**Problem**

- Accurate measurement of power output of a performance bicyclist

**Background**

- Existing solutions are inaccurate, expensive or require replacement of bicycle parts
- Current Solutions:
  - Crank set strain
  - Rear wheel hub strain
  - Chain vibration
  - Opposing force (gravity, air resistance, etc)
  - $500 and up

**Objective**

- Create an inexpensive (within $100) and universal device to accurately measure the power output of the bicycle rider

**Methodology**

- Strain gauges provide crank set strain readings
- Reed switches provide rpm/cadence readings
- Electronic circuit processes data and transmits to cyclocomputer

**Results**

- Static test data for Aluminum and Carbon Fiber (most popular materials) crank sets
- Elegant and practical circular housing design
- Redesigned circuit that fits the circular housing and incorporates new components and noise filters
- System ready for dynamic testing

**Future Work**

- Collect dynamic data
- Manufacture new circuit design
- Manufacture new housing
- Follow-up EnPRO

**Team Structure**

**Advisors:** Dietmar Rempfer, Sheldon Mostovoy

**Team Leader:** Mark Rhodes

**Electrical Team:**
- Leader: Jeffrey Aigner
- Jeonghun Lee
- Seunggeun Lee

**Mechanical Team:**
- Leader: Jonathan Swanson
- Nick Gaulin
- Yoshio Piediscalzi

**Visual Team:**
- Leader: Brian Albee
- David Rowell
- Yuriy Sizyuk

**Special Thanks**

Russ Janota

**Future Dynamic Testing**

- Mechanical setup for static load testing