



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Future Faces of Physics Award Report

Project Proposal Title	Future Faces of Physics with CSM SPS
Name of School	Colorado School of Mines
SPS Chapter Number	Chapter 1287
Project Lead (name and email address)	David Schmidt daschmid@mymail.mines.edu
Total Amount Received from SPS	\$500
Total Amount Expended from SPS	\$500

Summary of Award Activity

The Colorado School of Mines SPS group recently went out to John F Kennedy High School to perform outreach to underprivileged students. The group consisted of 12 members that set up 5 different science stations for students to learn about different forms of Physics. The group also formatted basic worksheets to guide the students in their learning. Many of the students actively engaged in the experiments and asked deep thoughtful questions. Some students even inquired about college since many would be the first in their family to attend college.

Statement of Activity

Overview of Award Activity

The project conducted was replacing the science class of a high school for the day. This is accomplished by having the students complete a small worksheet while exploring and learning about various physics concepts through demonstrations with members of SPS. This year the target group was 3rd and 4th year high school students. About 100 of these students were able to go to the activity. This activity is a larger version of various outreach the CSM SPS club does. We try and do as much physics outreach as possible to not only better the community but better each other as we learn how to teach science to students in high school or middle school. The project's goal is to get more students interested in science and in some cases even college. This year many students asked about college since they did not have family members that attended any secondary education. It was also great to give the students people to talk to about science. While at the event one student asked me about a math conjecture and my thoughts about it. It was a great surprise to see a few students that were able to ask very high level questions due to their interest and exploration outside of the classroom.

Impact Assessment: How the Project/Activity/Event Promoted Physics across Cultures

The school was located in a mainly low-income Hispanic community. The science at the school being a small department with little funding. We were very glad we could go and show science to the students in a fun environment. With this school also being a high school we were able to be role models for many of the students. Many of the SPS members received questions about college and pursuing a career in Physics. This is exactly what we hoped to achieve. Allowing these underprivileged students access to more resources and opportunities than they had originally.

Impact Assessment: How the Project/Activity/Event Influenced your Chapter

As with almost any outreach event, the club grew stronger. With 12 SPS volunteers we were able to gain experience in setting up an event and how to run it successfully. The newer members also got to know more about the demonstrations we use along with how to explain science concepts to those without any possible background in science. Many of the volunteers were moved by their impact and have expressed interest in the next outreach event. This year was also a good bonding experience for the SPS officers of next year since only one was unable to go to the event.

Key Metrics and Reflection

<p>The Future Faces of Physics Award is designed to promote projects that cross cultures. What cultures did your project attempt to bring together? (Please be as specific as possible.)</p>	<p style="text-align: center;">This year the school was in a low-income area with mainly a Hispanic community.</p>
<p>How many attendees/participants were directly impacted by your project? Please describe them (for example “50 third grade students” or “10 high school volunteers”).</p>	<p style="text-align: center;">4 Teachers 100 High School Students (We did not know specific grade counts, but mainly juniors and seniors)</p>
<p>How many students from your SPS chapter were involved in the activity, and in what capacity?</p>	<p style="text-align: center;">12 active volunteers helping set-up, host the event, and clean-up.</p>
<p>Was the amount of money you received from SPS sufficient to carry out the activities outlined in your proposal? Could you have used additional funding? If yes, how much would you have liked? How would the additional funding have augmented your activity?</p>	<p style="text-align: center;">This year the amount was sufficient. In previous years and upcoming years the amount is usually low if we need to rent a bus to travel to the school that wants the event.</p>
<p>Do you anticipate repeating this project/activity/event in the future, or having a follow-up project/activity/event? If yes, please describe.</p>	<p style="text-align: center;">Yes, we annually host an FFOP event with generally a new school to try and broaden our impact range.</p>
<p>What new relationships did you build through this project?</p>	<p style="text-align: center;">Internally the event always helps members get to know each other better. Externally we now have another school asking for events to help their students</p>
<p>If you were to do your project again, what would you do differently?</p>	<p style="text-align: center;">The project was slightly rushed near the event date due to poor communication from the school. Next year hopefully we have more productive and frequent talks with the school hosting the event.</p>

Expenditures

This year's proposal funding was overinflated due to past year's experiences. This year the school we held the event at was closer to the College campus. This allowed for us to not need to rent a bus as stated in the proposal. We also had no need to spend money on food since it was provided for us. This allowed all of the funding from SPS national and some funds from the club's account to go into maintaining and building new demonstrations. We placed a large order with Arbor Scientific to get: a Stirling Engine, a Chladni plate, replacement mirrors and lenses, a magnetic accelerator, and an inertia apparatus. We also needed some base consumable items from basic stores in the area. These things included a new driver for our speaker demonstration, corn starch, tin foil, batteries, tablecloths (for the messy demos), and balloons.

Expenditure Table

Item	Please explain how this expense relates to your project as outlined in your proposal.	Cost
New Demos from Arbor Scientific	The proposal mentioned building and mantaining demos with funding.	480.09
New Speaker driver and consumables for Demos	Again this is a part of maintaining our current demos	200.00
Total of Expenses		680.09

Activity Photos



The entire volunteer group: From left to right (Back) Allie Pelzel, Jacob Wikowsky, Lindsey Hart, Emily Atkinson, David Schmidt, Nick Smith, Fran Mallett, and Martin Ritter. (Front) Allison Tucker, Zach Simons, Hannah Grover and Gus Becker. Credit: Natalie Dibling (teacher at JFK)



The entire volunteer group: From left to right Allie Pelzel, Jacob Wikowsky, Lindsey Hart, Emily Atkinson, Allison Tucker, David Schmidt, Hannah Grover, Nick Smith, Fran Mallett, Martin Ritter and Gus Becker with Zach Simons in front. Credit: Natalie Dibling (teacher at JFK)



Jacob Wikowsky and Lindsey Hart show a student the Mini-Plasma Cutter made from a voltage supply, pencil lead and aluminum foil. Credit: Allison Tucker.



Allison Tucker and Nick Smith explain Lenz's Law and the ideas of Eddy currents to a group of students. Credit: Fran Mallett



Gus Becker shows students 2-D vibrational modes using the Chladni plate. Credit: Allison Tucker



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If you have any questions, please contact the SPS National Office Staff
Tel: (301) 209-3007; Fax: (301) 209-0839; E-mail: sps-programs@aip.org