

The Annual SPS Pumpkin Drop  
California State University, Chico  
SPS Chapter Number: 0804  
Total Amount Requested: \$423.00

### **Abstract**

The Pumpkin Drop reenacts Galileo Galilee's Tower of Pisa Experiment. On Halloween, SPS members dress as Einstein, Aristotle, Newton, and Galileo to explain the evolution of the Rule of Falling Bodies as other SPS members demonstrate the rule by dropping pumpkins from the fifth floor of CSU Chico's Butte Hall.

### **Proposal**

#### **Overview of Proposed Event**

The event takes place on the side of CSU Chico's Butte hall staircase. At the top, are two dozen hallowed out pumpkins either empty, filled with water, feather, or fire ready to be dropped by SPS members. These are to be dropped at specific instances, within the script, to the bottom of the outside of the building, where there is a designated area for the pumpkins to fall. Near the bottom, we have the other SPS members dressed as Einstein, Aristotle, Newton, and Galileo explain their theories of falling bodies while the pumpkins drop upon countdown with the crowd. The goal of the event is to explain how scientific theories are developed, and later improved upon, using the famous example of the Rule of Falling Bodies. The intended audiences are older elementary to middle school students, but the event brings fun for the entire family and students, regardless of age.

The pumpkin drop was originally thought of by physics students, based off the dropping of fruit from a five story tower, as featured in The Late Night with David Letterman. In 1988, SPS members Ben Catching and David Snyder wanted to demonstrate a love for physics for the entire campus and community. Their idea was have Galileo present his "Rule of Falling Bodies" with three pairs of pumpkins dropped from the top of the CSU Chico Meriam Library. In the early 1990's, Scot Carter added the finale of coordinating smashing pumpkins with the cannon blasts of the 1812 Overture, calling for even more pumpkins.

Later in the 90's the pumpkins were to be dropped off the south side of the CSU Chico Butte hall, which gave more space to the increasing size of crowds from local school students and the rest of the community. Soon Aristotle was added to debate Galileo on the physics of falling bodies, and in 2005, Einstein and Newton were added to chime in. Now, all four famous physicists explain and demonstrate their theory of gravity showing how scientific thinking evolves with time.

#### **How Proposed Activity Promotes Interest in Physics**

The Annual SPS Pumpkin drops promotes an interest in Physics by providing a live demonstration of The Rule of Falling Bodies in the spirit of Halloween. Throughout the script the actors or actresses, playing as the famous physicists, explain their scientific postulation and reasoning as they amend to previous theories to further improve the rule. Before the event, the SPS members dressed as the famous physicists pass out “trading cards” of themselves and sign them. In addition to this, the trading cards provide a little bit of information about the scientist, as well as some of their contributions to physics.

### **Plan for Carrying Out Proposed Event**

The chapter president will assign a committee of three SPS members to plan the event, obtain materials, and monitor practice of the script. One of those in the committee must be the Chapter Vice President of Activities. After 28 years now, the event is known around the community of Chico as an annual Halloween event. Having an event where pumpkins drop from a building also attracts the younger community, and the science attracts the older community. The set-up is prepared the day (or two days) before the main event, and is set up by all of the members of the SPS chapter, if available. For the main actors/actresses, there will be four SPS members dressed as the scientists. An additional 4-6 “Ivors” will be preparing and dropping the pumpkins from the fifth floor staircase, with additional supervision from a professor atop. To document the event as well as clean up the event afterward, the rest of the SPS chapter, if available, will participate in the event. Because this is an annual event, what can be improved upon has been written down for the next year. Half of the SPS members have also participated in the event before one way or another, so this ensures the event can only improve.

### **Event Timeline**

The Pumpkin Drop is conducted the day closest to Halloween available, at high noon of given day. The planning for the event begins one month in advance with an SPS meeting deciding who will help coordinate, act, set-up, and clean-up at the event, leaving 4 weeks to plan for the fine details of the event. By the end of the first week past, the costumes are to be accounted for, as well as the other materials such as renting a speaker, asking permission to the school for space, large banner for the pumpkins to splash on, brooms and buckets, and contacting newspapers for coverage of the event. For the following two weeks up to the event, we have practice two times a week at the physical science building on Friday evenings. The practices should allow the actors/actresses familiarize with the script, as well as allow the Ivors to synchronize with the script to when to drop the pumpkins. Rather than use real pumpkins however, we use basketball balls off the second floor of the physical science building. The week leading up to the event is final practice two days before where we add or remove certain aspects of the script or event. In that week the pumpkins are also bought, stored, and prepped to contain feathers, water, and fire. The day of the event, we meet at ten am to ensure everyone who is participating will be at the event.

### **Event Evaluation Plan**

After the event, the SPS chapter will send short surveys to teachers of middle and elementary schools who brought their classes to the event. The survey will question what grade level the class is, how much did they enjoy the event, how well did they understand the physics, what they (and students) liked most about the event, and what can be done to improve the event for the next year. The surveys will then be reviewed by the SPS chapter and discussed what can be done even better for the next time around, as well as possible feedback for future events throughout the year. Because there is no arranged seating, there is no way to tell exactly how many people participate in the event. However, a viewing of roughly how much space is occupied compared to the previous year can tell of an increase or decrease in overall attendance. In addition to these short surveys, we are to review the event as recorded by one of the SPS members or a local news source. At the next meeting, it will be discussed what went well as well as what can be improved by either the performers, or the set up. A list of things to be purchased before next years even will then be made and inserted into the activities binder.

### **Budget Justification**

For the crowd to hear the actors/actresses, the SPS must rent an audio system including two speakers, wiring, and a microphone.

The script calls for 22 Pumpkins to be dropped for theories discussed in the script and experiments presented by the script.

To reduce pumpkin splatter, and fill some pumpkins with other material, a pumpkin carving kit would help make this process easier and less hazardous than kitchen equipment.

The feather boa bags are used in as a reference between light and heavy objects, and are used every year, so have to be purchased every year.

As with the feathers, the water balloons used are needed to be purchased every year.

The costumes we currently have are raggedy and perhaps over a decade old. An update on costumes will make a more realistic event for the viewers.

The dummy we have is used in a "confusion" of Galileo's Rule of Falling "Bodies". Our dummy however is old, tattered, and quite off-putting.

Lighter Fluid is used for a pumpkin lit on fire on the inside. A fire extinguisher must be accompanied for safety precautions.

The radio will help communication between the bottom floor and Igors on the fifth floor, especially when the crowd cheers too loud.

The caution tape roll is to keep the audience at a safe distance away from the splattering pumpkins.