



# Closing the Excellence Gap: Understanding How to Promote High Achievement with Students from Underserved Populations



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## Problem Statement

High-achieving students from disadvantaged backgrounds, when compared to their more advantaged peers, are twice as likely to drop out of school; more likely to lose ground as they move forward in their schooling; and less likely to attend or graduate from college (Wyner, Bridgeland, & Diulio, 2008). This is harmful for individual students, who are denied the opportunity to develop their talents, and harmful to society, which fails to reap the benefits of those talents. Research on interventions that effectively curtail this growing excellence gap (Plucker, Burroughs, & Song, 2010) is necessary, particularly research on existing programs that successfully mediate risk factors for high-achieving students from disadvantaged backgrounds.

## Program

Realizing that students from underserved populations are often denied opportunities to develop potential and the prospective benefits of tapping into such potential, West Virginia's Land Grant Universities and 26 counties partnered to start the **Health Sciences & Technology Academy (HSTA)**. HSTA helps academically capable students from underserved populations learn the skills they need to succeed in college through a variety of interventions, including after-school clubs and summer camps rich in mentoring, academics, and community-based healthcare research.

## Participants

The population served by HSTA is largely first generation (73%), from low socio-economic status (63%), female (70%), and ethnic minority (31%). Below is a description of the study sample.

	2014			2015			2016		
	Total	Female (%)	First Gen (%)	Total	Female (%)	First Gen (%)	Total	Female (%)	First Gen (%)
Sophomore	149	64	54	152	72	45	174	72	61
Junior	138	69	59	147	65	52	140	72	51
Senior	135	73	57	122	70	56	158	67	47

Note: Data reflects on only participants with complete data

## Program Effects

Graduation rates for completing participants is impressive- 99% of participants attempt some college and around 88% complete a bachelors degree. Of those earning a bachelor's degree, 62% are in STEM fields. The purpose of this study, broadly, was to determine what characteristics of students or the program were critical to student success. Here we focus on program experiences of first generation and non-first generation program participants.

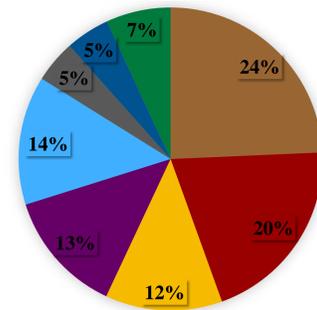
## Research Questions

The purpose of this study was to examine how first generation students and non-first generation students respond to the HSTA program. We examined several factors:

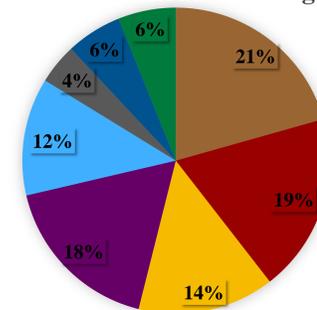
- 1) Which program aspects were most influential to first generation and non-first generation students?
- 2) What are first generation and non-first generations students' intention to finish high school?
- 3) How do first generation and non-first generations students' interest in a health science career develop over time?
- 4) What are first generation and non-first generations students' commitment to a health science career over time?

## Results

Non-First Generation College

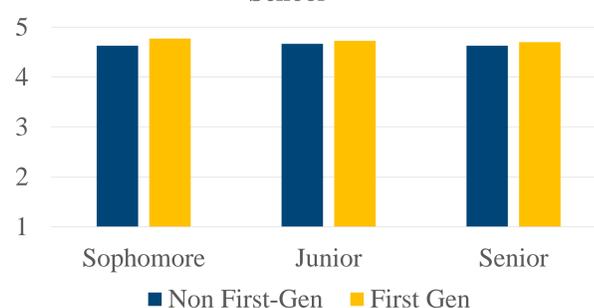


First Generation College

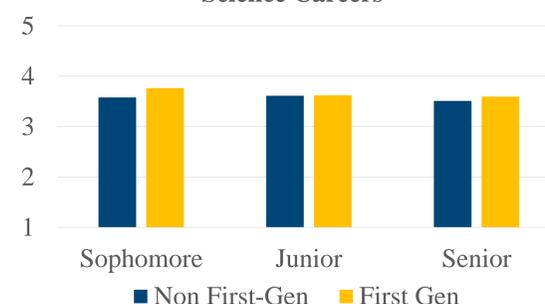


■ HSTA Projects  
■ HandsOn Activities  
■ HSTA Symposium  
■ Field Trips  
■ Guest Speakers  
■ Shadowing  
■ Community Service  
■ Friends

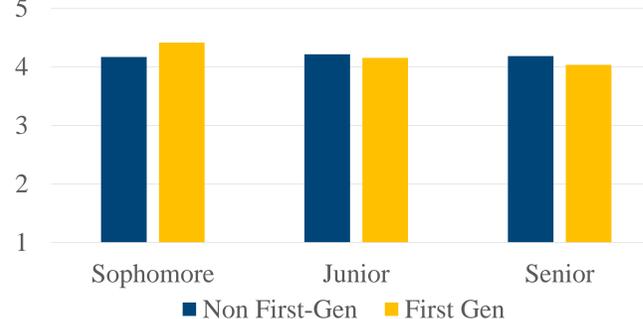
Intentions to Successfully Finish High School



HSTA Impact on Interest in Health Science Careers



Commitment to Health Sciences



## Conclusions

First generation and non-first generation students experienced and responded to the HSTA program similarly with regard to:

- Intentions to successfully finish high school,
- Commitment to health sciences,
- Interest in health science careers, and
- Aspects of programming most influential in supporting their interest in health sciences.

It is encouraging that both first generation and non-first generation students similarly had high intentions to complete high school. Additionally, both groups reported that the HSTA intervention had a moderate impact on their interest in health science careers. Finally, both groups of students retained a high level of commitment to pursuing a career in health sciences over the three year program, although first generation students showed a slight decline.

## Limitations

Data collection is an important part of any research project. Due to the nature of student self-reported data, many students in this study did not accurately and/or inconsistently reported their WV-student ID number. For example, 000000 was a very common ID code. This hindered researcher efforts to longitudinally track HSTA students over the course of their participation in the program, to link individual student survey responses to background data, and to make correlations between survey responses and variables. Additionally, the same background information was not available for all survey participants, which limited comparisons.

## Recommendations

Recommendations for the future of the program include data collection modifications to ensure obtained data is complete and can be linked back to individual students. For example, students could be provided with a unique survey link to ensure that obtained data can be linked to that same individual student, and therefore, allow researchers to track students over time. As an additional advantage, students could then be randomly assigned to take portions of the survey to relieve survey fatigue and simultaneously increase the quality and quantity of usable data.

## References

- Plucker, J. A., Burroughs, N., & Song, R. (2010). *Mind the (other) gap: The growing excellence gap in K-12 education*. Bloomington: Indiana University, Center for Evaluation & Education Policy.
- Wyner, J., Bridgeland, J.M., & Diulio, J. J. (2008). *The achievement trap: How America is failing millions of high-achieving students from lower income families*. Lansdowne, VA: Jack Kent Cooke Foundation.