



Welcome to the ACCESS OpenACC GPU Programming Workshop

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Who are we?

Your hosts:

Pittsburgh Supercomputing Center

part of



ACCESS

Advancing
Innovation

Who am I?

John Urbanic

Parallel Computing Scientist

Pittsburgh Supercomputing Center

What I mostly do:

Parallelize codes with

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

ACCESS HPC Monthly Workshop Schedule

- April 7-8 *HPC Monthly Workshop: Big Data*
- May 5-6 *HPC Monthly Workshop: MPI*
- June 2-5 *Summer Boot Camp*
- August 10-11 *HPC Monthly Workshop: Big Data*
- September 14-15 *HPC Monthly Workshop: MPI*
- October 5-6 *HPC Monthly Workshop: Big Data*
- November 3 *HPC Monthly Workshop: OpenMP*
- December 7-8 *HPC Monthly Workshop: Big Data*
- January 24 *HPC Monthly Workshop: OpenMP*
- February 16,18 *HPC Monthly Workshop: Big Data*
- March 3 *HPC Monthly Workshop: OpenACC*
- April 6,8 *HPC Monthly Workshop: Big Data*
- May 26-27 *HPC Monthly Workshop: MPI*
- August 10-11 *HPC Monthly Workshop: Big Data*
- **November 7** ***HPC Monthly Workshop: OpenMP***
- December *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 the first **Wide Area Classroom** in 2 years! So bear with us.

Agenda

Wednesday, March 16th

- 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

Resources

Your local TAs

Questions from the audience

On-line talks:

<https://www.psc.edu/resources/training/hpc-workshop-november-2022-gpu-programming-using-openacc/>

The old XSEDE YouTube Channel

These are the last WAC versions of these events and have much of this content. Find them on the XSEDE Monthly Workshop Training Channel:

XSEDETraining

They will be incrementally appearing in the coming months on a new channel. Subscribe and give us feedback.

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.