Training Projects

Jason Allison (TACC)
Victor Eijkhout (TACC)
Sandra Kappes (NCSA)
Tom Maiden (PSC)
Susan Mehringer (Cornell)
Jeff Sale (SDSC)
Manu Shantharam (SDSC)
John Urbanic (PSC)

Accomplishments

This list has moved to a separate document.

Training Workshops (synchronous)

See the course calendar on the XUP for upcoming courses.

Monthly HPC and Big Data multi-site hands-on workshops (Tom Maiden, John Urbanic, PSC)

XSEDE HPC Training

- XSEDE HPC Workshop: OpenMP - January 17, 2017
- XSEDE HPC Workshop: BIG DATA - February 10, 2017
- XSEDE HPC Workshop: GPU Programming Using OpenACC - March 30, 2017
- XSEDE HPC Workshop: MPI - April 18-19, 2017
- XSEDE HPC Workshop: BIG DATA - May 18-19, 2017
- XSEDE HPC Workshop: Summer Boot Camp - June 6-9, 2017
- XSEDE HPC Workshop: OpenMP - August 15, 2017
- XSEDE HPC Workshop: GPU Programming Using OpenACC - March 12-13, 2017
- XSEDE HPC Workshop: MPI - October 3-4, 2017
- XSEDE HPC Workshop: GPU Programming Using OpenACC - November 7, 2017
- XSEDE HPC Workshop: BIG DATA - December 5-6, 2017
- XSEDE HPC Workshop: OpenMP - January 9, 2018
- XSEDE HPC Workshop: BIG DATA - February 7-8, 2018
- XSEDE HPC Workshop: GPU Programming Using OpenACC - March 6, 2018
- XSEDE HPC Workshop: MPI - April 3-4, 2018
- XSEDE HPC Workshop: BIG DATA - May 1-2, 2018
- XSEDE HPC Workshop: Summer Boot Camp - June 4-7, 2018
- XSEDE HPC Workshop: OpenMP - August 7, 2018
- XSEDE HPC Workshop: BIG DATA - September 5-6, 2018
- XSEDE HPC Workshop: MPI - October 2-3, 2018

Web-based live training (webinars) (Jason Allison, TACC)

- 2/3/17 Advanced Manycore Concepts (KNL)
- 2/3/17 Introduction To Manycore Programming (KNL)
- 3/22/17 Writing a Successful XSEDE Allocation Proposal
- 4/4/17 Writing a Successful XSEDE Allocation Proposal
- 4/6/17 Data Management At TACC
- 4/13/17 R HPC Training
- 4/14/17 MPI Foundations I
- 4/14/17 MPI Foundations II
- 4/20/17 Introduction To Hadoop And Spark On Wrangler
- 4/27/17 Introduction to Scala/Spark
- 4/28/17 Introduction To OpenMP
- 4/28/17 Optimizing Performance With OpenMP
- 6/13/17 Writing a Successful XSEDE Allocation Proposal
- 7/6/17 Writing a Successful XSEDE Allocation Proposal
- 9/13/17 Writing a Successful XSEDE Allocation Proposal
- 9/14/17 Introduction To OpenMP Using The Interactive Parallelization Tool (IPT)
- 10/6/17 MPI Foundations I & II
- 10/11/17 Writing a Successful XSEDE Allocation Proposal
- 12/7/17 Writing a Successful XSEDE Allocation Proposal
- 12/14/17 Introduction To OpenMP Using The Interactive Parallelization Tool (IPT)

In Person Training Support (Jason Allison, TACC)
• 4/1/2017 Introduction to Python at subr.edu - provided Maverick system access and node reservation for attendees

Broadening Participation Workshops (in person and virtual, Linda Akli, SURA)
TBD

Extended Support for Training, Education and Outreach tutorials (Jay Alameda, NCSA)
TBD

Web-based Live Training (Webinars) (Jeff Sale, SDSC)

• XSEDE HPC Workshop: Introduction to Running Jobs On Comet - January 8, 2019
• XSEDE HPC Workshop: Singularity Containers For High-Performance Computing - February 12, 2019
• XSEDE HPC Workshop: Working With Parallel File Systems On Comet - March 12, 2019

Quarterly New User Training (webinar)

Dates: 1-3 weeks after the allocations are awarded; date is dependent on speaker availability and other logistics.

Location/speaker alternates:
• PSC: August/September & February/March (contact: Tom Maiden)
• TACC: May/June & November/December (contact: Jason Allison)

Slide deck: Master is maintained by TACC. Both sites share their latest updates with the next presenting site.

Video posting: See the “XSEDE New User Tutorial” link at the top of https://www.xsede.org/web/xup/online-training

Online Training (asynchronous)

Online training is primarily provided in two formats: CI-Tutor (contact Sandie Kappes) and Cornell Virtual Workshop (contact Susan Mehringer).

Existing topics: See Online Training on the XUP.

In development:

CI-Tutor Modules - Contact Sandie Kappes for details
Cornell Virtual Workshop Modules - Contact Susan Mehringer for details

In development:
Intro to Wrangler
Globus File Transfer: Advanced

Planned:
Globus Sharing
Globus Data Management

XSEDE Training YouTube Channel

As mentioned earlier in the synchronous training section, XSEDE runs an HPC Monthly Workshop Series on Big Data, MPI, OpenMP, OpenACC, and GPUs. These are offered as live multicast workshops to ~25 sites per month. For those who are not at a site that offers these workshops, or want a refresher, the recordings are being made available on YouTube. The topics are grouped into playlists here:

https://www.youtube.com/XSEDETraining

The first two topics, OpenACC and OpenMP, are now available. Big Data is currently in work.
Assessment – Badges

XSEDE CEE proposes to offer Competency badges which may be earned independently or offered as part of workshop activities. They may be earned by anyone who demonstrates competency in an area by completing an assessment or submitting results from completed exercises. Assessments/exercises are based on the event or topic training objectives.

Learn more about the XSEDE Badge Project.

XSEDE New Staff Guide

XSEDE has developed a New Staff Guide designed for new XSEDE staff to become familiar with the many different parts of XSEDE. This orientation consists of a broadly-based general XSEDE overview. Individual WBSs are working on their own member-specific new staff training modules. Please explore the New Staff Guide and submit any feedback via this form.

Learn more about the XSEDE New Staff Guide.

Training Gaps

The Training group in CEE Workforce Development ESTEO in ECSS work together to identify and fill training gaps. Gaps are identified by:

- User survey input
- Request for user input here: https://www.xsede.org/for-users/training
- Help ticket input
- Quarterly email for input to
  - Campus Champions
  - SP Forum
  - XSEDE Staff

View the list of identified topics

Material Review

XSEDE staff conduct formal, anonymous peer reviews of XSEDE-sponsored training resources, as well as key training resources developed by XSEDE service providers. These reviews help inform roadmaps and other XSEDE-level training initiatives and provide valuable feedback to authors to help them improve their training materials. When appropriate, XSEDE staff also conduct less formal evaluations of non-XSEDE training resources that may be of value to the XSEDE users.

View the items currently in review

View the Material Review procedure

Course Listing Updates

The Course Catalog contains course listings from XSEDE, SPs, and community contributors. The web page content is driven by a master spreadsheet, maintained by the Training Lead. It is updated quarterly, as follows: The Training Lead contacts those with existing entries, along with new contributors, then the updated master spreadsheet is used to upload the new/updated content. If you have updates, please contact the Training Lead.

Community Contributors

The XUP training pages originally only included materials and links to XSEDE SP materials. Adding links to select materials from the community allows us to present a broader range of quality training materials, coordinate rather than duplicate development, and focus our development efforts on materials that do not already exist.

Learn more about Community Contributors

Roadmaps

The Course Catalog contains course listings from XSEDE, SPs, and community contributors. The web page content is driven by a master spreadsheet, maintained by the Training Lead. It is updated quarterly, as follows: The Training Lead contacts those with existing entries, along with new contributors, then the updated master spreadsheet is used to upload the new/updated content. If you have updates, please contact the Training Lead.

New Material Currently in Development

XSEDE Gateways Tutorials

Tutorial 1: How to Create a Science Gateways Application

XSEDE Science Gateways are rapidly becoming a preferred way for members of a specific research community to conduct computational science at scale. Several options for providing gateway-based access to advanced computing systems are available. XSEDE proposes to offer tutorials for those interested in supporting their own science gateway.
Tutorial 2: Deciding on a Science Gateway

The process of hosting an XSEDE Science Gateway can be long and involved with much uncertainty for those new to gateways technologies. This tutorial addresses this challenge by providing a step-by-step decision-tree approach to help researchers understand their options, the pros and cons of different approaches, and the steps required to succeed in establishing a science gateway.

XSEDE Data Visualization Webinar, Tuesday, October 9, 2018, 9am-11am PDT

This workshop had 38 registrants and was attended live by 18 participants. There were some challenges and problems with the TACC Viz Portal. The authentication service failed and we were not able to demonstrate the portal.

A visualization workshop has not been offered by XSEDE in a long time. The XSEDE Data Visualization Badge was developed without a specific XSEDE webinar to encourage XSEDE users to attempt the badge. This webinar is intended to address both of these issues.

This webinar is intended for XSEDE users who have limited experience with scientific visualization applications and would like to understand basic visualization principles and practices, and would like to develop basic visualization skills. It included hands-on demonstrations and practical examples for using XSEDE visualization resources including the TACC Visualization Portal, running jobs remotely on SDSC's Comet supercomputer or PSC's Bridges supercomputer using the VisIt visualization package. We will discuss some of the advantages and disadvantages of these options. We will briefly review and discuss the strengths and weaknesses of some of the most popular visualization applications including VisIt, Paraview, Matlab, R, and others. We will also briefly explore some of the more recent developments in visualization, including infoviz, graph networking, and advanced hyperglyph methods.

XSEDE Tutorial: Data Science With Python

This tutorial is targeted to a growing audience within the XSEDE community for Python with data science.

Learn more about the XSEDE Gateways Tutorial Project.