IPRO 324: Power Measurement for Performance Bicycles

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Statement of the Problem

- Power measurement for cyclists
  - Accurate
  - Low cost
- Project goals
  - Working prototype
  - Durable encasement
- Target market
  - Performance cyclists
  - Casual cyclists for general fitness
Goals of the Project

- Proposed solution
  - Torque measurement using strain gauges
  - Crankset attachment

- Impact on end user/target market
  - Affordable power measurement
  - Accurate power measurement for all cyclists

- Current solutions
  - Pedal systems
  - Rear hub
  - Chain vibration
Organization of the Team

- **Mechanical**
  - Design and build case
  - Dynamic lab test
  - Road test

- **Electrical/Programming**
  - Redesign circuit
  - Rewrite code
  - Establish wireless communication

- **Research**
  - Order parts
  - Analyze market
  - Prepare deliverables and documentation
Progress Toward Goals

- Work accomplished to date
  - Rewrote code
  - Designed casing
  - Established ANT+ wireless communication
  - Restructured team
Major Obstacles Encountered

- Biggest challenges to date
  - Dynamic testing
  - ANT+ programming
  - Team building
- Ethical dilemmas
  - Existing patents
- Changes in goals
  - Concurrent testing
  - Circuit redesign
Anticipated Major Challenges

- Challenges
  - Creating fully operable circuit
  - Ensuring accurate measurement

- Alternative paths
  - Rely more on manufactured components
Needs/Questions/Requests

- Request
  - Take our survey
- Questions?