

# Project One – Group 9

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# Project Proposal



# Data Discovery/Hypothesis

## DATASETS

U.S. Department of Education  
U.S. Census Employment Statistics of College Graduates

*also looked at Kaggle, US Bureau of Labor Statistics, Harvard Dataverse*

## NULL HYPOTHESIS

Zip codes where the largest public colleges had increased proportion of students enrolled (race) over the last 5 years had the same increase in median income for that race as zip codes where the largest college had no increase in enrollment.

Alternative Hypothesis: Median income increase for (race) was greater in zip codes where enrollment for (race) increased at the largest college.



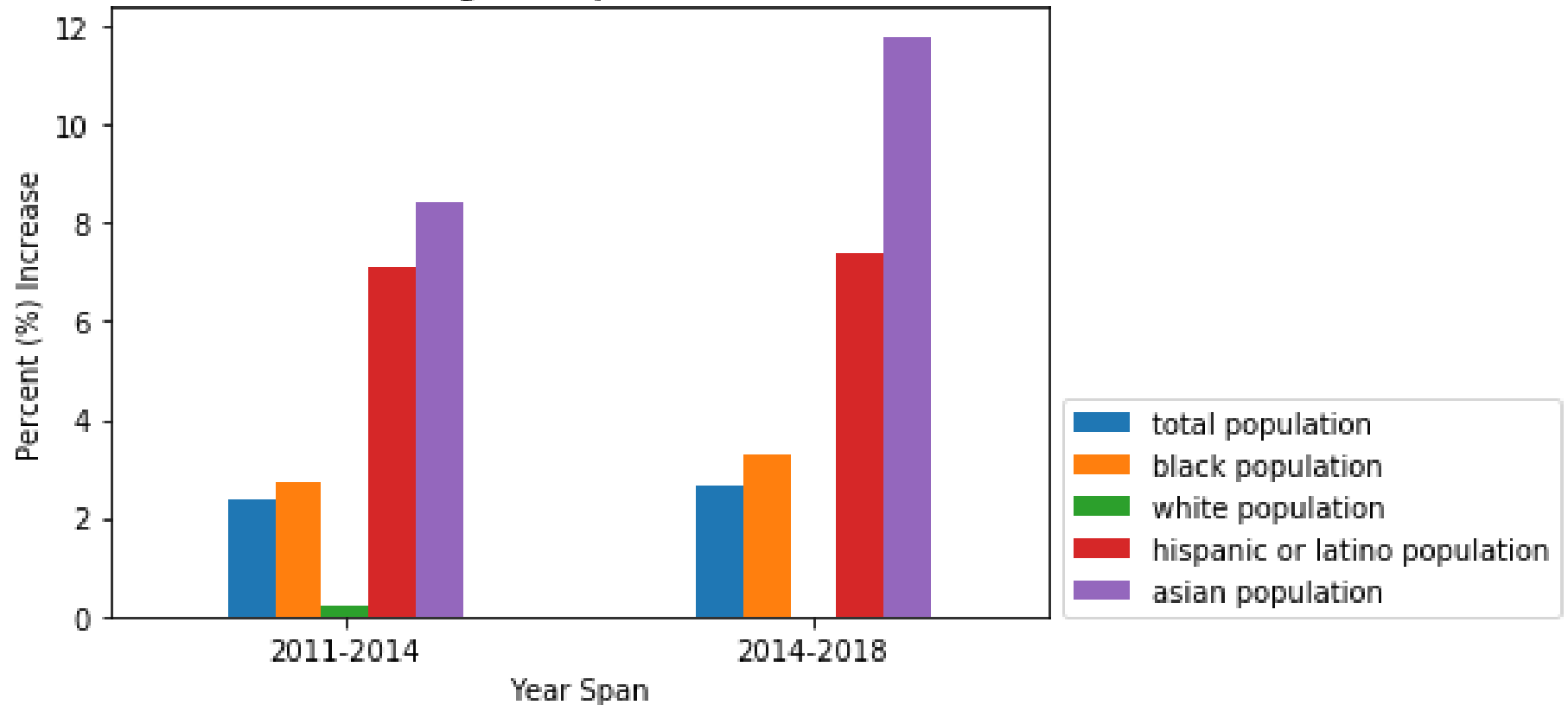
# Data Cleanup & Exploration

Daniel & Cullen



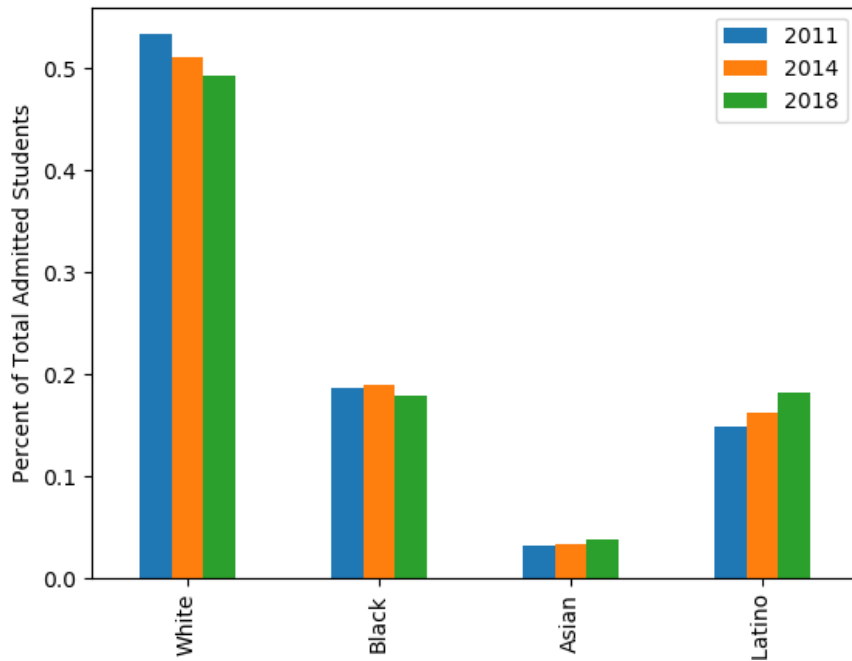
# Data Analysis

Percent Change of Population 2011-2018

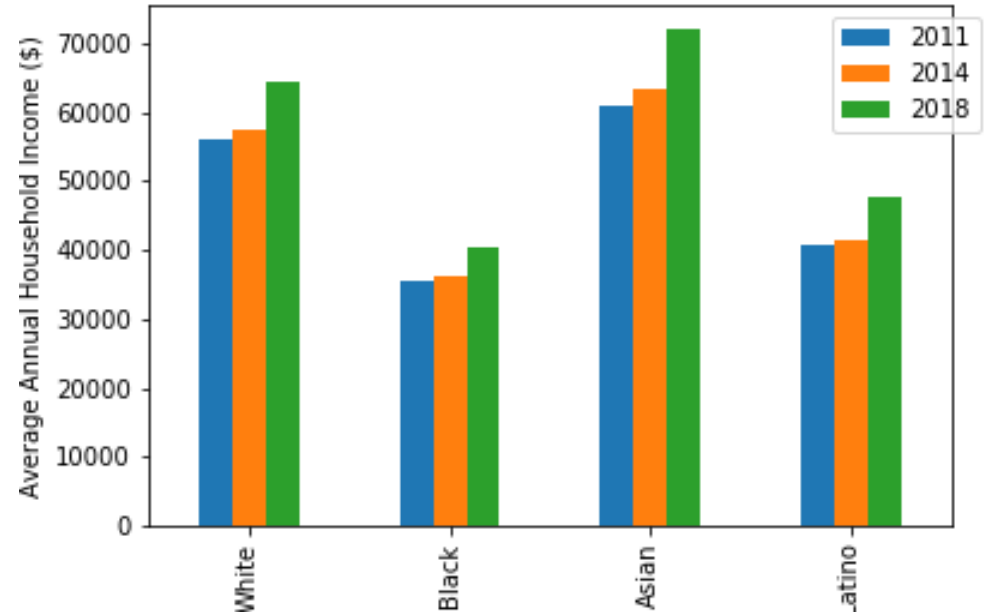


# Data Analysis

Percent of Students, by Race, Admitted to Colleges in the U.S.

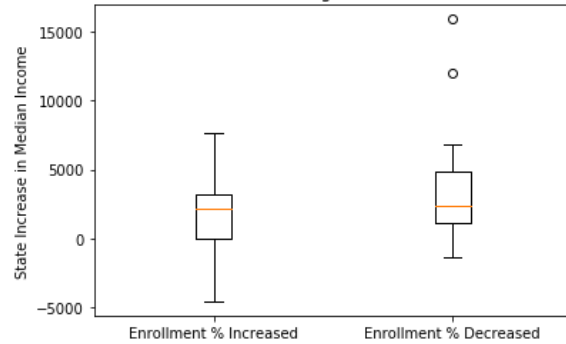


Average Annual Household Income, by Race in the U.S.



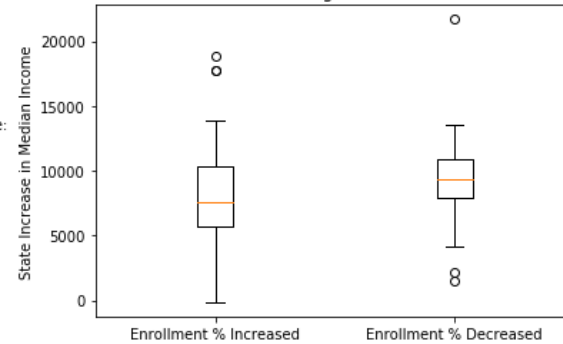
# Data Analysis

Median Income Change 2011 to 2014--ASIAN



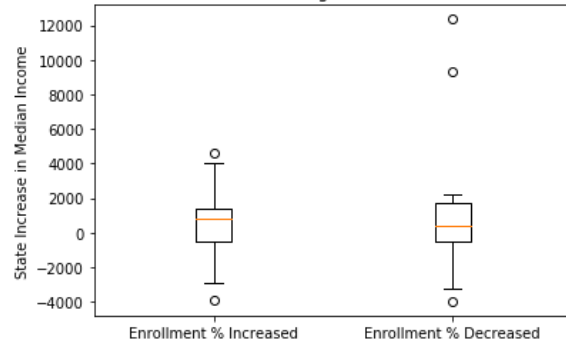
T-test for Difference in Median Income Change:  
 $t = -1.6$   $p\text{-value} = 0.1267$

Median Income Change 2014 to 2018--ASIAN



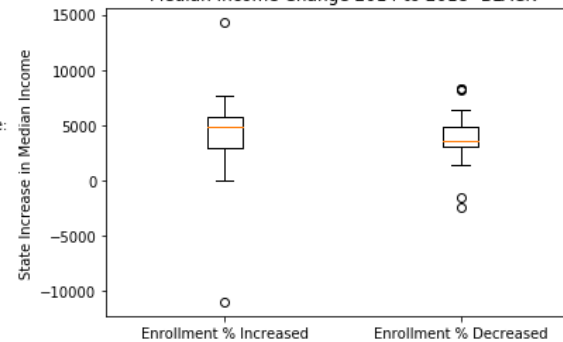
T-test for Difference in Median Income Change:  
 $t = -0.74$   $p\text{-value} = 0.4632$

Median Income Change 2011 to 2014--BLACK



T-test for Difference in Median Income Change:  
 $t = -0.51$   $p\text{-value} = 0.6126$

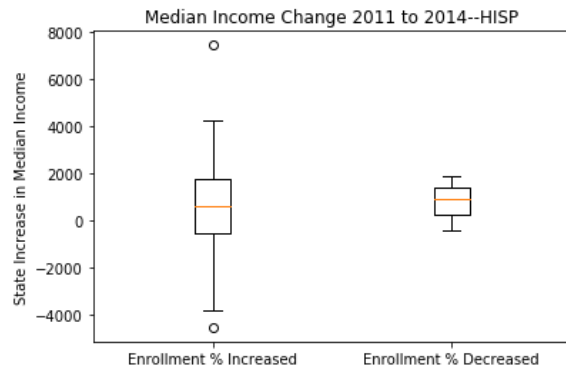
Median Income Change 2014 to 2018--BLACK



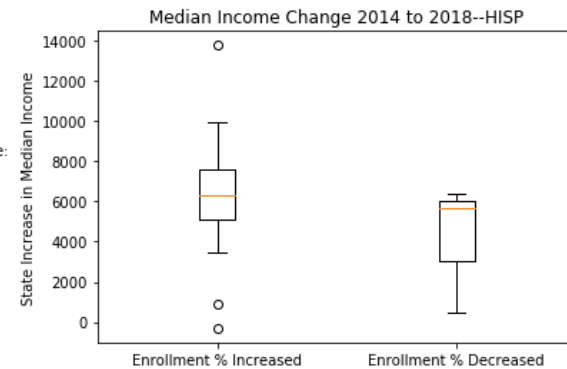
T-test for Difference in Median Income Change:  
 $t = 0.38$   $p\text{-value} = 0.7038$



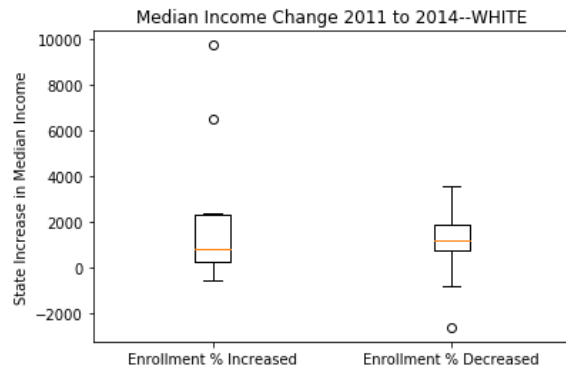
# Data Analysis



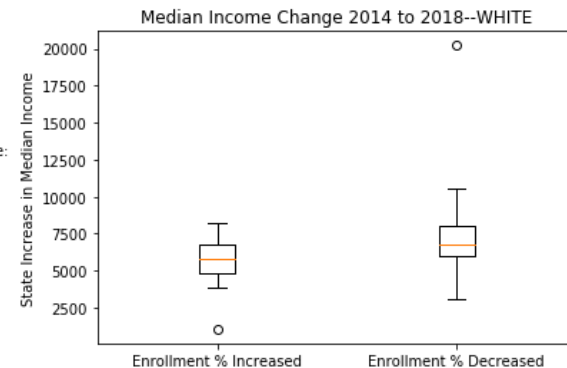
T-test for Difference in Median Income Change:  
 $t = -0.28$   $p\text{-value} = 0.7994$



T-test for Difference in Median Income Change:  
 $t = 1.15$   $p\text{-value} = 0.3633$



T-test for Difference in Median Income Change:  
 $t = 0.88$   $p\text{-value} = 0.3962$



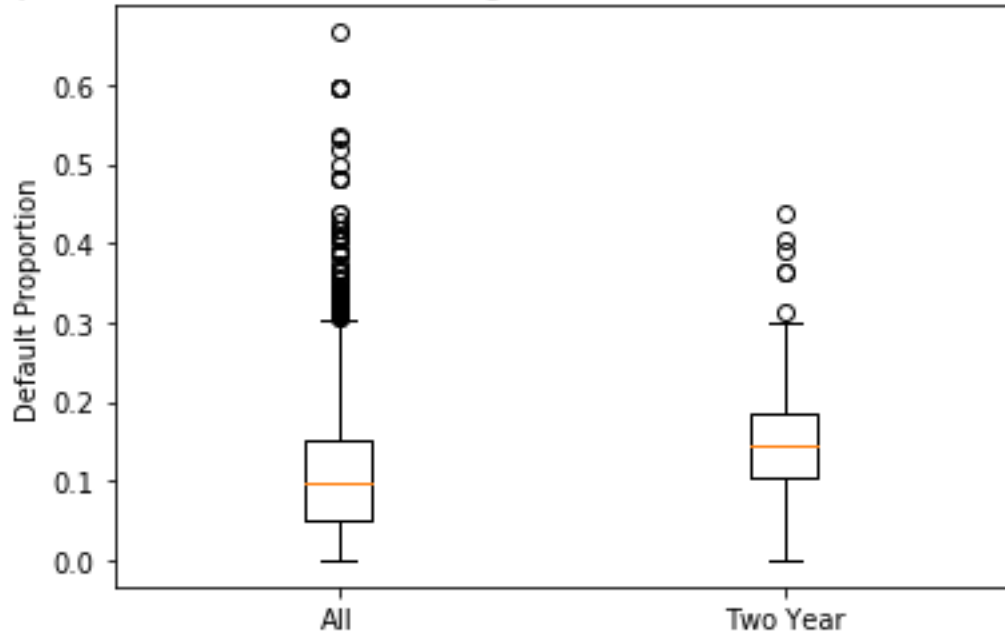
T-test for Difference in Median Income Change:  
 $t = -1.97$   $p\text{-value} = 0.0748$





# Data Analysis

Proportion of Students Defaulting on Loans, Overall vs. Two Year Colleges

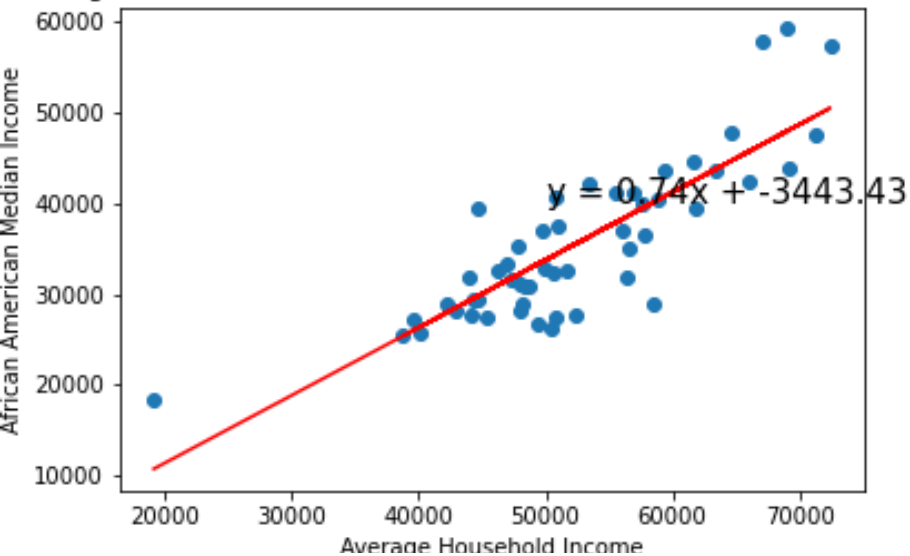


T-test for Difference in Default Proportion:  
 $t = -18.56$   $p\text{-value} = 0.0$

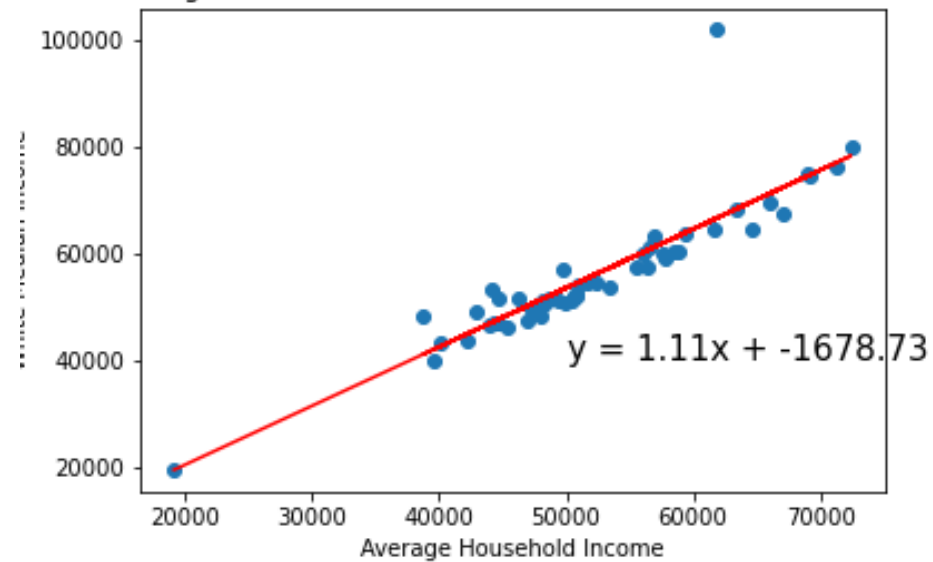


# Data Analysis

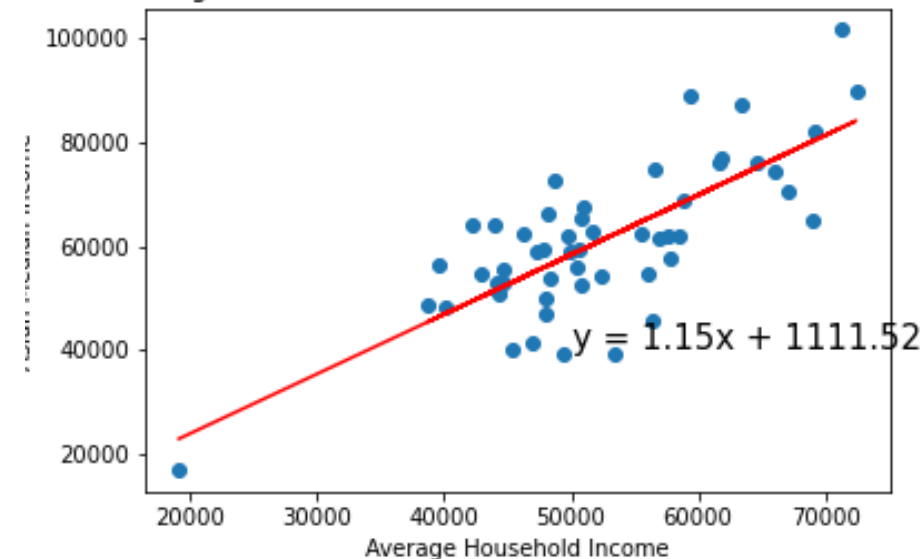
Average Household Income vs. African American Median Income (2011)



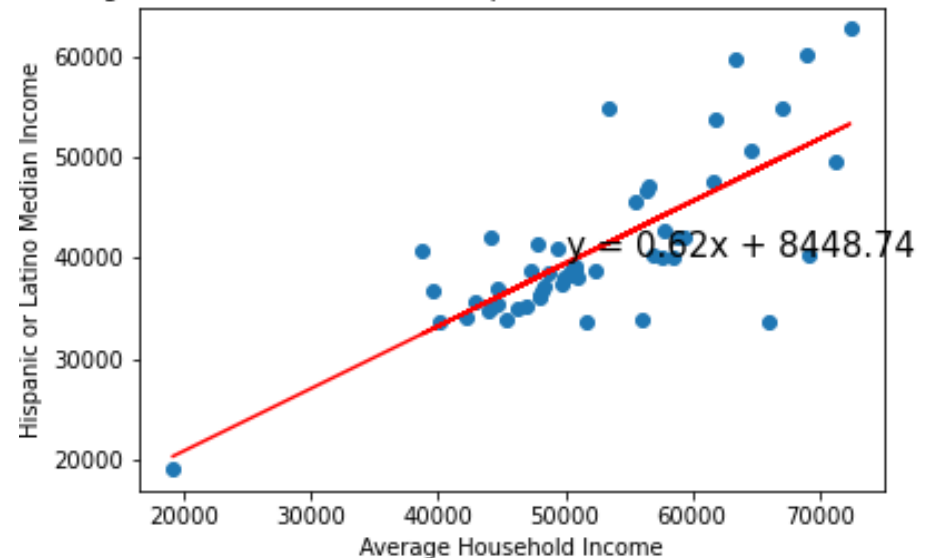
Average Household Income vs. White Median Income (2011)



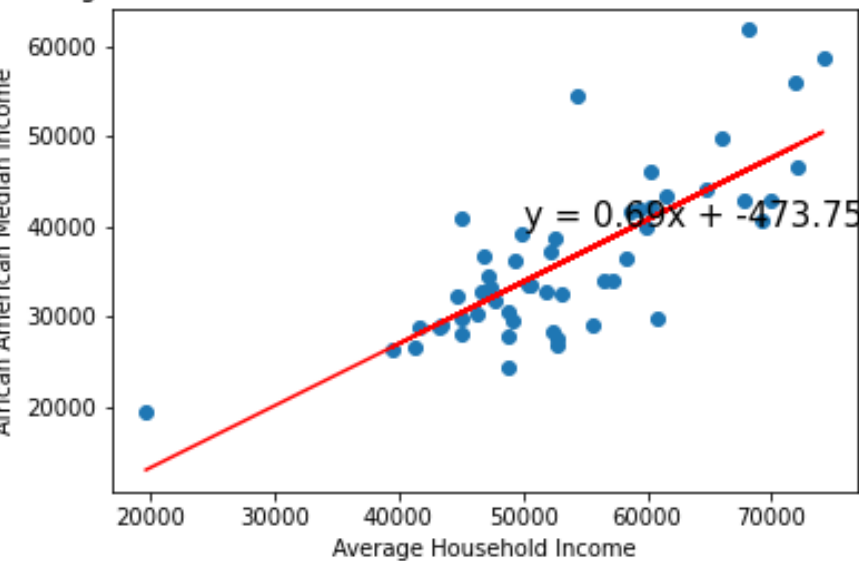
Average Household Income vs. Asian Median Income (2011)



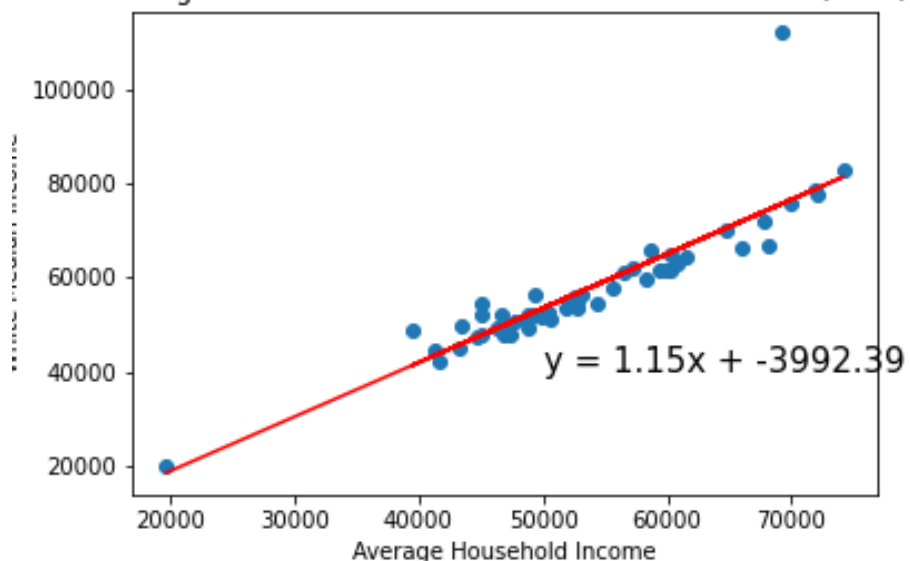
Average Household Income vs. Hispanic or Latino Median Income (2011)



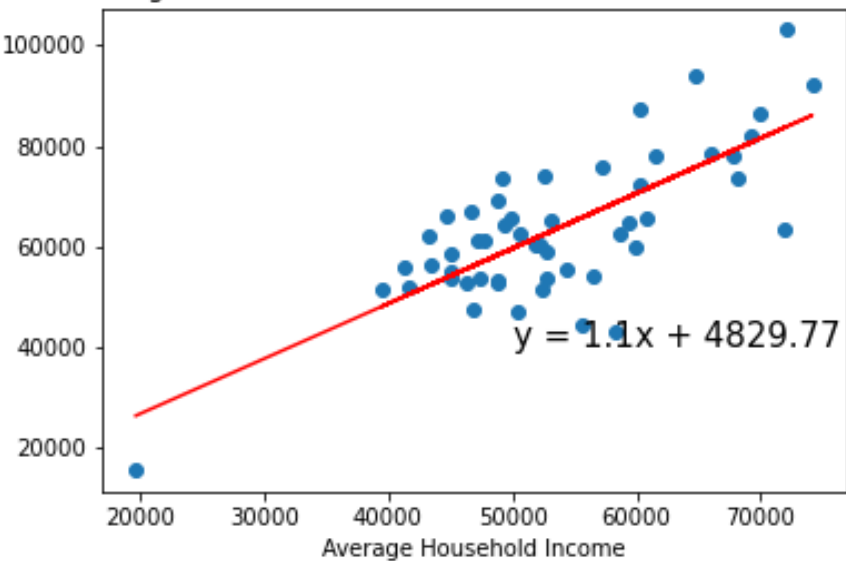
Average Household Income vs. African American Median Income (2014)



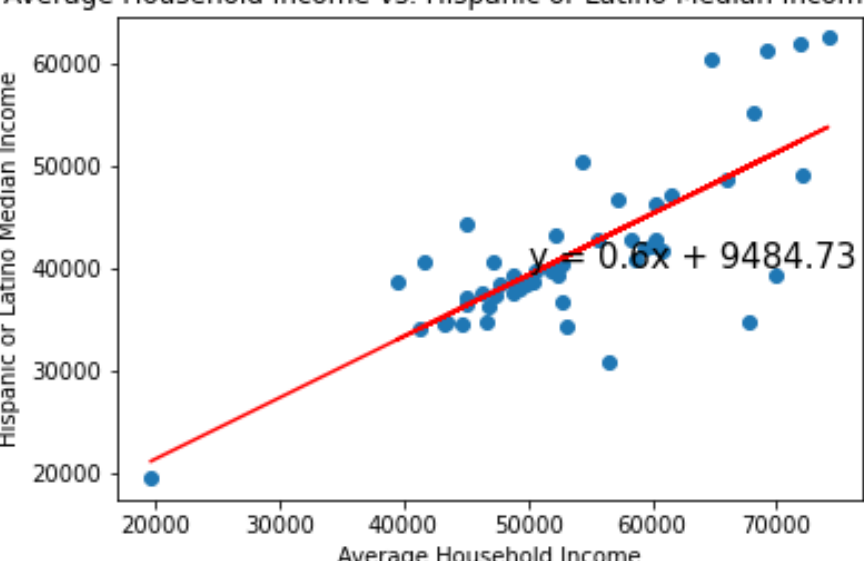
Average Household Income vs. White Median Income (2014)



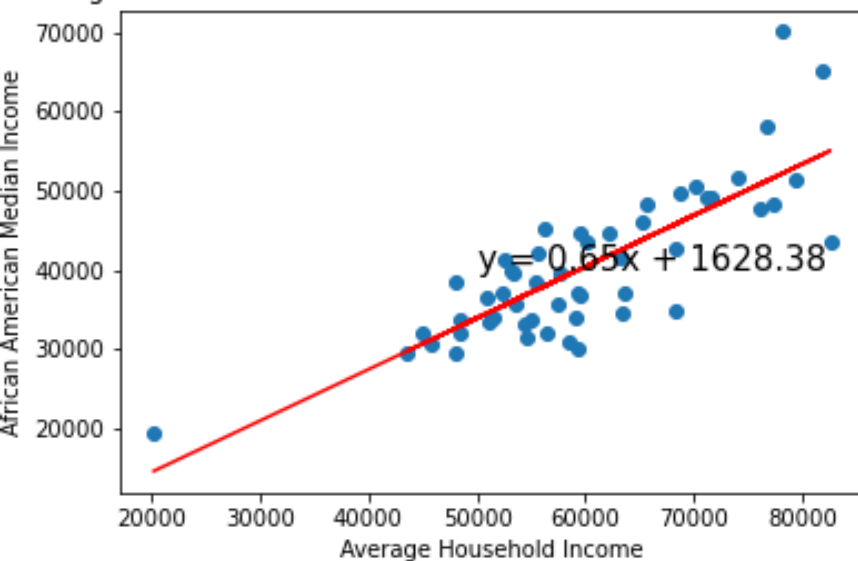
Average Household Income vs. Asian Median Income (2014)



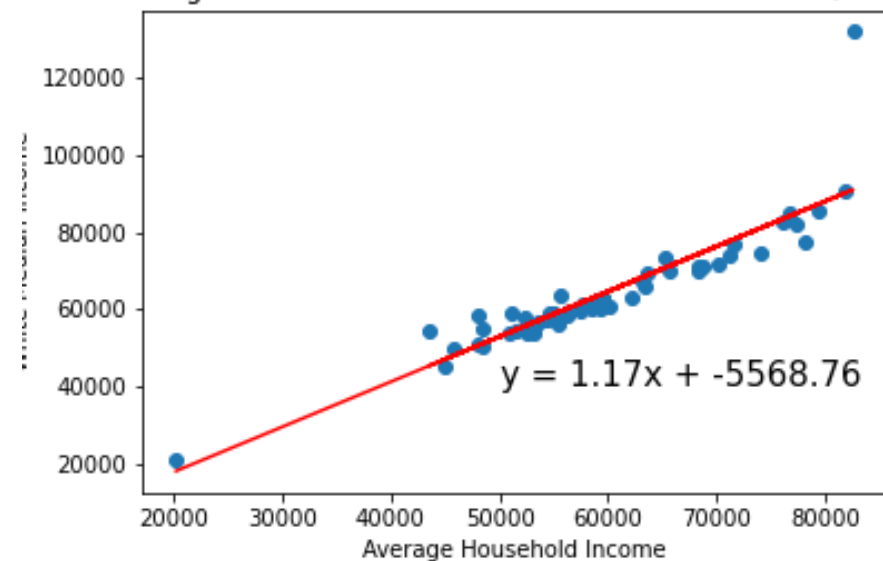
Average Household Income vs. Hispanic or Latino Median Income (2014)



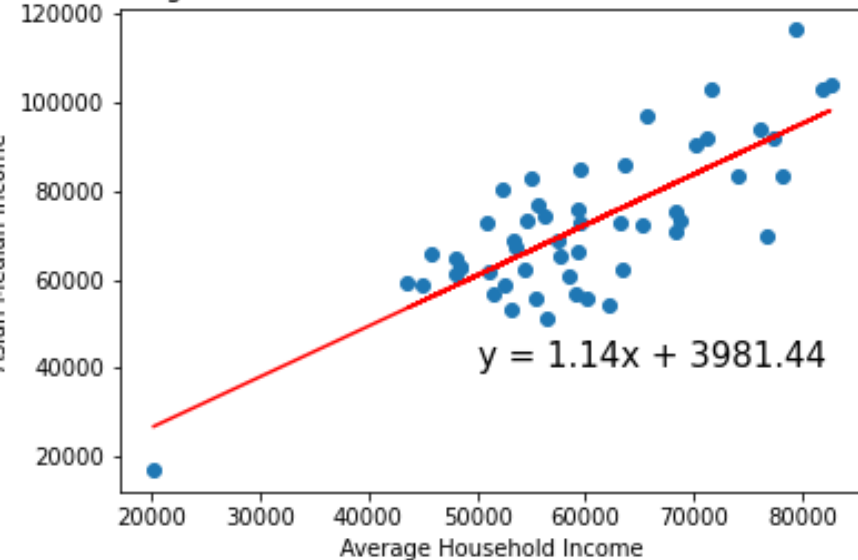
Average Household Income vs. African American Median Income (2018)



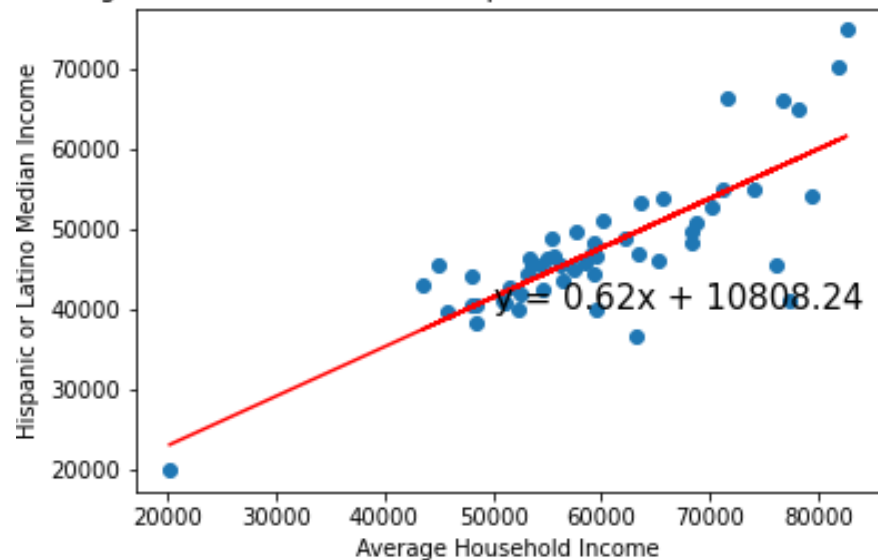
Average Household Income vs. White Median Income (2018)



Average Household Income vs. Asian Median Income (2018)



Average Household Income vs. Hispanic or Latino Median Income (2018)



# Discussion



# Questions?

