



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Future Faces of Physics Award Report

Project Proposal Title	Cesar Chavez Pen Pal Program
Name of School	University of Michigan
SPS Chapter Number	4267
Project Lead (name and email address)	Nico Wagner nicowa@umich.edu
Total Amount Received from SPS	\$300.00
Total Amount Expended from SPS	\$300.00

Summary of Award Activity

The University of Michigan chapter of SPS has teamed up with Cesar Chavez Academy Middle School to start a new pen pal program with all 97 sixth graders. In addition to regular letter exchanges, we visited Cesar Chavez Middle and brought the kids to our campus for a campus visit, including an all-out demo show and liquid nitrogen ice cream. The demo show and ice cream have left a lasting impression on the kids as they are still amazed by the physics knowledge we have imparted upon them.

Statement of Activity

Overview of Award Activity

We started our pen pal exchanges in the middle of October by recruiting 60 University of Michigan students to write to Mr. Brian Wagner's 97 sixth grade English students at Cesar Chavez Academy Middle School (CCAMS). Most volunteers were from our own SPS chapter, but we also received some help from the Student Astronomical Society, Physics Graduate Students, and AXE, the chemistry fraternity on campus. Over the 7 months that we were able to run the pen pal program, we exchanged a grand total of 12 letters.

In addition to exchanging letters, we were able to interact with the pen pals in person on 3 separate occasions. On Thursday, April 10, we brought all of our pen pals to Ann Arbor for a campus visit and lots more. During the first 2 hours of their visit, the kids were split up into groups and rotated through various stations we had prepared for them. These included a planetarium show, a campus tour, a condensed matter physics lab tour, and a crash course/lab on fruit flies & microscopy. After exploring the campus, we gathered all of our pen pals into one of our large physics lecture halls for lunch (sponsored by the UMich Physics Department) and an all-out demo show. The show, put on by president Nico Wagner, co-outreach chair Yunjie Yang, co-advisor Prof. Dragan Huterer, and the demo lab crew featured demos such as a ping pong canon, killer discharge capacitor, fire tornado, Tesla coil, and a pulse jet. To finish off their stay, we made enough liquid nitrogen ice cream to feed all of the pen pals from CCAMS as well as all of the Michigan volunteers in attendance.

Throughout their time on campus, the kids were able to meet their Michigan pen pals. Although the Michigan volunteers still had to attend class, they popped in and out as they had time. This way, about 75% of the pen pals were able to meet each other face-to-face. In addition to just meeting up, many also exchanged small gifts, showing just how much of a friendship can be built through letter writing.

After our pen pals returned to CCAMS, word quickly spread about how much fun they had on their campus visit. A hot topic among the students, which is still on going, was the demo show. As a result, SPS was invited to come to CCAMS to put on a demo show for their afterschool program, which would be open to all grades. On Wednesday, April 30, 3 SPS volunteers made their way to Detroit to put on another demo show for the kids. Due to the smaller audience (~50 students) and location, we split the show up into two parts. In the first, we showed them some of the more dangerous and exciting demos. For the second half hour, we allowed the kids to come up to us and play with the demos themselves.

To finish off the year program coordinator and SPS president Nico Wagner went to CCAMS on Thursday, May 22 for career day. Rather than talking about what it's like being a research scientist, he talked about what it's like being a college student. It was our hope that the students, who for the most part felt worn out by their schooling thus far, would have a new sense of motivation knowing that things at college work quite a bit differently.

After the last set of letters was received, we asked a few UMich pen pals to compare their first and last letters. By large, we found that the kids' interest in science had significantly increased. We also found that there was an increase in the number of kids who are now considering attending college after they graduate from high school.

We found that the success of this program far exceeded our expectations. We were hoping that by the end of the program we'd have given the kids something to remember and increased their awareness of physics and science as a whole, our goal for any outreach program. Given the kids' interest in everything we showed and told them and their unstoppable thirst for more, we have more than fulfilled

our goal. In addition to the large demo show at the campus visit, we've been invited back for more twice! More importantly, we have also left a lot of kids with an increased affinity toward considering college, with some pursuing science in their futures.

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

Cesar Chavez Academy Middle School is attended by a predominantly Latin American population of students. Due to various circumstances, many of them drop out of school before graduating with even a high school diploma. As a result, many end up working minimum wage jobs just to keep their heads over water. By connecting them with college students and showing them what can be accomplished with a Bachelor's Degree, we hoped to make a small dent in the high drop-out rate of our pen pals and, by extension, convince some of them to pursue a post-secondary education.

Due to the success of this program (see Overview), we are cautiously optimistic that we've been able to do just that. A lot of the kids now have much more appreciation for physics/science and have a more tangible idea of just what opportunities are available to them by graduating from high school and continuing on into college. Due to their minority background, we hope that these students will be able to contribute both intellectually and culturally to the physics field in the coming years.

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>Most of our pen pals were of a minority background, predominantly Latin American.</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>97 6th grade students (pen pals) Rest of the school through our day of science and career day participation</p>
<p>How many students from your SPS chapter were involved in the activity, and in what capacity?</p>	<p>60 pen pals regularly writing letters 3 students to visit their school</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 funding was sufficient for the things we initially proposed for this program. Our physics department contributed ~\$300 to this to make it even better.</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>Our new SPS board is planning on continuing this program next year in the same way it was run this year.</p>
<p>What new relationships did you build through this project?</p>	<p>All the pen pals got to know each other very well and we have built a strong connection with the school as a whole for future events.</p>
<p>If you were to do your project again, what would you do differently?</p>	<p>We were very happy with the way things worked out and would not change anything major.</p>

Expenditures

Expenditure Table

Item	Cost
12 batches of letters (\$5.60 each)	\$67.20
LN2 ice cream supplies	\$57.30
Transportation for kids to come to campus	\$200.00
Total of Expenses	\$324.50

The \$24.50 by which we exceeded our allowance was covered by SPS funds granted to us by the department. Our physics department also generously funded a pizza lunch (\$322.83) for all the student visitors and volunteers in attendance.

Activity Photos

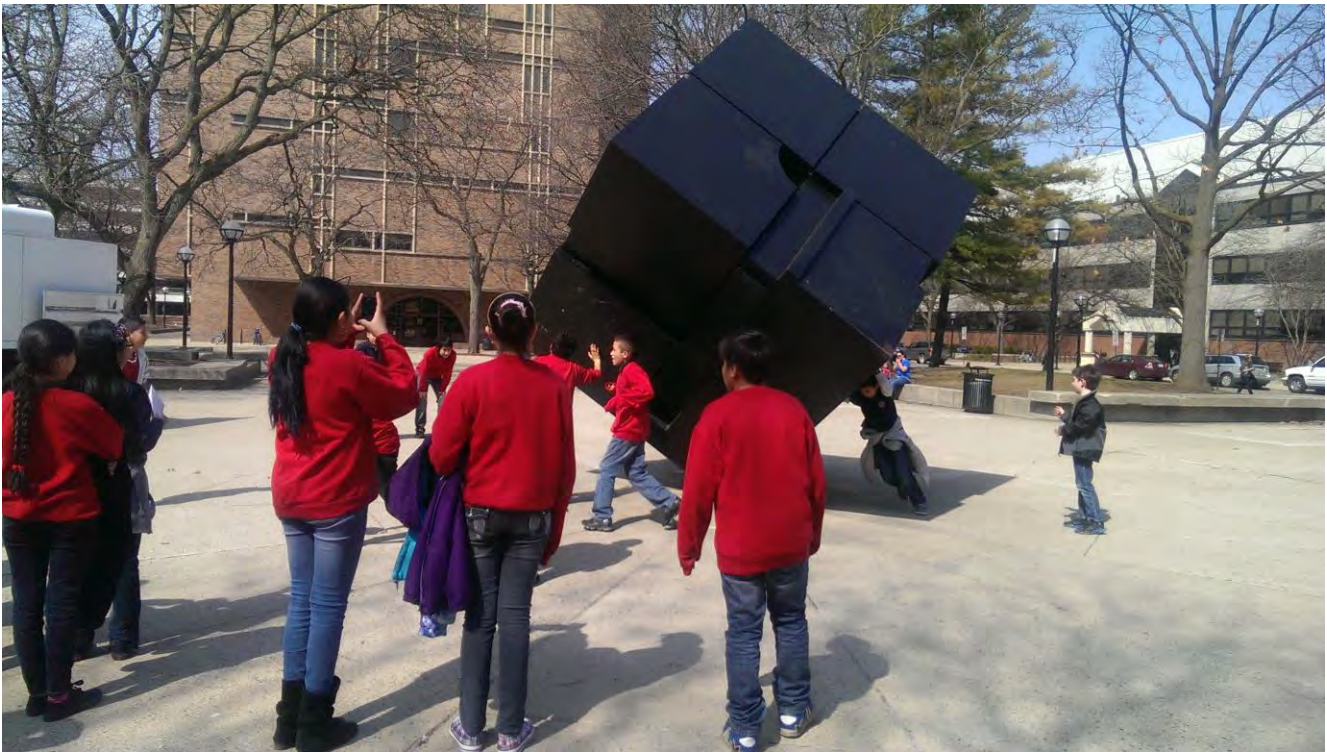
All pictures can be found at <https://sites.google.com/a/umich.edu/spsclub/pictures/pen-pal-visit-april-2014>. Below is a subset of pictures we thought best exemplified the project. If needed, picture credit can go to the University of Michigan chapter of SPS.



Students from Cesar Chavez Academy Middle School enjoy some sunshine on their way around the University of Michigan campus in Ann Arbor.



The students from Cesar Chavez Academy Middle School learn about fruit flies and microscopes during their visit to the University of Michigan.



Students from Cesar Chavez Academy Middle School spin the Cube at the University of Michigan, an activity rumored to be performed by university president Mary Sue Coleman every morning.



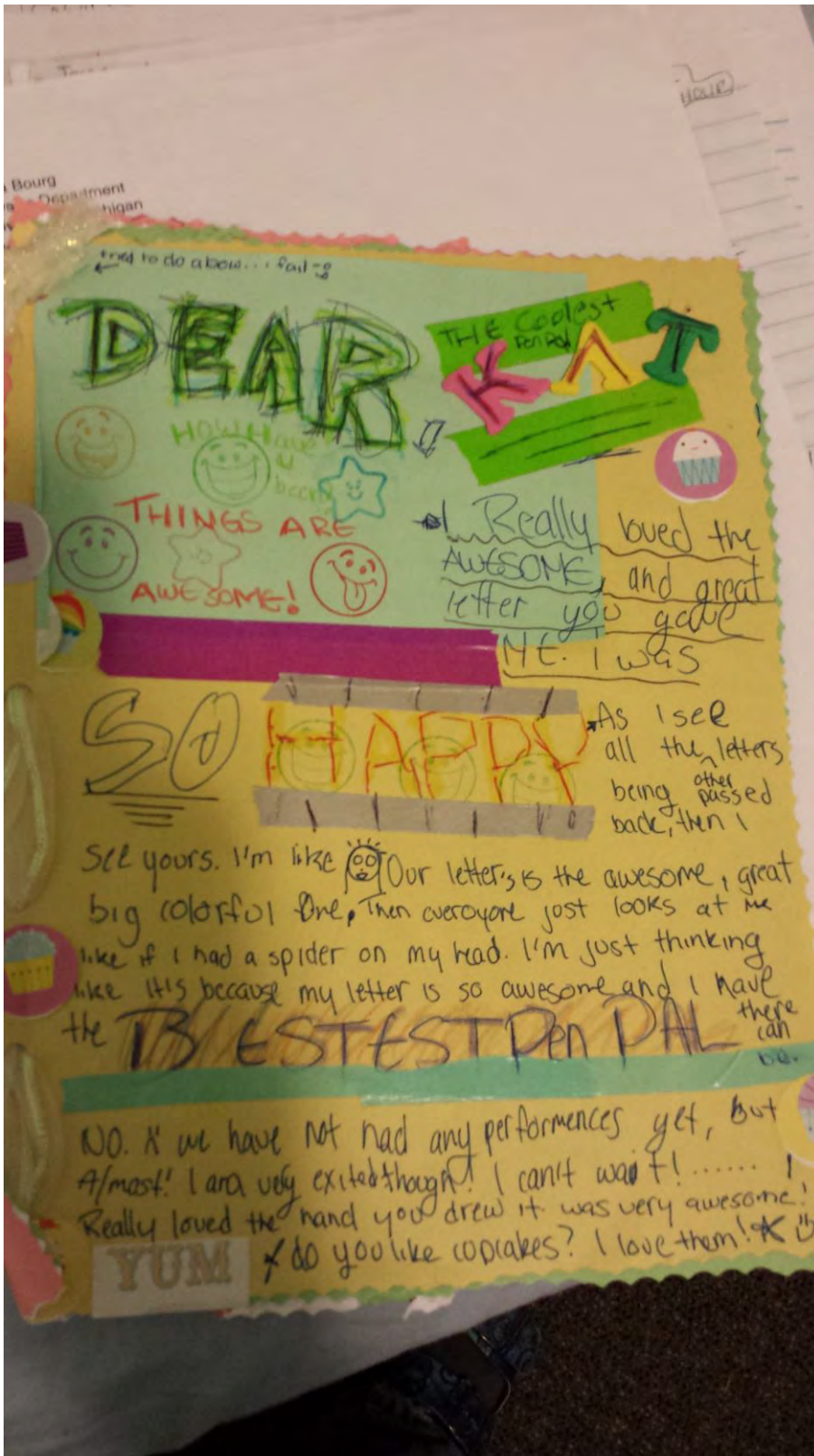
Students and volunteers of the pen pal program watch eagerly and attentively during the demo show put on jointly by the University of Michigan's chapter of SPS and the University of Michigan physics demo lab.



Two students from Cesar Chavez Academy Middle School pose for a quick picture during their visit to the University of Michigan.



To finish off their first day at college, the students from Cesar Chavez Academy Middle School eagerly await the next batch of liquid nitrogen ice cream.



One of the more eccentric letters by a student from Cesar Chavez Academy Middle School for their pen pal at the University of Michigan. Almost 100 of these letters were exchanged 12 times during the course of this program.



If you have any questions, please contact the SPS National Office Staff
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