April 15, 2005

Society of Physics Students
Blake Lilly Prize Committee
One Physics Ellipse
College Park, MD 20740

Greetings,

The SPS Chapter of Augustana College feels that community outreach is vital to the future of physics as a whole. We create interest in the youth of our community by not only showing that a future in physics is possible, but also that it's really cool. Our outreach programs include regular visits to local elementary school classrooms to do demonstrations, and we are often asked to return. We also take part in local science fairs, where we do a few quick demonstrations multiple times for different groups of students. This past March we conducted a Physics Open House in our own science building for the 2005 World Year of Physics and invited local elementary schools to come visit.

Augustana College is located near many elementary schools, which makes it easy to fit visits into our busy schedules. We receive requests to perform physics-related demonstrations on a regular basis and last term we were eventually visiting a different school each week. We typically bring along our gas discharge tubes and diffraction gratings, with which we show how we can tell what kind of materials are found inside various stars (though we always point out that looking directly at the sun, even through a diffraction grating, is a bad idea). We also bring sound wave generating devices such as tuning forks and our Doppler football to demonstrate the Doppler effect, as well as to show how waves are produced in and propagated through many different media. We bring along our Van de Graff generator to establish the link between electricity and magnetism, as well as make their hair stand on end (pictures included). We usually close with a liquid nitrogen demo. Kids really seem to take pleasure in our freezing and smashing of objects like bananas and racquetballs, and everyone enjoys eating really cold marshmallows that make your mouth steam.

For science fairs, we usually just bring along the Van de Graff and the liquid nitrogen. These two demos show how fun and (literally) cool physics can be and do not take very much time to show. For the open house, though, we were able to show off all of our demonstration equipment and really show the children what it's like to be a physicist. We included such additional instruments as a Faraday Cage, a Tesla Coil, a hand-crank generator, numerous lasers, and much more. The children had such a great time that we have decided to do one annually. A few of our members constructed a "Relativity Car," with which we could accelerate a child down a hallway while demonstrating that a plumb bob moves backward and a helium balloon moves forward in an accelerating reference frame. We received, earlier in the year, a grant from SPS for this open house, and with this money we purchased a microwave for our EM wave demos and night vision goggles for use in our blackbody radiation demo. We also purchased tons of little physics toys for the kids to take home with them. All in all, the open house was a wonderful opportunity for outreach and the children enjoyed it immensely.

A few letters from students and faculty of schools we have visited have been included with this letter as well as a few pictures of us demonstrating. We also have included a newsletter from a local high school robotics team that we sponsor. The pictures enclosed and others like it are available at the chapter's Web site (helios.augustana.edu/physics/sps.html). The Augustana College SPS Chapter has a great record of community outreach and intends to continue its work in stimulating interest in physics.

Sincerely,

Daniel Barrett, President
SPS Chapter of Augustana College
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Thank you

Thank you for coming. I liked it when you used the liquid nitroegin to freeze things. I liked the balloon and yogert. I liked the vandergraph generator and when you put your hand by it it ~~t~~ hacks you and when you put your hand on it makes your hair puffy. Thanks for frezing my gogert. Would it be okay to eat it? One thing is for sure is that when I get in college I'm taking that class. And I've always have been liked using diffirent chemicals and see what they do. How cold is liquid nitrogen again? All I remember that it is below zero. Thanks again.

Sincerly,
Jacob Morrison

Dan, Tom, Mike

Kylie

Thank you

Thank you very much for coming down to our school and showing us some demonstrations of how you guys do in Science at your school. I especially loved the Vandergraph generator. That was so totaly awesome. I wish I had some of that frozen stuff to freeze of my wart. I also want to thank you three for freezing my humongis rubber band. I also know that my big sister is looking for a college so you guys might see her there but I think shes probaly going to Taylor but she hasen't made up her mind yet. Dan, Tom, and Mike do you guys have your dourm rooms in the school or is it seprated. Also do you three live in the same dourm room and how many people can live together in a dourm room. Do any of you play sports. Well that's all I got off of my chest and that is all I need to ask(?) Well hope to to see you again.

Sincerily, Kylie Speer.