

Welcome to the Pittsburgh Supercomputing Center OpenMP Workshop

John Urbanic

Parallel Computing Scientist
Pittsburgh Supercomputing Center

Who are we?



- If you find this a useful resource, you are welcome to apply for time to continue as a member of our research community.
- It is free.
- It is easy.

Who am I?

John Urbanic



*Distinguished Service Professor
Carnegie Mellon University*

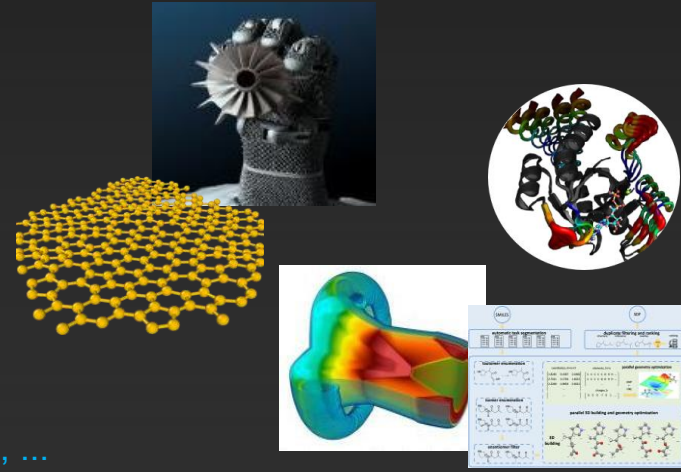


*Undergrad Advanced Computational Physics
Graduate Large Scale Computing
Data Science Capstone Projects*



*Parallel Computing Scientist
Pittsburgh Supercomputing Center*

*Code, code, code, on
Parallel platforms: MPI, OpenMP, OpenACC, ...
Big Data platforms: Spark, ...
Machine Learning: Spark, TensorFlow, PyTorch, ...*



PSC HPC Monthly Workshop Schedule

- January 7-8 *HPC Monthly Workshop: Big Data & Machine Learning*
- February 19 *HPC Monthly Workshop: OpenMP*
- March 4-5 *HPC Monthly Workshop: MPI*
- April 9 *HPC Monthly Workshop: GPU Programming*
- May 13-14 *HPC Monthly Workshop: Big Data & Machine Learning*
- June 13 *HPC Monthly Workshop: OpenMP*
- July 29-30 *HPC Monthly Workshop: Big Data & Machine Learning*
- August 12-13 *HPC Monthly Workshop: MPI*
- September 15,17 *HPC Monthly Workshop: Big Data & Machine Learning*
- October 14-15 *HPC Monthly Workshop: Big Data & Machine Learning*
- November 3April 9 *HPC Monthly Workshop: GPU Programming*
- December 15-16 *HPC Monthly Workshop: Big Data & Machine Learning*
- January 7-8 *HPC Monthly Workshop: MPI*
- February 11,13 *HPC Monthly Workshop: Big Data & Machine Learning*
- **March 11** ***HPC Monthly Workshop: OpenMP***
- April 8-9 *HPC Monthly Workshop: Big Data & Machine Learning*

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
 - This is the **Wide Area Classroom**
so raise your expectations!

Biggest Potential For Disappointment

- We absolutely, definitely, without question, wish we had more hands-on exercise time.
- This is by design and demand. The topics we cover are all greatly requested and attempts to delete any of them provoke outrage in our surveys. This demand has compressed our hands-on sessions.
- One solution is for you to use the remainder of our short days to do further work.
- We also assume you will use your extended access to do exercises. Usually this is just a bonus.
- Use your time wisely, and ask questions relentlessly.

Agenda

Wednesday, February 11th

- 11:00 Welcome
- 11:15 Computing Environment
- 11:30 It's a Multi-core World
- 12:00 Intro to OpenMP
- 1:00 Lunch Break
- 2:00 Exercise 1
- 2:45 Advanced OpenMP
- 4:00 Exercise 2
- 4:30 OpenMP and GPUs
- 5:00 Adjourn