**Blue Waters Petascale Semester Curriculum v1.0**

**Unit 7: CUDA**

**Lesson 5: Adding 2 vectors in CUDA**

**Exercise Instructions for Students**

*Developed by Sanish Rai for the Shodor Education Foundation, Inc.*

•You are given the code for vector addition program in CUDA

•Write a similar program for multiplying three vectors.

Some points to consider:

* Change the SIZE to different values and observe the results
  + If you make SIZE too big, make sure to change data types in the code appropriately
* Why do we need to do (int)ceil((float)SIZE / threads) and not just SIZE/threads ?
* Why do we need to do *if (thread\_id < n)* in the kernel?
* Why do we need to do

*thread\_id = blockIdx.x \* blockDim.x + threadIdx.x* and not *thread\_id = threadIdx.x;*



*Except where otherwise noted, this work by The Shodor Education Foundation, Inc. is licensed under CC BY-NC 4.0. To view a copy of this license, visit*[*https://creativecommons.org/licenses/by-nc/4.0*](https://creativecommons.org/licenses/by-nc/4.0)

*Browse and search the full curriculum at*[*http://shodor.org/petascale/materials/semester-curriculum*](http://shodor.org/petascale/materials/semester-curriculum)

*We welcome your improvements! You can submit your proposed changes to this material and the rest of the curriculum in our GitHub repository at*[*https://github.com/shodor-education/petascale-semester-curriculum*](https://github.com/shodor-education/petascale-semester-curriculum)

*We want to hear from you! Please let us know your experiences using this material by sending email to* [*petascale@shodor.org*](mailto:petascale@shodor.org)