Hands-on with Intel Xeon Phi Worksheet Name: _____

Add the following two lines to your .bashrc file (or other appropriate startup file for your shell):

```
source /opt/intel/composerxe/bin/compilervars.sh intel64
source /opt/intel/impi_latest/intel64/bin/mpivars.sh
```

and then source your modified .bashrc file.

Do as many of the following activities as you can. You do not need to do all of them. Most of the activities just involve simple modifications of the example programs shown in class. Return this worksheet with your answers before the next class.

1. Log into one of the Xeon Phi coprocessors. Which coprocessor did you log into? How many cores are on this coprocessor? (There are many ways to find out these answers.)

2. Run the stream benchmark on a Xeon Phi coprocessor in native mode. What is the best bandwidth that can be achieved? How many threads were used to achieve this bandwidth? Repeat with the CPU on the host.

3. Run the dgemm-bench benchmark on a Xeon Phi coprocessor in native mode. What is the best bandwidth that can be achieved? How many threads were used to achieve this bandwidth? How did you set KMP_AFFINITY to achieve this?

4. Repeat the above using all CPU cores on the host to see how much faster/slower is the coprocessor.

5. What is the latency and bandwidth between two MPI processes on the Xeon Phi coprocessor? You can a “ping pong” benchmark code to measure this. Repeat for a process on the host and on the Xeon Phi coprocessor.

6. Write and run a simple hello world program to demonstrate offloading onto the Xeon Phi coprocessor.