Welcome to the XSEDE MPI Workshop

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Parallel Computing Scientist
Pittsburgh Supercomputing Center
Who are we?

Your hosts:
Pittsburgh Supercomputing Center
Who am I?

John Urbanic
Parallel Computing Scientist
Pittsburgh Supercomputing Center

Parallelize codes with

- MPI
- OpenMP
- OpenACC
- Hybrid and Big Data/Machine Learning mixes of these

 Mostly for XSEDE platforms. Mostly to extreme scalability.
XSEDE HPC Monthly Workshop Schedule

- September 3-4  HPC Monthly Workshop: MPI
- October 1-2    HPC Monthly Workshop: Big Data
- November 5     HPC Monthly Workshop: OpenMP
- December 3-4   HPC Monthly Workshop: Big Data
- January 21     HPC Monthly Workshop: OpenMP
- February 19-20 HPC Monthly Workshop: Big Data
- March 3        HPC Monthly Workshop: OpenACC
- April 7-8      HPC Monthly Workshop: Big Data
- May 5-6        HPC Monthly Workshop: MPI
- June 2-5       Summer Boot Camp
- August 4-5     HPC Monthly Workshop: Big Data
- September 1-2  HPC Monthly Workshop: MPI
- October 6-7    HPC Monthly Workshop: Big Data
- November 3     HPC Monthly Workshop: OpenMP
- December 1-2   HPC Monthly Workshop: Big Data
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.

- Learning is a social process
  - This is not a MOOC
  - But this is also not the Wide Area Classroom
    - …so bear with us.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>11:00</td>
<td>Welcome</td>
</tr>
<tr>
<td>11:15</td>
<td>Computing Environment</td>
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<tr>
<td>12:00</td>
<td>Intro To Parallel Computing</td>
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<tr>
<td>1:00</td>
<td>Lunch Break</td>
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<tr>
<td>2:00</td>
<td>Introduction To MPI</td>
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<tr>
<td>3:30</td>
<td>Intro Exercises</td>
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<tr>
<td>4:10</td>
<td>Intro Exercises Review</td>
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<tr>
<td>4:30</td>
<td>Scalable Programming: Laplace Exercise</td>
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<tr>
<td>5:00</td>
<td>Adjourn / Laplace Exercises</td>
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**Wednesday, May 6th**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>11:00</td>
<td>Advanced MPI</td>
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<tr>
<td>1:00</td>
<td>Lunch break</td>
</tr>
<tr>
<td>2:00</td>
<td>Laplace Review</td>
</tr>
<tr>
<td>2:30</td>
<td>Outro To Parallel Computing</td>
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<tr>
<td>3:15</td>
<td>Parallel Debugging and Profiling Tools</td>
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<tr>
<td>3:30</td>
<td>Exercises</td>
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<tr>
<td>4:30</td>
<td>Adjourn</td>
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Resources

Our TAs

Questions from the audience

On-line talks

Copying code from PDFs is very error prone. Subtle things like substituting “-” for “_” are maddening. I have provided online copies of the codes in a directory that we shall shortly visit. I strongly suggest you copy from there if you are in a cut/paste mood.

The YouTube Channel Has Arrived!

Due to overwhelming demand, and a lot of editing, we have begun to post workshop videos on the XSEDE Monthly Workshop Training Channel:

XSEDETraining

They will be incrementally appearing in the coming months. Subscribe and give us feedback.
Getting Time on XSEDE

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

even simpler:

https://psc.edu/apply-for-an-xsede-startup-grant
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Check your email later for the post-event survey.

Surveys are conducted by an external evaluation team. XSEDE staff will not know who said what. If you have questions regarding the evaluation please contact: Lorna Rivera, lorna.rivera@gatech.edu, or Lizanne DeStefano, ldestefano6@gatech.edu