SOCIETY OF PHYSICS STUDENTS
An organization of the American Institute of Physics

Marsh W. White Award Proposal

Project Proposal Title	Physics Phair
Name of School	Mount Holyoke College
SPS Chapter Number	4555
Total Amount Requested	$534.40

Abstract

The Mount Holyoke College chapter of the Society of Physics Students is organizing their inaugural Physics Phair, displaying the fantastical physics world to the general public. We are offering three ways to participate: expert-led demonstrations, self-directed activities, and friendly competitive games. Our event will enhance our guests' appreciation for physics!

Proposal Statement

Overview of Proposed Project/Activity/Event

The “Physics Phair” will involve 3 main components - demonstrations, volunteer-assisted activities , and a team relay competition on the lawn. We will offer snacks and beverages for everyone so they can enjoy and have a good time. Our primary goal is to engage students across disciplines and promote physics and physics education. We want to show that science is much beyond what is taught within the four walls of a classroom and encourage scientific exploration. The fair will be targeted to around 200 Mount Holyoke College undergraduate students. We will also work with the on-campus childcare facility to invite children from The Gorse Children’s Center to attend the fair.

Physics is a field that impacts all aspects of life and other disciplines. Through our demos and activities, we aim to bridge the gap between physics and the wider community, illustrating its relevance and applications in everyday life. The fair will be more than an educational event; it's a celebration of community. By bringing together people from diverse backgrounds, we foster a culture of inclusivity, collaboration, and mutual respect, all under the banner of shared scientific enthusiasm. Furthermore, it will be a celebration of our belief in the power of physics to inspire, educate, and connect.

How Proposed Activity Promotes Interest in Physics

This project will promote interest in physics among students and the general public by providing a fun and informative introduction to the physical principles that govern our world. We will offer a combination of exciting demonstrations, hands-on crafts and activities, and friendly competitions that are fun for a variety of ages. We will promote the event within our physics department; within the wider student body population; and by inviting the families from the on-campus children’s center to attend. We will also encourage staff, faculty, and parenting students to bring their children to participate with them. There are numerous opportunities for SPS members to volunteer within the event planning, promotion, and implementation process.

This project promotes physics education and STEM engagement across a wide swath of our campus community. Physics can have an intimidating reputation, but our event will demonstrate that there are many interesting entry points to studying physics. As a liberal arts college, Mount Holyoke students often take many courses outside their major, and this event can provide a friendly and fun introduction to disciplines that students may not have considered studying before. As a historically women’s college that is gender-diverse, this event will inherently promote physics education for gender minorities and historically marginalized groups. Additionally, we hope to add to the public’s perception of “what a physicist looks like” through our diverse body of physics enthusiasts, which is especially important for our children attendees. We will promote this event widely, and hold it in a centrally accessible campus location to draw additional interest.

This event has a high potential impact factor. A Marsh W. White award would allow us to host a significantly larger event than we could afford on our own. This event continues our chapter’s commitment to making physics accessible, as demonstrated by our earlier Marsh White-funded outreach activities.

Plan for Carrying Out Proposed Project/Activity/Event

The event will be organized and run by the five members of the SPS Executive Board with assistance from our advisor, the Department of Physics, and the MHC Office of Student Involvement. We will recruit student volunteers to assist on the day of the event for setup, running activities, and cleanup. Additionally, we will ask 1-2 physics department faculty to run demonstrations during the event. The event will be marketed through posters around campus, the physics department email list, advertising by physics professors in intro courses, and through the student involvement Embark page. We will also advertise through contacting other STEM student organizations on campus. The members of the SPS board are experienced in successful physics events and are excited to organize a bigger event together. Our SPS board is very efficient and runs at minimum three events for our members per month. We work very well together, and our teamwork and dedication will make this event a hit!

We are currently working with the physics department technician to plan demonstrations and activities. Specific activities and demonstrations will include:

- Oobleck making (Non-Newtonian fluids)
- Standing wave string toys (waves)
- Pasta structure building (engineering)
- Flying stick (Electromagnetism)
- Tuning forks (waves)
- Ground-effect Frisbee (Aerodynamics)
- Soap Bubbles (optimization)
- Lissajous-figure writing double pendulum
- Damped pendulum and chaotic pendulum
- Thomson's coil (magnetic induction)
- Radiometer/light-driven pinwheel (light)
- Viewing light through a diffraction grating (light)

Project/Activity/Event Timeline

One month before (March 9th) the event date we will be in contact with Student Involvement to prepare the lawn and reserve the event space. We will also start advertising a month before the event, and order all materials needed. Invitations will be sent a month and a half before the event (February 24th) to Gorse Children's Center and Faculty/student parents. Two weeks before the event (March 23rd) volunteers will be recruited and demonstrations will be prepared. Also further cross-departmental and general campus advertising for the event, and team registration opens. Other purchases for demonstrations will be completed two weeks before the event. Teams will register with a deadline a week before the event. Non-perishable food purchases will be made the weekend before the event (March 30th). Pizza will be delivered the day of the event. The fair will be held on Saturday, April 6th, timed with the academic calendar and expecting many students.

Activity Evaluation Plan

We will use the online platform, Embark, to create an event link where students and members of the Mount Holyoke Community will be able to RSVP for the event. This will allow us to be aware of the approximate number of participants. We will share a google form via email to all registered participants at the end of the event to get feedback. We will use the attendance and feedback from the event to help us better organize our next outreach activity!

Budget Justification

We will be having an event where people can engage and have a fun time. We are ordering pizza, soda, paper plates, and cups for the approximately 100 people attending the event. We will also be ordering linguine pasta and low-temp hot glue guns for a pasta sculpture building event, which will provoke our guests' engineering mindset. We are also ordering linear diffraction grating handouts for people to look through at and see light diffraction first hand. We hope the rainbow colors will get our guests excited about physics, especially young children. We are planning to decorate the stalls with rainbow streamers to engender a fun environment.