



# Raising Environmental Awareness for Community Health: A Youth Education and Health Advocacy Initiative

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## Background

- The environment has a large impact on public health, from food availability to respiratory and cardiovascular health.
- These impacts are especially damaging for low-income communities and communities of color.
- Environmental science, climate change, and its health consequences are undertaught in schools despite evidence that early childhood exposure to these topics fosters future leadership and advocacy.

## Introduction and Program Design

- To address this educational gap, Raising Environmental Awareness for Community Health (REACH) was created by students and faculty at the University of Colorado School of Medicine.
- REACH is a 5-week afterschool program for 4<sup>th</sup> and 5<sup>th</sup> graders that covers major environmental topics and their connection to public health.
- REACH is offered at Aurora Public Libraries and Aurora Public Elementary Schools.
- These schools serve populations in which up to 93% of students are identified as economically disadvantaged and up to 96% are identified as racial and ethnic minorities.

## Methodology

- REACH was offered for 5 weeks in Fall 2024 and Spring 2025 at two Aurora Public Elementary Schools.
- Upon program completion, students completed an anonymous and optional post-pre survey to assess how their perception of environmental topics changed before and after the program.
- The questions were rated on a 1 to 10 Likert scale and analyzed using a Wilcoxon Signed Rank test.

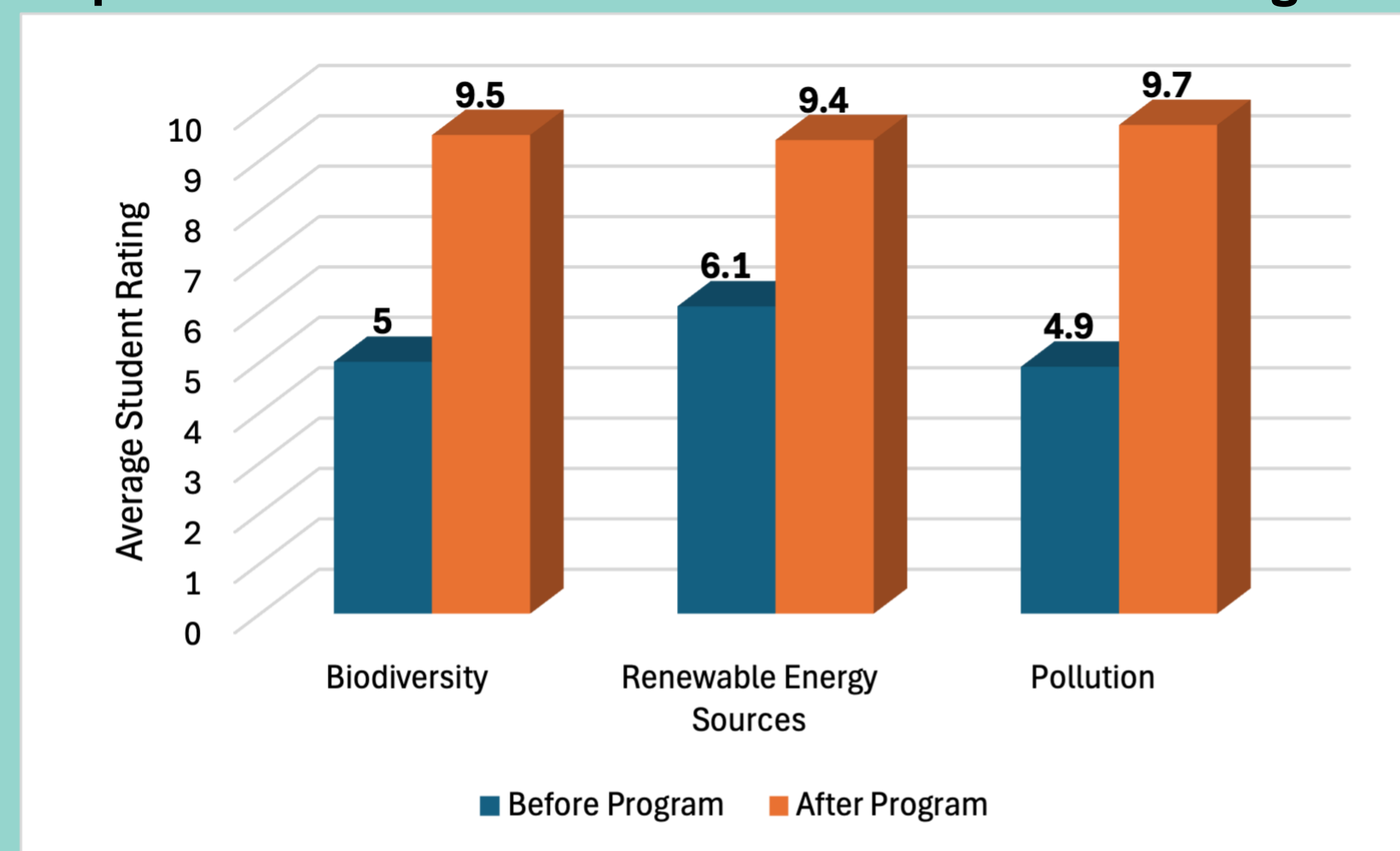
## Results

- A total of n = 15 surveys were analyzed.
- The average rating for how likely students were to tell others about climate change increased from 5.5 to 9.8 (p = 0.00079).
- The average rating for how likely students were to get involved in efforts to protect the planet increased from 5.7 to 9.9 (p = 0.0019).

## Attendance Data

	School 1	School 2
Average number of students per session	9.6	6.6
Maximum number of students in attendance at any given session	11	9
Number of students that filled out the final survey	11	4
Average percentage of sessions attended by the survey respondents	72%	70%

## A Comparison of Students' Perceptions of a Topic's Importance to Human Health Before and After the Program



## REACH Curriculum

Week	Topic	Activity 1	Activity 2
1	Biodiversity	Biome matching game, including pictures and environmental terms	Potting a plant
2	Energy	Renewable and non-renewable energy matching game with pictures and descriptions	Oil spill creation and clean-up with soap
3	Pollution	Smog activity with marshmallows and pretzels	Acid rain demonstration with water and phenol red
4	Solar oven	Solar oven creation and s'mores	Campaign posters
5	Final Review	Trivia review game	Presentation of posters

## Conclusion

- REACH increased students' perceived importance of several major environmental topics while simultaneously increasing students' perceived likelihood to speak up or act on these issues.
- Programs like REACH may hold promise in improving public health through the promotion of awareness and advocacy.
- Since the REACH program was held in a school district that primarily serves students from backgrounds historically underrepresented in STEM, this early opportunity for exposure may be especially influential.
- Future work will include expanding the program to other schools to increase impact and obtain a larger sample size.

## Acknowledgements

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- Thank you to Aurora Public Libraries and Schools teachers and staff for their support of this program
- Thank you to the PhD program statisticians at the University of Colorado Anschutz Medical Campus
- This study was deemed exempt by COMIRB (#24-1617)
- Parents/guardians of student participants signed permission slips and photo release forms