IPRO It takes a team!
INTERPROFESSIONAL PROJECTS PROGRAM

IPRO 348:
Techno-Business Study of Water Pump Motor Technologies

PUMP

Pentair Utilities Motor Project

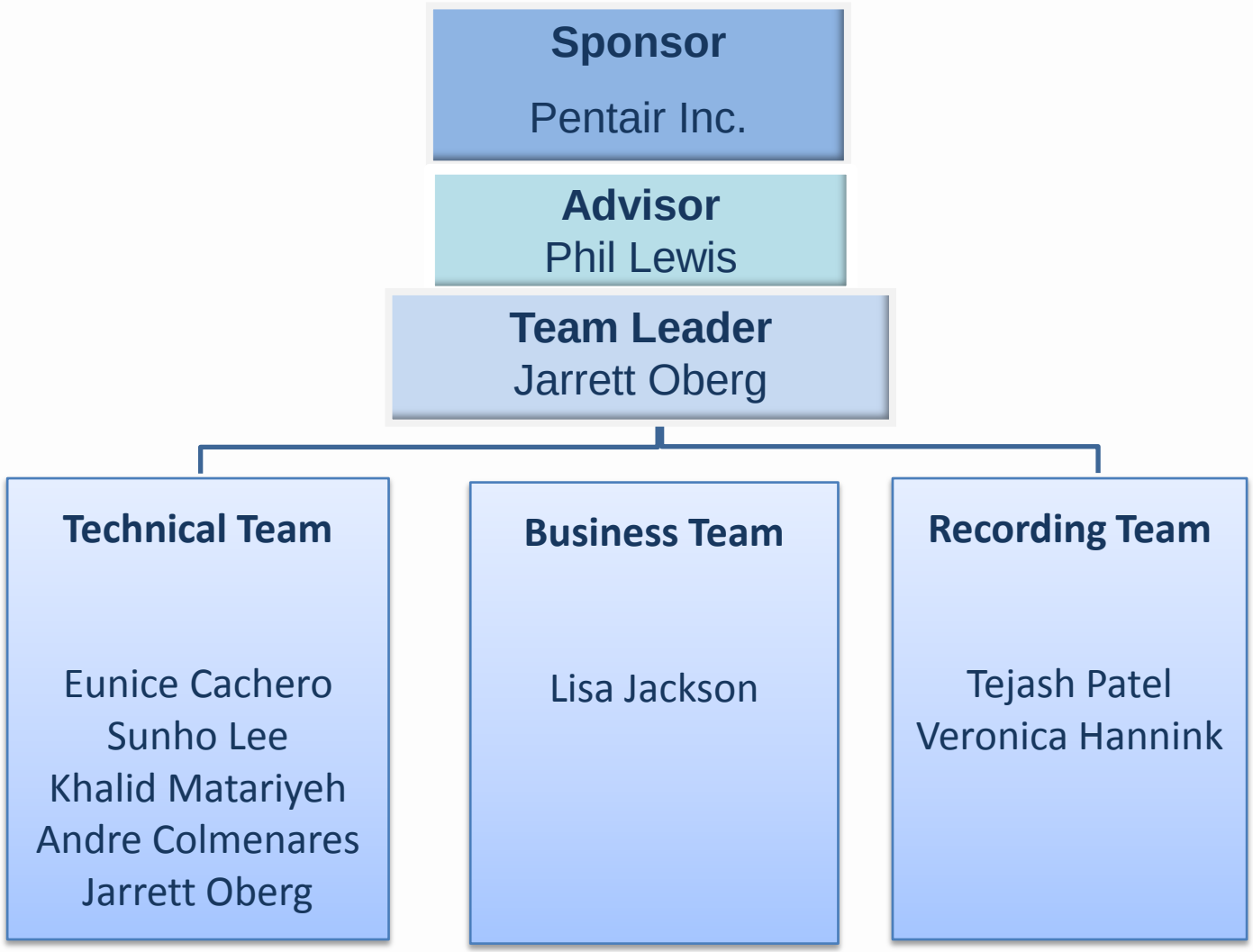
Problem Statement

- Pentair Inc. is looking to transition from AC to DC motors to drive their pumps for a more environmentally and economically conscious alternative

Project Goals

- Research and test potential motor technologies
- Report to Pentair our findings and our recommendation for which motor they should select to use in their water pumps

Organization of Team



Progress

- Research
  - DC motor types
    - **Switched reluctance**
    - Permanent magnet
    - **Brushless** vs. Brush
    - **Servo**
    - Stepper
  - Alternative energy sources
  - Controllers/Drives
  - Marketing impact

Progress

- Motor Decisions
  - Switched Reluctance
    - New technology, needs additional investigation
  - DC Servo
    - Very controlled performance to meet client's request, popular motor
  - DC Brushless
    - Most popular potential solution, high availability

Challenges

- Encountered:
  - Finding a motor with comparable performance characteristics to those already in use
  - Finding controller for motor
- Anticipated:
  - Finding a specific model
  - Developing a plan for testing

Game Plan

Week	Tasks	Tasks	
Week 8	Find motors (specific models)	Meeting w/ Pentair – motors will be purchased	
Week 9	Develop Test Plan		
Week 10	Finalize Test Plan	Test Motors	
Week 11	Test Motors		
Week 12	Analyze Results	Investigate market for best value of motor	
Week 13	Modeling/Retesting	Prepare final deliverables	
Week 14	Finalize Results	Prepare final deliverables	
Week 15	Final Presentation for Pentair	IPRO Day	

Questions?