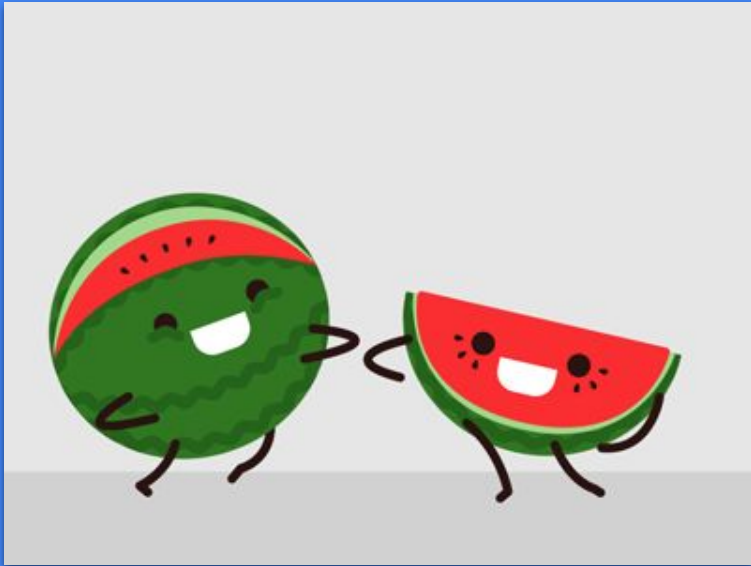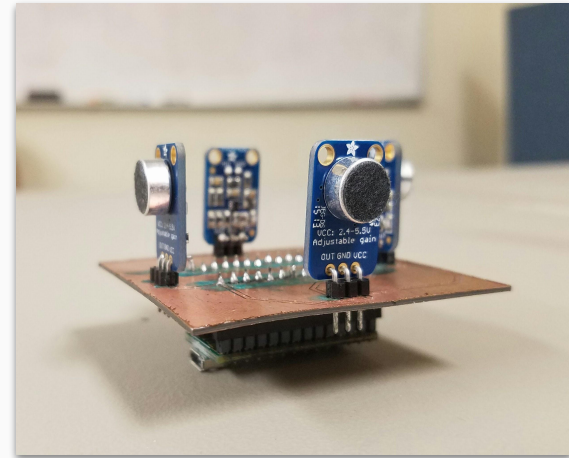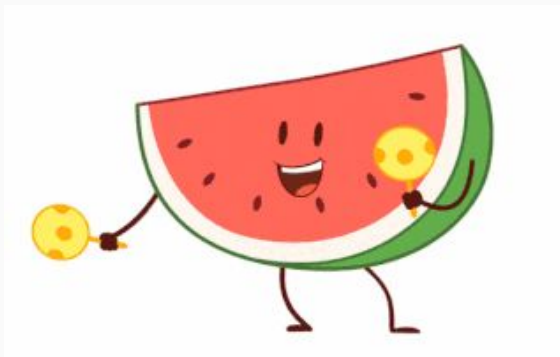# Team Melon

Wind Sensor Team

Overview of Semester

- Explore wind sensor types

- Build upon prior semesters of work

- Perfect an acoustic wind sensor

Mission statement:

Design a small, static, and affordable sensor that can accurately measure wind speed and direction in real time and pass this information to WeatherBox systems.

The Problem/Motivation

Hawai'i is hot!

However, tradewinds provide:

- Natural relief from high temperatures
- Lower UHM energy usage from the biggest culprit: **air conditioning**

2016   **2017**   **2018**   **?**
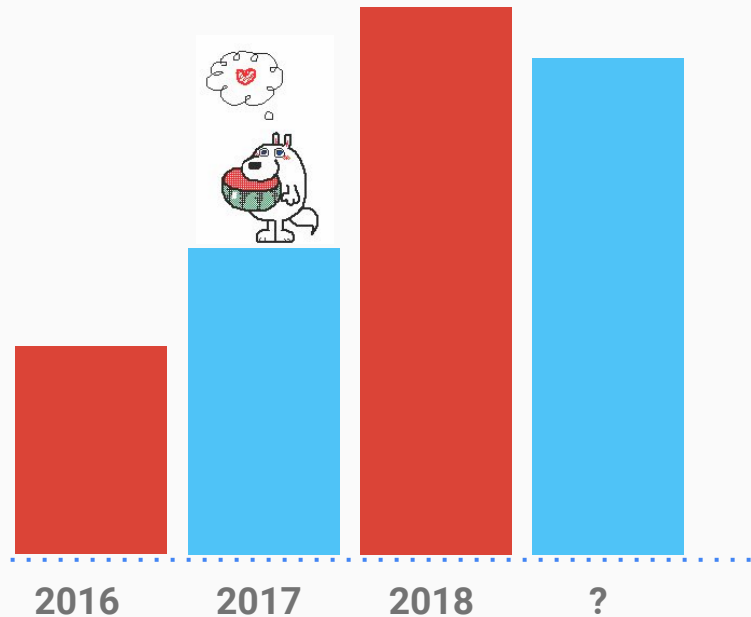
The Solution

Measure wind patterns and utilize that information to design greener buildings that take advantage of the wind's natural ventilation, lowering UHM energy usage and pushing closer to green energy goals.
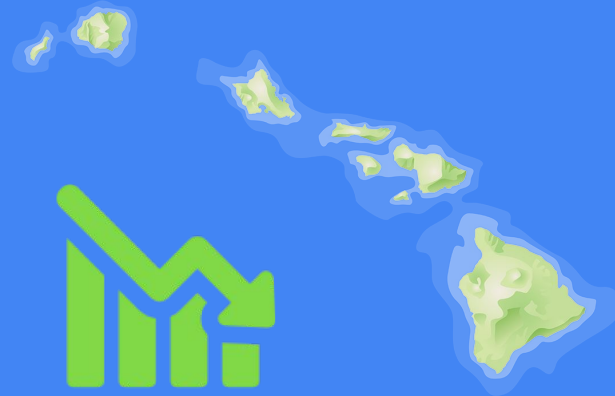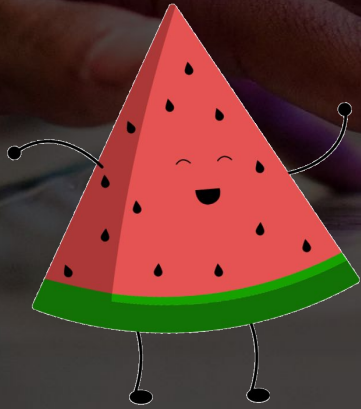
The Team

Mark

Senior

Electrical Engineering | EP

Joe

Junior

Electrical Engineering | EP

Josh

Junior

Electrical Engineering | EP

Specifics

Similar to existing sensors, needs pins from microprocessor

2 pre-existing methods: Acoustic and Ultrasound

    Acoustic method requires 6 analog pins for the cardinal directions

Might have Personal power bank

Have personal microcontroller instead of being an accessory to Weatherbox

Goal

- To improve acoustic method
- Continue ultrasound method next semester
- Build Wind Tunnel apparatus
- Create housing that satisfies:
  - Acts a wind tunnel or funnel to isolate directional
  - Muffles noise
  - Weather protection

Gantt Chart

Joseph, Josh, Mark		January				February				March					April					May
Week		Week 1	Week 2	Week 3	3	Week 4	Week 5	Week 6	24	Week 7	Week 8	Week 9	Week 10	24	Week 11	Week 12	Week 13	Week 14	Week 15	28	Week 16
Presentations	Proposals				x																
	PDR								x												
	CDR													x							
	Final																			x	
Research		██	██																		
Testing	Max - 4466			██		██	██	██													
EAGLE	Schematic										██	██									
	PCB Layout											██	██								
Debugging															██	██					
Wind Tunnel										██	██	██									
Housing											██	██	██								
Final Paper																		██	██		██

Questions?