

# Cranberry

## *Experimental Weatherbox Platform*

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# Introduction



**Kim Pee Castro** - *Team Lead*

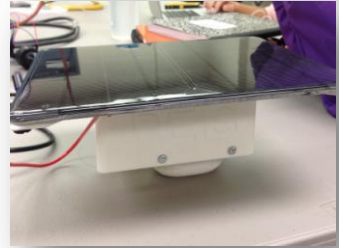


**Brandon Amano** - *Team Member*

# Project Overview

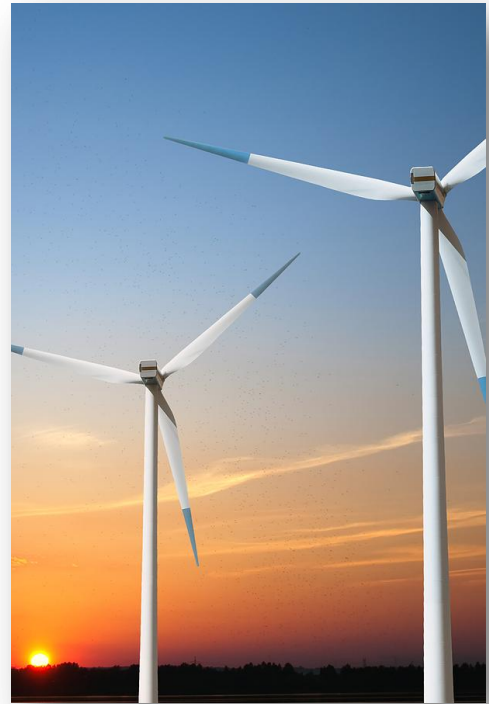


- *Cranberry* - Experimental Weatherbox Platform
  - Weather Sensor Module - Measures barometric pressure, humidity, temperature, and luminosity.
  - Improvements over *Apple* design:
    - ✓ Power System
    - ✓ Reduction in cost and size
- Current design not operational
  - ✓ Charging Chip
  - ✓ Sensor Readings



# Motivation and Goals

- Motivation
  - Understand more about renewable energy related fields
  - Apply engineering and design skills and use of relevant tools
- Goals
  - Update *Cranberry* Documentation
  - Troubleshoot problems with current design and fabricate operational board
  - Improve upon *Cranberry* board layout and implement personal design preferences





# Team Approach

- *Phase One: Test / Fix Current Design*
  - Understand design - connections, parts, etc.
  - Update documentation - part library and schematic
  - Assemble parts onto a working board
  - Debug and fix problems
  - Produce a working *Cranberry* board
- *Phase Two: 2<sup>nd</sup> Iteration Design*
  - More efficient use of PCB space
  - Consider different IC packages
  - Manufacture revised PCB



# Learning Expectations



- Renewable Energy Applications
- Develop hardware-related technical skills
  - Troubleshooting skills
  - Use of Hardware Tools
- Improve communication and teamwork



# Potential Problems

- Major Problems:
  - Starting with an Ongoing Project
  - Debugging and Troubleshooting
- Learning Curves:
  - Unfamiliarity with SMD Soldering
  - Inexperience with PCB Design Software
  - Unfamiliarity with New Parts / Sensors



# Current Progress and Tentative Schedule

## *Current Progress:*

Read through Cranberry documentation and schematics

## *Future Deadlines:*

Oct. 2<sup>nd</sup> – Begin assembly and testing of current design

Oct. 16<sup>th</sup> – Remake part library and update schematic

Oct. 30<sup>th</sup> – Begin 2<sup>nd</sup> iteration design







Any Questions?