July 31, 2020

XSEDE Training

Susan Mehringer

XSEDE Training Lead

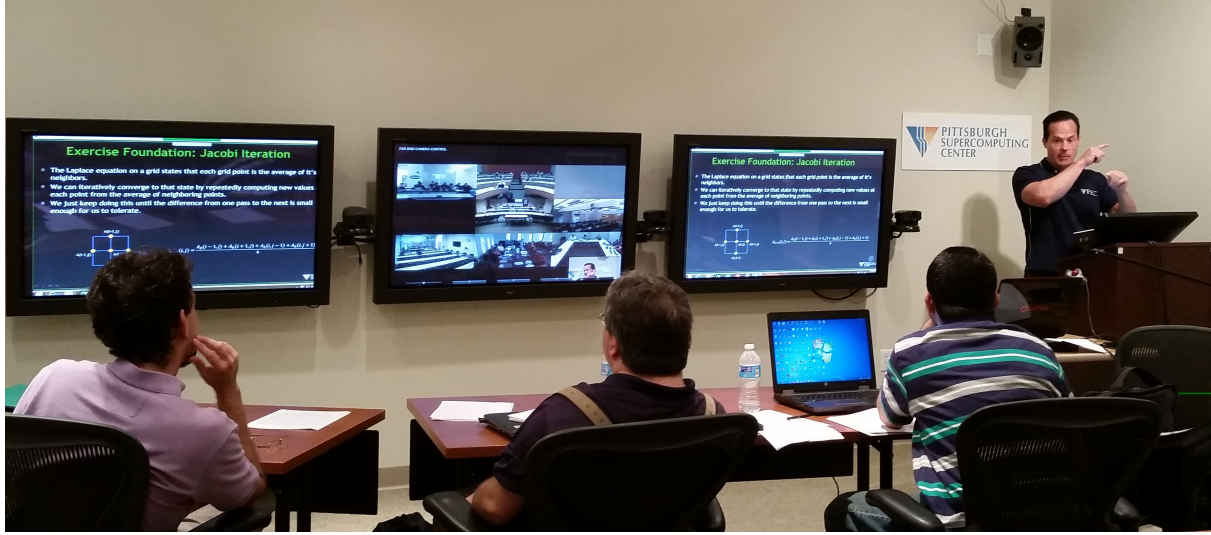
shm7@cornell.edu

XSEDE

Extreme Science and Engineering Discovery Environment

Supported by OAC 15-48562.

Overview



Training is available in a variety of formats, including multicast, webinars, online training, and in person workshops. Suggestions for new topics are encouraged via the feedback form. For more information, see:

- XSEDE Training Overview for a summary guide of materials available
- XSEDE Training Course Catalog including listings across formats and sites
- Course Calendar with registration for upcoming training courses
- Online Training on materials relevant to XSEDE users
- Badges are available
- Roadmaps are available
- Training materials focus on systems and software supported by the XSEDE Service Providers, covering programming principles and techniques for using resources and services. Training classes are offered in high performance computing, visualization, data management, distributed and grid computing, science gateways, and more.

A Brief Tour

- Sign up for Training Announcements
- XUP Training Page
  - Course Catalog
  - Course Calendar
  - Online Training
  - Roadmaps
  - Badges
- YouTube.com/XSEDETraining

XSEDE Monthly Workshop Series

- Rotating (Nuts and Bolts) Topics
  - MPI, OpenMP, OpenACC, Big Data, Summer Boot Camp
- Up to 25 satellite sites* per session
  - Sites are spread geographically and include MSIs and National Labs
- Register VIA XSEDE Portal:
  - https://portal.xsede.org/ course-calendar
- To Become a Satellite Site or Questions Contact:
  - Tom Maiden – tmaiden@psc.edu

**Webinars for the time being*

Acknowledgement: Tom Maiden

XSEDE Monthly Workshop: Big Data

Day 1		Day 2
11:00	Welcome	Machine Learning: Recommender System with Spark
11:25	Intro to Big Data	
12:00	Hadoop	
12:30	Intro to Spark	
1:00	Lunch	Lunch
2:00	Intro to Machine Learning	Deep Learning with Tensorflow
4:45	Bridges: A Big Data Platform	
5:00	Adjourn	Adjourn

Acknowledgement: Tom Maiden

XSEDE Training Providers

This group	Offers	On	To	Approx
Training	Async online modules	Many HPC topics	Everyone	Ongoing
Training, SP	Webcast	Getting started	Everyone	Quarterly
Training	Multicast live training	HPC Topics	Satellite sites	Monthly
Broadening Participation	On-site training	HPC and XSEDE	Underrepresented institutions	Quarterly (academic year focus)
ECSS ESTEO	Webcast and live training	New resources, new capabilities	XSEDE Staff	Annual series
ECSS ESTEO	All formats	Many HPC topics	Everyone	Ongoing
Service Providers	On-site and webcast	Local resource	Everyone	
ECSS, SPs	Webcast	Varied	Campus Champions	Quarterly

Events and registrations: https://portal.xsede.org/course-calendar

ESTEO

- Mentor Campus Champion Fellows
- Deliver live training events especially in collaboration with CEE Broadening Participation
- Orchestrate ECSS internal staff training seminars
- Respond to requests for service
  Review training modules, Retire training modules
- Support Meetings and BOFS
- Mentoring
- Review Education Allocation Proposals
- Support Campus Champions
- Manage US Participation in International HPC Summer School

Acknowledgement: Jay Alameda

Education

Curriculum and Educator Programs

XSEDE pursues innovation and collaboration in computational science education.

Campus Visits

XSEDE campus visits emphasize the need for computational science education and offer guidance concerning course content.

Campus visits bring together faculty, students, and administrators to discuss the importance of having a workforce that is ready to use

XSEDE campus visits emphasize the need for computational

Participating in Collaborative Online Courses

The XSEDE courses consist of recorded lectures that can be watched by students independently or in their own local classrooms. Each lecture comes with built-in quizzes that are used as part of the grading for the course. In addition, several computer exercises are typically available that students can run on XSEDE computational resources to gain practical experience and have credit for the work recorded in their class grade.

XSEDE sponsors full-semester online courses taught through collaborations with faculty at participating institutions.

The capstone assignment for a course often is a final project supervised by the local faculty members.

The first of these courses is Applications of Parallel Computers, taught by Jim Demmel at the University of California, Berkeley. View the course content.

How Faculty Can Participate

If you are a faculty member interested in collaborating with XSEDE in this program, you will need to create a course in your own academic schedule that your local students can register for and receive credit. You and your students will then use the online materials and XSEDE resources to complete the course.

Local faculty who participate in the program meet periodically with the XSEDE instructors and staff to discuss schedules, suggestions for course improvement, and any questions related to operations. The local faculties are responsible for assigning final grades to all of their own students.

https://www.xsede.org
/community-engagement
/educator-programs

Acknowledgement: Kate Cahill

XSEDE Broadening Participation Program

Expand awareness

- Campus Visits
- Conference Exhibiting
- Papers
- News

Identify programs and researchers who can benefit from XSEDE services

- Conference Exhibiting
- Campus Visits
- Training Events
- Consulting

Enable institutions and faculty to use advanced computing to increase their research productivity

- Build and Maintain a Thriving Peer Support Community
- Deliver Customized Training
- Connect Researchers with Expertise and Resources

Create scalable and sustainable models and best practices

- Enhance Curriculum
- Foster Productive Campus Champions
- Create Connections to the CI Ecosystem

Acknowledgement: Linda Akli

Cyberinfrastructure Resource Integration

- Software toolkits, consulting services, provider coordination
  - Cluster distribution, scientific software, XSEDE-like environment
  - Site visits and engagements (e.g. remote builds)
  - Information and support for joining the XSEDE federation
- Impacts
  - 9 clusters and more than 1 Petaflop of computing on CRI software
  - New data analytics program supported at Bentley University, short video at http://bit.ly/xsede-ba

Acknowledgement: Rich Knepper

Info/Contact

Training:
https://www.xsede.org/for-users/training

Extended Collaborative Support Services:
https://www.xsede.org/for-users/ecss

Cyberinfrastructure Integration:
https://www.xsede.org/ecosystem/ci-integration

Curriculum and Educator Programs:
https://www.xsede.org/community-engagement/educator-programs

Please share your suggestions, submissions, and feedback!

shm7@cornell.edu