What is the Best Placement to Maximize the Effectiveness of Smog Reducing Materials?

Team Number:

School Name: Santa Fe High School

Area of Science: Environmental Sciences; Chemistry

Project Title: What is the Best Placement to Maximize the Effectiveness of Smog Reducing Materials?

Air pollution is a major contributor to many detrimental health and environmental issues around the world. As such, companies worldwide have been creating materials aimed at passively reducing smog concentrations in urban environments. In a continuation of our simulation from last year, we will be looking at the most effective placement of these materials from sidewalks to rooftops and everywhere in between. Over the course of this project, additional research will be conducted, including the acquisition of more recent data to update and improve our program. Among other subroutines, the variation in the amount of smog produced depending on the time of day and the effect of urban wind patterns on its dispersal will be integrated into the simulation. By doing this we can determine how effective the materials are at neutralizing smog at various urban elevations. The model will be created in NetLogo 3D, to simulate the urban environment, with the addition of a Java program to run the numbers and check its validity.

Team Members: Rowan Cahill, Theodore Goujon, Lisel Faust, and Ramona Park

Sponsoring Teacher: Brian Smith

Mentor: Hope Cahill