


Achieving program success: Lessons from an on-going longitudinal study of biomedical and behavioral science majors



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The Path to Program Success or Three Myths Related to Program Design and Assessment?

- Model successful programs
- Model successful students
- Regularly collect data and assess program



Longitudinal Study of Undergraduate Biological and Behavioral Science Majors: NIH Grant Number 1 RO1 GMO71968-01 (PI: Sylvia Hurtado).

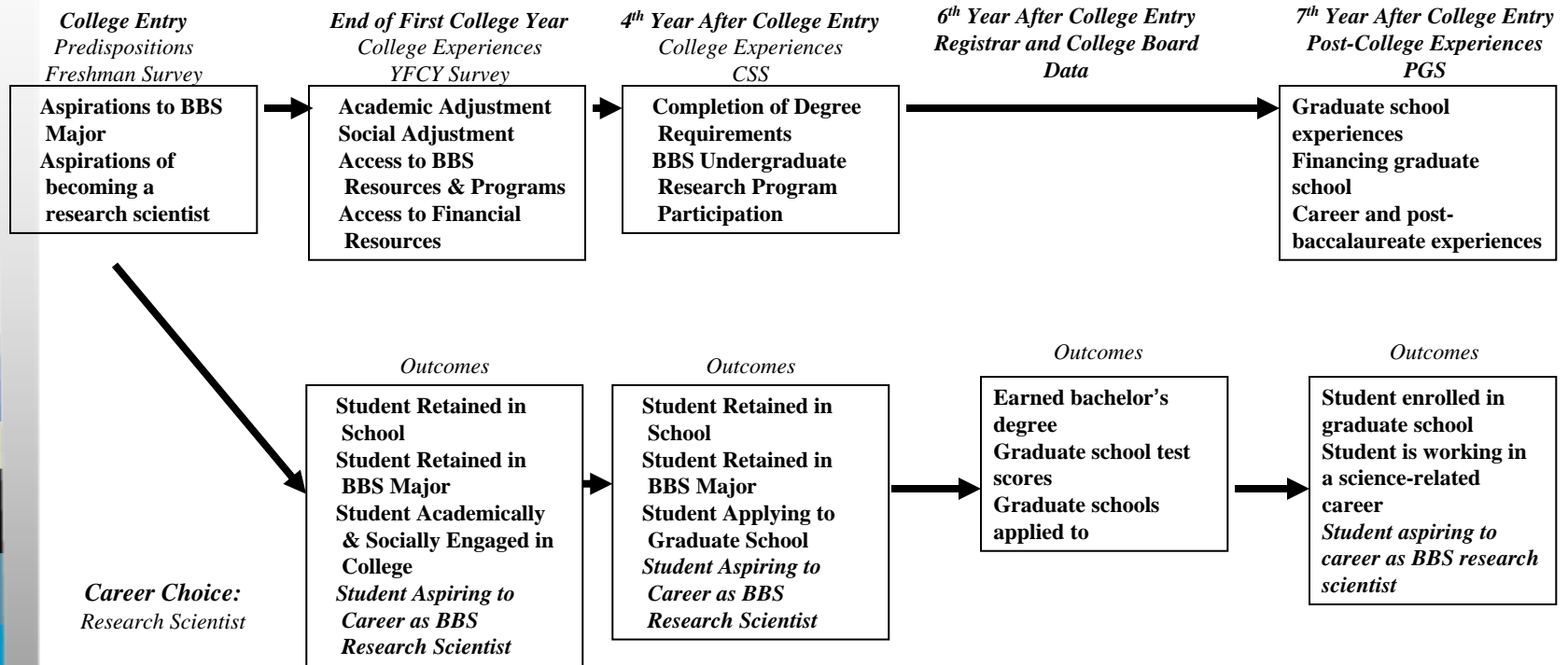
National Survey Data:

- The 2004 baseline survey contains 21,791 URM BBS aspirants attending 680 different institutions.
- End of first-year survey in spring 2005.
- Preparing to survey the baseline sample plus a matched sample of White, Asian, and URM non-science majors attending the 160 institutions to produce an upper bound sample of 65,373.

Additional Data:

- In 2007, conducted five site visits--interviews and focus groups.
- Also collected data to examine student experiences and approaches to learning science in key introductory courses (i.e., chemistry) that provide an early signal to students regarding their capacity to succeed as a science major.

Figure 1. Data Collection Points, 2004 Cohort: Tracking How Students Become Scientists





Organization of Presentation

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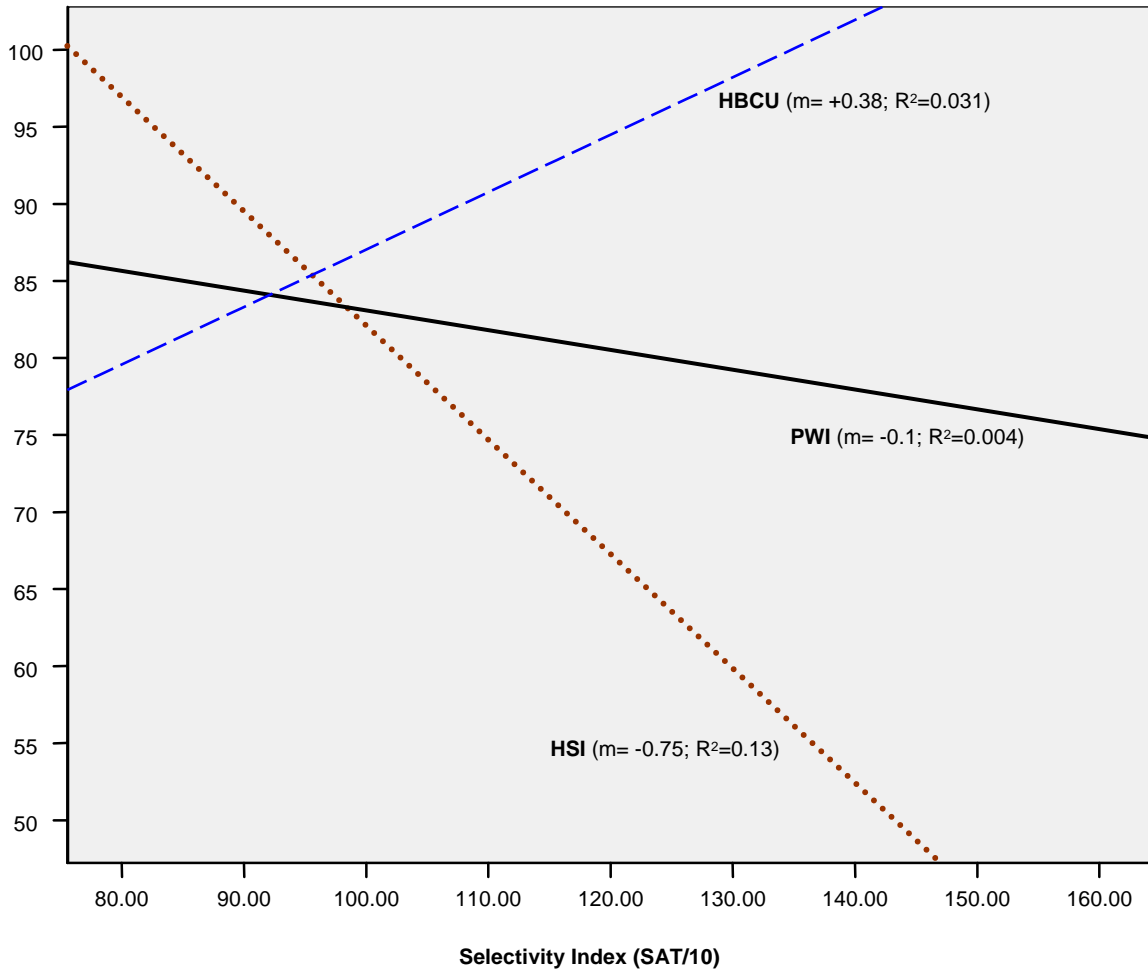
- Three overarching questions related to program design and evaluation.
- Under each, three related questions,
- and one main example.



Will Modeling Successful Programs Necessarily Improve Practice?

- Are your program students similar to those in other programs that you intend to model?
- Do you have the support structure (resources & capacity) to implement the program in ways similar to the model one?
- Is your institution similar to the institution of the program that you view as a model?

Figure 2: URM Retention Rate by Selectivity Index





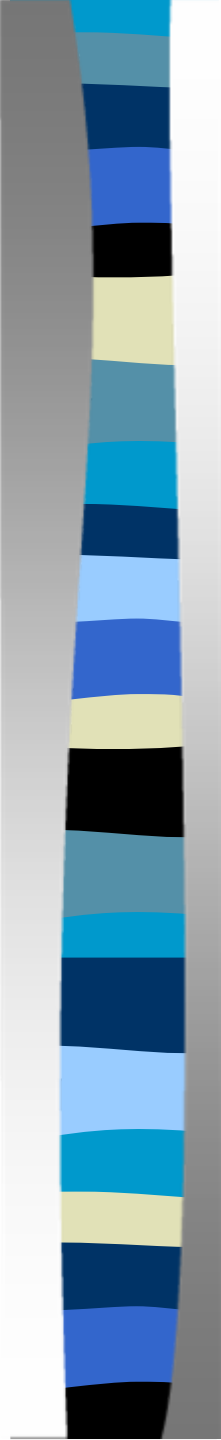
Will Modeling Successful Students Necessarily Improve Students' Chances of Success?

- Do the students in your program share similar aspirations, motivation, and insights as other successful students on your campus?
- Do your students experience other unique nonacademic pressures as compared to other successful students on your campus?
- Do the students in your program have different concerns and respond differently to their environments as compared to other successful students on your campus?



Stereotype Threat

- Negative racial stereotypes can undermine the academic performance of highly talented black students.
- URM students' reduced academic performance can be explained in part by anxiety associated with the fear that other's judgments or their own actions will confirm negative stereotypes about their group's intellectual capacity.
- Those who are at greatest risk are those URM students who have a combination of high "domain identification" and high levels of either "stereotype awareness or experiences with discrimination."
- We found that URM students who were more vulnerable to stereotype threat were 20% more likely to leave a science major.



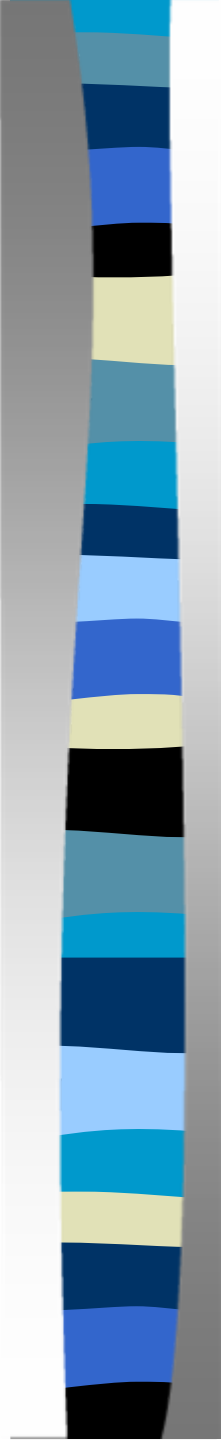
Will Data Collection and Assessment Necessarily Improve a Program's Rate of Success?

- What is the desired outcome?
- How are data collected & analyzed?
- What is reasonable success?



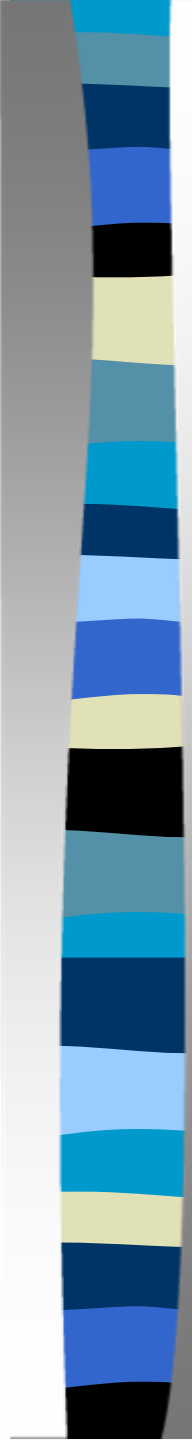
Issues to consider in determining success

- Does it make sense to compare rates across institutions when the characteristics of students who enroll in programs vary by institution?
- Does it make sense to compare rates of programs from year to year when the characteristics of students who enroll in the program may vary across years?
- Do our expectations for program success exclude the students who can benefit most from the program?



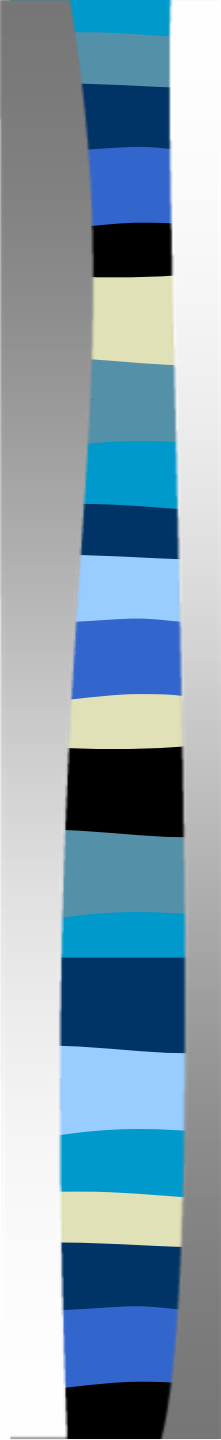
Will modeling other successful programs necessarily improve practice?

- No, but chances are better if you make a serious attempt to understand your program's unique student population, support structure, and campus characteristics compared to other programs.



Will modeling successful students necessarily improve students' chances of success?

- No, but chances are better if you make a serious attempt to understand your students' unique attributes, experiences, and backgrounds compared to other science students at your institution.



Will data collection and assessment necessarily improve a program's rate of success?

- No, but chances are better if you have a serious discussion about outcomes, design, and broader purpose.

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For more information on the project, reports of freshmen experiences, presentations:

<http://www.gseis.ucla.edu/heri/nih>