the various salaries by major and see which degrees exhibit the biggest income rise from entry to mid-career.
3. In the third section, we will visualize the various salaries based on their college type. We must assess whether a student should attend a state-run party school. Then we need to figure out which colleges have the highest starting and mid-career wages, as well as the Top 20 institutions by type.
4. In the final section, we do a salary study depending on various geographies. The next step is to determine the top 20 colleges by region.

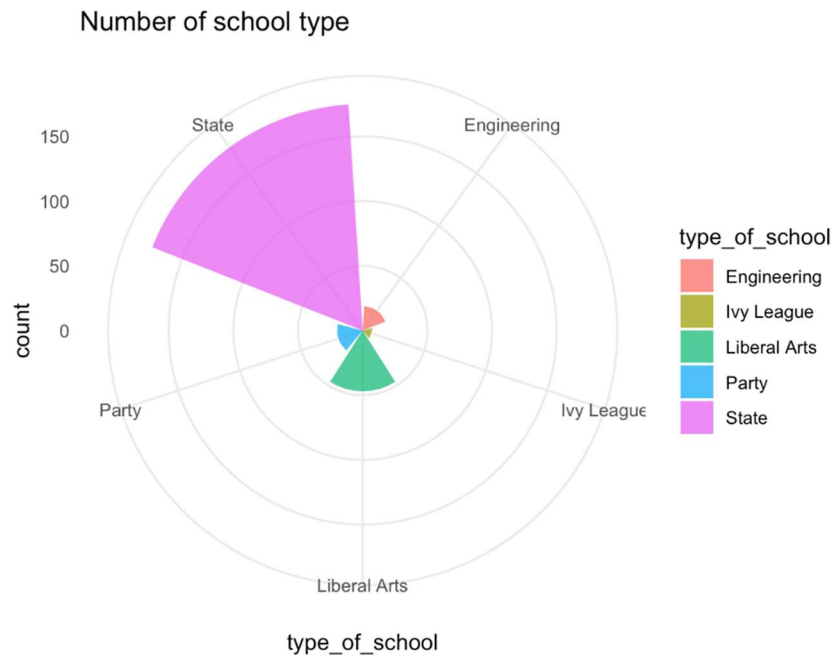
Distribution of salaries based on region

Q. We want to do another top 20 list to see if any schools that weren't on the top 20 list of the college types of data set pop up because the regions data set had the most observations.



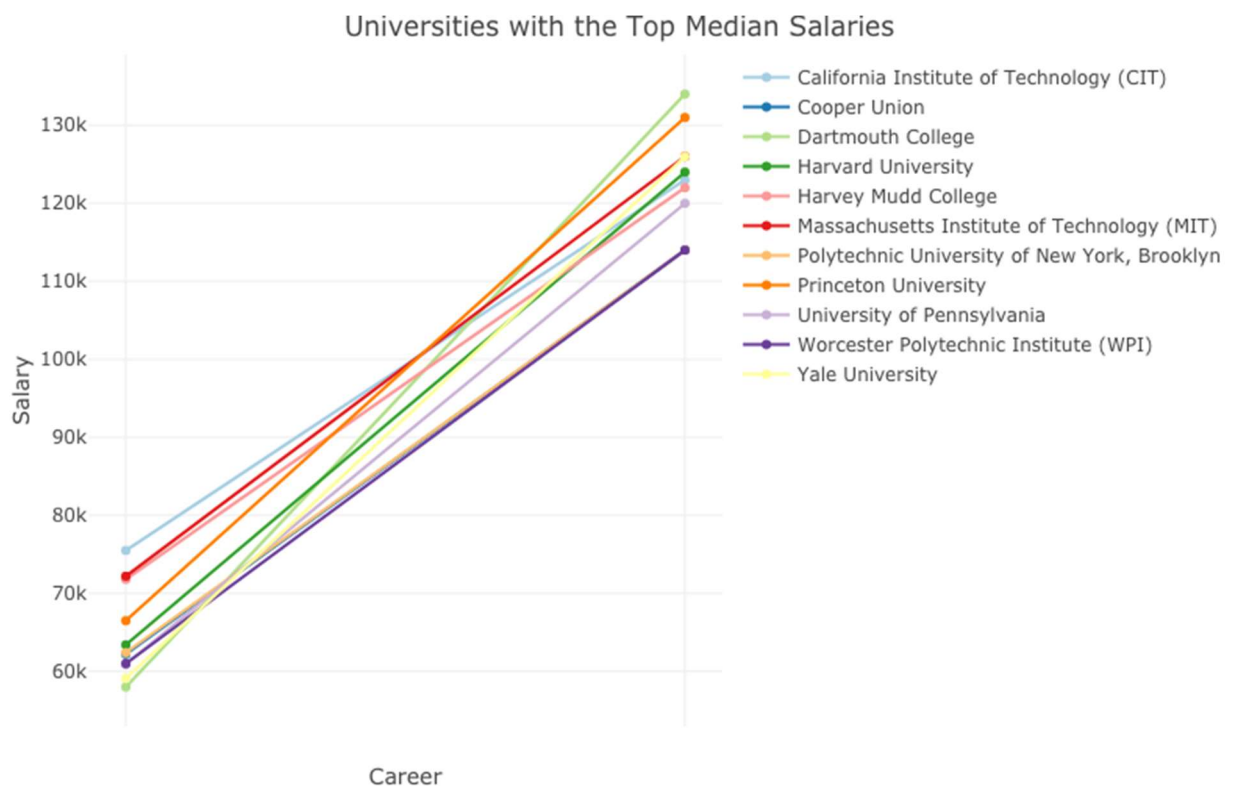
Conclusion: With a value of \$134,000, Dartmouth College has the highest mid-career median wage. In the California region, Stanford University has the greatest mid-career median wage, while in the Middle western and Southern regions, University of Notre Dame and Rice University have the top mid-career median salaries, respectively.

Q. Finding the distribution of types of schools based upon the total count of schools.



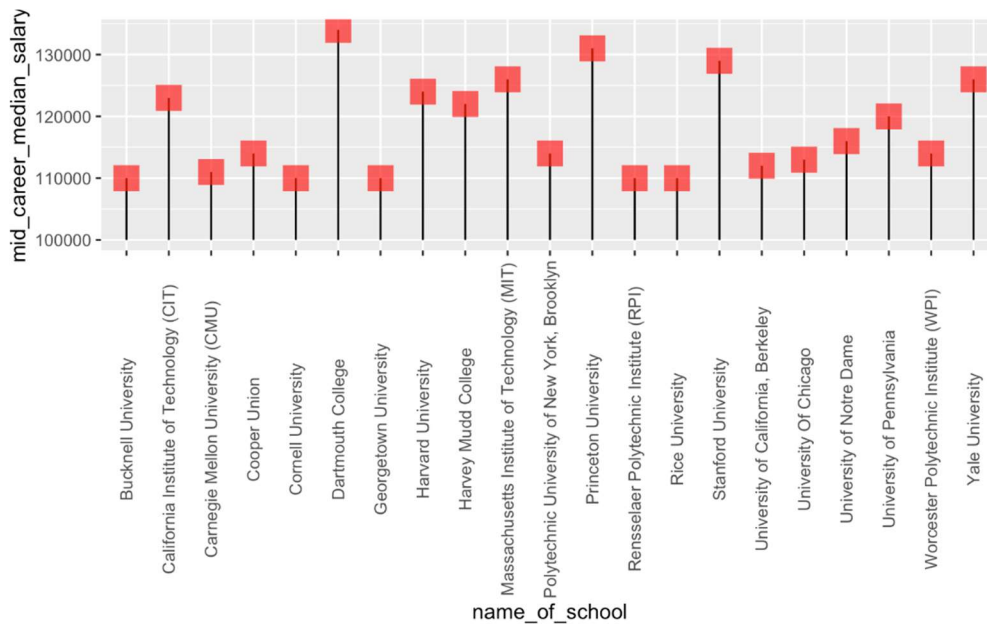
Conclusion: According to our findings, state schools have the most students, while engineering schools have the fewest. There are about 40 liberal arts colleges in the United States.

Q. Finding changes in salary percentages based on school, region, and majors, as well as analyzing changes in career progression based on the same criteria.



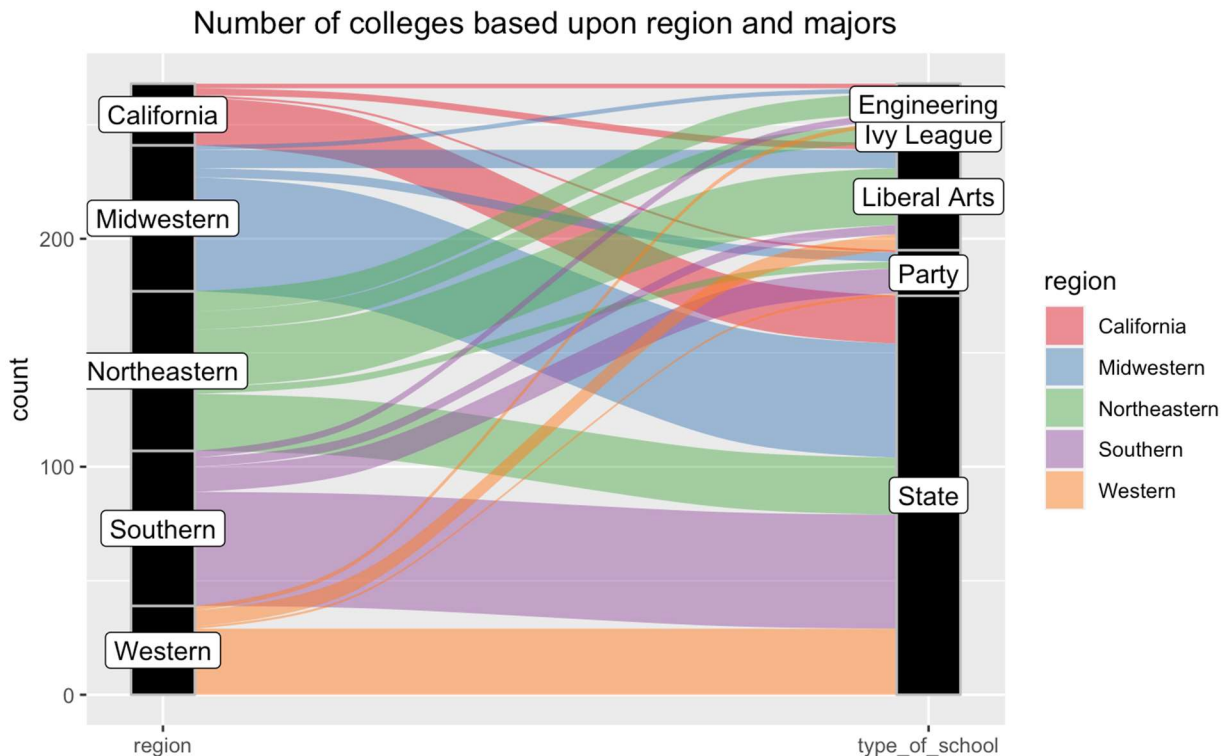
Conclusion: Dartmouth College's typical pay has increased significantly throughout the course of its lifetime, from \$50K to roughly \$130K. At the outset of a career, the typical pay at California Institute of Technology is \$75,000. However, over time, the median salary only increases by 20%, which is much less than the median salary at comparable universities.

Q. Finding the mid-career median pay distribution for the top 20 institutions and plotting it by division



Conclusion: The median wage at Rensselaer Polytechnic Institute, Rice University, University of Notre Dame, Cooper Union, and Bucknell University is between \$100K and \$115K. The compensation ranges from \$125K to \$140K at Dartmouth College, Princeton University, and Stanford University.

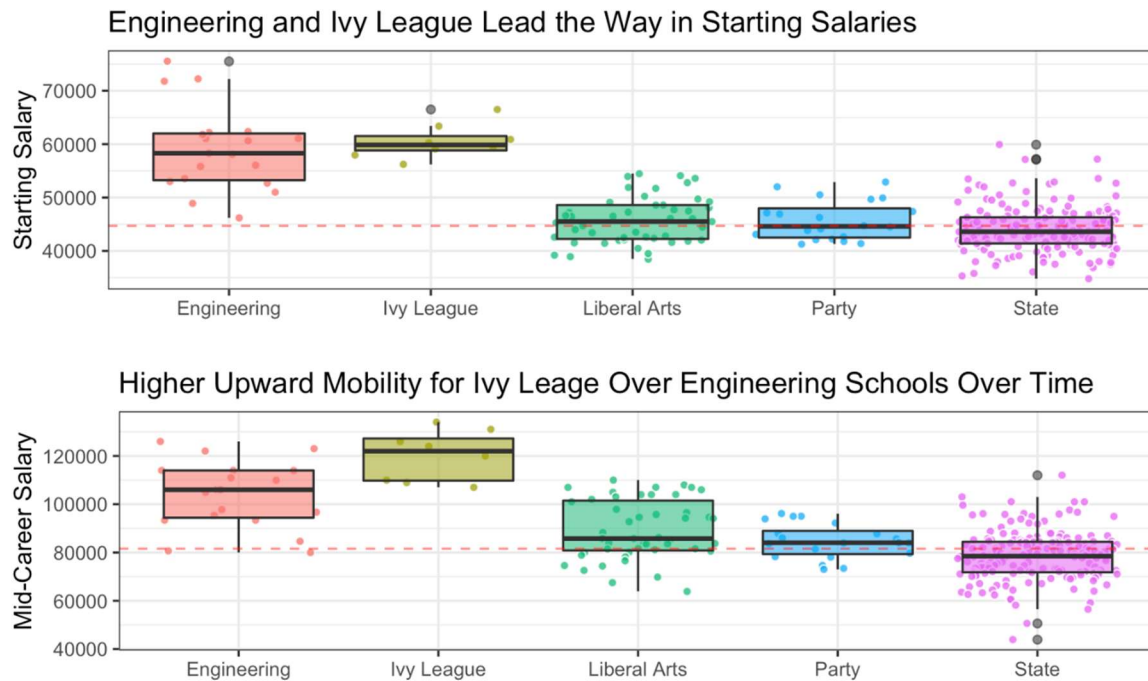
Q. Using alluvial chart to depict the distribution of number of colleges based upon region and majors



Conclusion: We notice that the northeastern region has a variety of school types, whereas the southeastern region only has two types of schools: state and party schools. Furthermore, the Midwest has only three types of schools: engineering, Ivy league, and party. Finally, California has the fewest different types of schools.

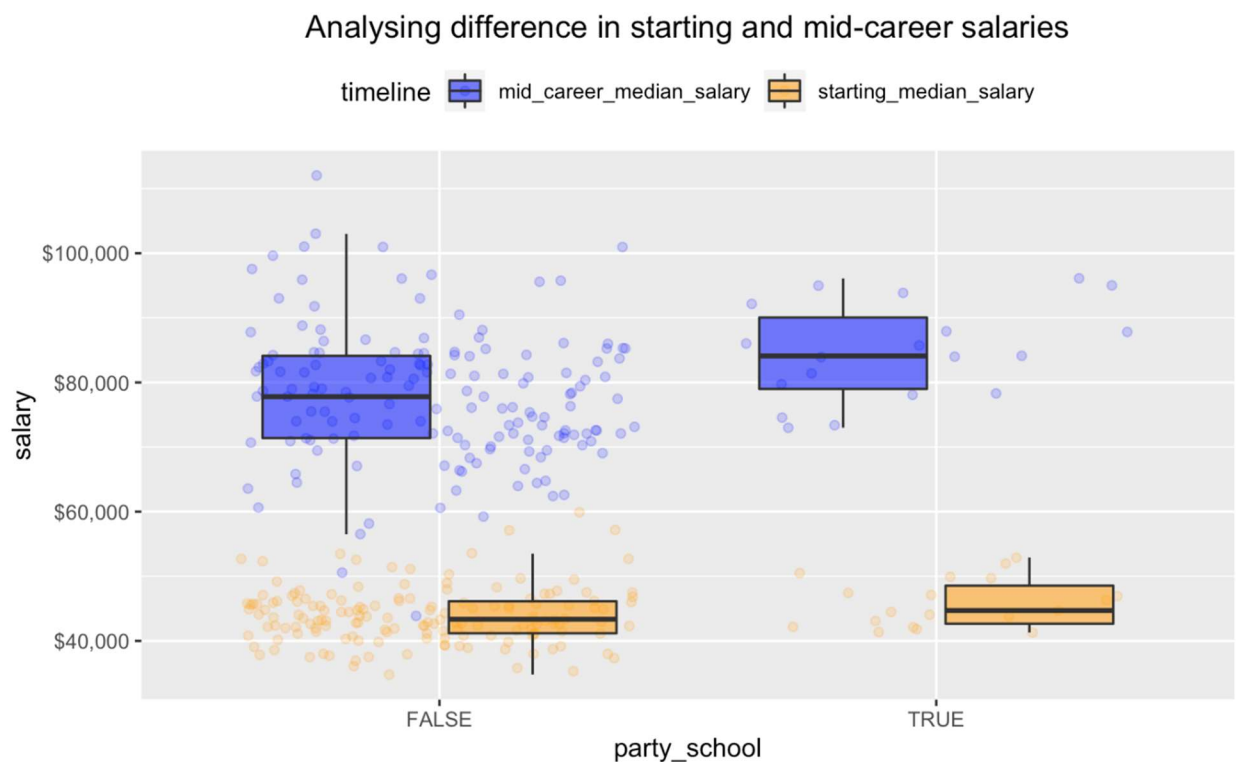
Distribution of salaries based on college type

Q. Plotting a box plot to determine the distribution of salaries based on school type for both mid-career and starting salaries over time.



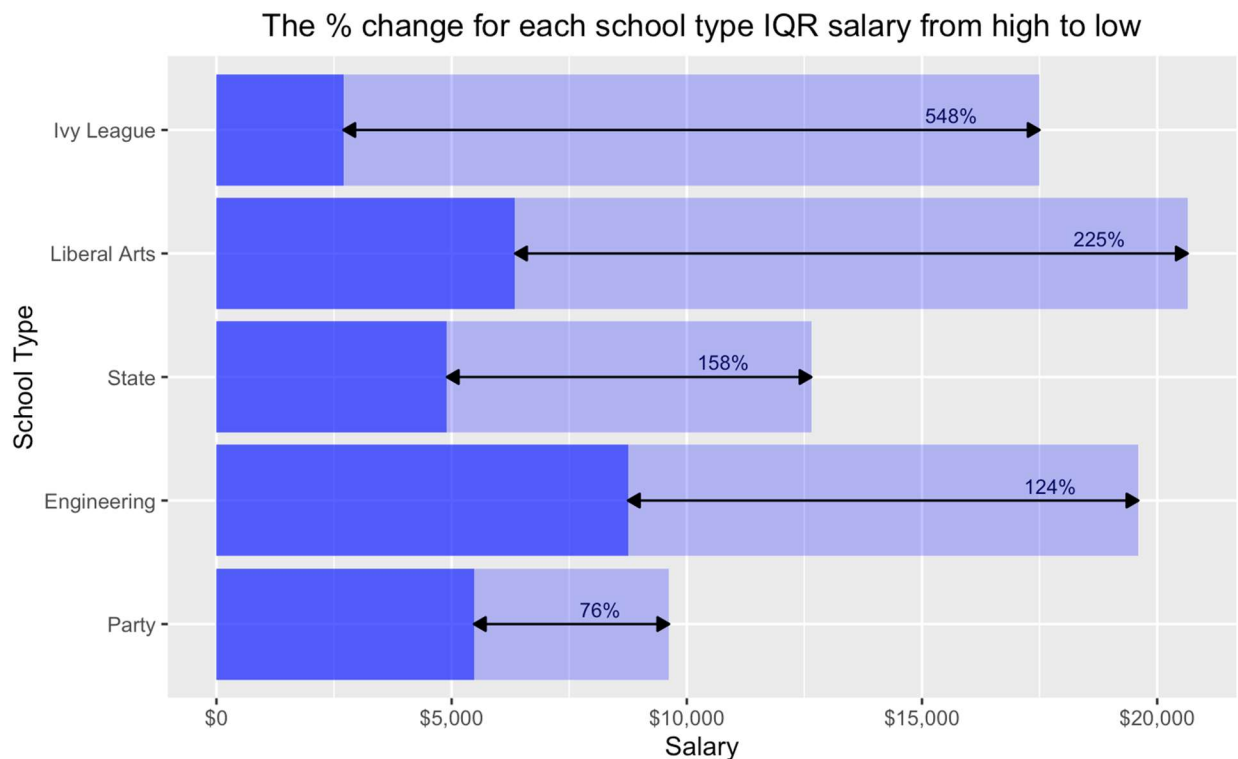
Conclusion: For a career start salary in the Ivy League, the pay range is between 62K and 67K, but the median salary has increased by 40% over time. State schoolteachers earn significantly less at the start of their careers, but their pay increases by around 30% over time.

Q. Using a boxplot to determine whether a student should attend a party school or not



Conclusion: There is some relevance here, as we can see. More data would be helpful, but this appears to imply that if you could attend a state school, it would be better to attend a state school that is also a party school, all other circumstances being equal. Starting and mid-career median incomes for state-party schools are statistically greater than for state non-party colleges.

Q. Determining the interquartile range of salaries based upon the school types and finding how they are distributed.



Conclusion: State-party institutions appear to have greater mid-career median incomes than state non-party schools. More data would be useful here as well, given there aren't enough observations for simply state-party schools.

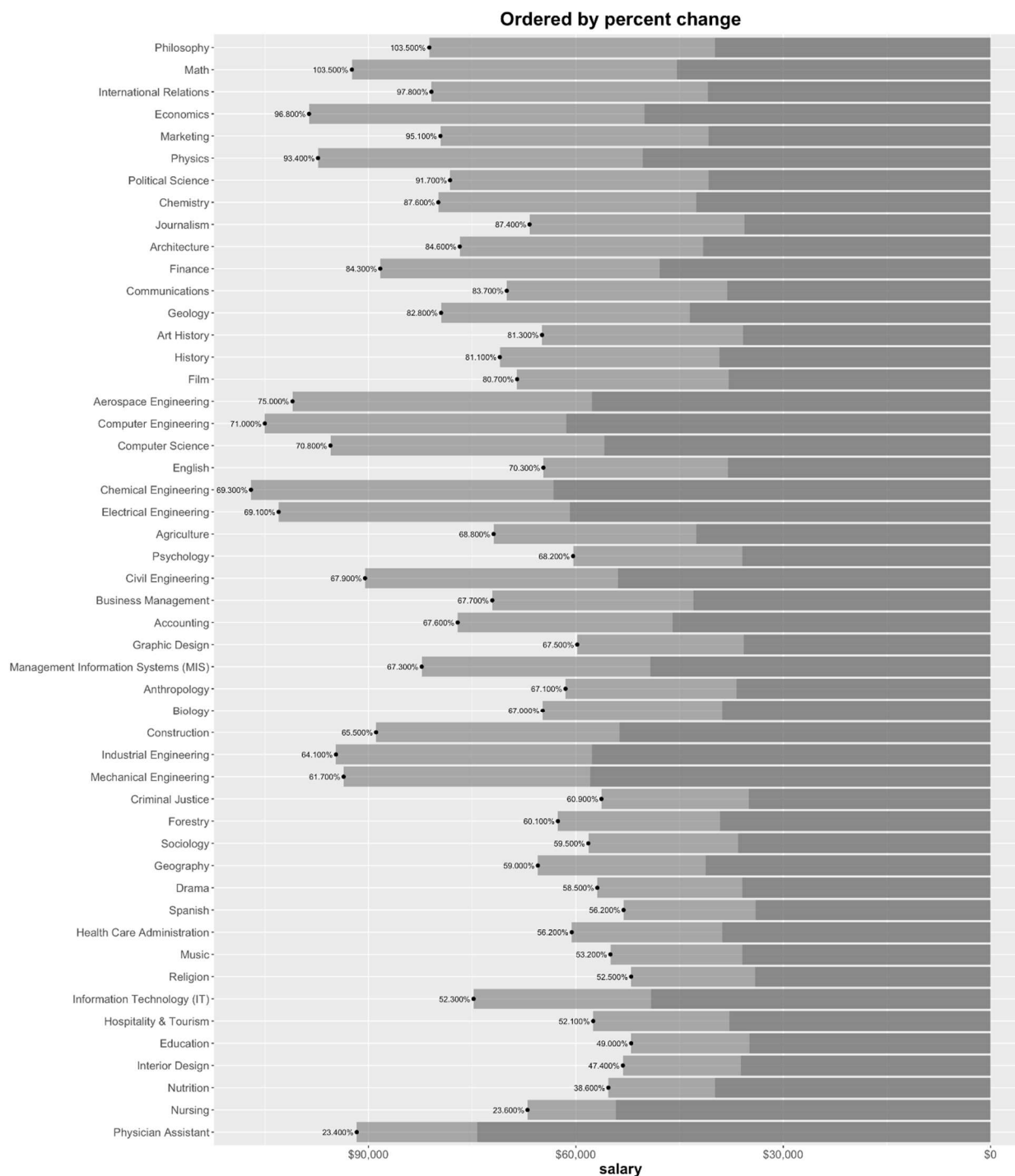
Analyzing salaries by college type and region

Q. What are the starting median income and mid-career median salary distributions by college?



Conclusion: The starting median pay distribution is clearly concentrated at the lower end of the scale and is slightly right skewed. The distribution of median (50th percentile) incomes grows more spread as working time proceeds to mid-career.

Q. Which degrees have the biggest income rise from entry to mid-career?



Conclusion: The degrees that exhibit the greatest percent change in career earnings are listed first in this graph. Even though physician assistants have the greatest starting salaries, the typical mid-career wage hasn't changed much. Philosophy and math majors appear to grow the most by mid-career. We can see that many engineering degrees start high and still have a high mid-career pay, even though they don't alter much.

Final Conclusion

For our visualization, we looked at three key factors: salaries by region, salaries by college type, and salaries by college type and region. We discovered that the Ivy League has the fewest number of schools in the country. Surprisingly, the Ivy League has the highest pay range of any school. Furthermore, Dartmouth College has a significantly higher starting salary, and the median salary has increased by 30 percent each year over a period of time. We also visualized the distribution of salaries by job type and function, and our analyses revealed that people with a background in economics and finance have a better chance of getting a higher pay. The starting salary for a Physician Assistant is \$74,300, and the pay raise for a Physician Assistant is 15% over time. People with a chemical engineering background, on the other hand, earn significantly more in their mid-career. Starting and mid-career salaries have a strong correlation.

According to one of our observations on start and mid-career salary, if you have the opportunity to attend a state school, it would be better to attend a state school that is also a party school, all else being equal. The northeastern region has a variety of school types, whereas the southeastern region only has two: state and party schools. We created a time series chart to determine which job type, background, and college type has a higher pay overtime, and based on our observations, students from California Institute of Technology have a larger pay increase after a few years of experience. Finally, we were able to conclude from our analyses that students graduating from Ivy League universities have a better chance of landing a higher paying job than students graduating from any other university, and they also have a wide range of job types available to students.