



Spotlight on Excellence – Science and Engineering Fair

TO: Dr. Joel Boyd, Superintendent of Schools
 FROM: Robin Desmond, Chief Academic Officer *Robin Desmond*
 DATE: April 28, 2023
 RE: *Science and Engineering Fair Award Recipients*

This Spotlight on Excellence presentation features the 2023 Science and Engineering Fair that was held on February 15, 2023 at Lowell High School. Lowell is proud to offer a Science and Engineering Fair as it provides students the chance to explore “real world” science and engineering topics of interest. Students learn about many exciting and emerging fields, while developing important life skills to include: reading, writing, mathematics, communication, teamwork and design. Below are this year’s winners along with their project descriptions.

Middle School

Water Quality in Our School
 Sapphire Feliciano and Yeirideliz Maria
 Bartlett Community Partnership

Our science fair project was school water testing. We did this project because students and teachers have been concerned about the water because of the different colors and tastes. Another concern of ours was if the school water was safe enough for the younger students to drink. The data that we collected informed us about the level of chemicals in the water in each classroom. Our results of this experiment showed that our school water is healthy enough to drink. We believe that the water was different colors because when everyone was in the pandemic, no one used the water so it sat there in the pipes.

Lowell High School

Harnessing the Intelligence of Slime Molds to "Mold" a Better Society
 Tiffany Tran
 Lowell High School

My project, "Harnessing the Intelligence of *Physarum polycephalum* to 'Mold' a Better Society", researches the foraging behavior of brainless slime molds. Pieces of these bright yellow protists were placed in simple mazes and complex mazes, and after the pieces fused together, oats were placed at either end of the maze. The slime mold was capable of finding the shortest path and solving the maze at least half of the time in both the simple and complex mazes. The slime mold behavior was compared with models of actual transportation networks of Massachusetts, America, and Africa. In the future, we can apply the "intelligence" of slime molds to map out transportation networks in developing countries, as well as creating a mathematical model to explain the similarity between the movement of slime molds and cancer tumors.

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