



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Marsh White Award Report Template

Project Proposal Title	Science After Hours: Educating Young Students
Name of School	Towson University
SPS Chapter Number	7338
Project Lead (name then email address)	Nathan Prins (nprins1@students.towson.edu)
Additional Project Leads (two lists: names then emails)	Nicholas McKinley (nmckin2@students.towson.edu)
SPS Chapter Advisor	Phuoc Ha
Total Amount Received from SPS	\$500.00
Total Amount Expended from SPS	\$500.00

Summary of Award Activities

Towson University's SPS chapter ran a program with community activist Andrea Loran to teach elementary school students science in a weekly after school program. The program, which included activities like tracking projectiles, creating oobleck, and hover boarding, was successful in exciting, empowering, and educating the students in the sciences.

Statement of Activity

Overview of Award Activity

The Hampden Family Center in Baltimore, MD takes in about 25 elementary school students each day to do after school activities, each day having a theme. For the past two years, Andrea Loran ran “Science Friday,” where she used her limited scientific knowledge to get the students excited about science. Starting in January, Towson University's SPS chapter has helped her run this program by providing activity ideas, supplies (thanks to the Marsh White Award), and eager volunteers.

Our main goal was to make sure the kids had fun, and try to get them to remember a few vocabulary words. This was realized almost immediately. Andrea Loran came up to me after our first day in tears, saying it was the first day in her two years that not a single kid came up to her and asked to do something different than the planned activity. While the “No Child Left Behind” streak did not last, the family center managers and coordinators always commented on how engaged and focused the children were.

Another goal was to create the expectation of scientific outreach in our SPS chapter. This was extremely successful, as about 20 members volunteered for the project in some way, and there is overwhelming interest in continuing the project next year. We even received another \$500.00 for supplies for next semester from Towson University's Student Government Association.

Each Friday, we would get our volunteers (about 5 each day), go over the day's plan, then split the student into groups, with each volunteer taking a group. The best part, other than working with the kids, was reconvening and talking about how each group did with the tasks. It was amazing how different each group behaved and completed their work. Although all of the volunteers were in the same room, each had very different experiences.

Impact Assessment: How the Project/Activity/Event Promoted Interest in Physics

The main goals of the project were to create activities that were engaging and educational. Plans were written before each day. The volunteers then debriefed at the end of each Friday to discuss what parts of the plans worked and did not work. An example is shown in the appendix.

In our initial proposal, we intended to see what the students learned by creating a “Science Wall” where the students could write interesting things they learned. Planning and organizing each day turned out to be much more work than we anticipated, so this did not get done. However, with many plans already written for future Fridays, this can easily get done in the near future as we continue this program.

Just by observation, we definitely sparked scientific interest in these students. In the future, we hope to get the parents involved as well.

Key Metrics and Reflection

Who was the target audience of your project?	Students attending the Hampden Family Center on Fridays
How many attendees/participants were directly impacted by your project? Please describe them (for example “50 third grade students” or “25 families”).	25 elementary school students
How many students from your SPS chapter were involved in the activity, and in what capacity?	20 students got involved at least once by either attending the events or helping plan.
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 and how would the additional funding have augmented your activity?	The amount of funding was perfect. We asked for \$500.00 for demo supplies. We used about \$600.00 (supplemented by our own funds), and much is still usable next semester.
Do you anticipate repeating this project/activity/event in the future, or having a follow-up project/activity/event? If yes, please describe.	Yes, our chapter will continue its partnership with with the Hampden Family Center.
What new relationships did you build through this project?	As mentioned previously, we built a great relationship with the Hampden Family Center.
If you were to do your project again, what would you do differently?	Now that we have all of the demos planned, and we have a better understanding of what to expect from the kids, the future demos should go much smoother.

Press Coverage (if applicable)

We received no press coverage.

Expenditures

All expenditures went towards supplies for our weekly activities. We have many leftovers and reusable items, so the funds will be helping us for years to come.

Expenditure Table

Item	Cost
String/Yarn	18.00
Slinkies	31.74
Plastic Cups	13.12
Markers and tape	15.21
Paper clips	9.52
Stickers and String	36.28
Paper clips and Straws	19.80
Rubber bands and Tape	6.96
Foam/egg drop materials	9.53
Eggs	5.59
Mouse Trap Car supplies	58.63
Corn Starch and Plates	145.14
Animal Figures	42.36
Sand	59.28
Rocks	18.50
Oragami books	85.68
Kitty Pools	30.91
Total Expenses	606.25

Activity Photos

Please include captions and credits for each photo. By including photos below, you are giving SPS and the American Institute of Physics permission to use these photos in their online and printed publications.



Figure 1: Science Friday at the Hampden Family Center on paper airplane day.



Figure 2: A fourth grader at the Hampden Family Center making Oobleck.



Figure 3: A Science Friday group making Oobleck.



If you have any questions, please contact the SPS National Office Staff
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Appendix: Science Friday plan 1

Science Friday
Day 1
February 5, 2016

Topic: Projectile Motion

Vocabulary words: distance, speed, gravity, angle

Goals: to

1. Introduction of new Science Friday program
 - o Andrea introduces new Science Friday program and SPS
2. Introduction of Projectile Motion
 - o What forces control how far and fast something travels?
 - i. gravity, distance and speed
 - ii. textbook-paper demo
 - o Explain goals
- . Farthest shot competition
- i. Play Battleship
 - o Demonstrate the cannon, or let them work it out? it probably would be fun to let them figure it out for awhile and then demonstrate. How many are there?
3. Start the fun!
 - o Split into groups
 - o Let them play with the cannons.
- . Have them explain to their TU helper why ball is going farther, higher, etc.
- i. What did the trajectory look like (high but not far vs low and far, arcs)
- ii. Did multiple angles go the same distance but different heights?
 - o Do farthest shot competition
4. End of lesson
 - o What words did you learn?
 - o How can you see this at home?
- . sports, bouncy balls