Hi!

Workshop Intro
What is a PCB and Why Should You Care?

**Printed Circuit Board**

Connects electronic components on a single board

Examples: Inside your phone, computer, smart watch, etc

Take a prototype from breadboard to polished product!
Some terminology

**Schematic** - A **symbolic** representation of how electronic components will connect based on their input and output ports. **Logical** connections

**Layout** - Placing components where they will actually go on a board and connecting them with copper. **Physical** connections
Some PCBs You May Know

**Arduino** - PCB built around the ATmega microcontroller. Open source - you could make your own by the end of this seminar!

**Raspberry Pi** - an entire computer on one board!

Often PCBs are shielded and we don’t see them directly, but they are in all of your electronics.
Workshop Overview

Topics
- Intro to PCBs (this one)
- Intro to basic electronics
- Design planning
- Component selection and creation
- Schematic
- Layout
- Manufacturing
- Testing and Verification
- Advanced topics

Labs
1. Soldering practice
2. Design pre-made PCB
3. Open-ended final design
Software

Altium

Industry standard PCB design software

Free student licensing!
1st Project

Step by Step instructions on how to build clock tower PCB

Lights up and plays the Alma Mater!
Final Project

Build your own board!

Examples

- DIY Arduino
- On-board game
  - Snake
  - Simon
- Business Card
Check it out and consider enrolling!

Virtual seminar to learn soldering, PCB design, manufacturing, and fabrication.
Boards, tools, components all provided by CMC.

Questions? Contact cornellmakerclub@gmail.com or keb278@cornell.edu