Welcome to the XSEDE OpenACC Workshop

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Who are we?

Your hosts:
Pittsburgh Supercomputing Center

Our satellite sites:
Tufts University
Pomona College
Purdue University
Stanford University
New York University
University of Delaware
University of Cincinnati
Northwestern University
Arizona State University
East Carolina University
Carnegie Mellon University
Ohio Supercomputer Center
University of South Carolina
Pennsylvania State University
Georgia Institute of Technology
University of Houston - Clear Lake
University of California, Los Angeles
National Center for Atmospheric Research
National Center for Supercomputing Applications
University of Tennessee, Knoxville - National Institute for Computational Sciences
Who am I?

John Urbanic
Parallel Computing Scientist
Pittsburgh Supercomputing Center

Parallelize codes with

- MPI
- OpenMP
- OpenACC
- Hybrid
- Big Data & Machine Learning

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.

- General Agenda
  - As much hands on as we can fit…
  - but now 2 weeks of follow on accounts

- Learning is a social process
  - This is not a MOOC
  - This is the Wide Area Classroom
    - so raise your expectations
Tuesday, March 3rd

11:00  Welcome
11:15  Computing Environment
11:45  Parallel Computing and Accelerators
12:15  Introduction to OpenACC
1:00   Lunch Break
2:00   Introduction to OpenACC and exercises
4:00   Using OpenACC with CUDA Libraries
4:30   Advanced OpenACC and OpenMP 4.0
5:00   Final Notes and Adjourn
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
XSEDE has an external code of conduct which represents our commitment to providing an inclusive and harassment-free environment in all interactions regardless of race, age, ethnicity, national origin, language, gender, gender identity, sexual orientation, disability, physical appearance, political views, military service, health status, or religion. The code of conduct extends to all XSEDE-sponsored events, services, and interactions.

Code of Conduct: [https://www.xsede.org/codeofconduct](https://www.xsede.org/codeofconduct)

Contact:
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- XSEDE ombudspersons:
  - Linda Akli, Southeastern Universities Research Association (akli@sura.org)
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  - Bryan Snead, Texas Advanced Computing Center (jbsnead@tacc.utexas.edu)
Earn an XSEDE OpenACC Digital Badge

- Test yourself on what you learn from this workshop and earn a digital badge!
- Go to: [http://www.hpc-training.org/xsede/moodle/](http://www.hpc-training.org/xsede/moodle/)
- Go to the course titled “XSEDE OpenACC Workshop” listed under ‘Available Courses.’
Check your email now 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@ceismc.gatech.edu, or Lizanne DeStefano, ldestefano6@gatech.edu