ACADEMIC HEALTH CENTER
Best Practices

Case Study

CONNECTING PIPELINES TO PATHWAYS FOR HEALTH EQUITY

A Rural Model from West Virginia: Achieving Healthcare and STEM Workforce Diversity

WEST VIRGINIA UNIVERSITY

KEY POINTS

The Health Sciences and Technology Academy (HSTA) is a grass-roots, community-based organization in partnership with West Virginia University and West Virginia institutions of higher learning. The program works to increase the number of African American, financially disadvantaged, first-generation-to-college, and rural students in WV who pursue degrees in health sciences and science, technology, engineering, and mathematics (STEM), thereby increasing the number of health practitioners and advocates in the medically underserved communities of WV:

- ✓ **Four-year student commitment: ninth to twelfth grade**
- ✓ **Sustaining mentor relationships: near peer, professional, and community members outside students' hometowns**
- ✓ **Weekly, engaging club meetings throughout the school year; summer-immersive campus experiences**
- ✓ **Annual interest-driven research projects that address local issues**
- ✓ **Tuition waiver eligibility upon completion**

ISSUES AND CHALLENGES

West Virginia is a rural and historically medically underserved state. Fifty-one of the 55 counties in the state are designated (full or in part) Health Professions Shortage Areas (HPSAs) and/or Medically Underserved Areas (MUAs). Compounding this, rural populations, and specifically residents of rural areas in West Virginia, differ significantly from the national norms in terms of demography, socioeconomic characteristics, health status and healthcare needs, and their access to care.[1]

Health disparities and educational disparities are national issues. They are particularly troublesome

in rural West Virginia, a state that ranks among the worst in obesity-related illnesses and in educational attainment.[2]

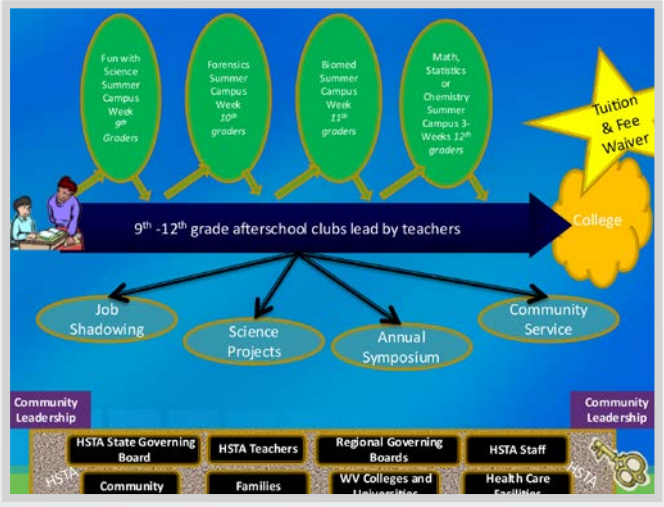
THE WEST VIRGINIA UNIVERSITY HSTA APPROACH

Help dissolve barriers for underserved and underrepresented students who enter college and pursue health science careers. The Health Sciences and Technology Academy (HSTA) has had remarkable success in serving this vulnerable population using a multi-layered mentoring structure.

For 27 years, the HSTA program has successfully focused on preparing students for matriculation in the health sciences, with the goal of bringing healthcare information and healthcare professionals to the medically underserved communities of West Virginia. More than 3,000 HSTA graduates (1998–2021) go to college, stay in college, and major in health science STEM fields at much higher rates than the general state or national populations.

HSTA Health Sciences Matriculation Rates

To date, 61 percent of HSTA students go into health and other STEM majors, with 49 percent specifically choosing health career majors versus 23 percent of college students nationally entering STEM fields, between 1995 and 2001. HSTA graduates have received 1,046 bachelor, 275 master, and 137 terminal degrees, including 34 medical doctors, seven dentists, 30 pharmacists, three audiologists, one psychologist, 12 physical therapists, 13 attorneys, one optometrist, four veterinarians, 11 physician's assistants, and 101 non-health science STEM careers. Added to these numbers are 167 associate degrees and over 800 students still matriculating.



Moreover, 84 percent of the Academy's graduates live and work in their home state after finishing college, and earn $30,000 more per year on average than their highest-earning parent. HSTA graduates overwhelmingly decide to remain at home, often in the very communities that helped make their education possible.

Applicant Requirements, Four-Year Commitment

HSTA students are chosen from a pool of capable applicants recruited by community leaders. Those who express the strongest interest, the greatest potential, and the most need for support are chosen. In 1994, HSTA began with 44 students from two West Virginia counties. Now, the program serves approximately 800 underrepresented high school students (grades 9–12) each year from nearly half the counties in the state.

Students enter HSTA in the ninth grade and continue through their senior year if they maintain a 3.0 or better GPA, attend 70 percent of the HSTA functions, attend two summer campus experiences (camps), complete 75 hours of community service, and adhere to all disciplinary policies. Successful graduates are eligible for tuition waivers to all state-supported colleges or universities, health professions schools, and many graduate schools.[2]

Program Structure, Supportive Mentorship Critical

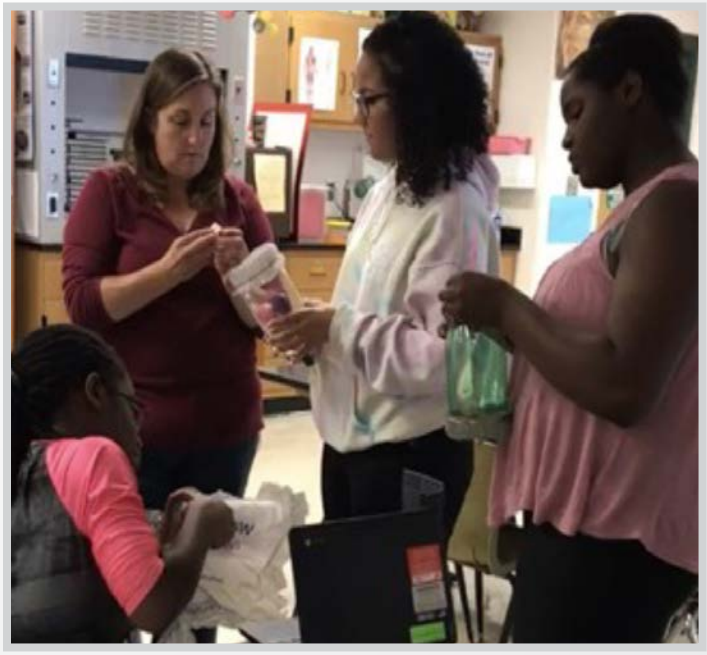
Each summer, students can participate in one of four sequential camps at different college/university campuses. These camps include

laboratory and classroom training, as well as enrichment activities designed to equip students with skills and experiences that ready them for a seamless transition into college. The camp curriculum builds on the previous grades to expose students to increasingly more rigorous educational and research experiences associated with careers in the health sciences.

Throughout the academic year, HSTA-trained teachers lead students in weekly local, community-based, after-school clubs. Leadership, communication, and resource skills—along with teamwork—are woven into the research experience. The students engage in scientific research to produce projects that are driven by their interests and focus on health-related issues affecting their local communities.

HSTA students can reach and teach in communities where professionals aren't invited. Guided by the six core Rs—Relationships, Recreation, Research, Relevance, Rigor, and Repetition—students partner with mentors to complete meaningful projects. Students present their project findings formally at the annual HSTA symposium. Students gain insight into issues, but also find they can be the vectors of change.

HSTA marshals an abundance of mentors, including HSTA near peers, college near peers, teachers, local community professionals, community research associates, scientists, university professors, and HSTA staff who together build the family that changes lives and changes futures.



RESULTS/OUTCOMES

- 34 medical doctors, 7 dentists, 30 pharmacists, 3 audiologists, 1 psychologist, 12 physical therapists, 1 optometrist, 4 veterinarians, 11 physician's assistants
- More than 800 students in the pipeline
- Implementation of community-based participatory research
- Increased pipeline capacity through junior year in college (HCOP)

FOR MORE INFORMATION AND RELEVANT MATERIALS:

1 West Virginia Education Association (2021). US college graduation rate drops 2 percent, WV rate also on decline. Accessed on 3/2/2021 from: https://www.wvea.org/content/us-college-graduation-rate-drops-2-percent-wv-rate-also-decline

2 McKendall S. B., Kasten, K., Hanks, S. & Chester, A. (2014). The Health Sciences and Technology Academy: An educational pipeline to address healthcare disparities in West Virginia. Academic Medicine, 89(1):37-42. Pubmed NIHMS551835

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