

## Understanding Why Aspiring PhD Students Seek a Postbaccalaureate Research Program

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To more broadly understand the transition from undergraduate to graduate student, it is useful to examine student decision-making during the last year of college, particularly why some aspiring PhD students choose to enter a postbaccalaureate program rather than apply for and begin graduate school. We draw from our ongoing research to portray a population of 53 aspiring PhD science students who participated in the NIGMS Postbaccalaureate Research Education Program (PREP). PREP awards encourage recent baccalaureate degree recipients from underrepresented groups to pursue a research doctorate. The programs offer a 1-2 year mentored laboratory research experience with an independent project and additional support activities.

The 53 PREP Scholars are a subset of our longitudinal research investigating the career decision-making of biomedical students. Data were gathered through in-depth one-on-one interviews during the early months of their PREP experience at seven universities throughout the United States.

Selected characteristics show a wide range of students entering PREP. Of the 53, 62% are female; 34% are Hispanic, and 49% are Black or African American. Other descriptors, such as immigrant background, baccalaureate institutions, GPA, and GRE scores, reveal diversity beyond gender, race and ethnicity. Eleven students had been participants in undergraduate NIGMS programs but due to a variety of life circumstances were not fully ready for graduate school.

We present initial findings from our qualitative analysis utilizing several social science theories. Consistent with Social Cognitive Career Theory, variations in the students' goals and outcome expectations influenced their choice to delay the graduate school decision and enter PREP. Our findings also reveal the PREP Scholars are developing career, academic and personal identities, influenced, in some cases, by experiences related to their race. Further, their expectations for PREP suggest the program can impact them by revealing norms and standards while providing a space for acquiring and honing cultural capital needed to become successful graduate students and scientists.

Several patterns were found among those entering PREP which can be useful to identify and support PREP Scholars. For example, one group had very little undergraduate research experience. They were unsure about short- and long-term goals, yet they could see the possibility of research in their future. For them, PREP was an opportunity to try research so they can decide whether to pursue a research career path. In contrast to this group, others had extensive research experiences as undergraduates and a focused goal of becoming a faculty member at a research intensive institution. Though these students may appear ready for graduate school, most had not applied for graduate programs nor felt ready to do so. As well, they talked about the impact of being perceived as a racial minority and how the extra pressure to prove themselves influenced their decision-making. With more awareness of the norms of graduate school and academic careers (cultural capital), they sought PREP to enhance their readiness and credentials for enrollment into a prestigious institution. Other groups include those intentionally changing from another field into science; those with unrealistically lofty goals; and those struggling to maintain a cultural identity while pursuing a science research career. By understanding these patterns, Program Directors can customize interventions to potentially broaden the population of students who will matriculate into and succeed in biomedical PhD programs.

While the patterns reveal differences, a common theme was the lack of readiness these students felt for graduate school. As one student said, "I couldn't talk the talk and walk the walk." Without PREP students had limited options, few of which would have afforded the benefits of an intervention like PREP. As our research continues, we will determine the short- and long-term impact of PREP on these students as they progress in their scientific careers.

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