Training Projects

Jason Allison (TACC)
Stephen Cunningham (PSC)
Victor Eijkhout (TACC)
Sandra Kappes (NCSA)
Tom Maiden (PSC)
Susan Mehringer (Cornell)
Manu Shantharam (SDSC)
John Urbanic (PSC)
Cindy Wong (SDSC)

YouTube/XSEDETraining

This YouTube channel was initially created to provide access to the monthly HPC workshop series video. In this form, it grew to over 1000 subscribers. It was later decided to expand the content to allow additional staff-submitted materials. The procedure for these submissions is as follows:

1. When recording your video, please follow these recommendations:
    a. Strive for quality audio. Perhaps use a headset or USB microphone if your laptop audio is muffled.
    b. Enable your video. Being able to see the presenter creates a more engaging presentation and can help the audience to understand the content better.
    c. Please make sure that your slides are in presentation mode.
    d. Clearly introduce the speaker and the topic.
    e. Try not to deviate from the agenda.
    f. If you are answering questions, please remember to repeat the question to the audience before answering.
    g. The Code of Conduct and Terminology slides can be presented before the recording starts - There is a pointer to the code of conduct and terminology slides in the description of each video on the site.
    h. Thank the audience for their time.
2. The submitter (restricted to XSEDE staff) will complete a short google form, providing Title, Description, Link, and Contact info. https://docs.google.com/forms/d/e/1FAIpQLScp9yP6vDdcLt1r14AIp5tx-9d7LkmvuoXO-yw9pPzTaucz1A/viewform?usp=pp_url
3. When submitted, the form is automatically emailed to the review team, consisting of representatives from Training (Susan, Tom), ECSS (Jay), and BPP (Linda to assign per topic).
4. Reviewers will make a determination based on New/redundant content, XSEDE suitability, better on Channel suitability (e.g. XSEDETraining or XSEDEScience), and Quality. Recommendations for Playlist (existing or new) appreciated. If an email exchange doesn't easily result in a decision, a short call will be scheduled.
5. The decision will be recorded here (by Susan).
6. If approved, the video will be posted to YouTube/XSEDETraining (by Tom).

History of submissions:

- 6/16/2021 - Introduction to Delta - Submitted by Jay Alameda - APPROVED
- 10/21/2021 - XSEDE Code Performance and Scaling Training - Submitted by Jay Alameda - APPROVED

Social Media

Materials needed:

- Registration link
- Topic/Title
- Skill the training or workshop is seeking to teach
- Date of event/availability
- Training Format (Webinar, live, online tutorial, etc)
- any relevant links/images
-

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 : BIG DATA - September 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**
- **XSEDE HPC Workshop: GPU Computing and Programming On Comet - April 9, 2019**
- **XSEDE HPC Workshop: Distributed Parallel Computing With Python - May 14, 2019**
- **XSEDE HPC Workshop: A Quick Introduction to Machine Learning On Comet - June 11, 2019**
- **XSEDE HPC Workshop: Introduction to Deep Learning - October 17, 2019**
- **XSEDE HPC Workshop: Data Visualization With Python Using Jupyter Notebooks - December 12, 2019**
- **XSEDE HPC Workshop: Comet 101: Accessing and Running Jobs on Comet - April 16, 2020**
- **XSEDE HPC Workshop: Running Jupyter Notebooks on Comet - May 21, 2020**
- **XSEDE HPC Workshop: Expanse 101: Accessing and Running Jobs on Expanse - October 8, 2020**
- **XSEDE HPC Workshop: Comet to Expanse Transition Tutorial - October 29, 2020**
- **XSEDE HPC Workshop: Running Jupyter Notebooks on Expanse - December 10, 2020**

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

- The video is updated by TACC only, twice per year when they present.

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:

Science Gateways Roadmap (now completed and live on the CVW)

Intro to Wrangler

Globus File Transfer: Advanced

Data Science With Python - Part 1

Data Science With Python - Part 2

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.

Learn more about the XSEDE Gateways Tutorial Project.

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.

Learn more about the XSEDE Gateways Tutorial Project.

XSEDE Tutorial: Data Science With Python, Parts 1 & 2

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

Learn more ...