David McHugh

Commotion in the Ocean

I chose to do an experiment on reducing the effect of tsunamis because after researching the devastation of the Japanese and Sumatran tsunamis, I realized how dangerous and unstoppable tsunamis can be. I think it would be vital to have a way to reduce a tsunami before it reaches land and kills thousands of people. The problem for my experiment is: Is it possible to reduce a tsunami wave's force before it reaches shore, and if it is, what is the best way in doing so? For my experiment, I created a wave tank out of plywood with a slope on one end. I used measuring tape (and human monitors) to measure the distance the wave traveled up the slope, and used potentiometers to measure the height and force of the wave. I used different obstructions to try to reduce the wave, and recorded the results.

When the data was collected, it was revealed that the obstructions that worked the best were a small, 2 mm by 2 mm net, and a granite wall at the bottom of the tank. I think the net reduced the wave because the holes split up or disturbed the wave, causing it to have less energy. I think the granite wall reduced the wave because of its irregular shape: the wall had one piece lying flat and the other standing up. If these obstructions could be useful in a real tsunami, than thousands of lives could be saved.