ECE5640 **High Performance Computing** **Spring 2014**

Homework 3: Due Friday, February 21 at noon

Homework is due on Friday, February 21 at noon. Code, scripts and output files should be uploaded to Blackboard. Please print a copy of your report and hand it in to Prof. Leeser's mailbox in 440 Dana.

Programs should be run on the Master cluster in COE. Please use qsub to submit your job.

1. (30 pts) Run `vector_add` in cuda, based on the code from lecture 13 slides 7 through 10, on the master cluster in COE. Fix the error with cudaFree in the code. Turn in your code, shell script and the output.
2. (30 pts) Run your code from part 1 on vectors of sizes 100, 200, ... 1000. Run it on the GPU on master and on the GPU on the nodes. Report your run times.
3. (30 pts) Run your code from part 1 on vectors of sizes 128, 256, ... 1024. Run it on the GPU on master and on the GPU on the nodes. Report your run times.
4. (10 pts) Comment on your code. Why is this an inefficient layout? Is there a difference in run times for powers of 2 and powers of 4 in length?