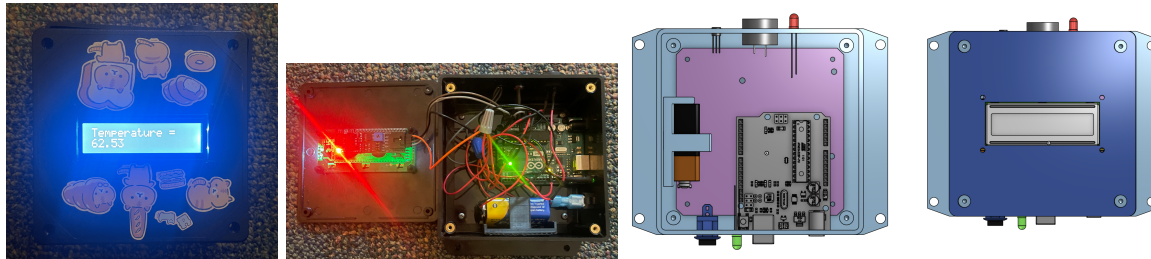


Hardware Projects

Thermal Sensor

Link to full-length report: [EK131 Report](#)



What

- Design and fabricate a device that uses changes in voltage readings to calculate room temperature

How

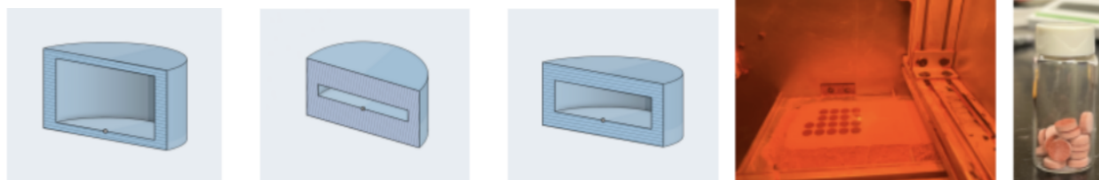
- Used onshape to design and map device
- Used Arduino Uno as device motherboard
- Used laser cutters, solder irons and 3D printers to fabricate

Results

- Created a fully working thermal sensor that played a tune when a room exceeded a pre-determined "room temperature"

Epilepsy and Bipolar Medication- SLS Printed

Link to full-length report: [REAL REU Poster.pdf](#)



What

- Created and tested powder-pill designs that dissolve at FDA-approved rate
- Determined crucial parameters for SLS process
- Presented at Texas A&M summer research convention

How

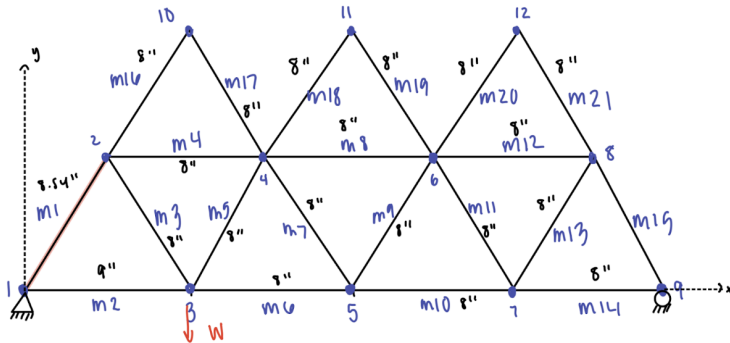
- Used onshape to design pills
- Used Selective Laser Sintering to fabricate

Results

- Determined that a large pill height and slow scan speed would produce results within FDA-approved range

Truss Project

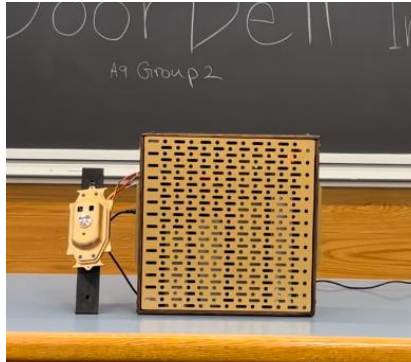
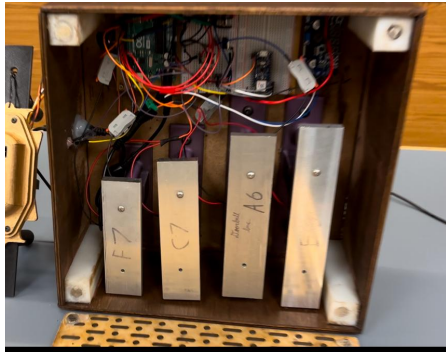
Link to full-length report: [Copy of EK301 Final Design Report](#)



What	How	Results
• Theorized method to create a bridge that would hold the largest load possible using given materials • Built and tested project to determine accuracy of calculations • Performed cost analysis on final product	• Used acrylic strips to fabricate bridge • Calculated loads both by hand and using a matlab program we developed	• Created a bridge that could hold up to 32 oz and predicted result with 95% accuracy • Correctly determined which truss would cause the bridge to buckle

Retro Doorbell

Link to full-length report: [Final Team Report](#)



What

- Designed and developed a Retro style, mechanically actuated, touchless doorbell
- Wrote a report and pitched product as part of class requirements
- Presented product to a board of reviewers

How

- Handmade chime bars using aluminum and milling machine
- Laser cut part of the housing from MDF and used wood for outer box
- Used solenoids to activate each chime individually which recieved a signal from an Arduino Uno when a person was within range of the doorbell
- Used an Arduino Nano and lightBlue app to develop a notification system that would send a message to a mobile phone when a person was within range

Results

- Determined that the IR sensor was working properly and could accurately determine when a person was within range
- Determined that the doorbell itself was loud and functional
- Encoded different tunes using the Arduino IDE program
- Recieved 3rd place after presenting to board

Software Projects:

<https://github.com/Adithichit?tab=repositories>

