CSCI 532 – CUDA Assignment 2

Write a general matrix multiplication routine that uses shared memory. You should have a host function with the following signature:

```c
int matrix_multiply(const float * M, const float * N, float * P, int m, int n, int p)
```

- The function multiplies matrices $M$ and $N$, putting the result in matrix $P$. $M$ should be of size $m \times n$, $N$ is of size $n \times p$, and $P$ is of size $m \times p$. $m$, $n$, and $p$ must be $\geq 3$. The return value is for error codes and returns 0 on success.

- Write a driver program that uses command line arguments for $m$, $n$, and $p$, generates random values for $M$ and $N$ and multiplies the matrices. Optionally, the results should be checked against a CPU version of the same multiplication.

- To turn in your assignment, send a copy of your source code, your Makefile, and your PBS script to hpc-2015-3@graphics.cs.niu.edu.