Gannon University HARD payload
Status Report #2
2/22/2012

1. **Activities of the team members**

   Detector Module
   - Photonique's amplifier circuit boards are tested for functionality. PSpice simulation of the circuit is being carried out to properly bias the transistor in the amplifier circuit.

   Nano-material subsystem
   - Research done on nanotechnology (i.e. atomic force microscopy and dip pen nanolithography)
   - Met and discussed actions with the professor in charge of nanotechnology

   Microprocessor/CPU module
   - Achieved a temperature reading from the microprocessors
   - Figured out the code for the motor
   - Initial codes written to interface with, and extract timing info, from the GPS.

   Thermal Control
   - Determined to use 20x10 mm ceramic heaters to generate heat for thermal control of the electronic parts inside of the payload. About 60 units of the ceramic heaters are expected to do the job (subject to further testing once parts are in).

2. **Issues encountered during payload design / development**
   - Photonique's amplifier board is not producing the desired output signal as one of the two transistors on the board seems incorrectly biased to stay on for amplification of the analog input signal.
   - Code for the GPS is not functioning properly with the microprocessor.

3. **Milestones achieved**
   - Interface between the Microprocessor and the GPS-based position/location detection has been completed, and the tracking subsystem has been tested and implemented.

4. **Current team members and leader**

   Robby Frantz, Electrical Engineering
   Dan Grasinger, Computer Engineering
   Nichole McGuire, Electrical Engineering (Team Lead)
   Aaron Neiman, Computer Engineering
   Joe Veneri, Electrical Engineering
   Emily Wright, Electrical Engineering

   Dr. Wookwon Lee, ECE Faculty Advisor
   Dr. Nicholas Conklin, Physics Faculty Advisor