



Seattle Pacific University
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Society of Physics Students

Seattle Pacific University

Marsh White Grant Report



Engaging High School Culture...
The Physics of Magic

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Expenses

In our grant proposal, we requested \$250.00 to spend on materials for several physics magic tricks. The following list shows the specific things we have purchased as well as what magic trick it corresponds with.

Musical Flame Tube (physics of standing waves):

- Propane Tank- \$52.12
- Propane Tank Refill- \$17.37
- Hose and Regulator- \$28.67
- Pipe Fittings- \$17.88
- Hose Clamp- \$7.15
- Cutting Oil- \$3.25

Ice Cream Fun (physics of making ice cream):

- Old Fashioned Ice Cream Maker- \$32.66
- Supplies for Ice Cream- \$31.46

Falling Laser Beam (optical physics):

- Green Laser Pointer- \$59.44

Other Projects

In addition to the projects listed above, SPU's physics students have prepared other magic tricks using materials already accessible to them. These tricks include disappearing test tubes (refraction), jumping rings (Lenz law), Lenz law drop tube, and candles burning under water (using optics). Over this summer, we are planning on expanding this list and enhancing our program even more.

Locations of Demonstrations

Listed below are the different schools that our physics students visited as well as the presentations we did at Seattle Pacific University. Due to scheduling issues, we weren't able to make it to as many schools as we would have liked. Winter quarter, several high school physics teachers attended a Science Teacher Workshop at SPU. During this time we had the teachers give us their information if they wanted us to visit their school. I have listed these schools at the end of this report. The Society of Physics Students officers have been in contact with these teachers already and plan to have dates solidified for the school visits by mid-September. To add to this our advisor, Lane Seeley, is working with the admissions office in hope of giving preview students the option of attending our magic show on junior and senior preview weekends.

Franklin High School (5 Classes)

We spent nearly all day doing our magic show for different science classes at Franklin High. In the morning, we did the show for mostly freshman sciences classes with about 20 students in each class. After the lunch hour, we presented the show to two different senior physics classes of about 20 students.

Flame Tube Demo (5 Classes, 1 Conference, 1 School)

Two of SPU's physics students created a flame tube which was hooked up to a speaker. When music was played into the speaker, standing waves were created at different frequencies. These students demonstrated their project for all the introductory physics classes as well as at the Erickson Undergraduate Research Conference and Dearborn Park Elementary School.

Future Plans

Next year we plan on expanding our relational network with local schools of Seattle. As I mentioned before, we have a list of teachers who want us to visit their school. The table with these teacher's names and schools is on the next page. We also plan on visiting Dearborn Park Elementary again (the younger students heard about us and have already requested that we come).

In addition to the school visits, we plan on hosting several magic shows on campus for preview students. The dates for these shows are listed below:

Fall Senior Preview: November 2-3, 2006

Winter Senior Preview: February 22-23, 2007

Spring Junior Preview: May 10-11, 2007

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School Name	Instructor(s)	Class Type	# Students/Class
Roosevelt High School	Kathy Olson	Physics	n/a
Roosevelt High School	Amy Schwentor	Physical Science	30
Summit (K-12)	David Ketter	Physical Science	20
Summit (K-12)	Laurie Clark	Physical Science	25
Garfield High School	Jessica Jacklet	Physics	30
The Center School	Kimberly Mullen	Physics	n/a
Franklin High School	Peter Junkerman	Physics	30
Franklin High School	John Dunkerley	Science	30
South Lake High School	Karen France	Science	30
West Seattle	Laura Sugden	Physics	n/a
Marshall	Amy Malter	Science	20
Cleveland High School	David Fisher	Science	10
Ballard High School	Bob Butler	Chemistry/Physics	30