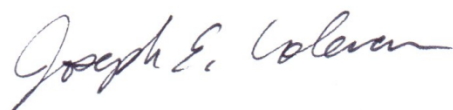


# Rocket Competition: Physicists Versus Engineers

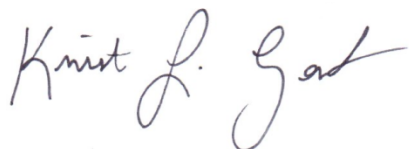
The University of Texas at Dallas Society of Physics  
Students

*Written By*

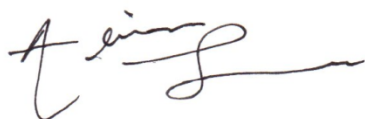
Joe Coleman: *President*



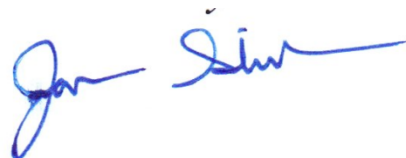
Kristen Genter: *Vice President*



Alison Lee: *Events Coordinator*



Jason Slinker: *Faculty Advisor*



Total Amount Requested

\$300.00

Date Submitted: November 15<sup>th</sup>, 2012

## Abstract

UTD's Society of Physics Students proposes to host a friendly rocket competition to engage students and the public to the wonder of rocket science. The goal is to encourage creative thinking to design a typical homemade rocket for performance, to engage the public with a lecture and the competition itself. The performance of the rockets will be based on height, range and design.

The University of Texas at Dallas's Society of Physics Students is an active organization spreading passion for the field of physics around the entire campus. From research projects, to science movie nights, to demonstrations on campus booths, we try all that we can to encourage people to stimulate the left side of their brains and seek further for their knowledge of physics. The students are shown a way to learn and discover physical ideas in a new and exciting way as a motivation to learn more about physics.

Last year, UTD's chapter of ASME challenged our club to a friendly pumpkin chucking competition to challenge our minds. This year, it is our turn to return the favor and host our very own rocket competition against the mechanical engineers at our school. Not only will this competition include physicists and engineers, but other people who are interested in rockets as well. We believe that it is very important to mix the various fields of science with different groups of people in order to encourage interaction amongst our members with the goal of helping to strengthen each other's weaknesses and exchange interesting discoveries. Encouraging different majors to interact with each other allows them to network while exchanging their creative skills. It is also important to show how physics is applied in several other fields of study to show younger members the potentials their future degree holds.

In the upcoming Spring 2013 semester, there will be a general lecture based meeting for the contestants on first week of February for the students to be exposed to the event where the physics of rocketry will be discussed. Either during the last week of February or the first week of March, we will hold another meeting open to the general public to allow teams to register for the competition and get their supplies to build the rocket. The actual competition will be held at the last week of March at a local park called Bob Woodruff Park in Plano, Texas. This park is a designated area for rocket launching which allows the contestants to see other possible rockets

being launched at the site. Each club is allowed 2-3 teams consisting approximately 3 members to participate in the competition. There will be additional 2-3 teams open to the general public. Additional teams will be allowed if the demand is high enough. The team setting allows the students to work with a group of different people sharing ideas. Our chapter of SPS is providing common rocket parts like rocket tubes, engines, igniters, fireproof paper, parachute, streamer and other miscellaneous parts. These must be incorporated into the design of each rocket. Whether the provided parts are used for their intended purpose or not is up to each team. Besides that, the teams are allowed to design their rockets in whatever way they please within restrictions the school has set forth. For safety, only the rocket engines provided by the club will be allowed. The items will be handed to each team at the same time, and they will have two to four weeks to complete their rockets. On the day of the competition, each rocket will be turned in, inspected for any rule violations, and allowed minor last minute fixes prior to launching.

To abide by the university's rules, we are asking for a campus policeman to be on site throughout the competition. This is not only because we are required to do it but also because it is the safe thing to do. As we all know, science is a field where accidents do occur; however, by taking the proper precautions ahead of time, we can ensure the safest environment possible.

The competition will have various categories. The winners will be determined based on: 1.) the rocket that goes the highest to be determined with an altimeter, 2.) the rocket that is able to achieve a predetermined target height to be specified at the lecture, 3.) the rocket that returns to the ground within a specified distance of launch, and 4.) the most creative, working rocket. The judges for the competition will be four faculty members, two from the physics department and two from the mechanical engineering department. Each group will receive prizes in the form of a t-shirt based on each criterion.

We hope this competition really sparks some creative, scientific thinking that applies all of the theory learned in class. This activity may initiate more students to apply the theories learned more often, and not just in labs, but in daily actions. The goal is to show that physicists can relate what they know to real world scenarios just like engineers.

Budget: **Federal Tax Number: 75-1305566**

Rocket Supplies	Ea. Cost	Quantity	Total Cost
Launch Pad	\$30.00	1	\$30.00
ALT TRAK Model Rocket Altitude Tracker	\$15.00	1	\$15.00
Recovery Parachute	\$1.75	9	\$15.75
Small Fire extinguisher	\$45.00	1	\$45.00
Engines (bulk)	\$50.00	1	\$50.00
Engine Mount Kit	\$8.00	9	\$72.00
BT-80 15" Body Tube	\$2.00	9	\$18.00
Tshirts	\$4.50	12	\$54.00
Total			\$300.00

Kristen Genter (left) Alison Lee

