



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 and the Higher Education Support Program
Name of School	Colorado School of Mines
SPS Chapter Number	1287
Project Lead (name and email address)	Nicholas Wendrych
Total Amount Received from SPS	\$300
Total Amount Expended from SPS	\$300

Summary of Award Activity

The Colorado School of Mines SPS chapter wrapped up this year's outreach with two of its largest and most ambitious outreach events to date. Students from all undergraduate years traveled to two schools - Berry Creek Middle School and Gateway High School - to put together a day's worth of entertainment and learning for the hundreds of students at each school. Through a combination of several interactive physics demonstrations and presentations on the value and excitement of a STEM education, these SPS members passed their passion for science and learning to a new generation of budding scientists.

After our presentations at Berry Creek Middle School, the administration was very impressed and asked our chapter to put on their science night. They said we engaged the students better than the "Science Guy" they normally hire.

Statement of Activity

Overview of Award Activity

For these events, we gathered several student volunteers from our campus' physics department, and set up and repaired a multitude of physics demonstrations, ranging from small, interactive pieces to large devices for stage presentations. We held events at both Berry Creek Middle School in Edwards, CO, with approximately 150 student attendees and Gateway High School in Aurora CO, with approximately 200 student attendees over the course of the day. These are two of the most diverse schools in Colorado, and in the case of Gateway High School, in the nation.

Each event was held in two parts. First, we held an interactive demo tour, where our volunteers directly engaged the students with hands-on demonstrations at multiple stations ranging in themes from robotics and optics, to magnetism and mechanics. After this tour, we held a larger, more organized session, in which we presented to large groups of students our largest and most impressive demonstrations, which were too big or complicated for the interactive session. In this same presentation, we spoke to the students about the value of a STEM education, why we enjoy what we do, and how they can best prepare to pursue such a path.

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

In the past decade and beyond there has been an increase in the rate of students going on to college level schooling and engineering however, we think there is still room for improvement. Though the number of students in engineering schools and majors continues to grow we still see limited growth in certain areas and schools. These underrepresented schools are typically in urban areas where the schooling environment is less than ideal. Many of these schools experience dropout rates at more than twice the state average and even lower numbers continuing on to college.

With the Future Faces of Physics Event, we have worked to fill a void wherein current physics and college students both spoke to and entertained these students, driving many of them to consider furthering their education in a way that bettered them through education and gives them the opportunity to prosper financially as well. In the many letters and comments we received as feedback, the students of Berry Creek MS and Gateway HS expressed to us that they were not only entertained for the day, but were led to seriously consider pursuing a career in the sciences, many of them for the first time in their lives. We feel through this that we have helped to introduce to these students the great opportunities that lie before them in the field of physics, and we believe, with much hope and pride, that many of these students may now feel empowered to seize these opportunities fully.

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?</p>	<p>Students of urban schools, multiple underrepresented ethnic groups (esp. African American and Hispanic)</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>~ 150 Middle School students ~200 High School students</p>
<p>How many students from your SPS chapter were involved in the activity, and in what capacity?</p>	<p>23 volunteer demonstrators and speakers</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>The received monies were sufficient to accomplish the goals we set for ourself, however, we believe additional funding could contribute to the construction of better demos for more robust and powerful events</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>Yes, we intend to do this event again, with a similar plan, including even more, bigger, and better demos. We are also in the process of setting up a mentoring program with Gateway HS as a result of this event.</p>
<p>What new relationships did you build through this project?</p>	<p>We made great contacts with multiple teachers from these schools, leading to the mentoring program mentioned above. We also influenced several students, many of whom have expressed interest in our return visits</p>
<p>If you were to do your project again, what would you do differently?</p>	<p>We intend to do this project again with our gradually improving demonstration supply. We also intend to refine the logistic organization of these events for a more fluid and refined presentation.</p>

Activity Photos



Vice President of Outreach, and incoming President Logan Hillberry shows his diaphragmatic levitation device to several middle school students at Berry Creek



Incoming Vice President of Inreach, Libby Booton explains the concept of the Bernoulli Principle to the students gathered



Kevin Rosmiarek, Samuel, Reiter and Logan Hillberry demonstrate

the amazing properties of angular momentum on stage at Berry Creek Middle School

Dear Physics students at school of Mines,
I am writing this letter of appreciation
because I know you took time out of
your very busy college life to show high
school students, (many of which will
probably choose another field to major in)
your little demonstrations. They were
all really cool and interesting to see and
I especially like the one with the 2
buckets, the science behind it was interesting,
because it was like you were trying to
harness and control lightning, even if
it was on a much smaller scale. I
would've like to have seen your demonstr-
ation in the afternoon, ~~but~~ I hear
those were pretty cool too, but, the
demonstrations I did see have increased
my interest in the science & physics
field some.

Sincerely
Christiana Rexford
A Gateway Physics Student

One of nearly 50 thank you letters received after our events,
this one from a student at Gateway High School

