Science Day

Wooster Marsh White 2009 Final Report

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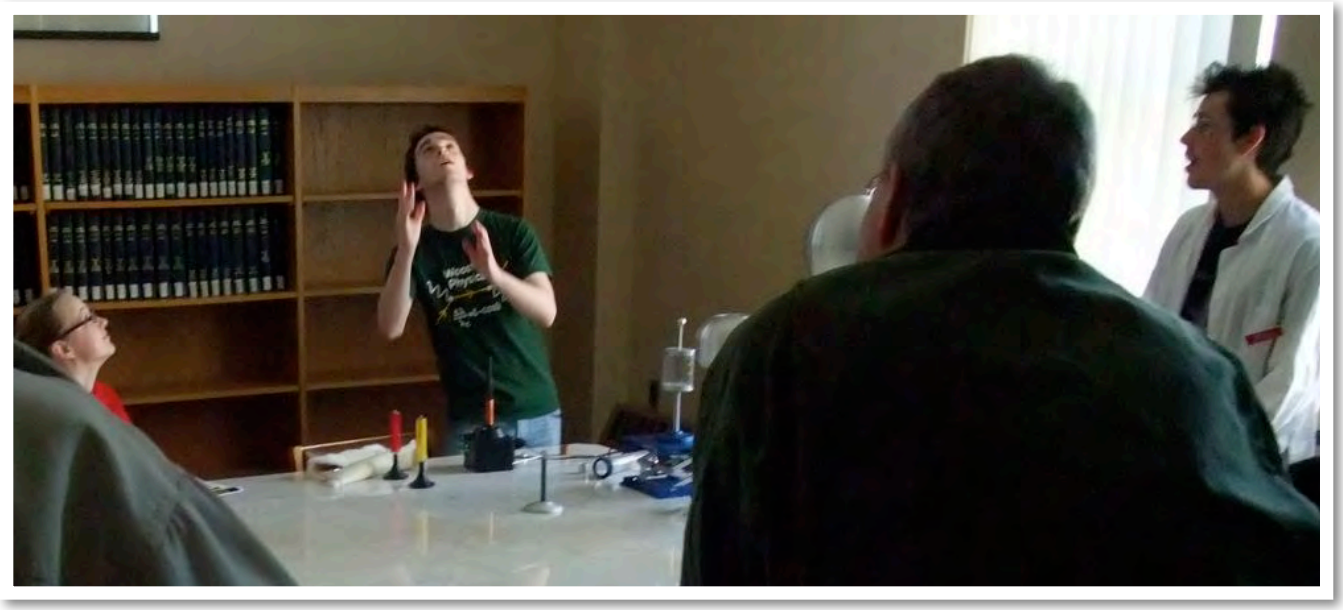
The idea for Science Day came about one physics club meeting while officers were discussing a desire to expand our current outreach program that targeted elementary school children to a program that incorporated the local and campus community. We were excited about the full extent of our outreach demonstrations, ranging from basic physics topics such as Newton's Laws to more advanced physics topics such as the inner workings of an electric motor, and wanted to reach out to a larger audience. In addition, we felt that science education in the classroom should be supplemented by activities outside of the classroom and supported by the entire family. From these goals, the Wooster Physics Club decided to host an open house for the entire Wooster community, welcoming families and college students alike to experience the phenomenon of physics! As planning progressed we felt that it would be an added bonus if we could showcase ALL the science being performed on campus, in addition to physics. We extended an invitation to all the other science clubs to participate in our open house. Upon receiving an overwhelmingly positive response from the other clubs, Wooster's first annual Science Day was born.

Science Day took over the entire physics wing of Taylor Hall at The College of Wooster and included a grand total of eleven stations, representing six different fields of science. Excitement was in the air the morning of April 4 as troops began to assemble their different outreach setups. Touch tanks were being filled in the Biology room, rocks were put under ultraviolet light in the Geology room, methane lines were being checked in the BMB room, brains were being set on display at the Neuroscience station,



and tanks of liquid nitrogen were being distributed to the Physics and Chemistry rooms. As the caterers put out enough food for 200 people, we looked at each other apprehensively, still unsure about what kind of response Science Day would elicit. At about 12:50 PM the hoards of masses started filing into Taylor Hall and Science Day was underway without a backwards glance.

The first stop on Science Day was Waves and Optics. Here, visitors could participate in a 25-minute interactive presentation, learning about the wave nature of light and sound. Continuing down the hallway, visitors reached the Polarization station where they could apply many of the optics concepts to understand how polarized sunglasses work and why corn syrup displays a spectrum of color when viewed through crossed polarizers. Across the way mad scientists were giving an electrifying demonstration on electricity and

magnetism, building up knowledge to explain the physics behind their exciting finale of the electromagnetic ring launcher. Taking a break from physics, visitors found themselves in the Biochemistry and Molecular Biology room where they were able to hold flaming methane bubbles, find out how florescence is used to solve crime scenes, and extract DNA from a banana. Walking out the back door of the BMB

demonstration, visitors found themselves immersed in an exploration of biological life. The Biology demonstration allowed visitors to touch live sea animals and view cellular life through a microscope. The Geology Club wowed visitors with a large-scale erupting papier-mâché volcano, and then continued to impress them with an extensive collection of rocks and fossils. Next door, jumping back into physics, was a demonstration of fundamental forces and how they affect motion. Here visitors learned about Newton's Laws, gravity, and the conservation of the angular momentum in a gyroscopic bike wheel.

After grabbing a healthy snack (and a few desserts) from our catering station visitors walked

downstairs to find the second round of demonstrations. As they rounded the corner they found themselves face to face with real sheep, rat and mice brains! The Neuroscience club used these models to explain the workings of a human brain and the phenomena behind optical illusions. After learning about the basis for vision, visitors entered a room devoted to atomic spectra where they used diffraction gratings to study the spectra of florescent filaments of various elements. Visitors were then challenged to match the spectrum emitted from a glowing pickle to one of the displayed elements. Next door at the air pressure demonstration, visitors learned how the motion of air molecules affects the volume, temperature and pressure of gasses. With the help of a bell jar and some liquid nitrogen, the concepts were conveyed with shattered roses, exploding film canisters, and popped balloons. At the final stop of Science Day, visitors were able to sample ice cream made from liquid nitrogen by the Chemistry club, and make their own flubber bouncy ball.

As the clock struck four we looked at the empty tables of snacks and beverages and declared Science Day a huge success. All the estimated 200 children, families, and college students expressed an overwhelmingly enthusiastic response to the entire event. We were especially thrilled to see that children as young as three years old were able to gain something from the experience. If we can spark an interest in science at that young age, then we feel like we have succeeded in our mission for Science Day. We plan to continue to expose the Wooster

community to the joy of inquiry by making Science Day an annual tradition where we will take the initiative to expand and improve upon this pilot event.