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"Study of access and outcomes from advanced computer science coursework in the Chicago Public Schools" poster in Structured Poster Session CS for All: An intersectional approach to unpacking equity in computer science education

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Study of access and outcomes from advanced placement coursework in the Chicago Public Schools

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AP Equal Access?

| Race | AP Schools | CS-A | CSP |
|------------------|------------|------|-----|
| Asian | 8% | 22% | 13% |
| Caucasian | 18% | 32% | 20% |
| African American | 22% | 9% | 17% |
| Hispanic | 52% | 39% | 50% |

AP Equal Outcomes?

| Race | CS-A Score | CSP Score |
|------------------|------------|-----------|
| Asian | 3.1 | 3.2 |
| Caucasian | 3.1 | 3.4 |
| African American | 2.4 | 2.1 |
| Hispanic | 2.1 | 2.3 |

Hypotheses

Hypothesis 1: “Most underrepresented AP students cannot benefit from the program.” (because they are not prepared for college level work.)

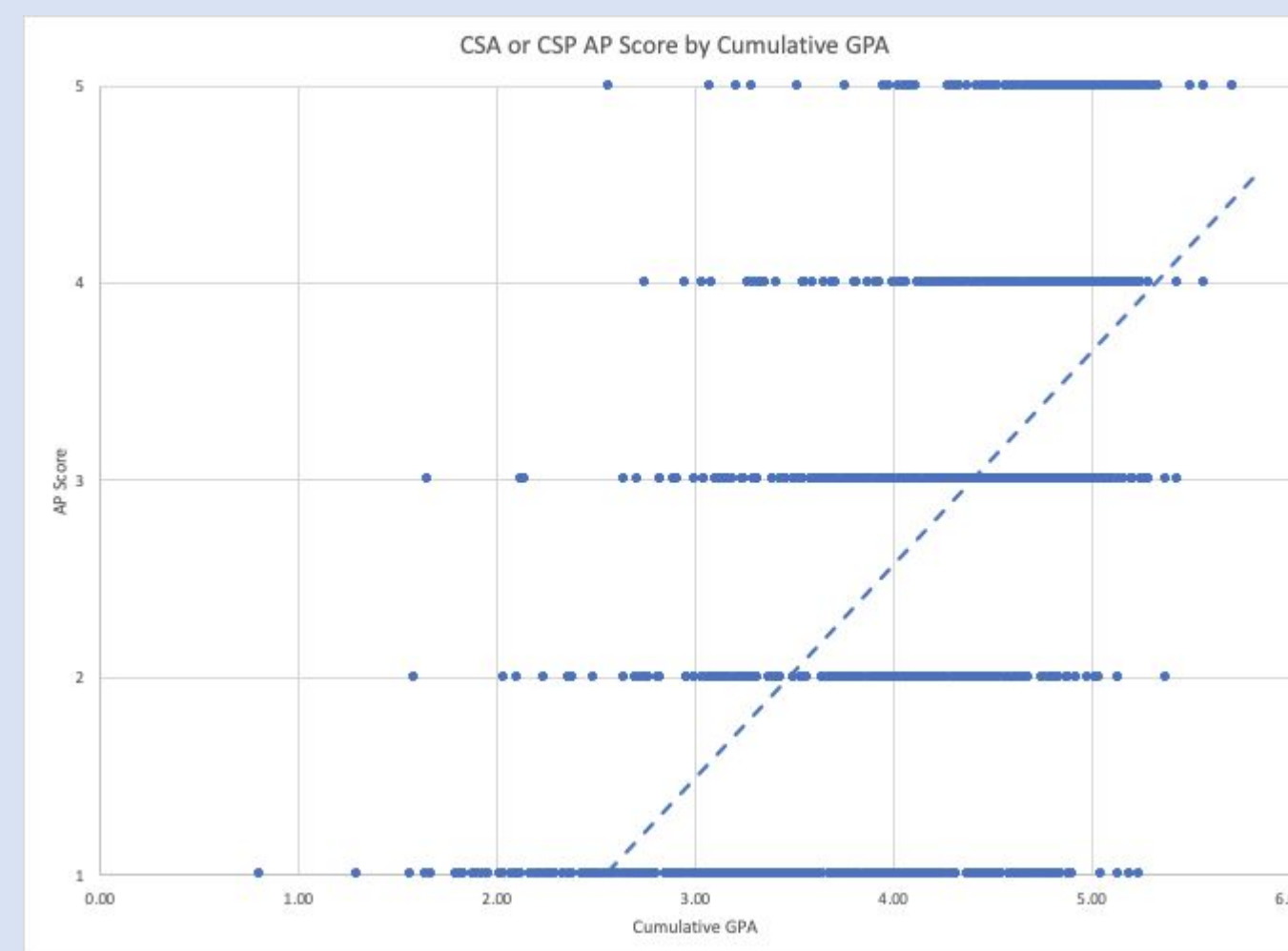
Hypothesis 2: “AP curricula are being ineffectively taught to underrepresented students.”

Hypothesis 3: “AP is a component of social reproduction.”

Kolluri, S. (2018). Advanced placement: The dual challenge of equal access and effectiveness. *Review of Educational Research*, 88(5), 671-711

Equal Preparation? (GPA)

| Race | GPA (CSA) | GPA (CSP) |
|------------------|-----------|-----------|
| Asian | 4.5 | 4.2 |
| Caucasian | 4.3 | 4.1 |
| African American | 3.7 | 3.2 |
| Hispanic | 3.7 | 3.5 |



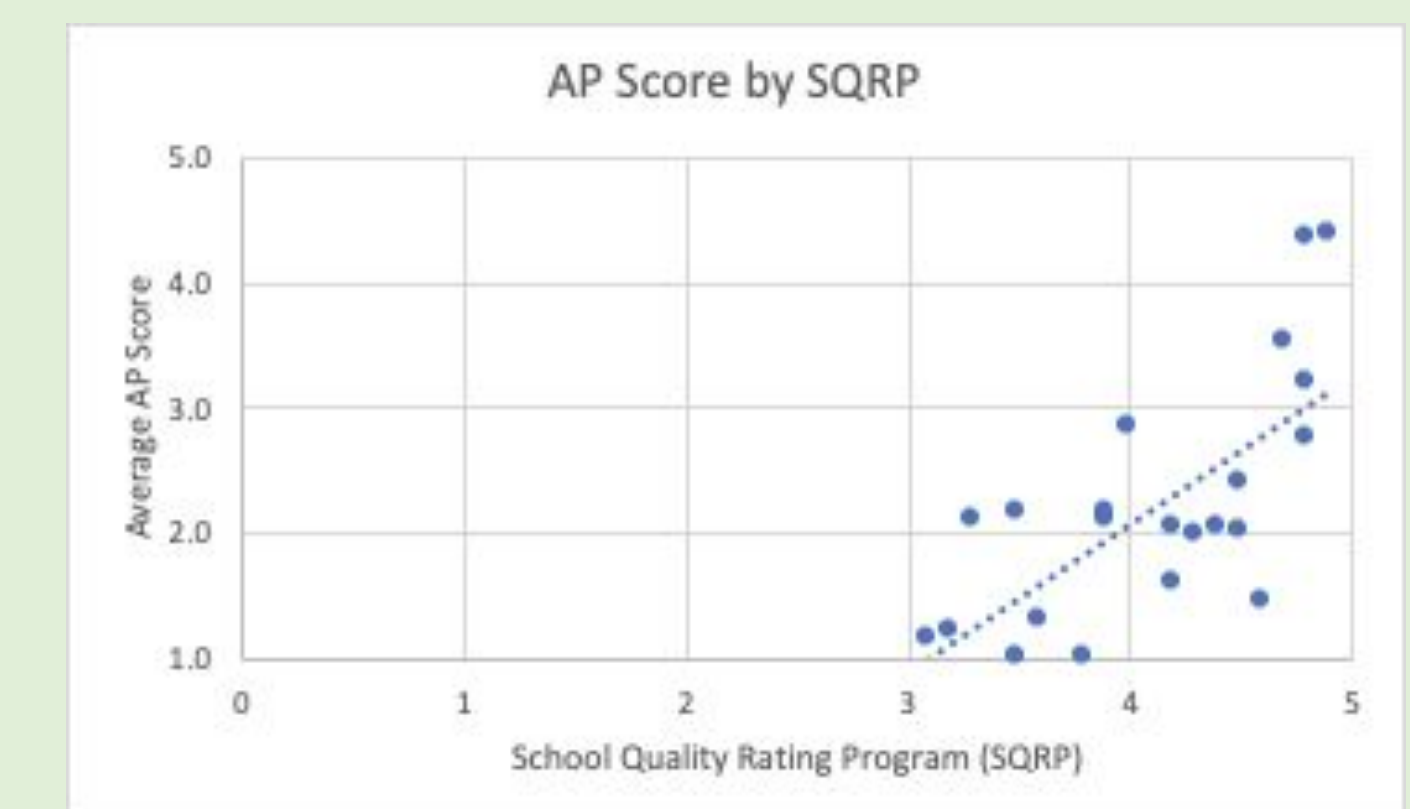
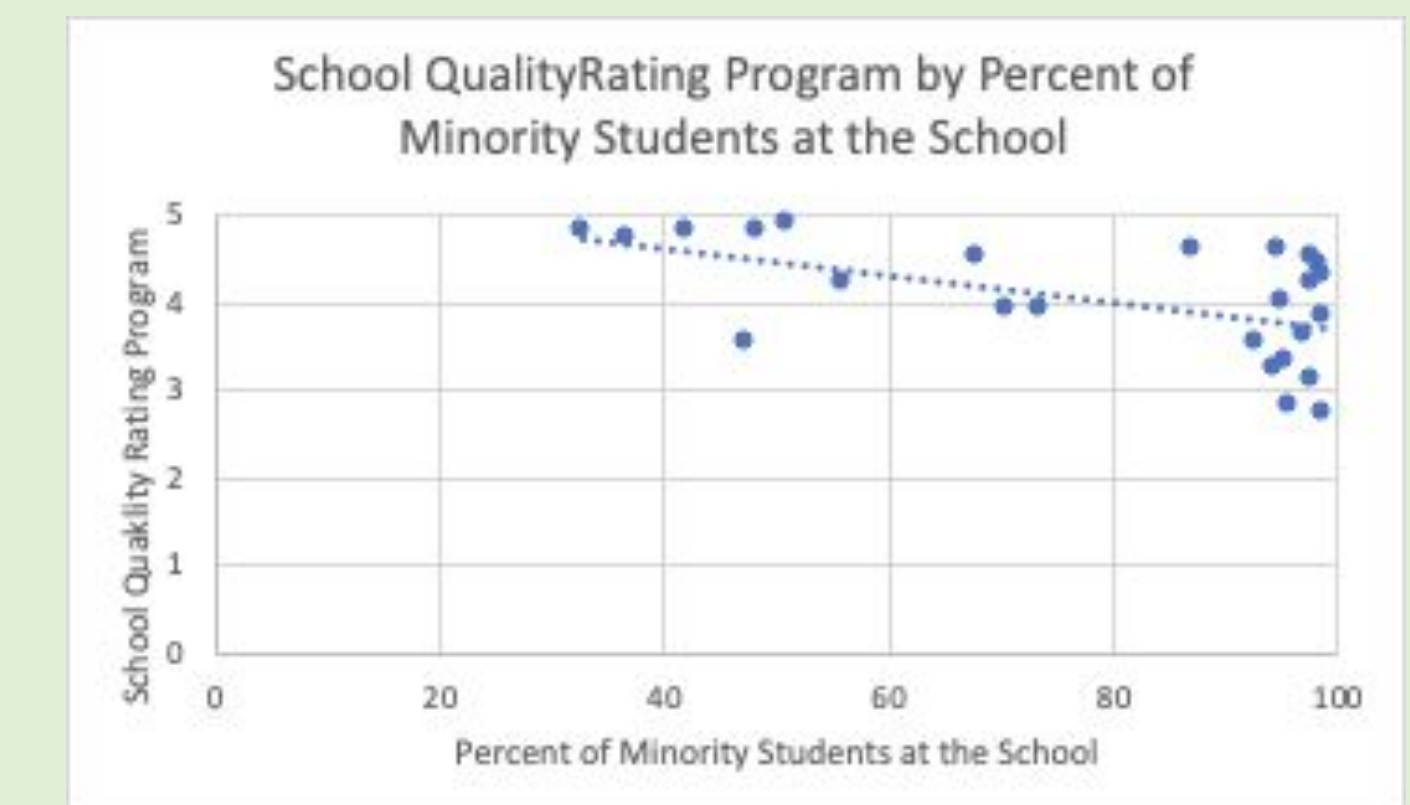
** Differences in AP performance by race disappear when controlling for GPA differences, except Hispanic students on the CS-A (-0.26)

Equal Preparation? (Prior CS Classes)

| Race | Prior CS (CSA) | Prior CS (CSP) |
|------------------|----------------|----------------|
| Asian | 0.8 | 0.8 |
| Caucasian | 0.9 | 0.6 |
| African American | 0.9 | 0.5 |
| Hispanic | 0.7 | 0.7 |

** Prior CS experience is beneficial for CS-A (0.32) but not for CSP

Equal School Quality? (SQRP)



** Underrepresented students are more likely to be in lower rated schools yet the quality rating of the schools correlated with average AP Score.

Conclusions

Computer Science Principles

- Within school access is more representative than CSA
- Better accommodates students with no CS experience and low income students than CSA

Factors Affecting Differences in AP Outcomes

- Differences in GPA and differences in School Quality

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