EE 491 Weekly Report #10 **Date:** 11/11/2013

Group Project: Garmin - Energy Harvesting in Fitness Electronics
Website: http://seniord.ece.iastate.edu/may1417/index.html
Project Number: May14-17
Client: Adam Rasmussen
Advisor: Dr. Degang Chen
Group Members:

Tyler Chenhall – Project Leader & Foot-Pod Team Member
Rebekah Dejmal – Communications & Webmaster & Foot-Pod Team Member
Catherine Homan – Research & HR Monitor Team Member
Allison Sapienza - Research & HR Monitor Team Member
Omer Vejzovic – Research & Foot-Pod Team Member
Jeramie Vens - Research & HR Monitor Team Member

Accomplishments in the Past Week

- Held a meeting with our advisor & client
- Held separate meetings for the thermo & piezo groups
- Continued researching energy harvesting strategies
  - Focusing on Piezoelectric, Peltier & Seebeck effect
  - Research is being focused on finding energy harvesting parts and ICs that would be useful in a human-wearable device
- Developed designs for the two energy harvesting prototypes
  - The mechanical (foot pod group) is almost done with the schematic. The main components have been selected & sampled, and final adjustments are being made prior to creating a layout. Some mechanical harvester components were also tested.
  - The thermo team reviewed their schematic and layout with an EE492 group, and submitted the board layout to be manufactured

Plan for the Upcoming Week

- Work on the research document for Adam
- Continue research on energy harvesting & parts
- Finish & submit the 2nd draft of the project plan
- Layout the mechanical energy harvesting circuit
- Meet with Dr. Chen (& Adam Rasmussen via conference call) on Monday

Pending Issues

- none

Individual Contributions

- Tyler
  - Took meeting notes & created the weekly report
  - Followed up with TQ Electronics for information on low frequency mechanical energy harvesting parts
  - Performed a few basic power output tests on the shake generator from Adam, and piezoelectric samples from Mide
  - Created a rudimentary mount setup for the Mide piezoelectric samples
  - Worked on the project plan
- Rebekah
  - Managed communications with Adam and others
  - Worked on the website, and transferred it to the new server location
  - Created the foot pod energy harvesting schematic in Multisim
  - Started the foot pod circuit layout
- Catherine
  - Worked on the heart rate monitor energy harvesting schematic & layout
  - Looked at parts for the HRM energy harvesting circuit
  - Did some research for the Research Document
- Allison
  - Finished routing the HRM energy harvesting circuit layout
  - Created concept sketches to go in the 2nd draft of the Project Plan
  - Recorded notes for our meeting and discussion with an EE492 group
- Omer
  - Reviewed the foot pod energy harvesting schematic
  - Researched relays and auto-switching power multiplexers for the foot pod circuit
- Jeramie
  - Helped finish the HRM energy harvesting circuit board design
  - Ordered the HRM circuit board
  - Worked on the 2nd draft of the Project Plan document

Individual Hourly Contributions

- Tyler – 10.2 hours
- Rebekah – 7.5 hours
- Catherine – 3.5 hours
- Allison – 10 hours
- Omer – 6.2 hours
- Jeramie – 5.5 hours