

Millikin University  
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## High School Physics Day

*“Just wanted to thank you again for the wonderful Physics day... the kids were very pleased to find out they placed First and their confidence has shot through the roof. :)”  
-Donja Rich, Cerro Gordo High School*

On April 19<sup>th</sup> the Millikin Chapter of The Society of Physics Students hosted the first annual High School Physics Day, HSPD. The purpose of HSPD is to promote physics education at the high school level by providing high school students with hands-on experiences that put their knowledge of physics into action outside of the classroom. The competition was setup in two parts: pre-prepared projects that the high schools worked on before the competition and the onsite competition that challenged students to think on their feet.

HSPD also tested the ability of our small department (two full-time professors and ten physics majors as of the 2007-2008 academic year) to organize a large event and utilize as many university resources as possible to make the event a success. The SPS chapter at Millikin has just recently been jumpstarted thanks to the dedication of the professors and several devoted students. As such, in addition to the small number of people, the operating budget for SPS was also insignificant.

After carefully considering all high school events that may have prevented schools from attending, we selected April 19<sup>th</sup>, 2008 as the date of the event. To insure a healthy turnout for HSPD we made up a list and contacted over seventy schools within a fifty-mile radius of Millikin. Unfortunately, mail proved to be an unreliable means of

communication. Many of our follow up calls revealed that the packets never ended up with the physics teacher(s). Thanks to some advice from Donja Rich or Cerro Gordo High, who attended HSPD 2008, we should be able to communicate much more effectively with the high schools next year through a widely attended academic conference in Springfield.

The cost of hosting HSPD turned out to be less than what we had budgeted for due to the much smaller turnout than we expected. Five schools committed to coming by our February deadline however only three actually showed up. Our total material cost ended up being \$151.49, half of the \$300 we requested since we had been planning on at least ten schools attending. With the first HSPD under our belts the budgeting for future HSPD should be much easier.



Central Catholic Students Test Their Prediction

*“Congratulations to the entire Physics department on what looked like a really good day.”*

*-Rich Dunsworth, Vice President for Enrollment*

April 19<sup>th</sup> ended up being a very good day despite some setbacks. The Chair of the department, Dr. Eric Martell had a family emergency at the last minute and could not help coordinate the event, but the event went along smoothly thanks to the good planning and execution by Dr. Watson and all of the physics majors. We also had poor weather and were forced to move the proceedings inside. Despite these hindrances, the high school students still competed, had a great time and learned a great deal.

Of the three pre-prepared projects, only one school made more than one. Millikin reimbursed every participating school \$100 to build their projects and arrange transportation to the event, so it is unlikely that money kept the schools from building all three projects but rather a lack of time. To correct this problem, future HSPDs will almost certainly have a reduced event list, so schools can concentrate more effort on one or two projects instead of worrying about trying to complete three.

With a neck and neck pre-prepared competition done and the scores tabulated, our teams took a breather as we showed them around the Leighty Tabor Science Center, LTSC, before diving into the onsite competition. The tours around LTSC not only let the students get a glimpse of college level facilities and experiments but also gave them time to talk to Millikin students and professors, students from other schools, and teachers from other schools. This networking opportunity was a secondary objective of HSPD. The High school teachers also seemed very interested in how to setup different labs that we had on display. We are planning on creating a session on HSPD that will be specifically for the teachers. This session will cover how to incorporate some inexpensive labs into a high school classroom.

*“Thank you so much for this last weekend, I know my kids really benefited from the competition as well as the tours. Hopefully we will have an opportunity next year as well to come for a visit.”*

*-Bill Paine, Central Catholic High School*

The onsite competition went very smoothly, and despite some gasps from teachers when students were making crucial decisions, all three schools performed very well on both of our onsite events. While we tabulated the final scores the senior physics majors demonstrated and explained the physics behind a potato and carrot gun much to the

delight of the students. Scores were announced shortly thereafter and the event concluded.

We believe that HSPD 2008 went very well, especially considering that it was the first one. We learned quite a bit from hosting this event and are already working on improvements for future years. High School Physics Day is a tremendous asset for showing high school students that physics can be a fun and engaging career path. HSPD also served to bolster SPS's image on campus. More and more members of the general student population and the administration here at Millikin are beginning to take notice of our active and energetic physics group. This recognition will only help future physicists that pass through Millikin's physics department. We would like to thank the Marsh White Award Selection Committee for funding us, thereby further encouraging the Millikin administration to provide full support both in terms of facilities and finances (\$100 in transportation and materials reimbursement costs to participating schools), and, in general, for making this event possible.