

## **University of Louisville SPS Outreach**

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The SPS Outreach Committee at the University of Louisville (UofL) has a single mission: to do everything in our power to generate interest in the pursuit of science in the community that we live in, especially among K-12 students. Through demonstrations of physics experiments in a relaxed and openly interactive environment, we strive to demonstrate to these students that physics is fun. Our focus on this generation of future scientists is prompted by the belief that without new minds there will be no new ideas. In this way our goals are not so much selfless as they are selfish, in that we believe that we need these future physicists far more than they need us.

The UofL Outreach Committee has focused its efforts this semester on the areas that we deemed to have the greatest need. Many of our school visits have been to high school classes that had a majority of African American or female students, or both. Both of these groups have historically been under-represented in the scientific community. It was our goal to create interest in physics among the students we contacted, in the hopes that they would then consider a career in the sciences.

At Central High School, which is 90% African-American and 80% female, our department visited five classes over two days. The response we received from the students was extremely positive. We asked the students there to help us gather data for a cylinder-dropping experiment that our SPS chapter was performing in conjunction with SPS National. The students were then asked to propose a model that would predict the ratio between the number of times a cylinder landed on its flat end versus the number of times it landed on its curved side. All of our volunteers were amazed at the diversity and clarity of the student's proposals, in that they included several insights into the topic that were fresh and inventive, and that we had not thought of ourselves. One student in particular noticed that when two cylinders were held firmly together end to end and dropped the probability of their landing on a curved side increased dramatically. Several students proposed hypotheses that involved surface area ratios and center of mass considerations.

For us, these visits were fun, informative, and enlightening. I believe that we managed to demonstrate to the students that physicists are not a bunch of people who sit behind desks all day and wear pocket protectors; that we are instead a group of people who try to answer the most fundamental questions in nature, and that we try to have fun while doing so. I believe we succeeded in our mission; many students questioned us about careers in physics, science, and engineering. We know that at least one of the students we spoke to will be entering UofL as a Physics major in the fall.

As a chapter, I believe that the single greatest thing that sets the DofL SPS apart from other organizations is the level of dedication I see from our volunteers. Central High is just one of several high schools we have visited this year, and we plan to visit more during the remainder. These visits will continue into the summer, well after our semester ends.

We also help Jefferson County Public Schools by providing judges for all of their science fairs. Our volunteers are avid supporters of our chapter's goals, and are willing to sacrifice their spare time, study time, and sleep in our effort to reach the community. We cannot, as members of a scientific community, expect the future to care for itself. We need new faces and fresh ideas to constantly stimulate the next wave of research and discovery. Outreach is a tool that we can use to insure that physics has a future, that there will always be someone to continue the efforts of those who went before them. Plus, it's just plain fun. As a chapter, we at DofL enjoy outreach as much or even more than the students we are visiting. While we are performing a valuable service to the community, the opportunity to talk to these students is necessary for us, as well. Seeing their enthusiasm reminds us that we are studying physics because physics is fun, a fact that sometimes gets lost between the front and back covers of a mechanics textbook. This year has been a lot of fun for all of us at DofL SPS. Next year will be even better.