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

**Unit 6: Hybrid MPI + OpenMP**

**Lesson 2: When to Use OpenMP vs. MPI vs. Both**

**References / Further Reading**

*Developed by Colleen Heinemann for the Shodor Education Foundation, Inc.*

Hybrid Parallelism: Parallel Distributed Memory and Shared Memory Computing

<https://software.intel.com/content/www/us/en/develop/articles/hybrid-parallelism-parallel-distributed-memory-and-shared-memory-computing.html>



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*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)