



ROAD TO SUCCESS

POSTSECONDARY ATTAINMENT: IDENTIFYING AREAS TO IMPROVE RETENTION
NORTH CAROLINA COMMUNITY COLLEGES
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ADVISOR - DR. DREW – GROUP 1



Problem Statement

Identifying reasons why 1/3 of students in
North Carolina Community Colleges do not
return for their second year of college.

Source: Carolina Demography. (2018). *North Carolina's Leaky Educational Pipeline & Pathways to 60% Postsecondary Attainment* [Word Document].



While 83% of high school grads intend on college...



62% Actually enroll

34% Community College (CC) students do not return for second year

25% CC students follow through on enrolling in four-year university

30% Full-Time CC students graduate in three years

Source: Carolina Demography. (2018). *North Carolina's Leaky Educational Pipeline & Pathways to 60% Postsecondary Attainment* [Word Document].



Data - Goals

- Address Problem Statement
- Create NC Community College Data Repository, extending Dr. Drew's work - Belk Endowment Educational Attainment Data Repository for NC Public Schools
- Repository available to Data Science community



Data - Sources

- **NC Office of State Budget and Management**
- **Internal Revenue Service**
- **National Center for Education Statistics**
- **NC Community College page for Analytics and Reporting**
- **NC Public High School Data (compiled by Dr. Drew)**



First Year Progression

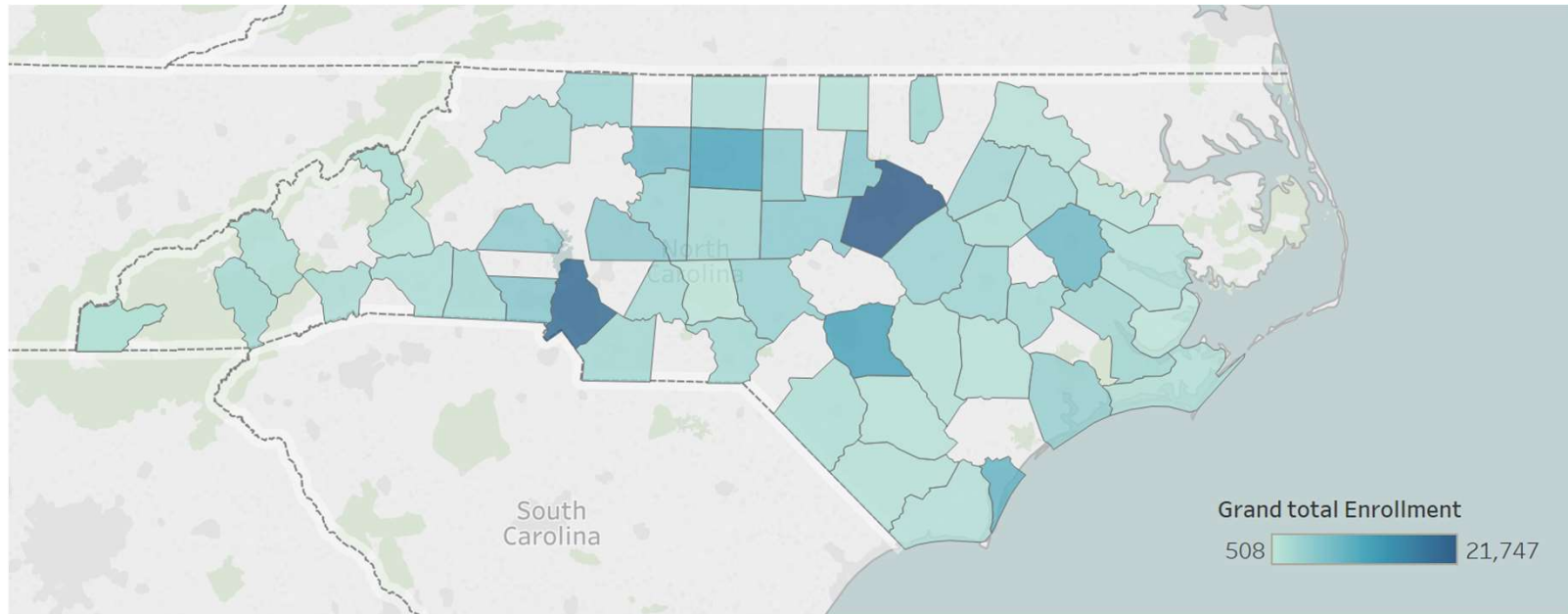
Students that attempt at least 12 hours of classes within their first academic calendar year and complete at least 12 hours of classes within that year.

Source: https://github.com/BrownRegaSterlingHeinen/PostsecondaryAttainment/blob/master/Data%20Documentation/Data_Dictionary_Full.pdf



Insights

58 out 102 NC counties have a Community College (CC)

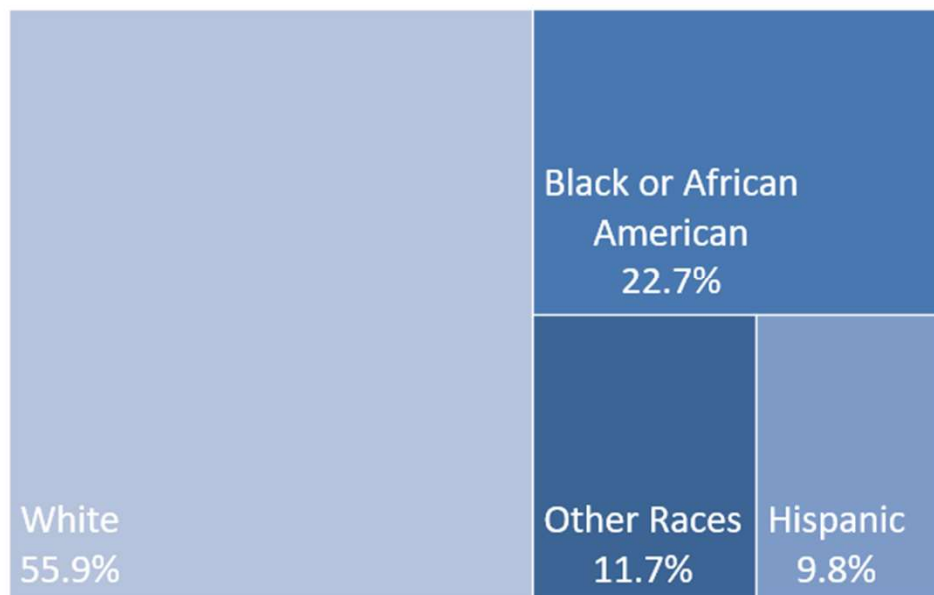


23% of NC public school students have proximity barrier to CC

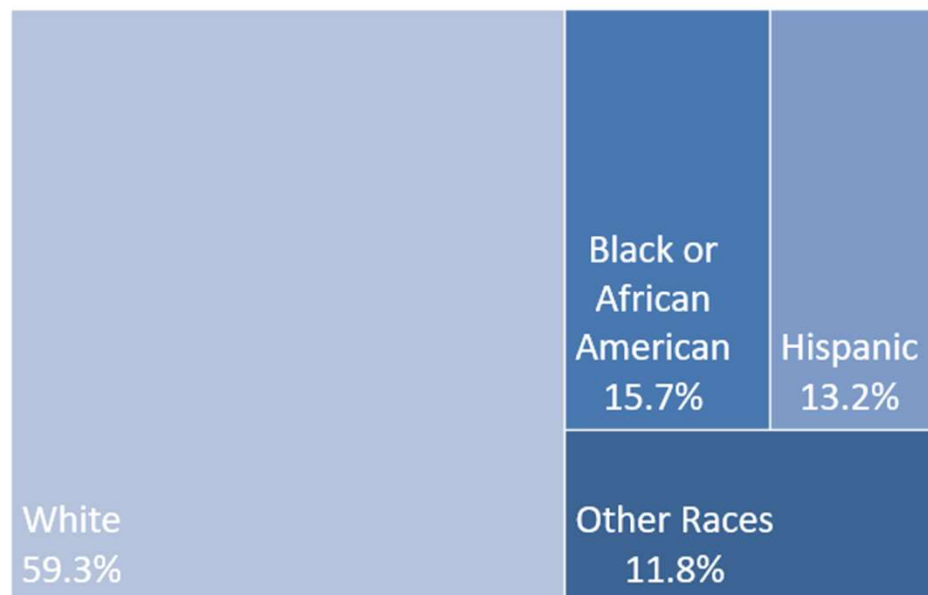


Black students represent 23% of Student Population...

TOTAL STUDENT POPULATION



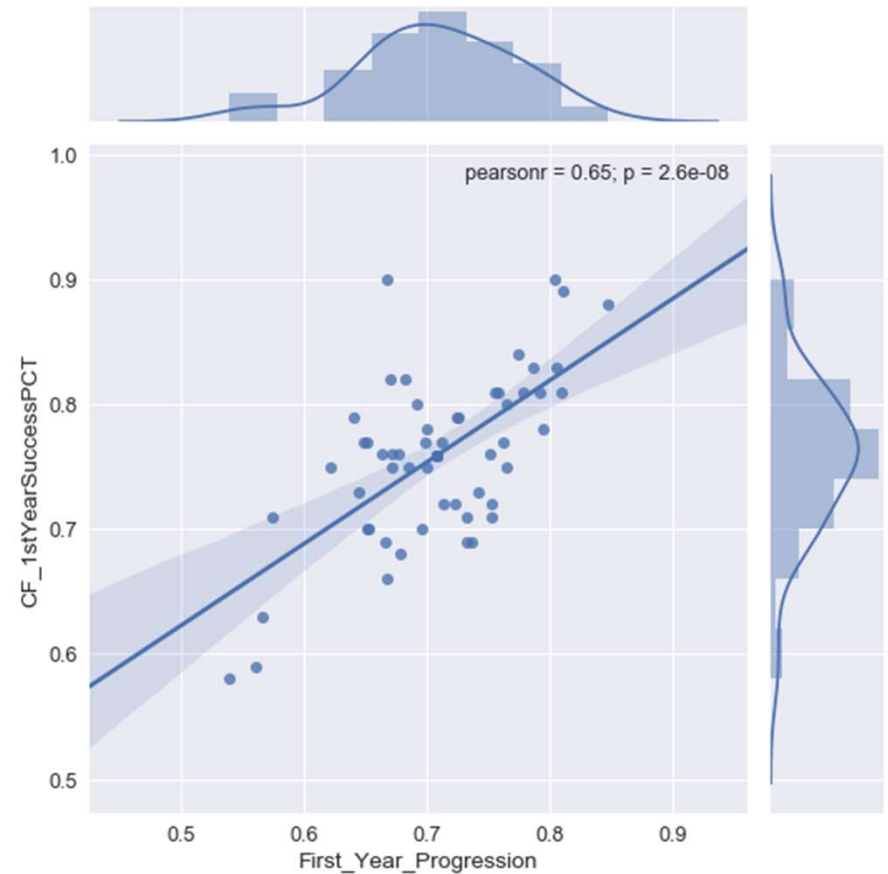
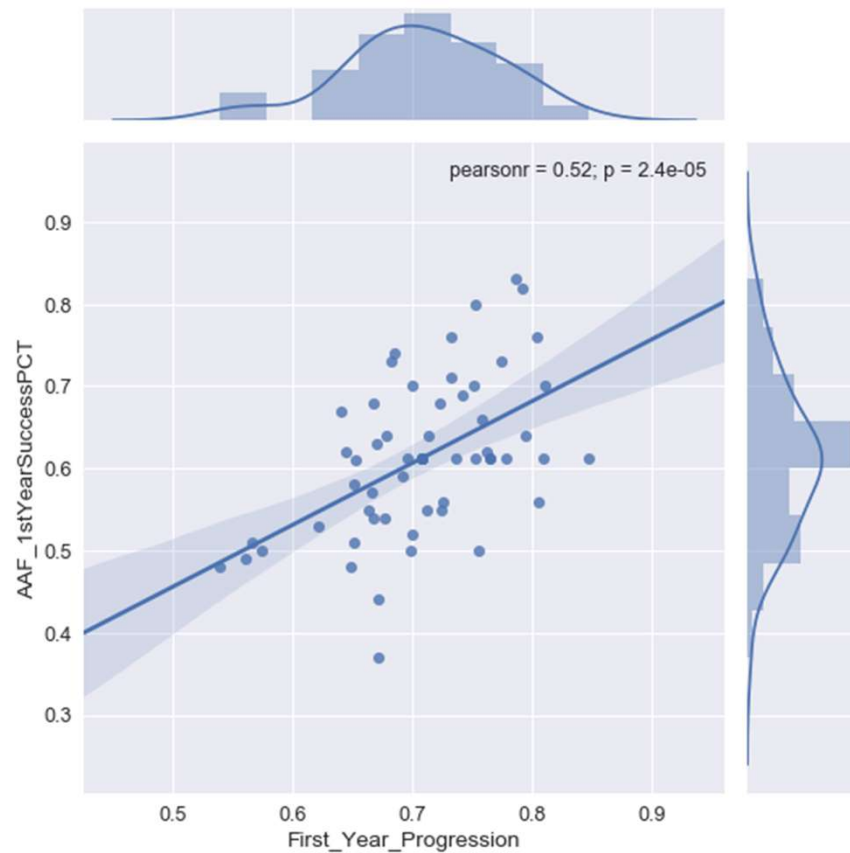
FIRST YEAR PROGRESSION



But only 16% meet First Year Progression Metric

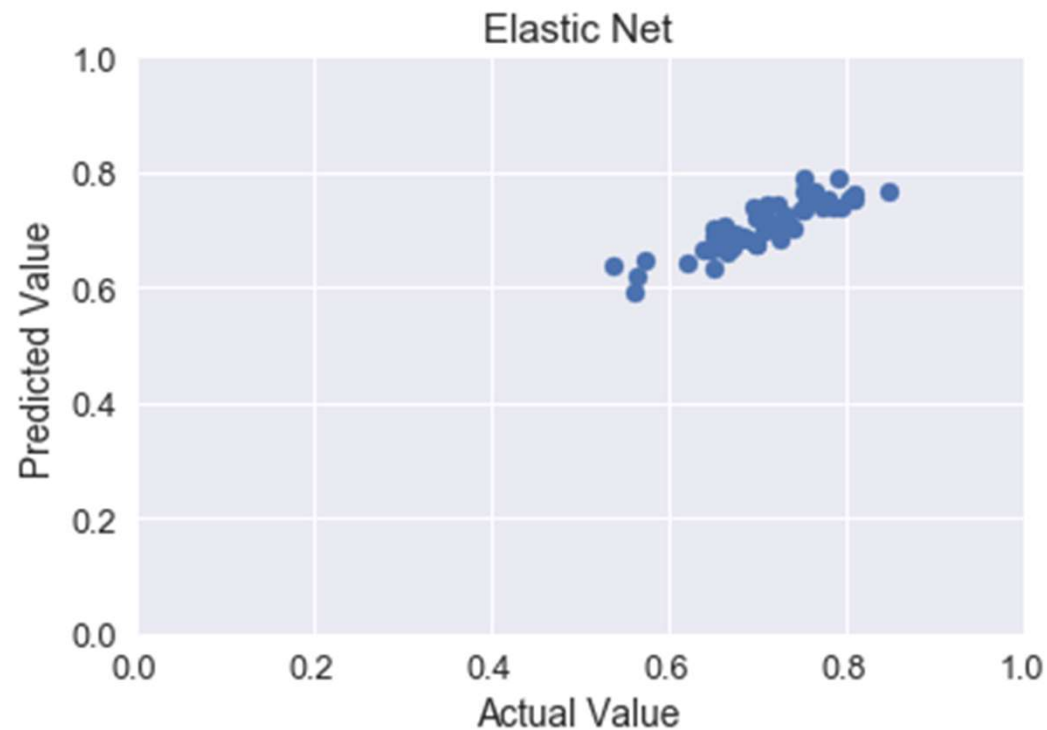


Correlation



Model

Elastic Net regression used to predict First Year Progression



Model Evaluation

4%

Mean Absolute Error

5%

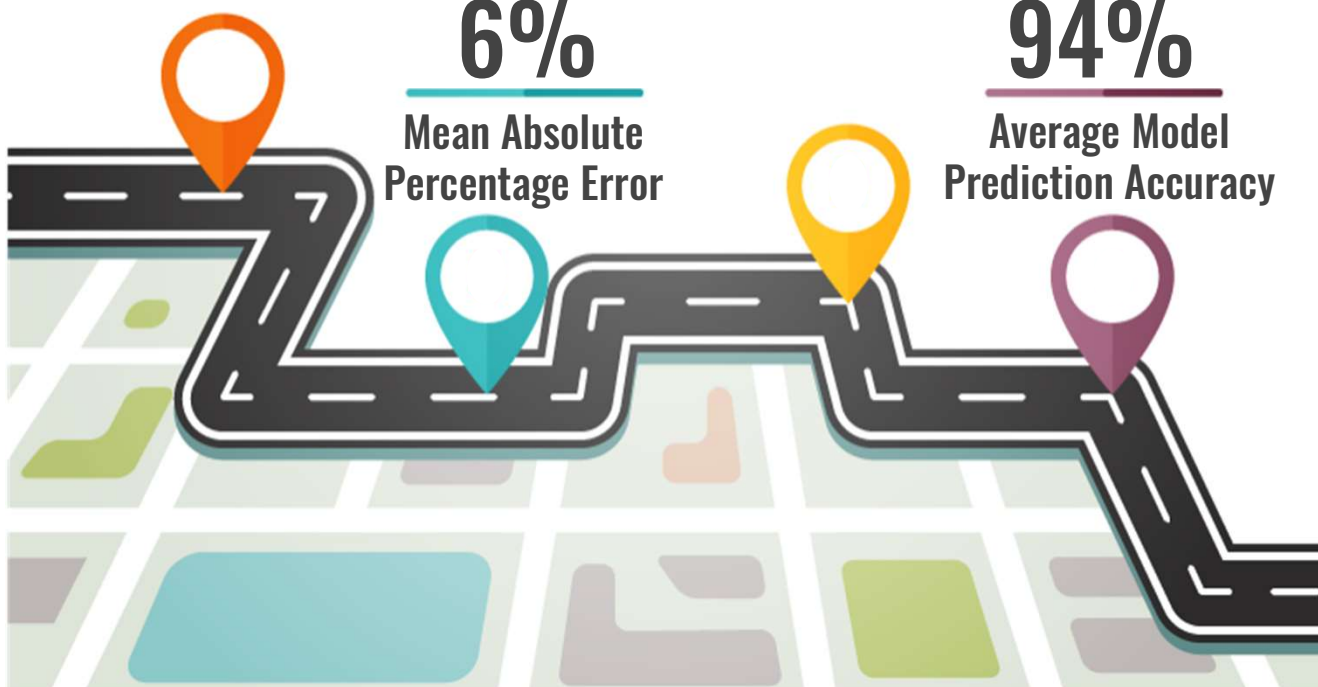
Root Mean
Squared Error

6%

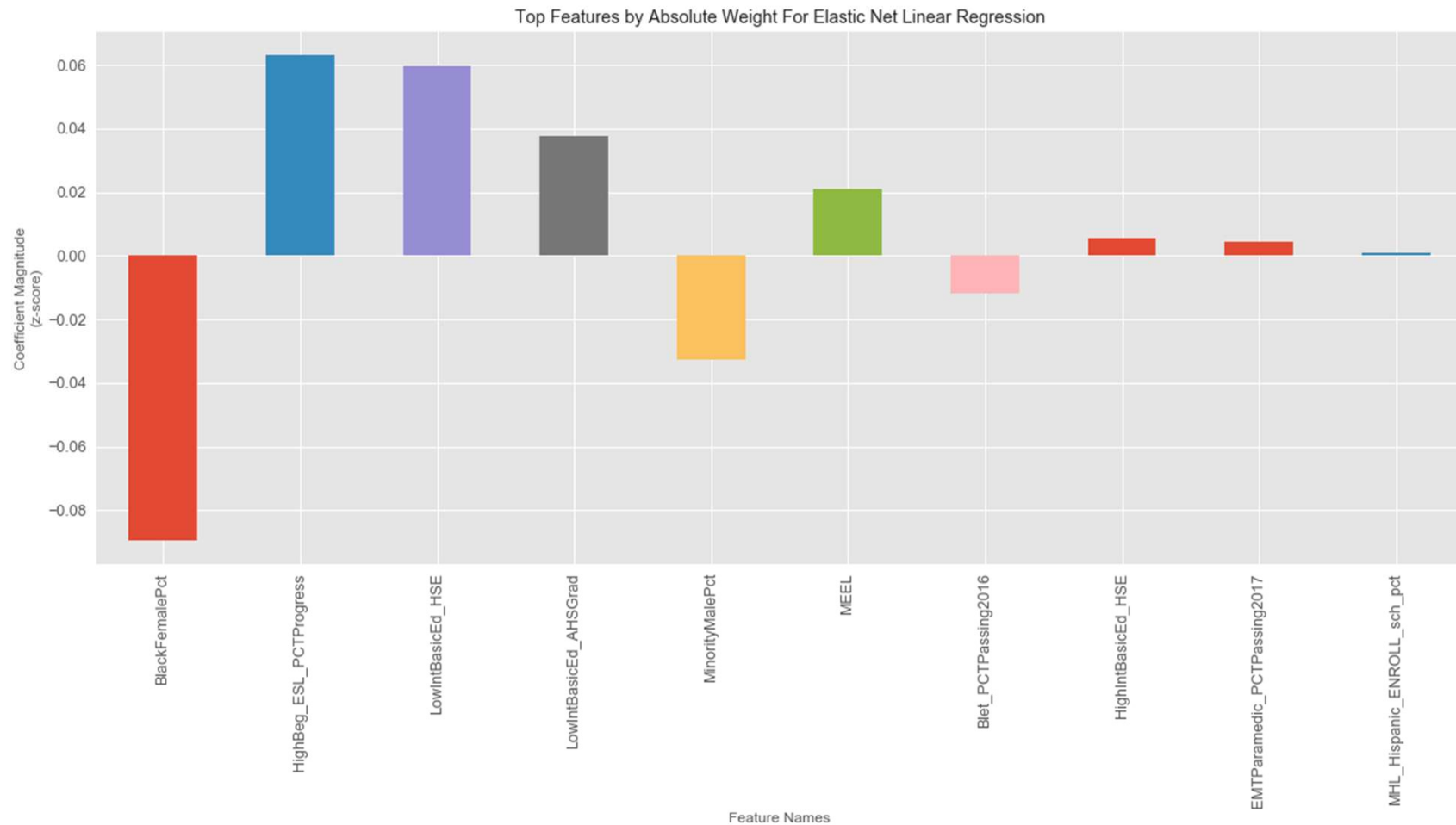
Mean Absolute
Percentage Error

94%

Average Model
Prediction Accuracy



Top features that predict First Year Progression Rate



Top Three Features

-0.109



Average % of black female high school students in the county

% of high ESL students receiving AEFLA Services that achieve EFL gain



0.063

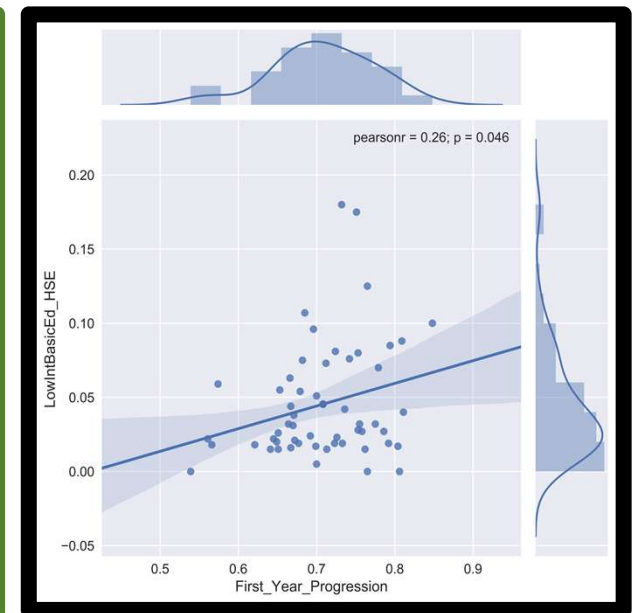
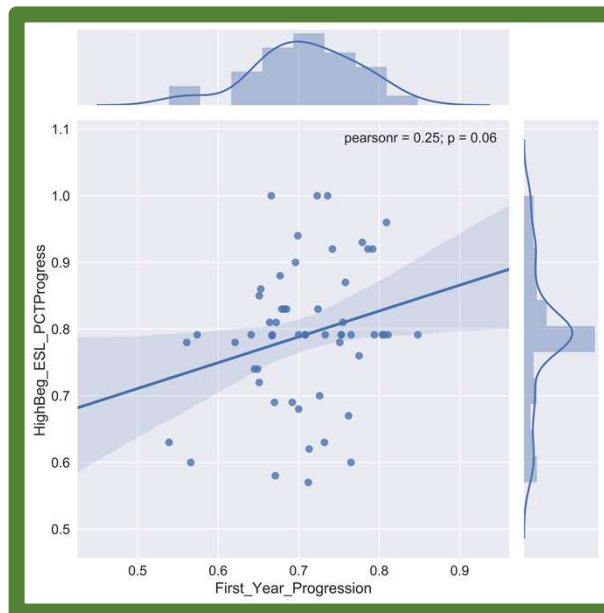
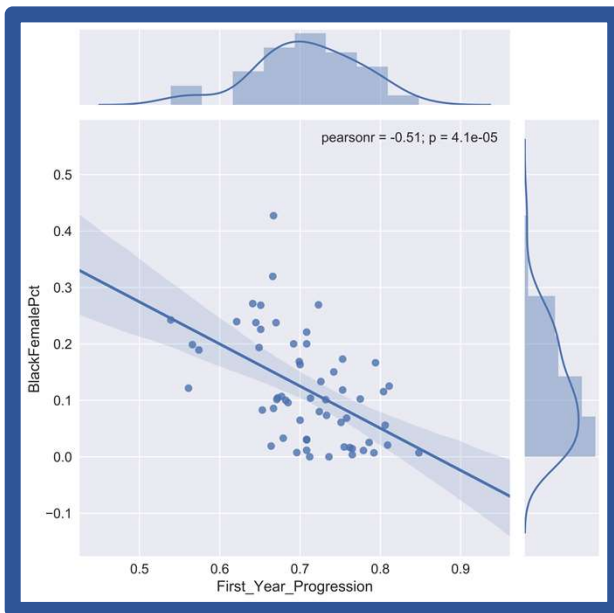
% of low basic education students receiving AEFLA services who passed HSE exam



0.059



First_Year_Progression vs. Top Features



Conclusion

AEFLA services are helpful for students completing their first year of college. These services help educationally at-risk and ESL students.

Future work can be done to further investigate the racial inequalities that exist within the North Carolina educational system.

