Marsh White Award Final Report

Colorado School of Mines SPS
March 2013

In March of 2013, the Colorado School of Mines chapter of SPS hosted its fourth annual Partners in Physics (PiP) outreach event. Since its inception, PiP has sought to bring together grade school students of all levels to participate in learning about physics by actively involving participants in the demonstration, learning, and teaching of physics concepts. This year's PiP event was focused on Projectile Motion. Because projectile motion is an extensive topic, our chapter was limited to a subset spanning the physics of catapults and trebuchets.

Partners in Physics is an excellent event for raising the younger generation's interest in physics and science by narrowing the age gap between teacher and student. The relationship which forms is more casual and friendly, yet instructive to allow genuine interest to flourish. To encourage this, our chapter used a tiered teaching style. This pedagogical approach was accomplished by first teaching high school students some 2D motion and gravitation concepts beyond what they would typically cover in depth in their classrooms in the first half of the day. In the second half of the day, these older students were asked to help to demonstrate to the younger students simpler physics concepts such as tension and energy conservation. This experience helped the older students practice teaching, reinforcing their conceptual understanding in preparation for their future science education, while giving younger students hands-on physics experience which may promote further interest and study.

Budget	
Pizza for attendees and volunteers	$92.35
Take-home catapults	$101.32
Demo Trebuchet Supplies	$50
Total	$243.67

In our initial proposal, the chapter quoted the construction of a large trebuchet and a catapult to allow the students to demo two different machines which achieve projectile motion. After careful consideration, our chapter determined that instead of building two large demos, we could afford to build one trebuchet and instead purchase catapult kits for the students to create at the event and take home. This was met with enthusiasm by the elementary school students

as well as their parents, who were the majority of our attendees. Without the expense of a large trebuchet, our leftover budget will be rolled over to next years PiP event.

This event proved to be extremely popular with parents because of its promotion of scientific literacy and the ability for their children to work with their peers to learn these concepts. PiP was also popular with children because of its hands-on demonstrations by peers minimizing the intimidation felt from adults. Because the event was largely parent driven there was lesser attendance of high school students where information on school or out of school events is not as commonly distributed to the parents. If chosen again next year extra emphasis will be placed on contacting and visiting high schools to raise event awareness; this event is an excellent source of pre-college information as well as a potential learning experience for any students interested in science or academia. Finally, more effort will be put into a dramatic demo apparatus while steering away from kits for the hands-on section allowing for more self-design by the kids while in groups.

The Colorado School of Mines chapter of SPS would like to thank the SPS Marsh White Grant for making this year's PiP a huge success, and to all the local elementary, middle, and high schools for promoting and participating in the event. We look forward to next year's Partners in Physics.

The Society of Physics Students Presents Partners in Physics...

Projectile Motion

The science of pinpoint accuracy and ultimate range

Learn how Romans took down nations,
Archers can shave hair off your head,
and Snipers hit their mark everytime.

Colorado School of Mines - Meyer Hall, Room 220

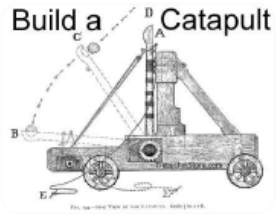
Saturday
March 30th,
1pm to 4pm

Contact vpoutreach@csmsps.org
to RSVP or for more information

The Society of Physics Students presents Partners in Physics:

Projectile Motion

The Science of Pinpoint Accuracy and Ultimate Range



Join Us **Saturday, March 30th** at **10:00 A.M.**
To Learn About Catapults, Projectile Ranging, Air Resistance,
and teach it to Elementary Schoolers from around the area
Lunch Included
For more information or to RSVP Please Contact Us At:
vpoutreach@csmsps.org

These are the 2 flyers used for the event. The first was used for the elementary and middle students while the second was sent to high schools.

Some of the earlier students testing the catapult kits with our President

Another early student testing the demo trebuchet with our treasurer

The full group of students working on their make-and-take catapults

Our VP of Inreach, Michael Slater, displaying the power of our demo trebuchet