Welcome to the XSEDE MPI Workshop

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Parallel Computing Specialist
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Who are we?

Your hosts:
Pittsburgh Supercomputing Center

Our satellite sites:
Purdue University
Stanford University
Michigan State University
Ohio Supercomputer Center
University of Tennessee-Knoxville
University of Houston, Clear-Lake
King Abdullah University of Science and Technology

XSEDE
Extreme Science and Engineering Discovery Environment

PITTSBURGH SUPERCOMPUTING CENTER

Who am I?

John Urbanic
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Parallelize codes with

- MPI
- OpenMP
- OpenACC
- Hybrid

Mostly for XSEDE platforms. Mostly to extreme scalability.

XSEDE
Extreme Science and Engineering Discovery Environment
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XSEDE HPC Monthly Workshop Schedule

- August 13,14 — *HPC Monthly Workshop*: OpenACC
- September 4,5 — *HPC Monthly Workshop*: MPI
- October 2 — *HPC Monthly Workshop*: OpenMP
- November 5,6 — *HPC Monthly Workshop*: OpenACC
- December 4,5 — *HPC Monthly Workshop*: MPI
- January 22 — *HPC Monthly Workshop*: OpenMP
- February 4 — *HPC Monthly Workshop*: Big Data, Hadoop and SPARQL
- March 5,6 — *HPC Monthly Workshop*: MPI
- April 1 — *HPC Monthly Workshop*: OpenACC
- May 7,8 — *HPC Monthly Workshop*: MPI
- June 24-27 — *HPC Monthly Workshop*: HPC Summer Boot Camp
- August 5 — *HPC Monthly Workshop*: OpenACC
- September 2 — *HPC Monthly Workshop*: Big Data
- October 7 — *HPC Monthly Workshop*: OpenMP
- **November 5,6** — ***HPC Monthly Workshop*: MPI**
- **December 4** — ***HPC Monthly Workshop*: OpenACC**

HPC Monthly Workshop Philosophy

- Workshops as long as they *should* be.
- You have real lives…
  in different time zones…
  that don't come to a halt.
- General Agenda
  - Lightweight first morning to get all the logistical nonsense out of the way so we can focus on…
  - Intense afternoon
  - Second day is advanced and optional topics (to allow you to continue with exercises at your pace)
- Learning is a social process
  - This is not a MOOC

Agenda

Wednesday, November 5

11:00	Welcome
11:15	Computing Environment
12:00	Intro To Parallel Computing
1:00	Lunch Break
2:00	Introduction To MPI
3:30	Intro Exercises
4:10	Intro Exercises Review
4:30	Scalable Programming: Laplace Exercise
5:00	Adjourn / Laplace Exercises

Thursday, November 8

11:00	Laplace Exercise
12:00	Laplace Solution
12:30	Lunch break
1:30	Advanced MPI
2:30	Outro To Parallel Computing
3:30	Exercises
4:30	Adjourn

Resources

Your local TAs

Questions from the audience

On-line talks

bit.ly/XSEDE-Workshop

Evaluation Form

Should get one from your local TA

Auditing too

Please turn them in when you leave

We take your feedback very seriously

Getting Time on XSEDE

https://portal.xsede.org/web/guest/allocations