

Extension Programming to Address Urban Issues

Case Study Snapshot Rutgers 4-H STEM Ambassador Program

Despite modest gains in the last 25 years, racial and ethnic minority workers continue to be underrepresented in the STEM workforce (Chiappinelli et al., 2016). To address career wellbeing, the [Rutgers 4-H STEM Ambassador Program](#) engages urban youth from groups underrepresented in Science, Technology, Engineering, and Math (STEM). The program has three primary focus areas a) STEM exposure, skill development, and identity, b) college readiness and access, and c) leadership and contribution.



Youth ambassadors are selected by their local 4-H staff to participate in a week on campus, where they engage in discussions, workshops, research projects, and engineering challenges alongside faculty, staff, and graduate students. This collaboration of seven counties serves high school youth from urban communities between Philadelphia and New York City, including young women, African Americans, and Latinos. These communities are racially and ethnically diverse and represent some of the most densely populated areas of the country.

Each year, a new cohort of 45-65 8th-9th graders are selected to receive full scholarships to participate in the multi-year pre-college program. More than 500 teenagers have become ambassadors. Many are the first generation in their family to pursue a college education. The program begins with [online learning modules](#) for participants to complete prior to a week of campus experiences. After their initial week on campus, the ambassadors continue to receive pre-college support and guidance during their four years of high school. Program staff provide additional opportunities for career and college exploration and assist the ambassadors with the college application process. Ambassadors have participated in the [National 4-H STEM Challenge](#), the [CYFAR-funded Science Pathways](#) program, and service with younger youth, as they facilitate science and engineering projects through afterschool, weekend, and summer programs in their home communities.

A diverse group of 4-H faculty and staff have been collaborating for several years to redefine how 4-H can serve expanded and diverse audiences through a variety of STEM initiatives, while still providing the essential elements of the 4-H experience. Rutgers professors, post docs, graduate students, and undergraduates from numerous schools within the university support the

program by contributing their time to lead full-day research projects, inviting Ambassadors into their labs and classrooms, participating in roundtable discussions about their journey in STEM, and mentoring the youth. Internal partners extend across campus and include schools, departments, centers, the office of communications and marketing, the [office of urban Extension and engagement](#), and Rutgers iTV Studio for the online learning modules.

Partnerships with urban schools and other youth-serving organizations have been key to building awareness of Extension programs and increasing access to programs by those underrepresented. An internal Rutgers Cooperative Extension Community Enhancement grant provided initial funding. Some of the most important outcomes of STEM pathway programs are engagement of educators, mentors, peer networks, and corporate, public, and philanthropic partners (Contreras, 2011; Stanton-Salazar and Spina, 2005; Wickliffe, et al., 2020). In metropolitan areas, these resources are near urban youth, but not always easily accessible.

The team conducted pre- and post-surveys, focus groups, and a longitudinal study, documenting program [impacts](#) through a variety of [journal articles](#), conference presentations, and other publications, such as the [4-H Science in Urban Communities Promising Practices Guide](#). Most ambassadors (80%) responded that their experience with the program was positive and helped shape their goals, widening their perspective in terms of possible STEM careers and areas of scientific study and research. Most importantly, most ambassadors said that their interaction with scientists, interaction with fellow participants, and opportunities to share their projects resulted in increased confidence in themselves, improved interpersonal skills, and strengthened interest in science and engineering. In 2015, the program received the National Excellence in Urban Programming Award from the National Association of Extension 4-H Agents. In 2020, the program team was awarded the Rutgers School of Environmental and Biological Sciences/New Jersey Agricultural Experiment Station Team Excellence Award.

[Follow this link for the complete case study.](#)

Contributors: [Chad Ripberger](#), Janice McDonnell, Marycarmen Kunicki, Marissa Staffen, and James Nichnadowicz from [4-H Youth Development, Rutgers Cooperative Extension](#)

This case study program snapshot is featured in the urban-themed chapter of ***Understanding Cooperative Extension Education in the Social Sciences*** Maria Rosario T. de Guzman and Holly Hatton-Bowers University of Nebraska-Lincoln Cambridge University Press 2021

See more information about this program in the case study series led by Julie Fox, Ph.D., Ohio State University Extension, fox.264@osu.edu