

Cornell University
Center for Advanced Computing



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Welcome!

**Parallel Computing on Stampede
Introductory and Advanced Topics**

June 11, 2013

June 18, 2013



Center for Advanced Computing (CAC)

- Mission:
 - *To Enable the Success of Cornell Researchers, Collaborators, and Supporters whose Work Demands Advanced-Computing Solutions*
- Organization:
 - Cornell core facility
 - Staff of expert consultants, systems administrators & programmers
 - CAC Director reports to the Vice Provost for Research-
 - CAC has a Faculty Oversight Committee, chaired by VPR
 - Includes leaders in the fields of engineering, life sciences, social sciences, computer science, & business



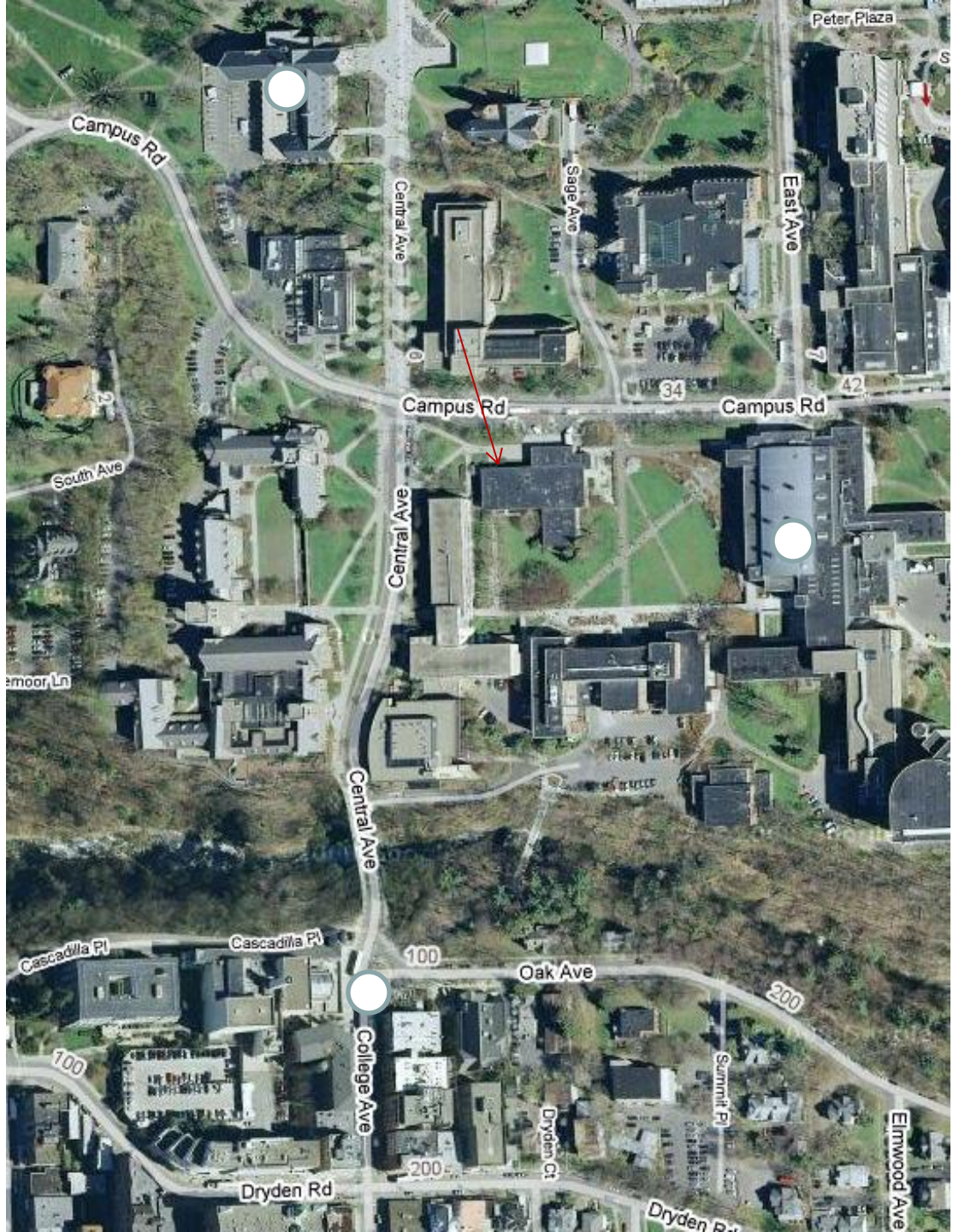
CAC Services

- Maintenance and support of general-purpose, high-performance computing systems
 - <http://www.cac.cornell.edu/services/HPCsystemsList.aspx>
 - Faculty and research group assistance in the preparation of proposals
- Research project participation and consulting
 - Parallel code development/optimization/extensive debugging or development
 - Database design, implementation and maintenance
 - Develop pipelines for data intensive research



Workshop Logistics

- Refreshments
 - Morning and afternoon breaks provided
 - No food or beverages permitted in training room
 - Lunch on your own
- Restrooms
- Room access





Workshop Web Page

<http://www.cac.cornell.edu/education/training/StampedeJune2013.aspx>

- Agenda
- Lecture slides
- Links
- Evaluation survey will come from XSEDE

Parallel Computing on Stampede

Introductory Topics -- June 11, 2013 -- Registration is closed

Advanced Topics -- June 18, 2013 -- **Registration**

Note: To attend both days, you must register for each one.

Cornell University
Carpenter Library
Blue Room

[Guest Wireless](#)
[CAC HPC Systems](#)
[CAC Services](#)

[XSEDE User Portal](#)
[XSEDE Allocations](#)
[TACC User Portal](#)
[Stampede Virtual Workshop](#)



1. Orientation

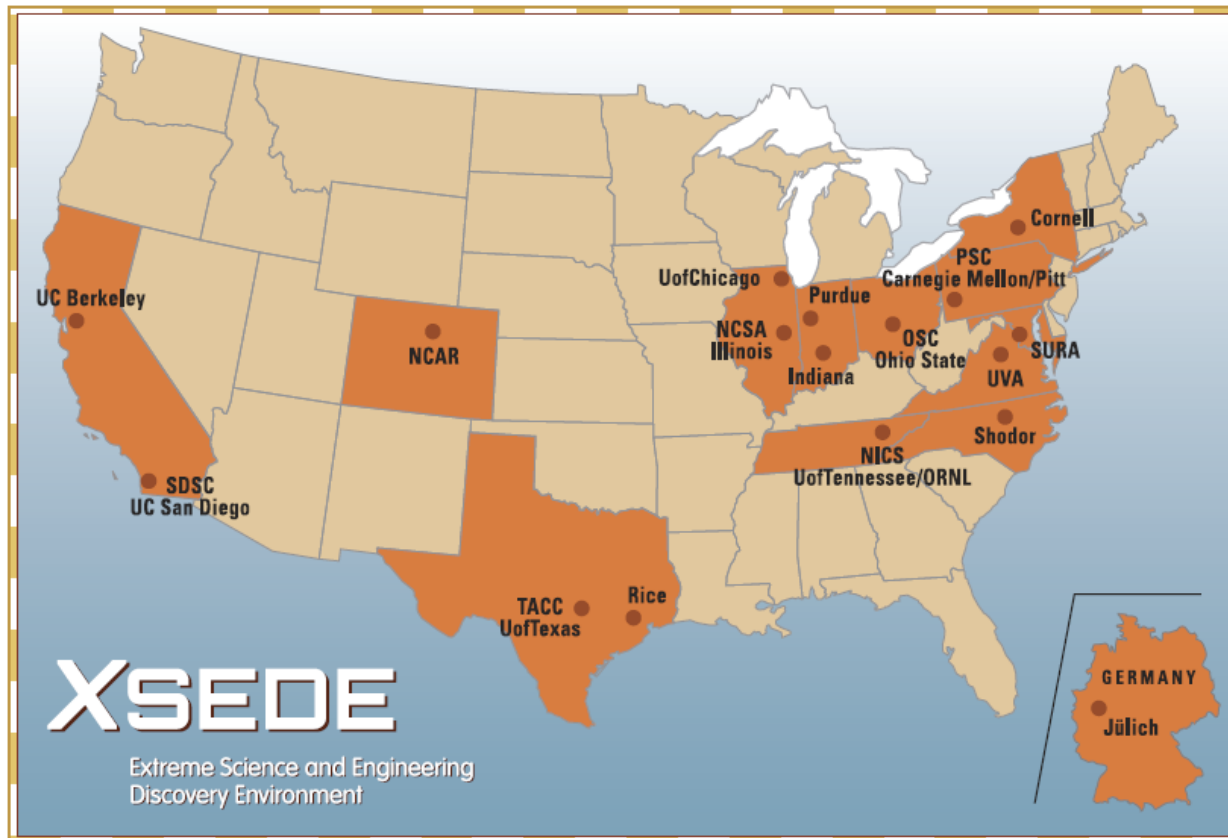


Orientation

- [XSEDE](#) – Extreme Science and Engineering Discovery Environment
 - Cyber infrastructure funded by NSF; a single virtual system
 - ~15 supercomputers & high-end visualization and data analysis resources. See [list and availability](#).
 - 17 partner institutions
- [TACC](#) – Texas Advanced Computing Center
 - [Stampede](#) – Dell Linux cluster
 - [Longhorn](#) – Dell Visualization Cluster
 - [Lonestar](#) – Dell Power Edge Cluster with Intel Xeon Phi coprocessors
- [CAC](#) – Cornell Center for Advanced Computing
 - [HPC Systems](#) – general use and private clusters
 - [Red Cloud](#) – on-demand research computing service



XSEDE Partner Institutions

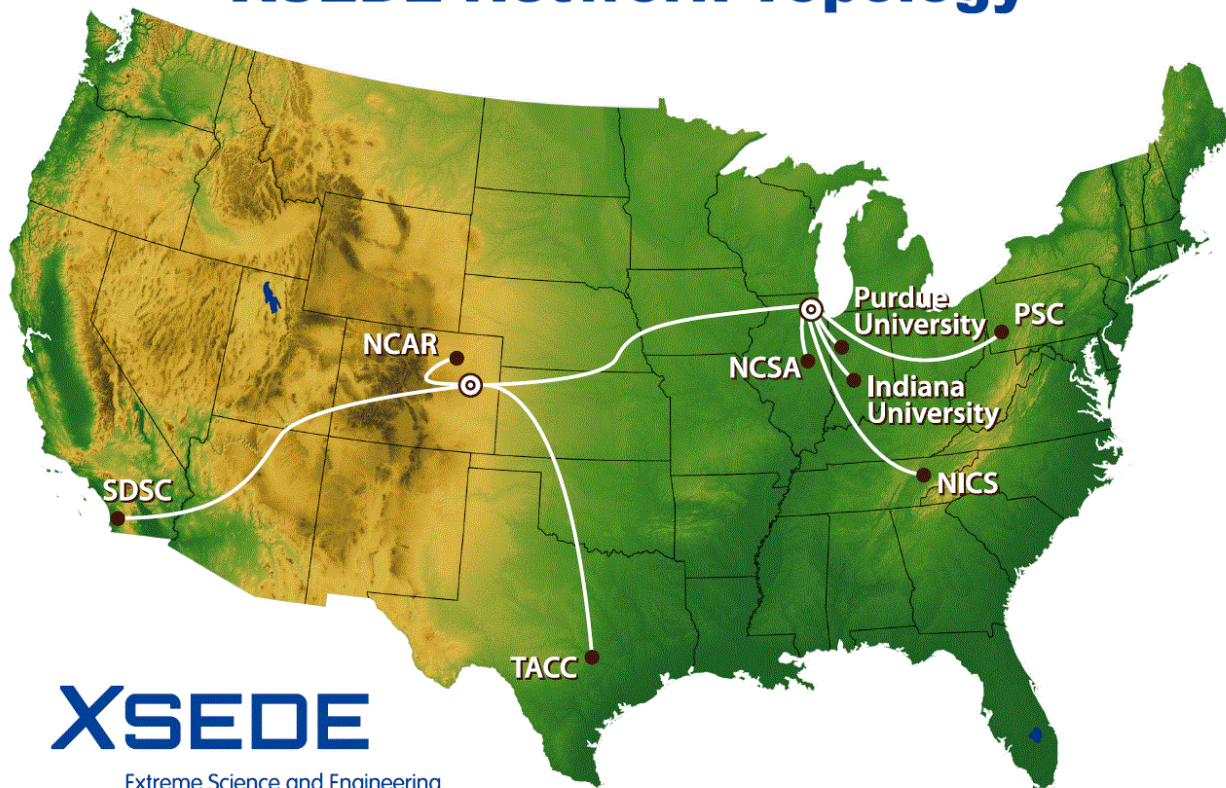


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XSEDE Network Topology

XSEDE Network Topology



XSEDE

Extreme Science and Engineering
Discovery Environment



XSEDE Resources at TACC/UT Austin

RESOURCE NAME	MANUFACTURER / PLATFORM	PEAK TERAFLUPS	DISK SIZE (TB)	AVAILABILITY
Stampede	Dell Dell Power Edge C8220 Cluster with Intel Xeon Phi coprocessors In production since January 2013. It is an NSF Track2 HPC acquisition.	9000	14336	Production through 2017-01-06
Lonestar	Dell PowerEdge Westmere Linux Cluster	302	1000	Production through 2014-01-31
Longhorn	Dell / NVIDIA Visualization & Data Analysis Cluster	20.7	210	Production through 2013-07-31



2. Accounts and Allocations



Computing Accounts

- Workshop/training accounts
 - Access to stampede.tacc.utexas.edu
 - ssh required
 - Account will be deleted after one week

- CAC Services
 - PI may set up projects for
 - compute time
 - consulting time
 - Maintenance
 - Storage
 - Red Cloud
 - <http://www.cac.cornell.edu/services/>



XSEDE Allocations

Allocations provide computing, storage, and support services.
<https://portal.xsede.org/web/guest/allocations>

- Startup – for testing and preparing allocation request
 - Up to 200,000 core-hours, for 1 year
 - Submit Abstract, Awarded every 2 weeks
- Research – usually for funded research project
 - Unlimited core-hours, for 1 year
 - 10 page Request, Awarded quarterly
 - Form only available during open submission period
- Education – for classroom instruction and training sessions
 - Up to 200,000 core-hours, for 1 year
 - Submit CV and abstract, Awarded/2 weeks



Campus Champions

- The Campus Champions program supports campus representatives as a local source of knowledge on XSEDE resources.
- Contact your Campus Champion for
 - Trial allocation
 - Information on XSEDE and cyberinfrastructure resources

<https://www.xsede.org/campus-champions>

Contact Susan Mehringer at shm7@cornell.edu



Campus Champions

