Understanding the graduate school selection process from students’ perspectives

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Context

- Admissions practices of physics departments - GAS survey
- Graduate school decision making - PGCI survey
- Historically under-represented (UR) race/ethnic groups in physics
Motivations: state of physics diversity

- Physics is one of the least diverse discipline.
- Gap is higher at graduate level

Credit: APS/Source: IPEDS Completion Survey

Percentage of degrees awarded to historically UR groups

3 year average (2013-2015)
Motivations: responses from faculty survey

Q. Please explain how applicants’ race or ethnicity (e.g., students who identify as UR minorities) is factored into application reviews and decisions, if at all:

- 28% indicated race/ethnicity **not** taken into account at all.

- *We get very few (to none) applicants that identify themselves as underrepresented minorities, the ones we get we look at carefully to see if we can accept them.*

- *Other things being equal, we always give priority to female applicants in our admissions.*
## Motivations: students’ survey responses

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage (Number of Respondents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students exhibited some level of interest in applying to graduate school</td>
<td>79% (816 of 1031)</td>
</tr>
<tr>
<td>Students identified from historically-UR race/ethnic groups exhibited some level of interest in applying to graduate school</td>
<td>84% (137 of 163)</td>
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Participants: undergraduate senior physics students  
Response rate: 12%  
Demographic: 12% self-identify as Hispanic, Latino, or Spanish,  
4% self-identify as Black or African American
Research questions

- What are the main factors influencing students’ graduate school decision making?

- How do historically-UR race/ethnic groups weight the importance of graduate school decision criteria in comparison to the non marginalized groups?

- How do the importance of various admission criteria is perceived from students’ (historically-UR race/ethnic groups) and faculty perspectives?
How important are the following factors in choosing which school you apply to?

(Please score each factor on the scale of 0 to 4).

- University/program reputation or competitiveness
- Availability of research opportunities that I’m interested in
- Availability/Amount of assistantships or scholarships
- Cost of living
- Not requiring physics GRE scores or not having a minimum score
- Location of university
- Recommendation from family or friends
- Recommendation from professors or teachers
- The university holds an open house/campus invitation for prospective students
- Having peers who are the same gender as myself
- Having peers who are the same race/ethnicity as myself
- Having a Ph.D. advisor of the same gender as myself
- Having a Ph.D. advisor of the same race/ethnicity as myself
(RQ1) Most importance factors in choosing graduate schools

<table>
<thead>
<tr>
<th>Factors important in choosing a graduate school for application</th>
<th>Mean ± standard error</th>
<th>Historically UR race/ethnic groups in physics</th>
<th>Non- UR race/ethnic groups in physics</th>
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<tr>
<td>Availability of research opportunity that I am interested in.</td>
<td>3.64±0.06</td>
<td>3.70±0.03</td>
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<td>Availability/Amount of scholarships or assistantships</td>
<td>3.33±0.09***</td>
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### (RQ2) Factors with significant difference

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<td>Having a Ph.D. advisor of the same race or ethnicity as myself</td>
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(RQ2) How important do you think the following criteria are for a successful graduate school application?

(Please score each factor on the scale of 0 to 6).

- GPA grades - general
- GPA/grades - physics/math
- Undergraduate courses taken
- Undergraduate institution type/reputation
- GRE quantitative scores
- GRE verbal scores
- GRE written scores
- GRE physics subject scores
- Letters of recommendation
- Reputation of recommenders
- Proximity/familiarity to department
- Personal statement
- Prior research experiences (including conference participation).
- Prior research publications
- Prior conference presentations
(RQ3) How important do you think the following criteria are for a successful graduate school application?

Students rate everything high.

Shared high importance: Undergraduate courses, letters, and GPA/GRE scores
Comparison of responses: Importance of criteria for successful graduate application

No significant differences between race/ethnic UR and the non-UR groups.
Insights

- Availability and amount of scholarships, lack of its information can influence graduate school selection. More significant for historically-UR race/ethnic groups.
- Importance of diversity at graduate cohort and faculty representation.
- Students rate every admission criteria as high.
- Recommendation letters- shared importance
- GRE test and score requirement was perceived as a barrier.
Acknowledgement

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