

**Preliminary Project Proposal Brainstorm**  
**ENGN/PHYS 208—Winter 2019**  
**Due: 14 Jan, in class**

## Project Background/Context

The purpose of the preliminary project proposal is to stimulate your thinking about specific projects for your Electronics design project. You should provide enough context/information such that it is possible to gauge the feasibility of the scope and nature of the project. As such, you aren't asked to know every last detail, but the more information you can provide, the better.

Students will collaborate in *teams of 2 or 3*. It is entirely permissible—encouraged, in fact—for multiple teams to pursue the same project. Each team will receive a **budget of  $\approx$  \$150** (thanks to funding from the Dean's Office).

The choice of topics is wide open, so long as it addresses a real-world problem. For some motivation, you may review the projects in section 9 provided in the Electronics Overview document as well as the Some More Electronics Projects Ideas on the course website. So, many possibilities, so let the creative juices flow!

## Brainstorming Details: Project Outlines

Please describe **at least three** potential research projects. For each, please do the following:

1. Provide brief description of the nature of the project (approximately 1 paragraph). What are you trying to build and/or what real-world problem are you addressing?
2. Identify any similar/relevant designs that already exist, whether commercially produced, or maker/hacker type projects (e.g. Hackaday competition website; Make magazine, etc.). Compare and contrast your proposed design, *highlighting novel elements*.
3. Make a preliminary bill of materials—i.e., what do you need to implement your project? Think about sensors (e.g., pressure, temp, distance, accelerometers), microcontroller (e.g. Arduino, Teensy, Particle Photon, etc.), and communication devices, (Bluetooth, Wifi), visual displays (LCD, TFT display), and power sources (battery, wall power adapters). Also list any necessary mechanical components/housing. Do you need any special materials? Any special fabrication equipment/facilities? Be sure to include potential vendors of equipment, where possible. Definitely check out Adafruit and Sparkfun for parts!