



UNIVERSITY OF PENNSYLVANIA'S GROWING TOGETHER:

The Story of How a Winning Entry is Making a Real Difference to Andrew Hamilton School

Trust, equity and collaboration are the hallmarks of the University of Pennsylvania (Penn) team's demonstration project that won the first prize for the category for the U.S. Environmental Protection Agency's 2020 Campus RainWorks Challenge. The team of 12 students from multiple disciplines, led by a faculty advisor, proposed a redesign for the schoolyard of Andrew Hamilton School—an elementary school in the lower-income neighborhood of West Philadelphia that lacks greenspace and adequate access to fresh food. Additionally, because the schoolyard is mostly paved, when it rains the water flows directly into the “combined sewer system” (sewers that carry both stormwater runoff and raw sewage in the same set of pipes) that can overflow into nearby Cobbs Creek during heavy rainstorms. The Penn team's experience with the Campus RainWorks Challenge highlights the value of their working directly with the students and teachers at the school to come up with creative green infrastructure solutions as well as their following through with the school to make the vision happen.

The Campus RainWorks Challenge allows and encourages university teams to work with K-12 schools in their communities. The Penn team, led by advisor John Miller, worked with Penn's [Netter Center for Community Partnerships](#) to engage with Andrew Hamilton's students and teachers during the design process to understand how green infrastructure ideas could improve the day-to-day life at the school and in the surrounding neighborhood. “We wanted to understand how the space was used before completely changing it. Therefore, we had to consider the teacher parking lot and a play area where children enjoy recess and line up before class. We also visited the site a few times to understand where there were current green spaces, even just grass, that we could utilize,” explained team member Corey Wills, who was a graduate student at the time.

The [team's design](#) features rain gardens and permeable paving to soak up the rain and raised garden beds and a “food forest” (diverse, edible planting that mimics the surrounding ecosystem) for students to grow their own food. Judges of the competition appreciated how the design highlights how properties that have been largely paved over can be redesigned to manage rainfall on site and better protect nearby streams from polluted runoff.

“External stakeholder engagement and collaboration were excellent. The plan addresses CSOs and community needs, while also integrating an equity component.”

“The design benefits are described in terms of mental, physical, environmental, social and economic health.”

“Terrific continuation of the university's existing partnership with the school. Clear evidence of trust developed.”

2020 Campus RainWorks Challenge Judges

Since winning the competition, Penn team members raised funds to build the garden beds, hired a graduate student gardener, and solidified a partnership with the Philadelphia Orchard Project. Building the garden with school students began in Summer 2021, and that fall, the school started planting the food forest and hosting an after-school gardening club five days a week. During the 2022-2023 growing season, the garden, predominantly composed of eight-foot by three-foot wooden beds, produced over 550 pounds of produce.



Figure 1 Image of the raised planting beds from team's design boards.

Team members plan to help start a free and low-cost farmers market to share produce grown at the school with the broader community. The team also plans to work with teachers to develop STEAM (Science, Technology, Engineering, Art and Math) curricula using the ongoing improvements to the schoolyard as a living laboratory. These activities are coordinated through the Netter Center as part of its strategy to support Andrew Hamilton as a comprehensive University-Assisted Community School, which involves bringing university, school and community partners together and linking school day and after school curricula to solve locally identified, real-world community problems.

Team members reported how much they enjoyed collaborating with their fellow teammates from different Penn departments such as Landscape Architecture, Earth and Environmental Science, and Economics. The interdisciplinary team was able to figure out together,

and with the input of the school partners, how to work within the constraints of the site and develop solutions to address multiple issues. Over the past two years, the Netter Center has coordinated many new partnerships between Andrew Hamilton, Penn departments and community partners around the use and expansion of the garden space. Penn students and faculty from multiple Penn schools, including Nursing, Medicine, Design and Education, regularly support the garden programming. The experience also shaped career aspirations for members such as Ms. Wills who said, “(my) participation in the Challenge has definitely made me consider working with educational gardening and green infrastructure in the future.”

By infusing enthusiasm into their project, the Penn team made a difference in the education experience of the Andrew Hamilton students while showcasing the value of the Challenge for [all the schools who have participated in the past 10 years](#).



Figure 2 Planting beds built at school (Fall 2022)

Acknowledgements

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Learn More

To learn more, visit [EPA's Campus RainWorks Challenge](#). To sign up for e-mail updates or ask a question about the Campus RainWorks Challenge, e-mail RainWorks@epa.gov.

