

# Utilizing a Cancer Research Training Program to Reduce Cancer Disparities



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### Background

The Prevention Research Center for Healthy Neighborhoods (PRC) at Case Western Reserve University (CWRU) fosters community partnerships to conduct collaborative research that seeks to better understand chronic health issues faced by under resourced neighborhoods in the greater Cleveland area. Using this research, effective strategies are implemented to combat these problems.

In collaboration with the Case Comprehensive Cancer Center, the PRC offers the Community Engaged Cancer Research Program (CECRP), a STEM pipeline program for underrepresented minority high school aged youth that aims to reduce cancer disparities by training students in a variety of mixed research methods and providing opportunities for community engagement. By providing trainees with these opportunities, we hope that they will pursue higher education and careers in biomedical and cancer related research fields.

Throughout the program, students completed learning modules, were introduced to various research methodologies, participated in group discussions, conducted mini experiments, and engaged with community stakeholders.

### Learning Objectives

- Implement a curriculum focused on community-engaged cancer research for underrepresented minority students within the greater Cleveland area.
- Develop an evaluation framework that supports the existing program and leverages the experiences of previous program participants.
- Identify recruitment, communication, and dissemination strategies to support the ongoing development of the program.

### Population

**Table 1.** Demographic characteristics of students who participated in the 2022-2023 Community Engaged Cancer Research Program.

	Total	N = 13	(100%)
<b>Gender</b>			
Female		6	(46.2%)
Male		7	(53.8%)
<b>Ethnicity</b>			
African American		2	(15.4%)
Asian		7	(53.8%)
White		4	(30.8%)
<b>Schools Attended</b>			
In Cuyahoga County		10	(76.9%)
Outside Cuyahoga County		3	(23.1%)
Private		4	(30.8%)
Public		9	(69.2%)
<b>School Grade</b>			
11 <sup>th</sup>		4	(30.8%)
12 <sup>th</sup>		9	(69.2%)
<b>Trainee Status</b>			
Alumni		4	(30.8%)
First Time		9	(69.2%)

### Activities & Deliverables

<b>Recruitment &amp; Marketing</b>	Supported the recruitment and marketing efforts for high school student participants
<b>Curriculum</b>	Utilized the <b>4A Learning Cycle</b> to develop curriculum material (Vella, 2000).
<b>Training &amp; Implementation</b>	<b>Assignment Prompts:</b> Trainees completed a series of reflection assignments, groups discussions, and mini experiments, all of which culminated into their final research project.  Reorganized and managed the <b>Canvas site</b> to increase efficiency and ease of use.
<b>Evaluation</b>	<b>Pretraining Assessment:</b> Trainees completed a pretraining assessment that surveyed students on their learning preferences and skills, community and neighborhood connectedness and involvement, and academic and extracurricular involvement.

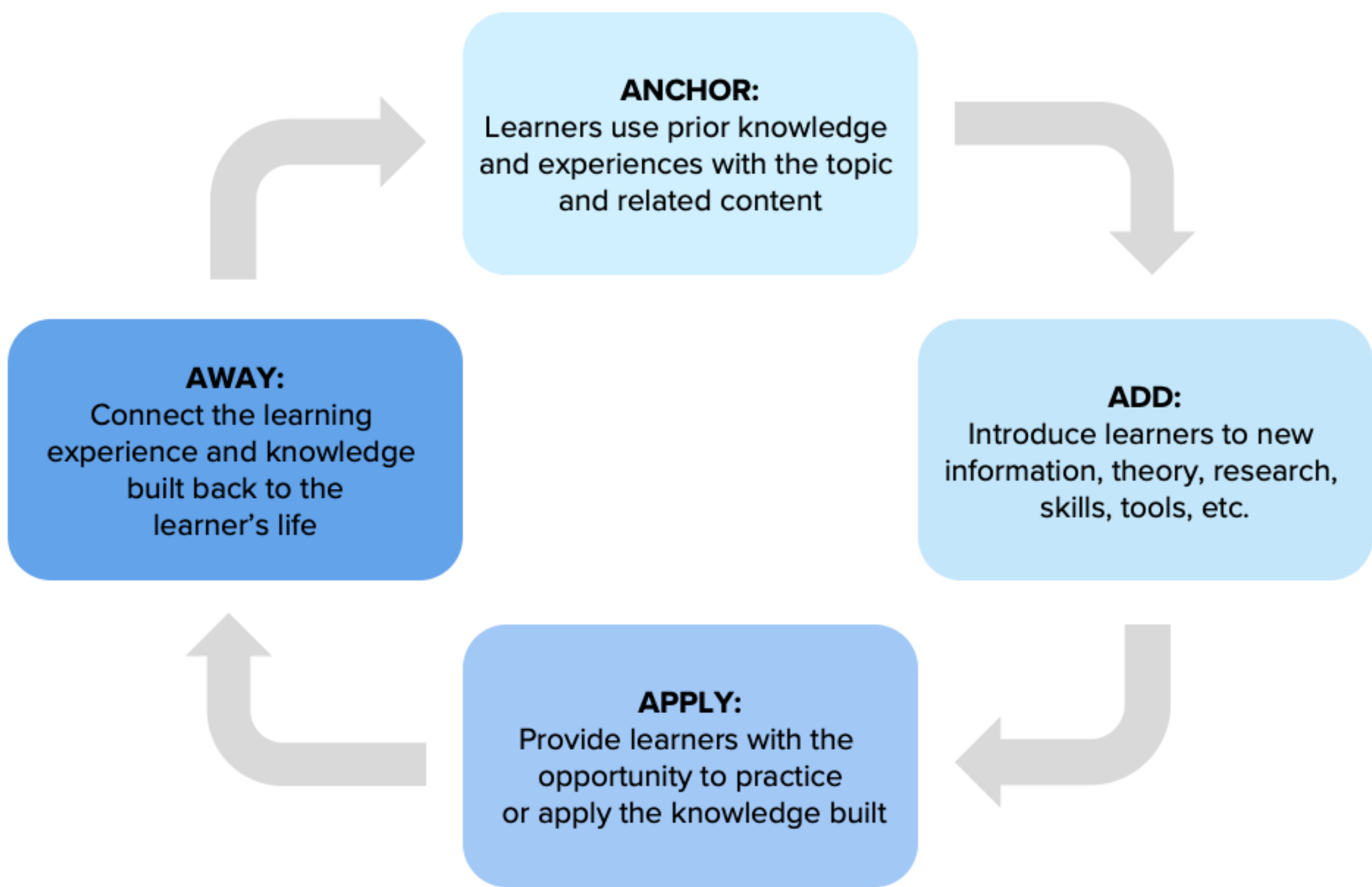


### Public Health Implications

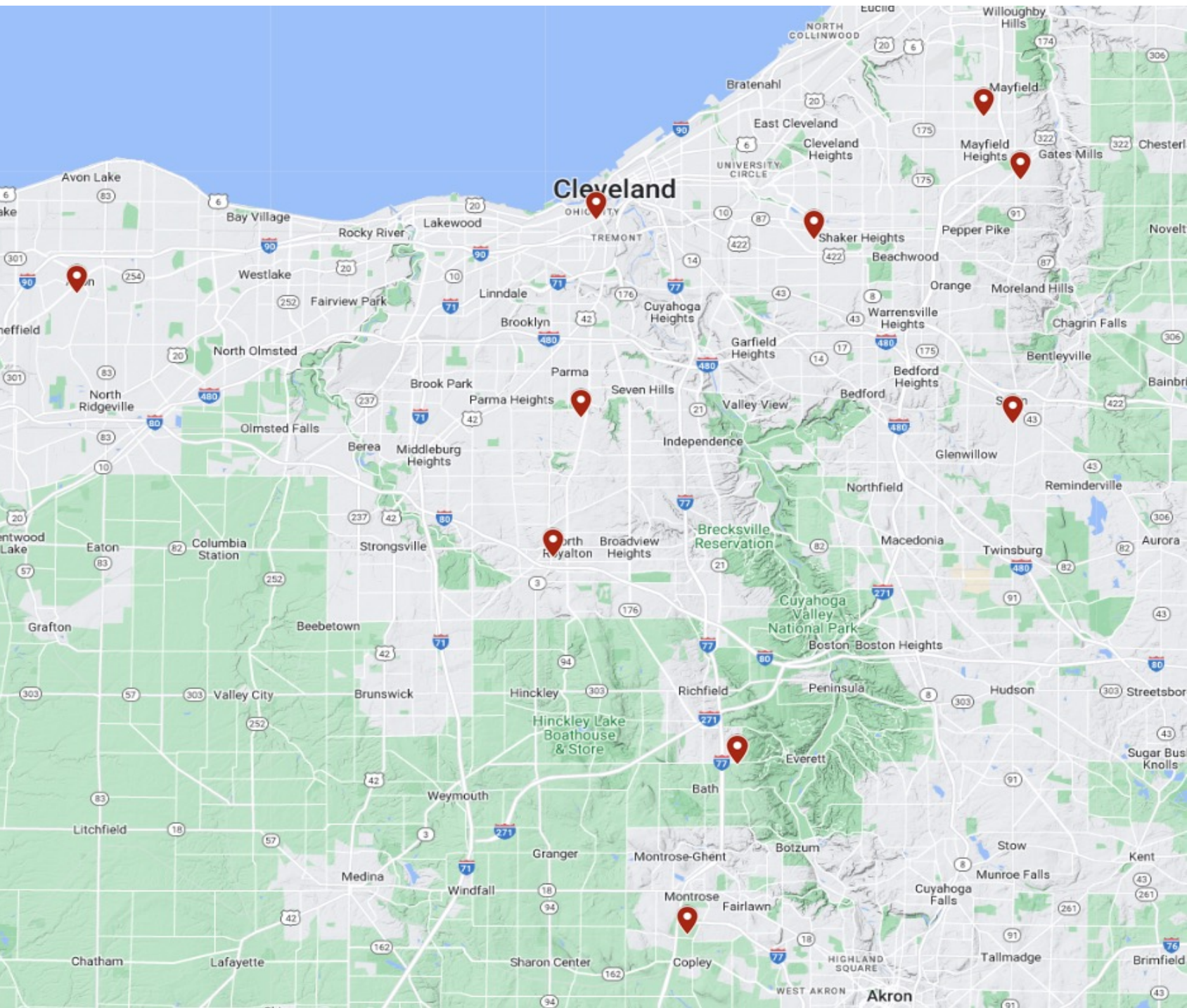
- Racial and ethnic minorities, along with low socioeconomic status individuals, experience differences in cancer incidence, mortality, and prevention.
- It is important that targeted community-engaged research, intervention development, and education are prioritized.
- STEM Pipeline programs for underrepresented minority high school students, like the CECRP, provide students with early access and exposure to experiences that have the potential to spark their interest in biomedical or cancer disparities research.
- Pipeline programs allow students from areas of the community that experience cancer disparities to engage with training protocols, educational material, and research that has the capacity to improve health outcomes. It is important that students are provided with these opportunities, as they increase the likelihood that they will pursue higher education and careers in these fields.
- 2022-2023 program cohort consisted of 13 students, only one of which attended a school in the city of Cleveland.
- In the future, the program should be expanded to accommodate more students from Cleveland and the surrounding areas.
- As students conduct research to identify disparities and gaps in knowledge, future cohorts of trainees should continue to expand upon previous students' work to make progress in these areas.

### Lessons Learned

- Adapting an existing program framework to meet the learning needs of Alumni trainees:** The existing program framework was adapted and expanded upon to provide Alumni trainees with a new program experience. Alumni trainees participated in additional community engagement experiences, led program discussions and activities, and presented at the Case Comprehensive Cancer Center's Annual Cancer Disparities Symposium and the MPH Innovations Conference.
- Utilizing a web-based learning management system to facilitate learning:** Canvas by Instructure was used to manage all learning materials and online discussions. This was very helpful for the students, as all materials were organized and consolidated into one location.
- Importance of cancer disparities and community drivers for prevention:** Trainees met with a variety of community members and stakeholders involved in cancer prevention and research. These individuals play a vital role in maintaining patient wellbeing and developing initiatives that seek to improve the cancer care for people within the greater Cleveland area. These individuals are also well connected to the community and are knowledgeable of the cancer disparities they face, allowing prevention efforts to be tailored appropriately.



**Figure 2.** The 4A Learning Cycle used in the development of program curriculum.



**Figure 1.** Location of schools attended by students who participated in the 2022-2023 Community Engaged Cancer Research Program.

### Acknowledgments

Thank you to my preceptors, Dr. Kristina Knight and Jean Frank, for their ongoing support and for providing me with insight into their wealth of knowledge and experience; I learned so much from them. Thank you to the students who participated in the program; the hard work and dedication they exhibit at their age is an inspiration.

### References

Vella, J. (2000). *Taking Learning to Task: Creative Strategies for Teaching Adults*. Jossey-Bass.