

**CS 791v: Topics: Parallel Computing**

**Spring 2015**

**Programming Assignment 4**

**Vector Reduce – Round 2**

**Assigned Date**

2/12/2015

**Due Date**

2/19/2015

**Overview**

* For this assignment, you will start with PA2, fix some issues and add enhancements.
* Fixes:
  + You should be able to reduce vectors of any size. With Threads and Bocks of any size.
* Enhancements:
  + After you do the warp reduction and block reduction you have several options/versions of the CUDA code (this could be selected by a command-line parameter or a compile time define)
    1. Have the kernel end and go back to the CPU which then calls the same kernel with different parameters.
    2. Have the kernel call the same kernel with different parameters.
    3. Have the Block sums passed back to the CPU and then summed there.

**Project Requirements**

* 2 versions of the code:
  + A compiled and running sequential C program
  + A compiled and running CUDA program
* Multiple timings of runs of various sizes.
* Appropriate graphs for each version/option
* A comparison among versions/options

**Deliverables**

* Bring output to class for discussion on the day the project is due.
* Have a pdf of your writeup and a zip of your source code emailed to Fred Harris and Lee Barford (DO NOT send binaries). [DO NOT ZIP the PDF]
  + Firstname dot Lastname at … (Fred is cse, Lee is gmail)
  + Subject: CS791v-PA4
  + 1 message – 2 attachments (pdf and zip)