



# OST Model to prepare the next generation of minority public health practitioners

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## Background

A 2006 HRSA review of 55 studies revealed that minority healthcare professionals tend to practice in underserved communities and have better rapport with their minority patients, improving compliance and health outcomes. Despite these benefits, the percentage of minority practitioners has remained stagnant since the first US medical schools were desegregated in 1909.

Housed in multi-ethnic Brooklyn's only academic medical center SUNY Downstate, the Arthur Ashe Institute for Urban Health's Health Science Academy (HSA) offers an Out of School Time (OST) health science enrichment program for minority students drawn from partnering Brooklyn schools.

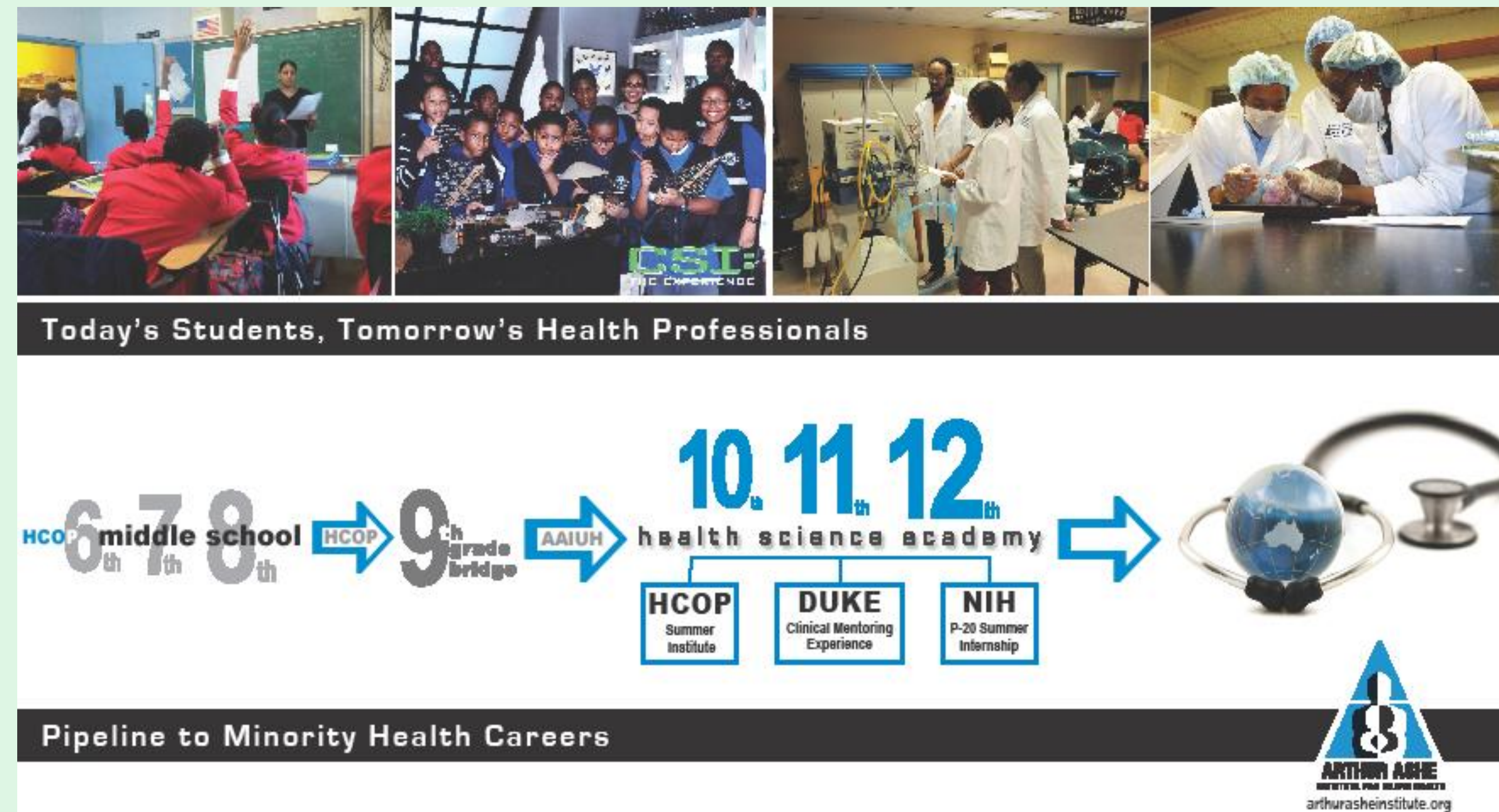
The eighteen-year old, science enrichment three-year high school program has extended to include middle school career exploration, bridge programming for ninth graders, specialized summer internships for academy high school scholars, including entering sophomores, and outreach to alumni. This health science education pipeline builds students of color's commitment and skill, understanding of the diversity of health science careers and the impact they can have on their communities.

## Methods

Each semester of the high school program opens with three-session mini-modules on strategies for academic success and research methods. Partnering with SUNY Downstate Medical Center provides laboratory visits, supervised dissections, guest speakers, simulations, and patient-oriented problem solving designed to build cultural competence. Health disparities activities and exploration of social determinants of health supplement clinical content in the program's six body system modules.

In addition to other health professionals, clinical graduate students from SUNY Downstate's Colleges of Medicine and Health Related Professions serve as faculty, curriculum consultants and role models. Instructors are trained to engage students, facilitate reflection and collaborative learning. Academy staff continually refresh the curriculum with activities integrating health disparities, community experience as well as exposure to SUNY Downstate's resources and facilities. Diversified funding supports a variety of summer internships offering mentorship, exposure to clinical and community research, academic enrichment, and stipends.

Multi-year funding from HRSA's Health Careers Opportunities Program (HCOP) enabled summer programming and missing pipeline components. Linking the middle school and high school programs, a ten-week Ninth Grade Bridge program was developed onsite at SUNY Downstate, providing interactive, age-appropriate overview of the three-year curriculum. The program also provides orientation for parents, and assistance with the academy application process. Funding from NIH and Aetna Foundation support internships and outreach for alumni.



## Results

In the fall of 2012, the Academy had 167 mostly Black and Hispanic students from 12 high schools enrolled. Over ninety-five percent of Academy scholars go to college. Based on an alumni survey of graduates conducted in 2011, respondents reported that

- 51% completed degrees in health and science disciplines
- 72% pursued degrees in health and science
- 100% would recommend the Academy to high school students interested in science
- 67% said the Academy prepared them for college-level science
- 68% positively rated the Academy's impact on their education decisions and career aspirations.


Academy alumni continue to return to serve as instructors, guest speakers, volunteers and staff. Vanessa Vales, HSA '06, recently returned as the Middle School program coordinator, while she completes her Master's degree in Adolescent Science Education at Brooklyn College. "As an 'educator in the works,' I am honored to come back to help make learning fun for these students, to pass a little torch," says Ms. Vales.

## Discussion

Partnership with SUNY Downstate and its NIH funded Brooklyn Health Disparities Center allows the Institute to leverage funders' investments to enrich and deepen students' experience all along the pipeline. In partnership with SUNY Downstate's Office of Minority Affairs, Health Academy scholars will participate in a year-round HCOP program offering career exposure and academic support in writing, chemistry and standardized test preparation. The Doris Duke Charitable Foundation will support three cohorts of students to work with faculty mentors on clinical research projects. Academy students and alumni participate in internships to build research capacity in community-based organizations through a summer internship program funded by a National Institutes of Health (NIH) P-20 grant, a model recently replicated in Trinidad and Tobago, seeded by a Fulbright grant.

The infusion of health disparities throughout the core curricula engages students in drawing connections between their experience and clinical content, building cultural competence, critical thinking and understanding of complex material. "Even those students who normally hang back come alive in the health disparities discussions," says Master Teacher Simon Shamass, a third year medical student who aspires to return to the middle east to teach emergency medicine.

Academy partnerships offer young people clinical exposure and community praxis to cement learning, building awareness of the complex factors that impact public health. Joshua McHugh, an alum and third year medical student at SUNY Downstate, teaches neurology at the Academy, where he says he gained "experience and exposure often not available to urban students and a way to integrate my interest in science and service. Being an instructor allowed me to 'give back' by encouraging younger students while reinforcing my learning as a medical student."

 <b>Health Science Academy Curriculum 2012-2013</b> <i>3 year commitment – Sophomore through Senior years</i> 13 week semester: mini and clinical modules		
Semester/Grade	3 week mini module	10 week clinical module & dissection and/or labs
Fall/sophomores	Strategies for Academic Success 1: What is your personal study style and how does it impact your learning?	<b>Introduction to Physiology and Health Disparities</b> Dissection: Fetal pig
Spring/sophomores	Strategies for Academic Success 2: Tools for Being a Better Learner	<b>Cardiovascular System</b> EKG Lab & Bodies Exhibit Dissection: Sheep heart
Fall/juniors	Research Skills 1: How to Ask a Question	<b>Respiratory System</b> Gross Anatomy lab No dissection
Spring/juniors	Research Skills 2: How to Answer Your Question	<b>Reproductive System</b> Birthing Simulation Lab Dissection: Sheep uterus
Fall/seniors	Research Skills 3: How to Organize and Analyze Your Data	<b>Neurological System</b> Simulation lab at Kings County Medical Center Dissection: Sheep brain
Spring/seniors	Research Skills 4: How to Communicate Your Results	<b>Digestive System</b> No dissection