

The Project List

Written by Administrator

Friday, 03 December 2010 22:21 - Last Updated Thursday, 17 May 2012 19:02

This is the page displaying all of our current and possible large projects. It will be updated as projects progress. Before we list the projects and ideas, we need to define the characteristics of a large X-Labs project. A large X-Labs project is one that meets all of the following criteria:

X-Labs Main Project Criteria Decree:- Our Projects must demonstrate knowledge of science and engineering
- Our Projects must be both inspiring and entertaining to the average person as well as the professional engineer.
- Our Projects must be aesthetically pleasing and maintain a high quality of build for long-term use.
- Our Projects must keep the safety of the general public as a critical design element.
- Our Projects must push designers past their current ability. Go Further, Faster, Higher, than before

Our current large club projects are:

1. The Big Tesla Coil

Create a Big DRSSTC capable of 10 foot arcs or larger and make it play music!

Status: This project is currently almost complete (Please see the Big Tesla Coil link to the left). Still needs new capacitor bank and toroid.

2. Robotic Drum Kit

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Design and Build a robotic drum kit that will play midi along with the Tesla Coils during a show.

Status: We currently have most of the parts for this project.

3. Hang Large X-Labs Banner

Add X-Labs website and then hang large X-Labs banner on the side of the USF parking garage.

Status: we need to start collecting supplies.

4. X5 High Altitude Balloon Project

Design and Build a fourth (X4 was our UAV) high altitude balloon to send to near space. Redundant tracking systems will be incorporated, HD video will be recorded, and communication from ground to the payload will be possible in addition to the standard payload to ground communication.

Status: Still in the planning stages.

The club has had some discussion about working with Engineering students on their Senior Design projects, so below is a list of large project ideas that are x-labs worthy and could potentially be used as a senior design project. If these projects are not taken on by X-Labs guided senior design students, they are projects that will eventually become regular large club projects.

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1. High Power Laser Projector with WEB GUI

Design and Build a high power (but portable) laser projector that can display live projections on the USF water tower from another building. System should have a web type interface so we can play Pong on the USF water tower with the controller being a smart phone! A pay system could also be incorporated to charge money for each game, ultimately generating revenue for the club.

2. Demo IEC Fusor in big bell jar

Use the large glass bell jar that X-Labs has to create a demonstration IEC nuclear Fusor / art piece. This will involve setting up a complete vacuum system to evacuate the bell jar along with designing and building a solid state high voltage power supply. Each piece should be reliable and safe enough so the setup could be permanently displayed in public somewhere at USF.

3. Pulse Jet Cart

Design and Build a large pulse jet engine attached to a rideable platform. This will largely be a mechanical project.

4. Cheap Segway type transportation vehicle

Design and Build a low cost and durable segway type electric transportation vehicle. It should be cheap and easy enough for college students to build. Also, create a class where other X-Labs members can build their own so they can easily get to class on their new segway!