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

**Unit 5: MPI**

**Lesson 3: Collective vs. Point-to-Point Communication**

**References / Further Reading**

*Developed by Mobeen Ludin for the Shodor Education Foundation, Inc.*



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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)

1. [Open MPI Organization/Community](https://www.open-mpi.org/doc/)
2. [Top500 List](https://top500.org/) of supercomputers in the world
3. [MPI Library Man Pages](https://www.open-mpi.org/doc/current/)
4. [MPI Standards](http://www.mcs.anl.gov/research/projects/mpi/)
5. [MPI Tutorials](http://www.mcs.anl.gov/research/projects/mpi/learning.html)
6. [More MPI Tutorials](https://computing.llnl.gov/tutorials/mpi/)