

# Leg Ergometer for Human Exercise Blood Flow Studies

Progress Report 13, May 3, 2007

## Team Members:

Amy Weaver (Team Leader) [aweaver@wisc.edu](mailto:aweaver@wisc.edu)  
Calista Roen (Communicator) [roen@wisc.edu](mailto:roen@wisc.edu)  
Lacey Halfen (BSAC) [halfen@wisc.edu](mailto:halfen@wisc.edu)  
Hyungjin Kim (BWIG) [kim22@wisc.edu](mailto:kim22@wisc.edu)

## Client:

William G. Schrage, Ph.D.  
Dept. of Kinesiology  
[wschrage@education.wisc.edu](mailto:wschrage@education.wisc.edu)

## Advisor:

Paul Thompson  
[pthompson@wisc.edu](mailto:pthompson@wisc.edu)

**Date:** April 27, 2007 to May 3, 2007

## Problem Statement:

The goal is to design a leg ergometer to be used by William Schrage in his lab. The test subject will use the ergometer to maintain a constant kicking motion while the femoral artery is imaged using an ultrasound. The information is used to determine blood flow to the leg during exercise.

## Project Schedule:

1/26/07 – Choose team and project, meet with client  
2/2/07 – Background research, preliminary design ideas, begin work on PDS  
2/9/07 – Continue background research, complete and post PDS  
2/16/07 – Brainstorm  
2/23/07 – Develop design alternatives  
3/2/07 – Decide on design alternatives, work on mid-semester presentation and report  
3/9/07 – Give mid-semester presentation, finalize and turn in mid-semester report  
3/16/07 – Decide on final design  
3/23/07 – 4/13/07 – Work on final design  
4/20/07- Perform tests on final design, determine and make adjustments  
4/27/07 – Finalize design and final presentation, begin work on final paper  
5/4/07 – Give final poster presentation, finalize and turn in paper  
5/11/07 – Final meeting with advisor

## Last Week's Goals:

- Purchase components to attach bike and seat
- Purchase/order boot
- Assemble final design
- Test for accuracy

- Acquire force sensor
- Finish final presentation

**Summary of Team Accomplishments:**

- Purchased remaining components
- Completed prototype
- Performed tests
- Finished final presentation

**Summary of Individual Accomplishments:**

- Amy wrote the progress report
- Hyungjin updated the website
- Cali kept the client updated with project progress
- Amy and Cali tested the design

**Upcoming Week's Team Goals:**

- Give final poster presentation
- Finish and turn in final paper

**Difficulties:**

We did not encounter any major difficulties.

**Activities:**

Amy

team meeting 1.0 hr  
 work on final design 15 hr  
 shopping 3 hr  
 work on final presentation 1.5 hr  
 progress report 0.5 hr

Lacey

team meeting 1.0 hr  
 work on final design 12 hr  
 shopping 3 hr  
 work on final presentation 1.0 hr

Calista

team meeting 1.0 hr  
 work on final design 15 hr  
 contacting client .5 hr  
 researching purchases 2 hr  
 work on final presentation 2.5 hr

Hyungjin

team meeting 1.0 hr  
 work on final design 12 hr  
 shopping 3 hr  
 work on final presentation 0.5 hr  
 updating website 0.5 hr

**Team Total Hours for this week: 55.0**

**Cumulative Team Hours to date: 259.5**