

The Carbon Catcher: Utilizing the Carbon Sequestration Abilities of Coccolithophorid Algae and Seagrass to Create a Low-Cost Carbon Collection System for Developing Communities

Sipe, Riley (School: North Atlanta High School)

This project explores the effectiveness of coccolithophorid algae and eelgrass in reducing atmospheric CO₂ levels through a small-scale carbon capture system. The goal was to design an affordable, replicable device that could efficiently sequester CO₂, particularly benefiting low-income communities. Three samples were tested over seven days: one with only coccolithophorid algae, one combining algae and eelgrass, and a control with neither. Results showed the algae-only sample reduced CO₂ by nearly 50%, outperforming the algae-and-eelgrass combination, which also effectively sequestered CO₂. The control showed no significant CO₂ reduction, confirming the success of the biological components. This inexpensive system, costing approximately \$68.71, demonstrates the potential for accessible carbon capture technology to address climate change equity.

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