



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Marsh W. White Award Proposal

Project Proposal Title	Physics Outreach for the Entire Community: Reaching the Region at Hubfest
Name of School	The University of Southern Mississippi
SPS Chapter Number	6626
Total Amount Requested	\$300.00

Abstract

Outreach traditionally focuses on reaching students in K-12, but reaching the entire community is also valuable. People from the entire region come to Hubfest, a community street festival. Our booth always draws a crowd, with the adults as fascinated and engaged as the children.

Proposal Statement

Overview of Proposed Project/Activity/Event

- Brief description – Over the past few years, our organization has had a booth at Hubfest, a community street festival. This has been a great outreach opportunity for us, as it gives us an audience potentially numbering in the thousands. We will do demonstrations with liquid nitrogen and lasers because these demonstrations draw the most audiences. During peak hours for the festival, we get 20-30 people at a time crowding around our booth, completely mesmerized by our demonstrations. As soon as we finish and they clear out, another group crowds in. We did this last year with the help of the Marsh White award, and we would love to do it again.
- Goals of the project – We will do demonstrations and explain the science behind them. We have seen that these interactions really spark a sense of wonder and curiosity about science in the adults and children. We hope to do that again for yet more people.
- Intended audience – This festival has music, crafts, art, and other things to buy. It draws in tens of thousands of people from the surrounding area and vendors from all the surrounding states. This is a great opportunity to reach these people before they go back to their communities. Also, in previous years, we have made connections with teachers from public schools and parents who home-school, and those connections have led to later outreach events. This is really a fantastic event for both reaching people and making connections for later.
- Background and motivation – Our chapter has done a booth at Hubfest for several years now. Each year, there are more people attending and more people we can interest in science. One year, we connected with a home-school association and we hosted them later that semester. At that later event, our science education faculty talked to the parents about how to effectively teach science, and SPS members did demos, took the students on tours of labs, and had a roundtable about college with the older ones. We have performed these demonstrations many times in the past and have all the necessary safety tools. If we did not go to Hubfest, we would not have had the opportunity to reach the thousands we did on that day and the hundreds we did through the later event. Hopefully we can make similar connections if we do Hubfest in 2015.

How Proposed Activity Promotes Interest in Physics

Doing cool demonstrations (in more ways than one!) at a street festival really draws attention. Every year, we have fascinated onlookers who range from preschool to retirement age. It would be difficult to imagine another event in the local area that would

give us access to 30,000+ people of different ages, professions, and hometowns and allow us to show them why physics and science as a whole is cool and worthwhile.

Plan for Carrying Out Proposed Project/Activity/Event

- Personnel -

1. The officers will head up planning, and we will form a committee to get more non-officers involved in planning. Progress will be monitored by the faculty sponsor and committee, making sure we meet the milestones in the “timeline” portion of this proposal.

2. The booth will be run by student and faculty volunteers.

- Marketing -

1. Hubfest is a major event for the area. Last year there were tens of thousands of people attending and over 200 booths. The event is marketed by the organizers, and they do an excellent job of it.

- SPS member participation -

1. We will need a minimum of 9 of our members to volunteer for shifts. Last year, we had the set-up crew work from 7am-9am, setting up and then working. After that, we split from 08:45-16:00 into about two hour blocks with 10-15 minutes worth of overlap. The last shift ran from about 16:00-17:00 when the festival closes. After that, they were responsible for clean-up and ferrying equipment back to campus. Repeating that model should work well.

2. We're going to ask our physics faculty for assistance with the booth. In previous years, we've gotten 1-2 faculty members to work at different times throughout the day.

- Expertise -

1. Most of our initiated members from prior years have stuck with physics and SPS and are now juniors and seniors. Since we have done Hubfest for many years, these people are a great asset in making everything run smoothly.

Project/Activity/Event Timeline

- January 2015

- Register for Hubfest (this is when registration opens).
- Start mentioning Hubfest at SPS meetings and in emails to the members.

- February 2015

- Decide if we'll have a specific t-shirt for Hubfest. If so, begin the design and print process.

- Mid-March:

- Start pushing for volunteers.
- Receive booth assignments, etc. from the festival organizers.
- Train volunteers on the operation and science behind our demonstrations.

- March 29, 2015:

- Finalize volunteer rosters. Distribution of phone numbers to facilitate communication between shifts. In prior years, people on later shifts have had trouble finding the booth.
- Load equipment into personal vehicles belonging to the set-up crew.

- March 30, 2015: Hubfest happens
 - ~7am: set up our booth
 - 8am: Festival starts, work in shifts of 2-3 students until the festival closes at 5pm.
 - ~5pm: break down our booth and move equipment (and people) back to campus.

Activity Evaluation Plan

We will ask each shift of our volunteers to estimate how many people visit our booth during their shift and send their estimate to the chapter president by text message. The chapter president will add up the estimates for an estimate of total visitors. We will also try to make connections with community members who may have further outreach opportunities for us. Additionally, we will have people take some pictures during each shift so we can see the “light bulb” moments as we draw people in with physics. We have such pictures from prior years. It would be fantastic to get a few more. I have included one such picture from a previous year.



Budget Justification

1. Balloons: Both of our demonstrations use balloons. The liquid nitrogen demo uses them to show a gas condensing to a liquid. The laser demo pops the balloons.
2. Batteries: We have a small laser that is battery powered. Spare batteries are needed when we're running it off and on for 9 hours.
3. Liquid nitrogen: Based on previous years, we will need 2-3 10-liter containers of liquid nitrogen. As it is very costly we will purchase one of the 10-liters and are hoping to get the department to help get the other liters.
4. Marshmallows: We freeze marshmallows in liquid nitrogen and pass them out. Everyone loves this part. We usually run out of marshmallows, so we put more than we normally buy in the budget.
5. Flowers: We freeze the flowers in the liquid nitrogen, and then we let the children put on insulating gloves and crush the flowers. It sounds like glass, and the kids enjoy it.

6. Produce: All the kids love when we break frozen vegetables. The adults enjoy it, too.
7. Water and Sports Drinks: It is really hot in south Mississippi in late March.
8. Hand Sanitizer: There is not much in the way of running water at the festival, and we are handling food because of the marshmallows. We do not need to get visitors sick.
9. Paper towels: Half-frozen and rapidly thawing marshmallows get sticky, and squished produce gets slimy.
10. Wet wipes: We need these for the same reason as #9.
11. Hubfest registration: This is what the booth rental cost in 2014. It is reasonable to assume it will be fairly close to the same in 2015.