

# MRI-Compatible Lower Leg Exerciser

Client: Alejandro Roldan

Advisor: Naomi Chesler

## Team:

Deborah Yagow (Leader)

Amy Lenz (BSAC)

Colleen Farrell (Communicator)

Val Maharaj (BWIG)

**Week 3:** September 18- September 23

## Problem Statement

The goal of the project is to design and build a lower leg exerciser that is compatible with MR imaging, ultrasound, and echocardiography so that can conduct cardiopulmonary exercise testing on patients and healthy volunteers during imaging studies. The device must have repeatable loads that can be measured and displayed to the patient for biofeedback.

## Last Week's Goals

- Buy resistance bands
- Finish IRB quizzes
- Visit Dr. Thelen's lab

## Summary of Accomplishments

- Met with radiologist Dr. Reeder
- Decided to continue with project
- Viewed Dr. Thelen's device
- Finished quizzes
- Researched existing devices

## This Week's Goals

- Brainstorm possible design options
- Research and purchase materials

## Difficulties

We decided to continue this project, to improve on any existing/competing devices, and to do it at lower cost. Resistance bands may not be our best option, due to a much greater range of motion and loss of elasticity over time. As we brainstorm this week, we'll consider other options.

### Activities

09/18/09	Amy	IRB quizzes	0.5 hr
09/22/09		Research	0.5 hr
09/22/09	Val	IRB quizzes, website, research	2 hr
09/23/09	Deborah	IRB quizzes	0.75 hr
09/24/09		Progress report/research	1 hr
09/22/09	Colleen	IRB quizzes	0.5 hr
09/22/09		Speaking with Lode Representative	0.5 hr
09/17/09	Team	Client meeting	0.75 hr
09/23/09		Team meeting	1 hr

### Previous Project Hours

Colleen: 2.75    Val: 1.25

Amy: 3            Deb: 2

Team: 4.5

**Total: 13.5**

### Project Timeline

Week ending:	September				October				November				December	
Task	18	25	2	9	16	21	30	6	13	20	27	4	11	
<b>Product Development</b>														
Background Research														
Brainstorm														
Decision matrix														
First Prototype Construction														
Testing														
<b>Deliverables (due)</b>														
PDS														
Prelim. Report														
Poster Presentation														
Evals/notebooks														