

The Physics GRE does not help “overlooked” applicants

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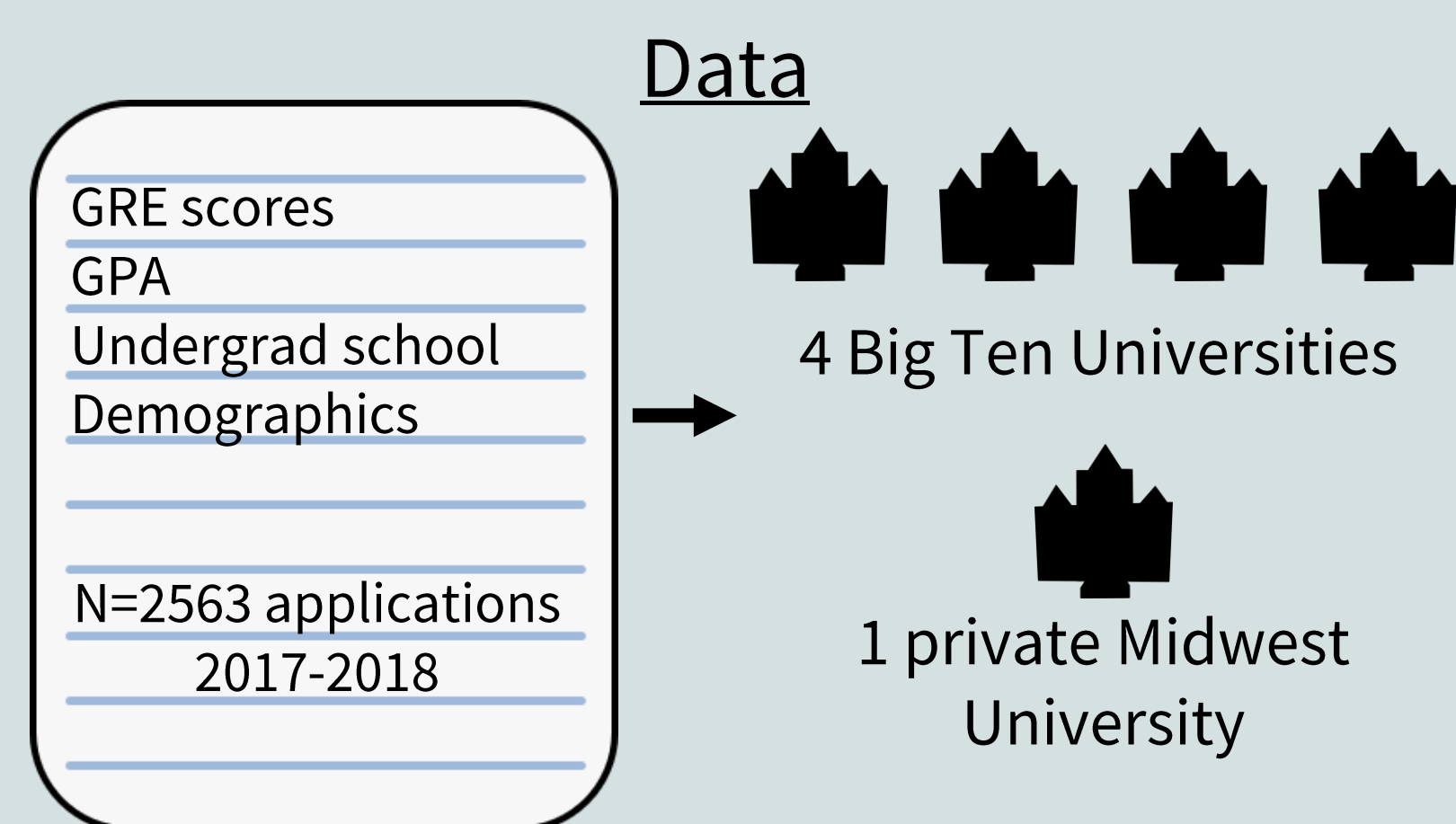
Highlights

- Physics GRE (pGRE) plays a large role in admissions and contains known biases
- But some claim pGRE can identify students missed by other metrics
- Therefore, we collected admissions records from ~2500 applicants to 5 physics grad programs
- We find limited evidence that the physics GRE can find students missed by other metrics
- More likely to reinforce biases rather than find outliers

Background

- Physics GRE still a large component of admissions¹⁻³ & at least 33% of physics grad programs use a cutoff physics GRE score¹
- Test is biased against underrepresented students⁴ & can act as barrier for applying⁵
- Test has not been shown to be predictive of completing physics PhD⁶
- Physics GRE is claimed to “help you stand out from other applicants”⁷
- But is this the case?**

Methodology



Caveat: all universities interested in making their admissions more equitable and actively working to do so.

Analysis

- Undergrad institution statistics ⇒ domestic students
- Use number of bachelor’s degrees to divide into largest and smaller programs
- Use Barron’s Selectivity Index to divide into most selective and less selective programs.
- Physics GRE scores binned into 100-point intervals to increase number of students/bin
- GPA binned into common grade cutoffs (3.0 = B, 3.3 = B+, 3.7 = A-, 4.0 = A)

Acknowledgements & Citations

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⁶Miller, C. W., Zwickl, B. M., Posselt, J. R., Silvestrini, R. T., & Hodapp, T., Typical physics Ph. D. admissions criteria limit access to underrepresented groups but fail to predict doctoral completion. *Science advances*, 5(1) eaat7550 (2019).

⁷<https://www.ets.org/gre/subject/about>

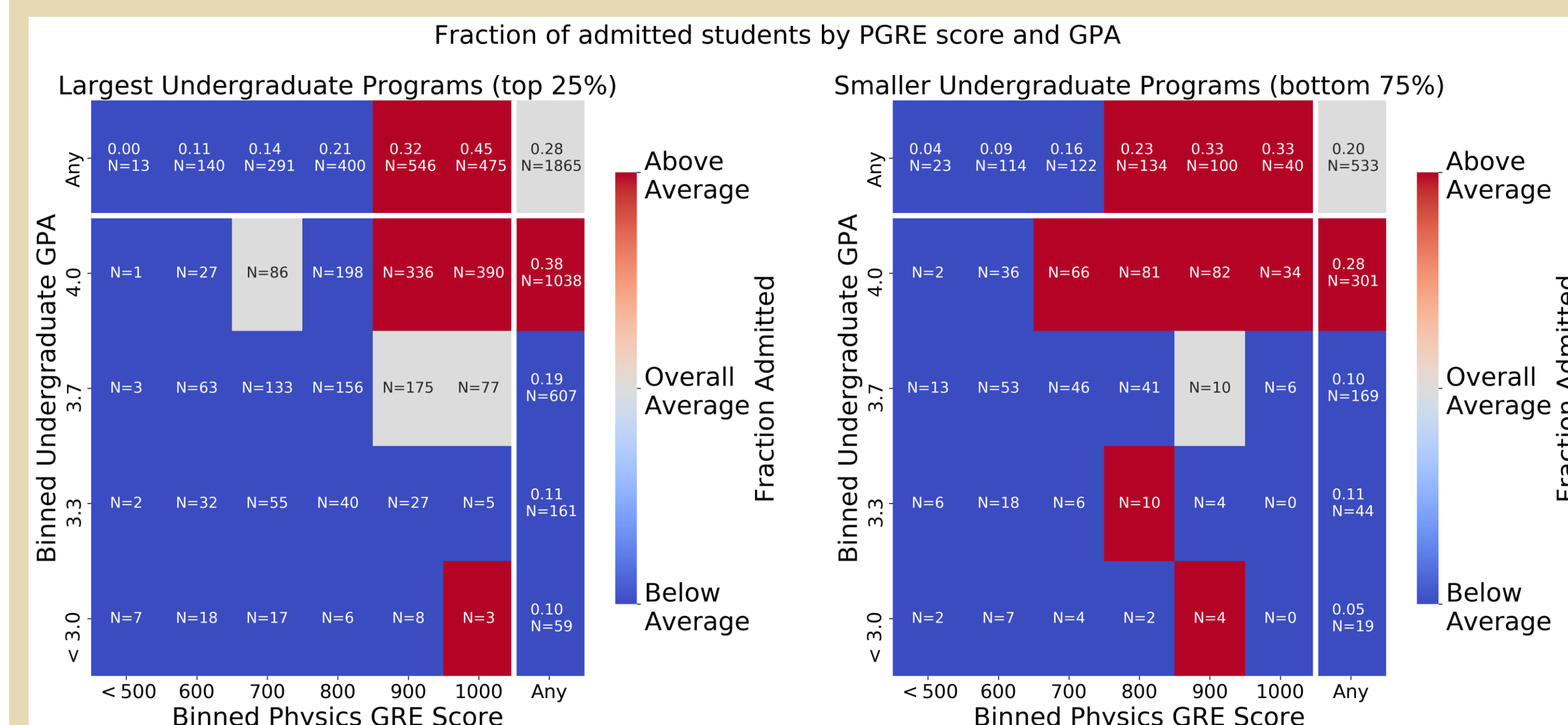
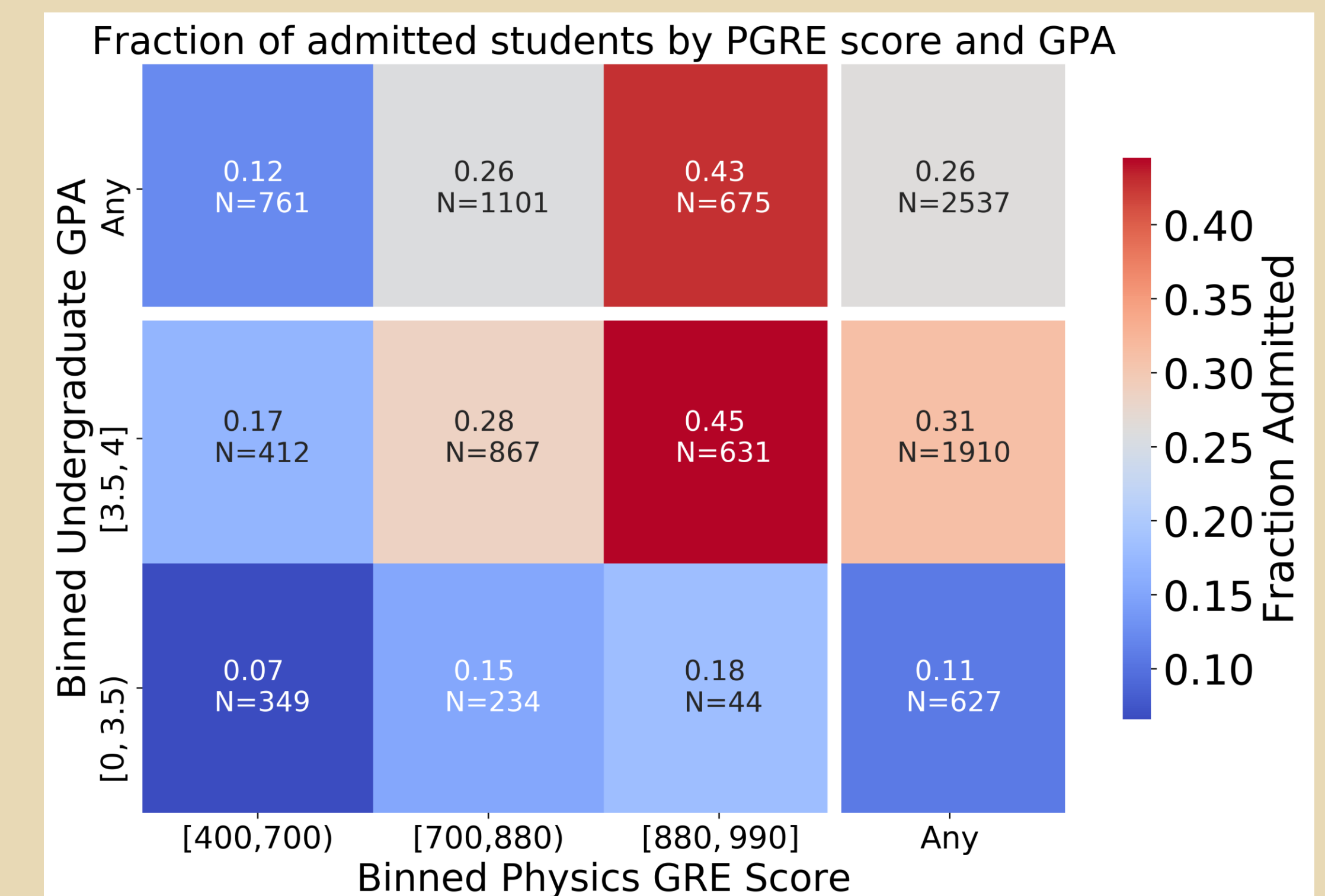
Results

Whether “overlooked” means low GPA or attended a small or less selective school, the physics GRE doesn’t seem to help those applicants stand out.

High Physics GRE and GPA applicants → likely to be admitted

High Physics GRE-low GPA applicants are admitted at similar rates as low GPA-high Physics GRE applicants.

Many more of latter than former.



Larger and smaller programs are similar...

Except for highest Physics GRE scores, where we’d expect “standing out” to happen.

Less selective programs are at disadvantage...

Especially for the highest Physics GRE scores where we’d expect “standing out” to happen.

