



### **Company Background:**

Steady Systems is a biotechnology company with the vision of creating interactive digital health devices that reduce fall risk, promote active lifestyles, and restore confidence in aging adults. The product Steadiplay is an engaging, evidence- and value-based balance screening and training system that informs and entertains through game-based fitness.

The invention offers quick, affordable, and accurate balance screenings and engaging balance training through visual cues from a robot's movements, which relate to body motion on an instrumented tilt board (patent pending). Steadiplay is unique because it uses visuospatial feedback, which may better map to physical motions and provide mental and physical relief from excessive screen-time. A research prototype has been developed and tested with human subjects in a laboratory environment showing the invention's potential value but requires further development to enable translation to a clinical environment for additional efficacy testing and defining market potential.

**Team Size:** 2-4 students

**Location:** Remote and/or in-person, client/team meetings held either on Zoom or Mines campus.

### **Project Summary:**

Steady Systems would like to develop a mobile device application for Steadiplay and add Bluetooth connectivity to the IMU-based motion controller. The mobile app requirements include establishing device connectivity via Bluetooth and writing a simple user interface for basic controls (e.g., on/off switch), data logging, and visualization. Next steps would be to add demographics and summary analysis results and statistics if time permits. All tools including the hardware (e.g., IMU sensor, Bluetooth module, microcontroller, mobile device) and required software will be provided for prototyping. Students will be asked to sign a non-disclosure agreement (NDA) and all IP rights will be retained by Steady Systems.

### **Key Skills/Technologies:**

A background in Arduino C or similar embedded systems, either Android (e.g., Java) or iOS (e.g., Swift) or cross-platform API, and Git version control would be beneficial skills for this project. IoT and/or Bluetooth experience are also preferred but not required.

### **Student Benefits:**

- Creative freedom to develop unique problem solutions.
- Potential future paid freelance opportunities in software and hardware development.
- Contribute to developing a product that can significantly impact the health care system.
- Build valuable time-management and leadership skills with successful completion of project milestones.

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