



Transitioning to the Professorate Requires Advisor – Advisee Coordination: A Study of Career Preferences among STEM Faculty for their PhD Advisees

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INTRODUCTION

Translating increases in diversity at the graduate student level to the professorate requires coordination between PhD students and their faculty advisors. This project builds on our AGEF research examining STEM PhD students' perceptions of their advisors' career preferences for them (Sherman & Ortosky, 2019). In that study, we found that graduate students reported considerable diversity in their personal career goals: 43% preferred non-academic positions, 20% preferred teaching-focused academic positions, and 37% preferred research-focused academic positions.

However, these same students perceived that the vast majority of their advisors (79%) wanted them to pursue a research-focused academic position. Social norms theory (Miller & Prentice, 2016) suggests that discrepancies between actual and perceived norms about career preferences of faculty may be a barrier to effective communication between students and advisors. To examine whether such a discrepancy existed, we asked STEM faculty for their actual views about career goals for PhD students they advise.

A survey queried STEM faculty on their preferences for the students they advise. The questions assessed preferences in general – that is, faculty's preference for a hypothetical student. They also assessed preferences for *specific* current students, as well as the perceptions of their students' own career goals.

The study enabled an examination of the accuracy of PhD students' perceptions that faculty, in general, strongly preferred their students to pursue research. However, the study also examined whether faculty are flexible and responsive to the perceived career goals of their advisees when they consider them individually, beyond their general preferences.

HYPOTHESES

H1: STEM faculty have a general preference for their students to pursue research-focused academic positions more than teaching-focused academic positions or industry positions.

H2: When considering a specific student's career options, STEM faculty would be more balanced in their preferences than when considering their preferences in general.

H3: Faculty's career preferences for students they advise will be more strongly predicted by their perceptions of that student's desired choice than the faculty's general preference.

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STUDY PROCEDURE

PARTICIPANTS

- 274 STEM faculty at UC Santa Barbara (N=177) and UC Merced (N=97) were recruited via email to complete an online study (~40% response rate):
- ✧ 38.6% female, 60.7% male, 0.7% other
 - ✧ 11.7% Asian/Asian American, 1.1% Black/African American, 24% Hispanic/Latino American, 0.4% Native American, 70.7% White/Caucasian, 4.5% Other, 3.8% Multi-Racial
 - ✧ Median number of current students =2, Range 0 to 10+
 - ✧ 27.4% Assistant Professor, 18.6% Associate Professor, 52.6% Full Professor, 1.5% Other
 - ✧ 22.6% first generation college student, 51.1% first generation grad student

METHOD

- All faculty members completed the same survey measures regarding 3 potential career paths: Non-academic position (industry, government, non-profit), teaching-focused academic position, or research-focused academic position. All:
1. Ranked their general career preference for their students.
 2. Considered up to 3 of their current PhD students (Students A, B, and C)
 3. Ranked their personal career preference for each of those specific students (see below)
 4. Provided their perception of each of those same students' ideal career path preferences, as they understood it

Student A

In terms of career options for Student A after obtaining a PhD, please drag and drop the following options to rank them according to **your own perspective** from: 1 (most desirable for this student), 2 (moderately desirable for this student), and 3 (least desirable for this student):

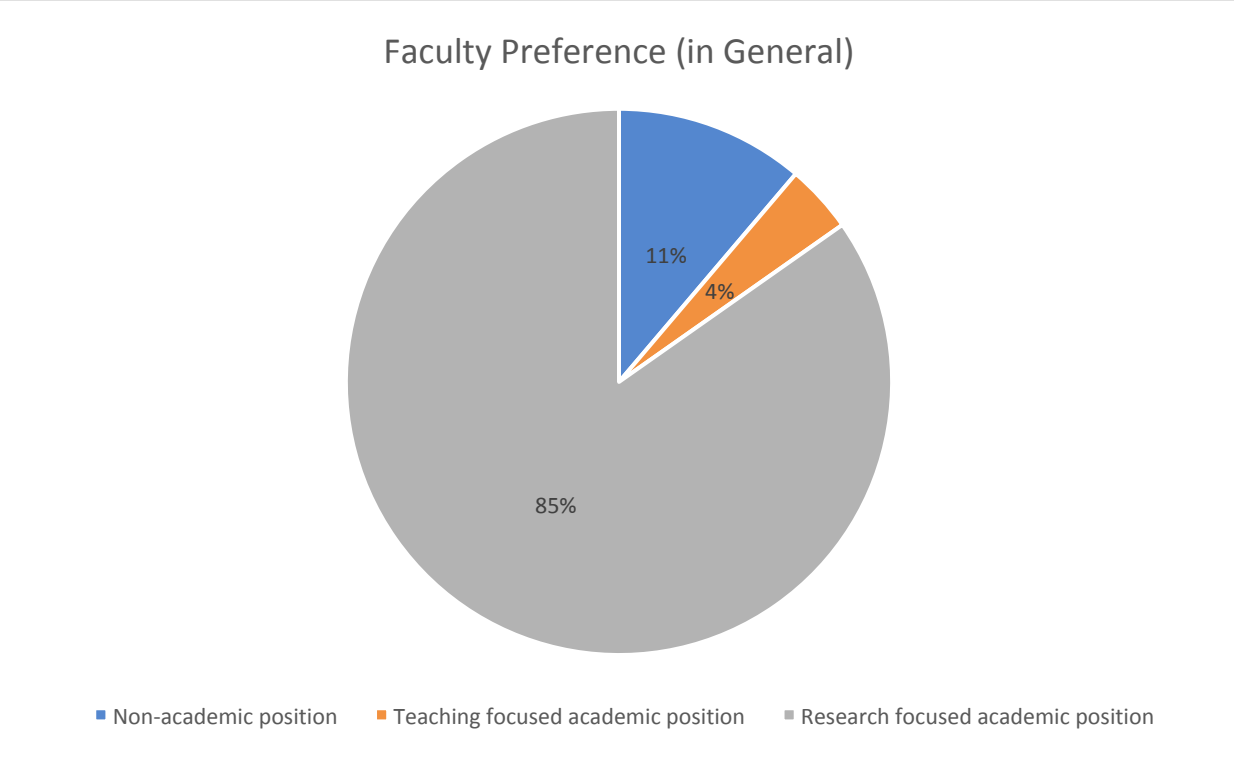
Non-academic position (e.g. industry, government, non-profit organization)

Research focused academic position (professor at university with PhD program)

Teaching focused academic position (professor at college without PhD program)

RESULTS

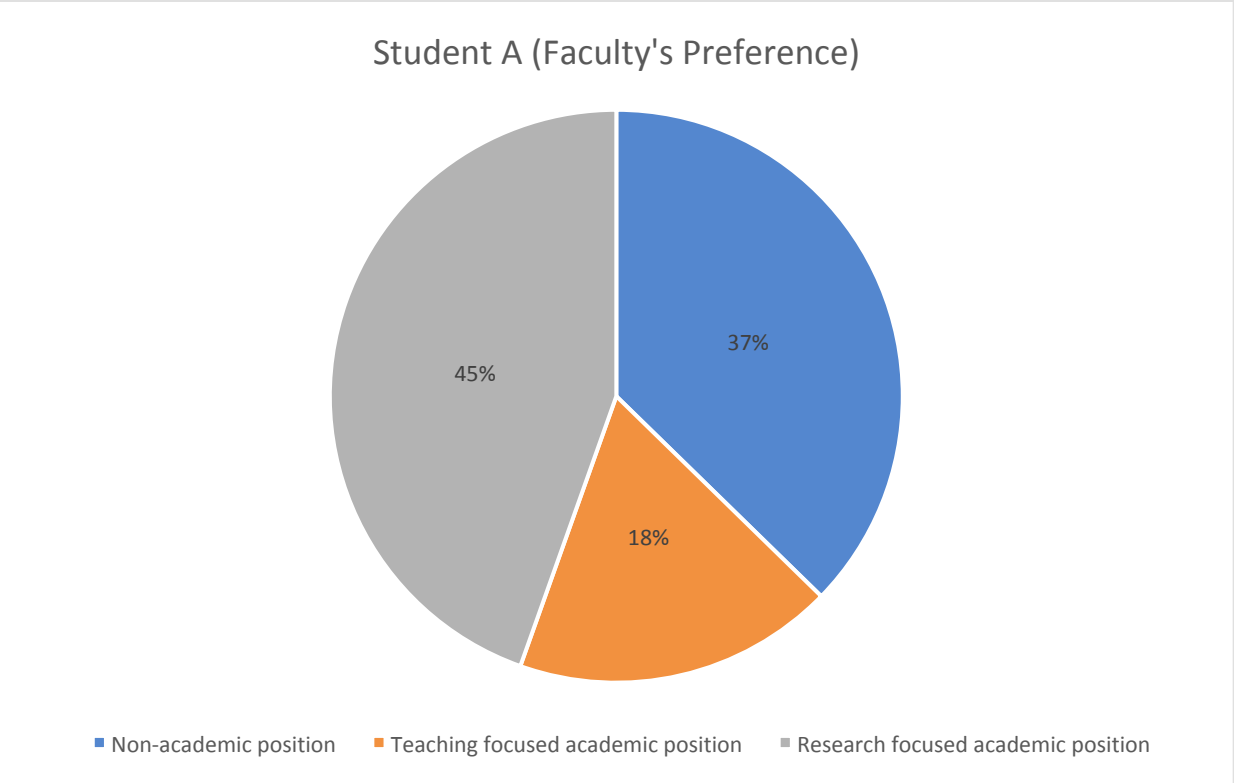
STEM faculty have a general preference for students they train to pursue academic research careers.



As predicted, faculty show a strong preference for training future researchers, with 85% listing this as a first choice.

This accords with previous research showing that STEM grad students perceived 79% of faculty to prefer research.

When considering a specific student's career, STEM faculty are more balanced in their preferences for that student.



- These specific-student preferences closely align with what each professor perceives to be that student's preference:
- ✧ 47% believe the student prefers research
 - ✧ 17% believe the student prefers teaching
 - ✧ 36% believe the student prefers industry

Faculty preferences for a specific student are driven by their perception of that student's preference, not their own general preference.

Model	Unstandardized Coefficients			Standardized Coefficients		t	Sig.
	B	Std. Error	Beta				
1 (Constant)	.371	.271				1.368	.173
General Faculty Preference	-.145	.093	-.100			1.567	.119
Student A (Faculty's Perception of Student Preference)	.647	.064	.647			10.168	.000

a. Dependent Variable: Student A (Faculty's Preference for Student)

A multiple regression indicated that faculty's preference for Student A was more strongly predicted by their perception of Student A's preferences than their general preferences.

DISCUSSION

- ✧ Our research with STEM PhD students at the same institutions found that they perceived their advisors to overwhelmingly prefer research careers for them (79%), which is consistent with this study's findings on faculty members' general career preferences for students they train (85%)
- ✧ However, faculty were more variable in preferences for specific students' careers, with those preferences closely tracking the students' own preferred career paths.
- ✧ These findings suggest that better communication between faculty and graduate students about career choices could correct misperceptions:
 - ✧ Faculty may not be accurate in their understanding of what graduate students they advise prefer
 - ✧ Graduate students may hesitate to discuss alternatives to academic research careers if they underestimate their advisors' willingness to support that choice.

IMPLICATIONS FOR DIVERSITY IN THE PROFESSORATE: Grad students entering a PhD program are in an uncertain situation and look to powerful people in their environment to model its norms (Austin, 2002). This may be particularly true for URM students, who have greater uncertainty about whether they belong in academia (Sherman & Ortosky, 2019; Walton & Cohen, 2007).

- ✧ This research identified the descriptive norms of faculty preferences, and coupled with previous work on graduate students' perceptions of faculty preferences, suggests an opportunity for improved communication about professional choices.
- ✧ Communication about non-research careers may reduce grad students' uncertainty and facilitate pursuit of diverse academic options, such as teaching-focused careers.

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