

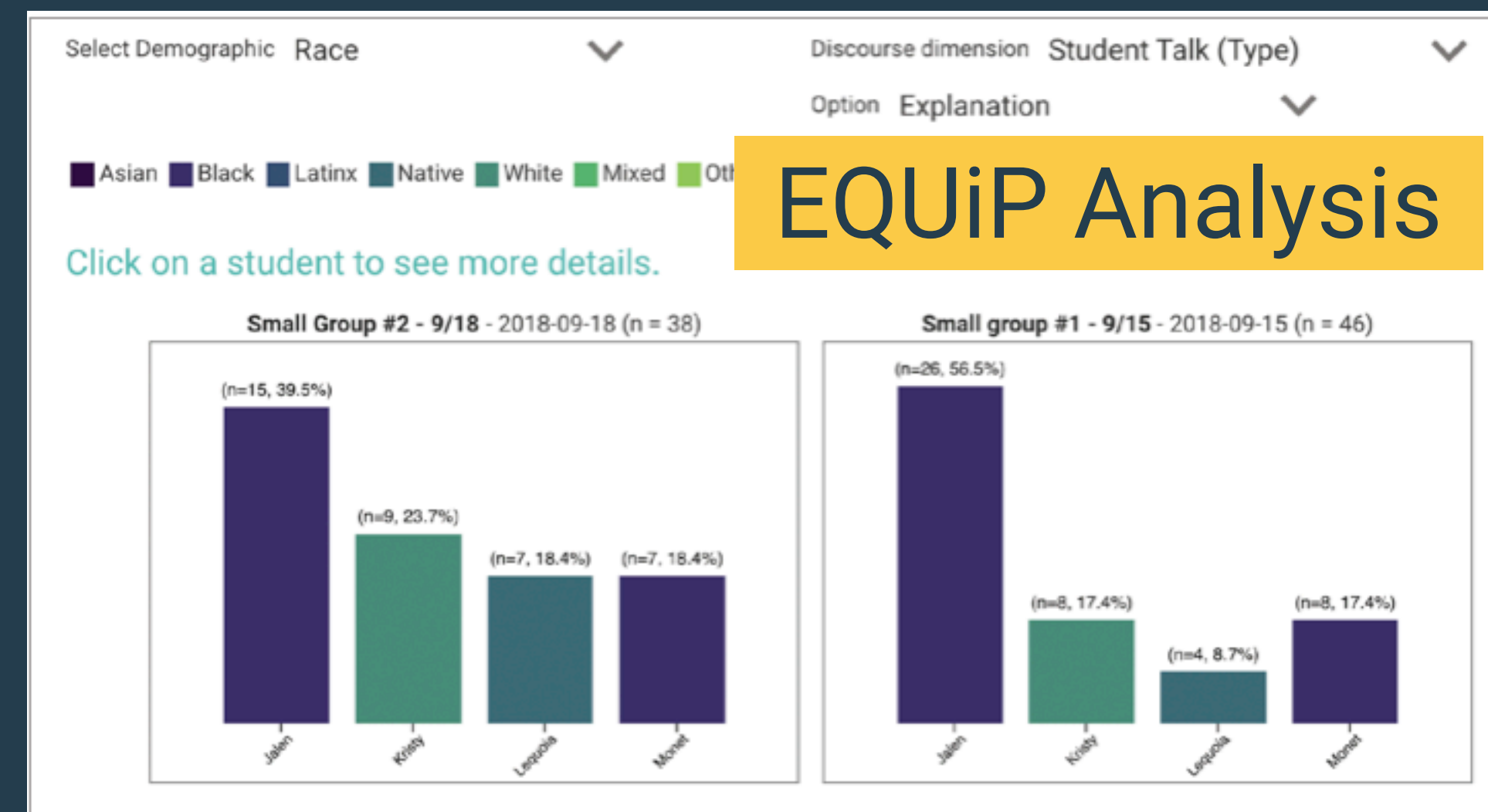
# supporting pre-college physics educators



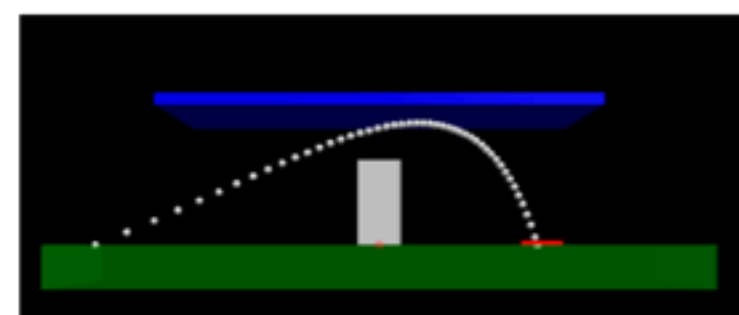
create a **computational model** to calculate...

use mathematical and/or **computational representations** to support explanations of factors...

use mathematical or **computational representations** to predict the motion...



## Marshmallow Launch



### Activity Information

#### Learning Goals

- Create and modify a computational model to describe a given system
- Use Newton's second law to relate the acceleration of a marshmallow with the forces acting on it ([HS-PS2-1](#))

<https://www.msuperl.org/wp/icsam/>  
Weller, et al. Phys Rev PER 18.2 (2022): 020106.

teacher  
developed  
computing  
activities

Willison, et al. 2022 PERC Proc.  
Stroupe, David, et al. ICLS 2022.  
Hamerski, Patti C., et al. Phys Rev PER 18.2 (2022): 020109.

equip.ninja  
Christensen, et. al. TPT 60.6 (2022): 414-418.

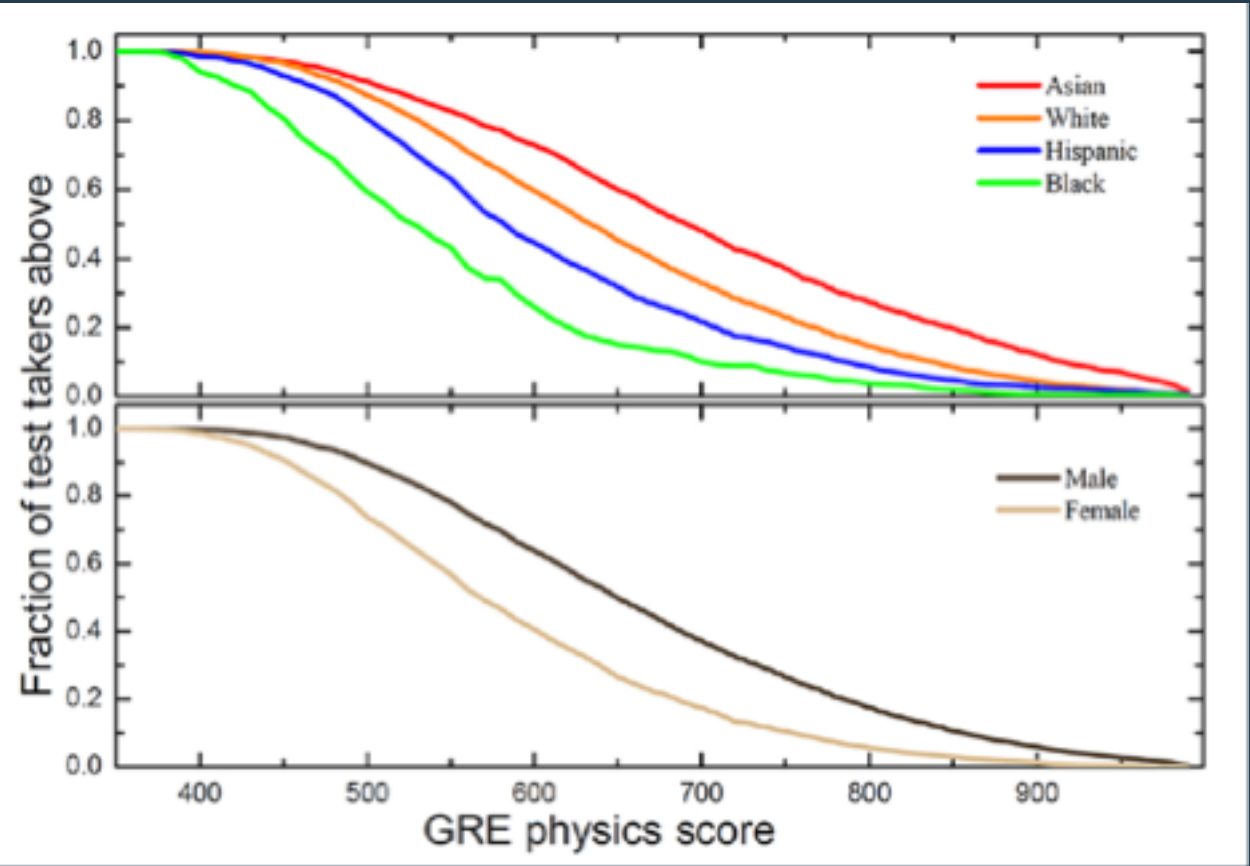
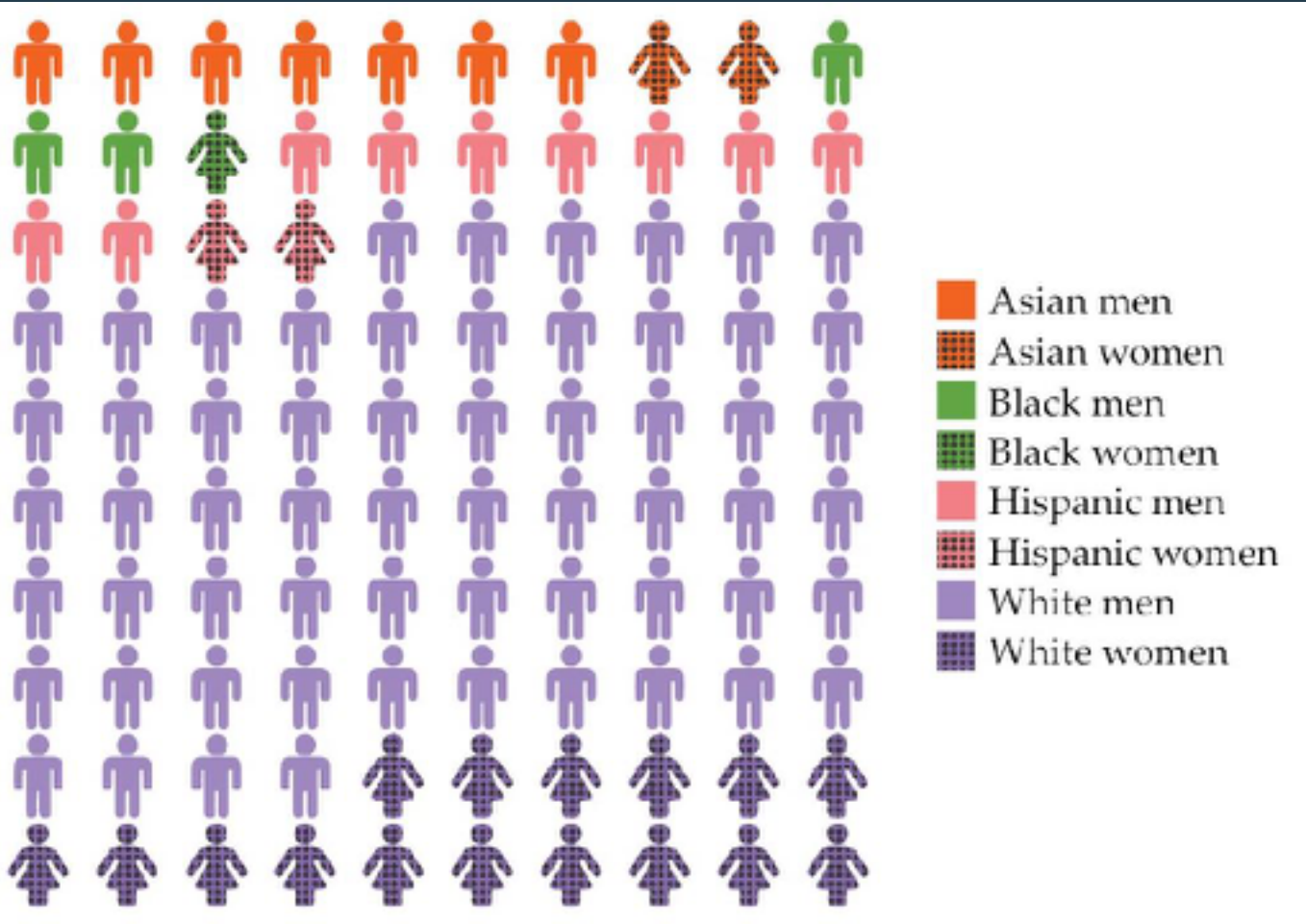




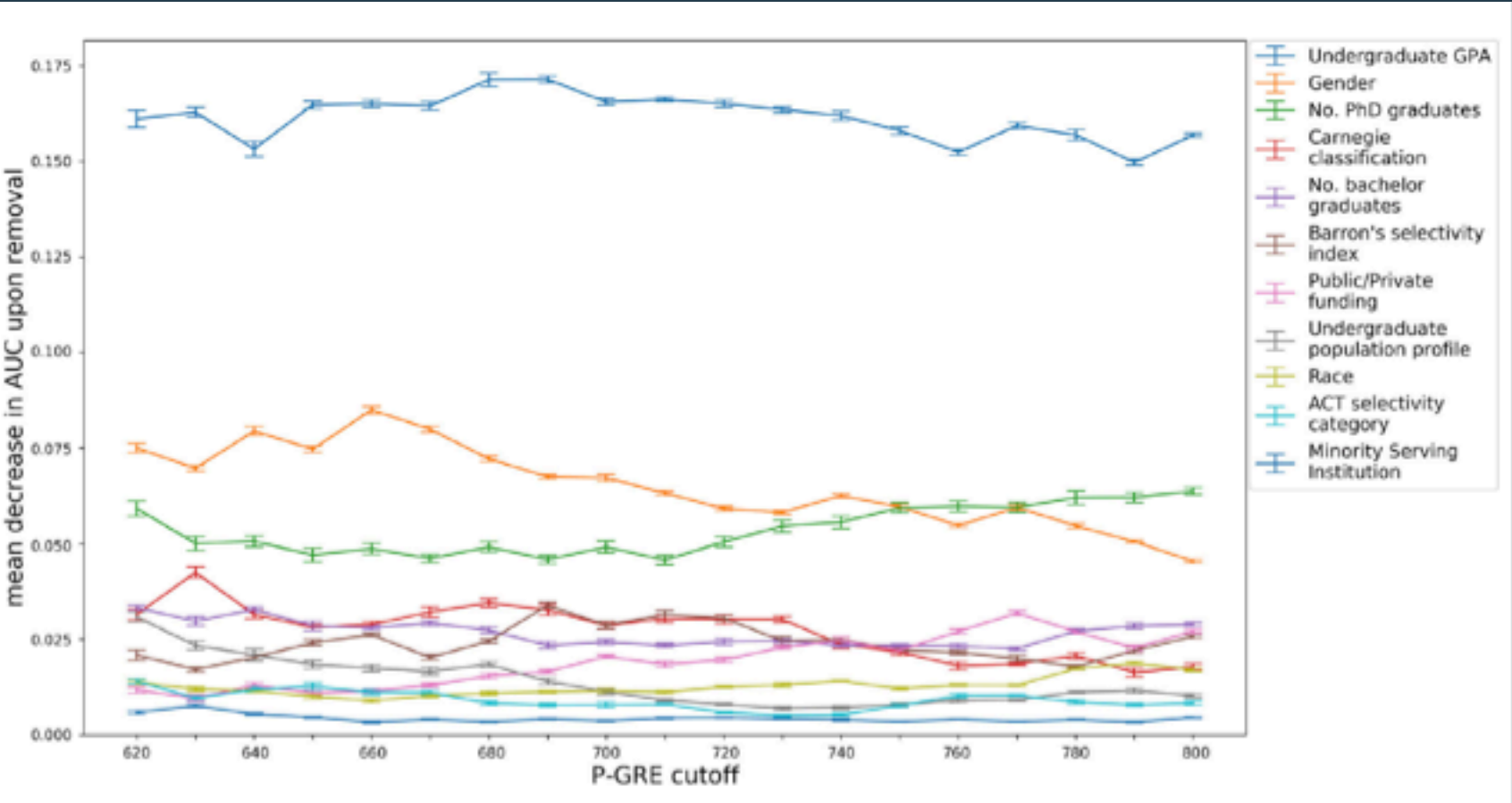
# diversifying graduate physics programs

potential physics phd applicants

using holistic admissions rubric



disaggregated  
gre distribution



gre cutoffs  
limit diversity

		Most common rubric score		
		Low	Medium	High
ACADEMIC PREPARATION	Physics coursework	✗		✓
	Math coursework		✗	✓
	All other coursework			✓✗
	Academic honors	✗		✓
RESEARCH EXPERIENCE	Variety/duration of research			✓✗
	Quality of work		✗	✓
	Technical skills		✗	✓
	Research dispositions		✗	✓
NONCOGNITIVE COMPETENCIES	Achievement orientation		✗	✓
	Conscientiousness		✗	✓
	Initiative		✗	✓
	Perseverance		✗	✓
FIT WITH PROGRAM	Alignment of research		✗	✓
	Alignment with faculty		✗	✓
	Community contributions		✗	✓
	Diversity contributions	✗		✓
GRE SCORES	General GRE scores			✓✗
	Physics GRE score	✗	✓	

✓ Admitted ✗ Nonadmitted

Young, Verboncoeur, Lam, and Caballero Phys Rev PER 19.1 (2023): 010134.  
Young, Tollefson, Zegers, and Caballero. Phys Rev PER 18.2 (2022): 020140.  
Young and Caballero. Phys Rev PER 17.1 (2021): 010144.  
Mikkelsen, Young, and Caballero. Phys Rev PER 17.1 (2021): 010109.