



# SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

## Marsh W. White Award Proposal

---

Project Proposal Title	Electrifying Interest in Physics
Name of School	University of Central Florida
SPS Chapter Number	1076
Total Amount Requested	\$500.00

### Abstract

SPS UCF will provide students at local middle schools with entry-level circuit building kits along with a brief description of the physics behind the components. Our goal is to inspire students to get interested in physics and become more creative and imaginative about the world around them.

# Proposal Statement

## Overview of Proposed Project/Activity/Event

Our goal is to provide local middle school students with a hands-on experience with physics by bringing circuit-building kits made for children and teaching students about the physics behind the circuits at a low level. We plan on doing this by reaching out to local middle schools and coordinating a day that a group of SPS members can go and oversee groups of students. During the activity, we will have the kits spread out at multiple tables and have the students split into groups. The kits themselves consist of large versions of elementary circuit components such as resistors, capacitors, etc. as well as more tangible components like buzzers and fans. The pieces snap together making it easy for younger children to build simple circuits and develop a basic understanding of the components. The groups of students will work together to create the circuits and complete the tasks we have provided. The motivation behind this project is wanting to show younger students how interesting physics is and encourage them to be more interested in the world around them, applying what they know to what they don't know. We think this project will invoke interest in STEM majors/fields in their future and promote collaboration between each other. We will also challenge their problem-solving abilities by asking them to create certain circuits and accomplish certain tasks that have been created by the SPS participants. We understand that convincing local teachers/faculty to allow us to do this activity poses a possible challenge. However, it is in our belief that the science teachers will be more than happy to give their students this opportunity, especially because our timeline will line up close to the end of the public school year, which should be after the students have taken their standardized tests. Additionally, we will look to our Student Outreach Services program here at UCF to help connect to local schools.



We think this project will invoke interest in STEM majors/fields in their future and promote collaboration between each other. We will also challenge their problem-solving abilities by asking them to create certain circuits and accomplish certain tasks that have been created by the SPS participants. We understand that convincing local teachers/faculty to allow us to do this activity poses a possible challenge. However, it is in our belief that the science teachers will be more than happy to give their students this opportunity, especially because our timeline will line up close to the end of the public school year, which should be after the students have taken their standardized tests. Additionally, we will look to our Student Outreach Services program here at UCF to help connect to local schools.

## How Proposed Activity Promotes Interest in Physics

Giving middle school students the opportunity to work hands-on with physics will inspire them to pursue a career in physics because they will be introduced to it in a way that makes learning fun. Additionally, with the help of the SPS participants, we will be able to teach the students about physics in a basic and easily understood way. This will increase the students' understanding and confidence in their abilities.

## Plan for Carrying Out Proposed Project/Activity/Event

- Personnel

- Project Lead – Max Daughtry: Facilitate purchase of materials and help create problem sets/lecture.
- Communications Lead – Julia Zorovich: Communicate with local middle schools as well as help create problem sets/lecture.
- Marketing – The project will be marketed to the school faculty as a learning experience and outreach event for the students of the school.
- SPS Member Participation – We expect around 5 to 7 SPS members to participate in this project, many of whom have been TA’s or have completed at least Physics 2, which is more than enough to effectively convey the information related to simple circuits.
- Expertise – Many SPS members have taken Physics 2, E&M I and even E&M II. Many have also been TAs in the past, which will help when teaching the students.

### **Project/Activity/Event Timeline**

January 2023	Reach out to local middle schools and choose one
February 2023	Start creation of circuit designs and lecture
March 2023	Finalize circuits and lecture
April 2023	Confirm with school and arrange transportation
May 2023	Presentation to Students

### **Activity Evaluation Plan**

We will determine the success of our activity by keeping track of the number of students we are able to work with and by having them fill out a short survey at the end of the session asking if they feel more inclined to pursue a career in physics/STEM. This will tell us not only how many people we positively affected, but also the percent of students we affected.

### **Budget Justification**

The requested funds will be used to purchase the circuit-building kits and pay for transportation of the SPS participants. The kits can be purchased off of Amazon for \$36.95 plus tax, this allows us to purchase 12 kits with some of the budget left over for transportation costs. These kits can be used for years to come and are valuable assets for our SPS chapter.