

**Eastern Michigan University Annual Physics Building Competition**

**Society of Physics Students – Eastern Michigan University Chapter**

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Amount Requested: \$300.00

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**Abstract:**

To begin an annual building competition for introductory physics students to become more involved in the department and to gain hands-on experience. The competition would use a microcontroller to run a system built by the students and judged by seniors. Winners would get recognition at an annual honors event.

**Tax #:** 38-6005986



**SPS Eastern Michigan University Chapter at Annual BBQ**

The Society of Physics Students, Eastern Michigan University Chapter would like to begin an annual building competition for introductory physics students. The competition would take place during the winter semester each year. The goal is to have students build a device that meets pre-determined specifications. The final product will be judged by seniors and professors in the Physics Department. For the first year, we anticipate the students building a roller-coaster which will be driven by an Arduino microcontroller.

Microcontrollers are used for a variety of research projects in many fields so it would be beneficial for students to become familiar with them. As part of the competition, students will attend a short workshop, hosted by senior SPS members, which will provide instruction on the use of the equipment. The Arduino microcontrollers will also be reused every year for this competition due to their versatile applications.

This competition is designed for introductory students (sophomore level) to help them become more comfortable with the department and gain hands-on experience working on a real project. In the sophomore physics classes, we see the most diverse students of all of the physics classes offered due to the wide range of majors represented in the 200 level courses. Historically, our SPS chapter has had difficulty recruiting students in these courses to participate in SPS activities. We feel that a unique project would help to boost interest in the organization, not only among physics majors, but also among students in other science programs. This competition would help to gain interest in physics in female and minority students. This would not only bring students from different backgrounds to SPS but also bring younger students to our organization.

**Budget:**

We are requesting \$300.00 to help fund this competition. This will allow us to purchase ten (10) Arduino Uno Rev.3 units at \$29.99 each. If we are able to find them cheaper at the time of purchase, we will use the extra money to fund student building materials. We anticipate that each microcontroller will be reused for this annual competition. Funds for building materials and rewards will be obtained through our SPS funds and SPS fundraisers. We will set a budget of approximately \$25 for the students to use for building materials. Each year, we anticipate spending about an additional \$300.00 for building materials and awards. The competition will take place during the winter semester and awards will be given out at the annual physics honors event in April.

We think this annual competition will become something students look forward to every year and attract new students to our department and organization. The project will change each year so that it will always be new and exciting. We are looking forward to starting this new event and to have an opportunity to interact more closely with the new students and attract a more diverse community to being active with our SPS chapter.