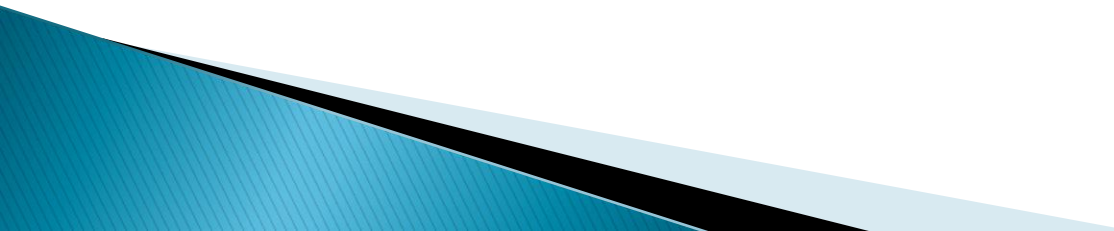


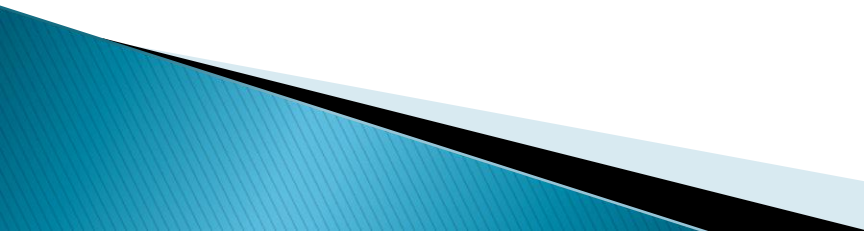
IPRO 324: Measuring Power Output for Performance Bicycles

Advising Professors: Dietmar Rempfer,
Sheldon Mostovoy

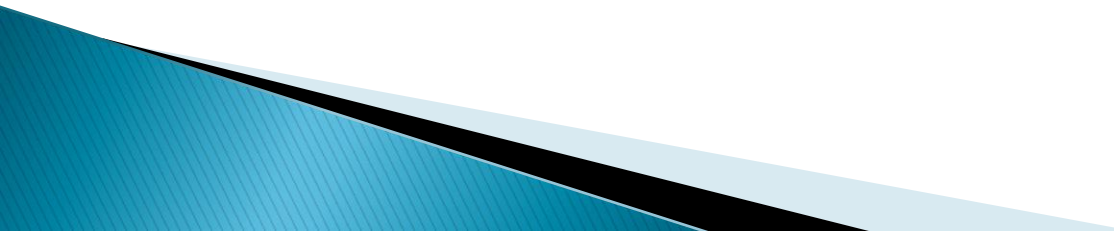
Project Goal

- ▶ Develop an inexpensive, accurate tool for measuring the power output of a bicycle rider
 - ▶ Engineering method applicable to all performance bicycles
 - ▶ Improvement of the circuit and mechanical design
- 

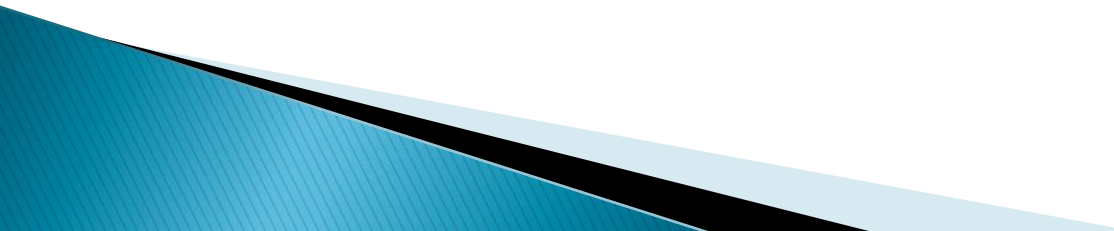
IPRO 324 Organization

- ▶ Team leader: Mark Rhodes
 - ▶ Three subgroups: Mechanical, Electrical, Visual/Research
 - ▶ Subgroup Leaders: Jon Swanson, Jeff Aigner, Brian Albee
 - ▶ Mechanical Team: Jon Swanson, Yoshio Piediscalzi, Nick Gaulin
 - ▶ Electrical Team: Mark Rhodes, Jeff Aigner, Jeonghun Lee, Seunggeun Lee
 - ▶ Visual/Research Team: Brian Albee, Yuriy Sizyuk, David Rowell
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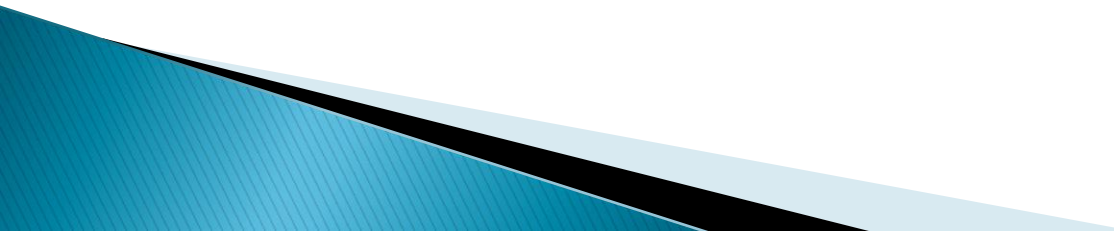
Mechanical Team Goals

- ▶ Strain gauge fitting/testing
 - ▶ Experimental calculation of strain gauge constants
 - ▶ Carbon fiber crank testing
 - ▶ Road Testing
- 

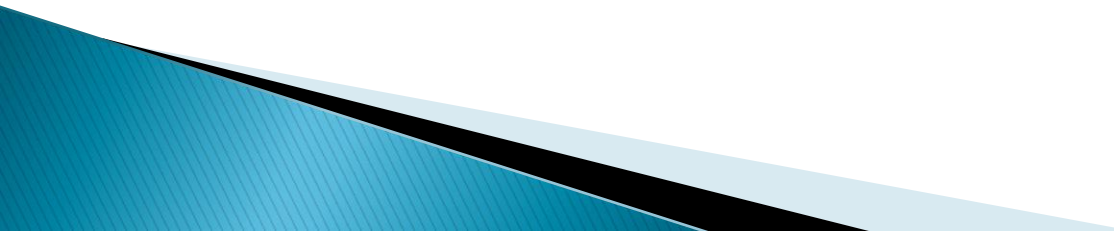
Electrical Team Goals

- ▶ Reduce noise in circuitry
 - ▶ Mitigate power consumption
 - ▶ Increase accuracy in measurements
 - ▶ Design more compact circuit board
 - ▶ Provide better I/O for debugging
- 

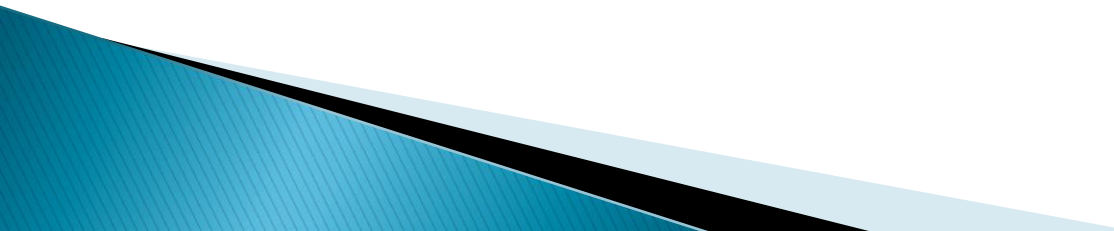
Visual Team Goals

- ▶ Research products
 - ▶ Communication with companies
 - ▶ Visual presentations and documents
 - ▶ Backup for EE and ME teams
- 

Progress

- ▶ Mechanical Team: Began strain gauge testing and carbon fiber crank testing
 - ▶ Electrical Team Progress: Discovered circuit design problems and coding problems, started working out solutions
 - ▶ Visual Team: Researched/purchased carbon fiber crank, researched/ordering necessary components for new circuit
- 

Obstacles

- ▶ Mechanical: Proper strain gauge fitting to carbon fiber crank, broken pedal
 - ▶ Electrical: Programming code, accurate output on computer, correcting errors in circuit design
 - ▶ Visual: Finding most cost efficient components, components must have required properties within budget
- 

Questions?