



# SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

## Marsh W. White Award Proposal

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Project Proposal Title	Invigorating Young Minds Through Physics Solution Videos
Name of School	University of Central Florida
SPS Chapter Number	SPS 1076
Total Amount Requested	\$499.71

### Abstract

SPS-UCF will create professional and high-quality physics problem solving videos that will be distributed to local Orlando highschools and through our SPS youtube channel. We aim to create fun, informative, and accessible problem videos that will help develop students' interest in physics and be used as a learning resource for high school teachers.

# Proposal Statement

## Overview of Proposed Project/Activity/Event

Our goal is to create professional looking and high-quality physics problem solving videos to be distributed to local Orlando schools and to later be uploaded to YouTube for access to high school students, and anyone who pleases, around the world. These videos will benefit students by giving them access to more learning materials targeted specifically for their grade level and allow for problem-solving techniques to be developed. SPS is looking to create not only informative and educational videos, but fun and interesting videos that will garner the attention of these students. We are also looking to promote more interest in physics among high school students by actively engaging them in problem solving. UCF's SPS officer board, SPS members, and UCF faculty outreach committee will all work together to create meaningful problem sets and corresponding video solutions. The problem sets will be focused on highschool level introductory physics topics and will be distributed by the faculty on the outreach committee who have contact with local highschools. We intend to reach not only local high school students, but the largest audience we can through the use of our YouTube channel. We are looking to create robust, educational, and interesting videos, and we are hoping to reach a broad, diverse audience. We are starting with a goal of 15 solution videos but hope to achieve more.

## How Proposed Activity Promotes Interest in Physics

Problem solving videos created by our SPS chapter will help to promote interest in physics by providing a way for high school students to increase their physics knowledge and hone their problem solving techniques. Since these videos will be made by current undergraduate students, they will provide a more relatable learning style for the students and will allow the students to see successful physics undergraduate students. Students will learn physics concepts first hand by attempting the problem sets themselves and reviewing the corresponding solution video.

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

Personnel:

- Madisyn Brooks: **Project Lead**, will facilitate the purchasing of materials/manage budget and will work as the liaison between SPS and UCF faculty
- Spencer Tamagni, Olivia Bitcon, Rajib Chowdhury, and Maximilian Daughtry: **Problem Set Leads**, will work together to create problem sets and solutions that span multiple physics subjects and are applicable to the highschool classroom
- Morrigan Ring, William Barret: **Technical Leads**, will work together on creating video set up, video editing and managing the SPS youtube channel

Marketing:

- We will be using the existing UCF faculty outreach committee to distribute our videos/youtube channel to local highschools
- A link to our youtube channel will be included on our local [SPS website](#)

SPS Member Participation:

- We expect to have 10-15 members of our SPS chapter contribute to this project
- We will also recruit students with physics minors, math majors, and physics graduate students in the department for development of this project

Expertise:

- Many of our SPS members have worked as teaching assistants and tutors and are well versed at concise and informative problem solving methods
- William Barret has previous experience with video editing software
- Spencer Tamagni has previous experience with managing a YouTube channel

### Project/Activity/Event Timeline

January 2022	Creation of Problem Solving Sets
February 2022	Review of Solutions and SPS Member Sign Up, Filming of Solution Videos Begins
March 2022	Filming of Solution Videos
April 2022	Final Filming/Editing of Videos, Distribution of Videos Begins
May 2022	Distribution and Upload of Videos, Feedback Form Distributed

### Activity Evaluation Plan

We will be creating a feedback form to be distributed to the local high school teachers and to participating students. This form will include a student effectiveness rating, comments on improvements and accessibility, and ideas for other problems that need to be solved. We will use this form to evaluate the effectiveness of our problem solving videos and determine the diversity of the audience we reached. We will also monitor the view count and comments on our youtube channel uploads.

### Budget Justification

The funds requested will be used to purchase equipment for the development of our solution videos. The budget items requested will be used to make high-quality videos that are easy for the students to follow. The equipment that we are requesting will be functional for years to come, given proper care and storage. We will be able to continue creating our solution videos into the foreseeable future. Any additional items needed will either be rented from the UCF library or will be requested from the UCF physics department.

Budget Items Requested:

- Camera/Tripod
- Memory Card
- Microphone
- Lighting Equipment
- Editing Software