

Cornell University
Center for Advanced Computing



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Welcome!

**Parallel Computing at TACC:
Ranger to Stampede Transition**

November 6, 2012
December 11, 2012



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



TACC Resources

- **Ranger** is a open science research XSEDE resource built and operated by TACC as the first of the new NSF Track2 HPC acquisitions.
- The TACC Dell Linux Cluster (**Lonestar**) is a powerful, multi-use cyberinfrastructure HPC and remote visualization resource.
- **Stampede**, scheduled to begin production in early January 2013, will be one of the largest computing systems in the world for open science research.
- <http://www.tacc.utexas.edu/resources/hpc>



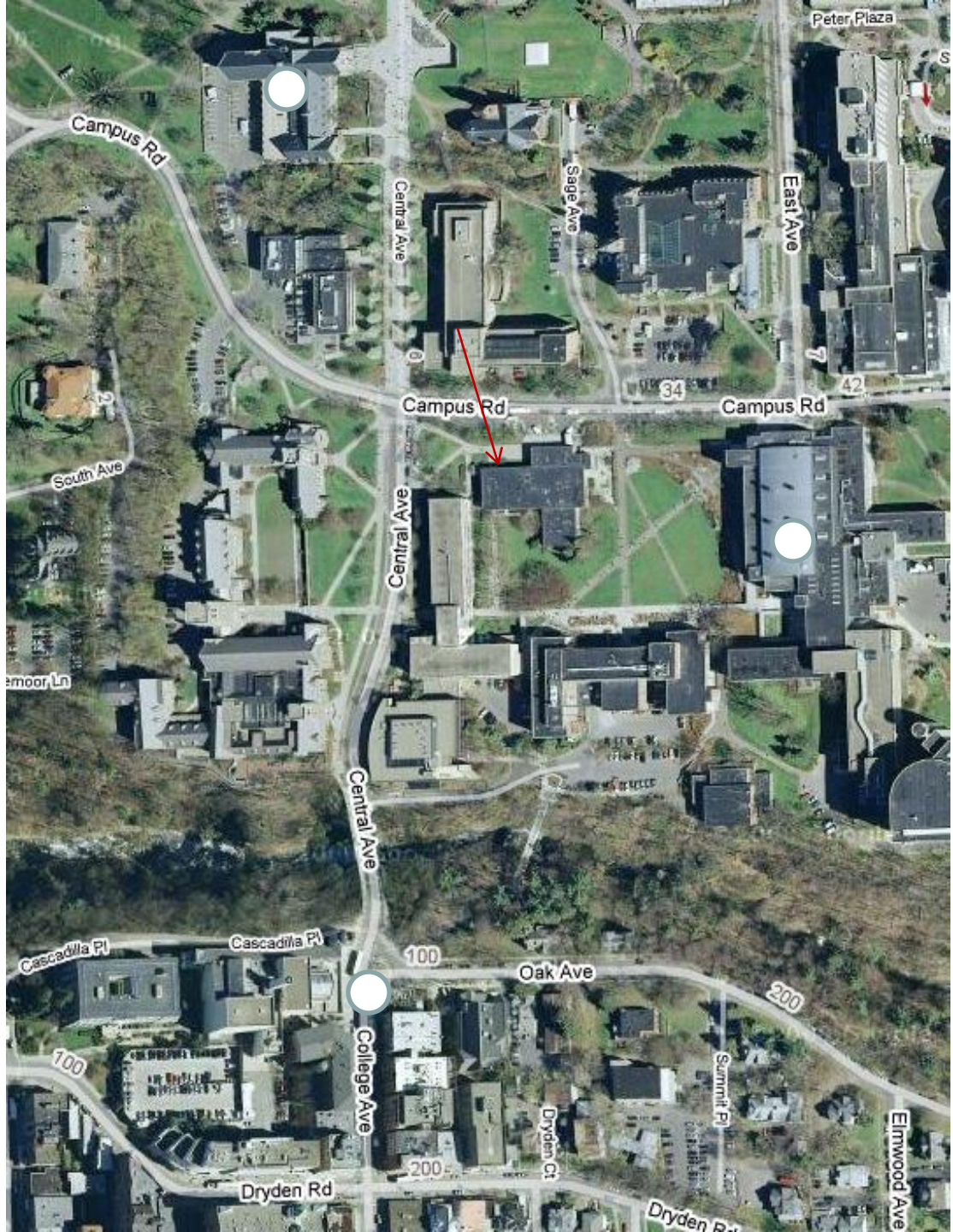
Computing Accounts

- Workshop/training accounts
 - Access to ranger.tacc.utexas.edu and lonestar.tacc.utexas.edu
 - ssh required
 - Account will be deleted after one week
- XSEDE Allocations
 - PIs may request Startup, Education, or Research allocations.
 - <https://portal.xsede.org/>
 - Go to Allocations tab
- CAC Services
 - PI may set up projects for
 - compute time
 - consulting time
 - Maintenance
 - Storage
 - Red Cloud
 - <http://www.cac.cornell.edu/services/>



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/parallelFall2012.aspx>

- Agenda
- Lecture slides
- Links

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[Registration Nov 6](#)
[Registration Dec 11](#)
Cornell University
Carpenter Library
Blue Room

[Guest Wireless](#)
[Participants](#)
[Evaluation Form](#)
[CAC HPC Systems](#)
[CAC Services](#)



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



1. Orientation

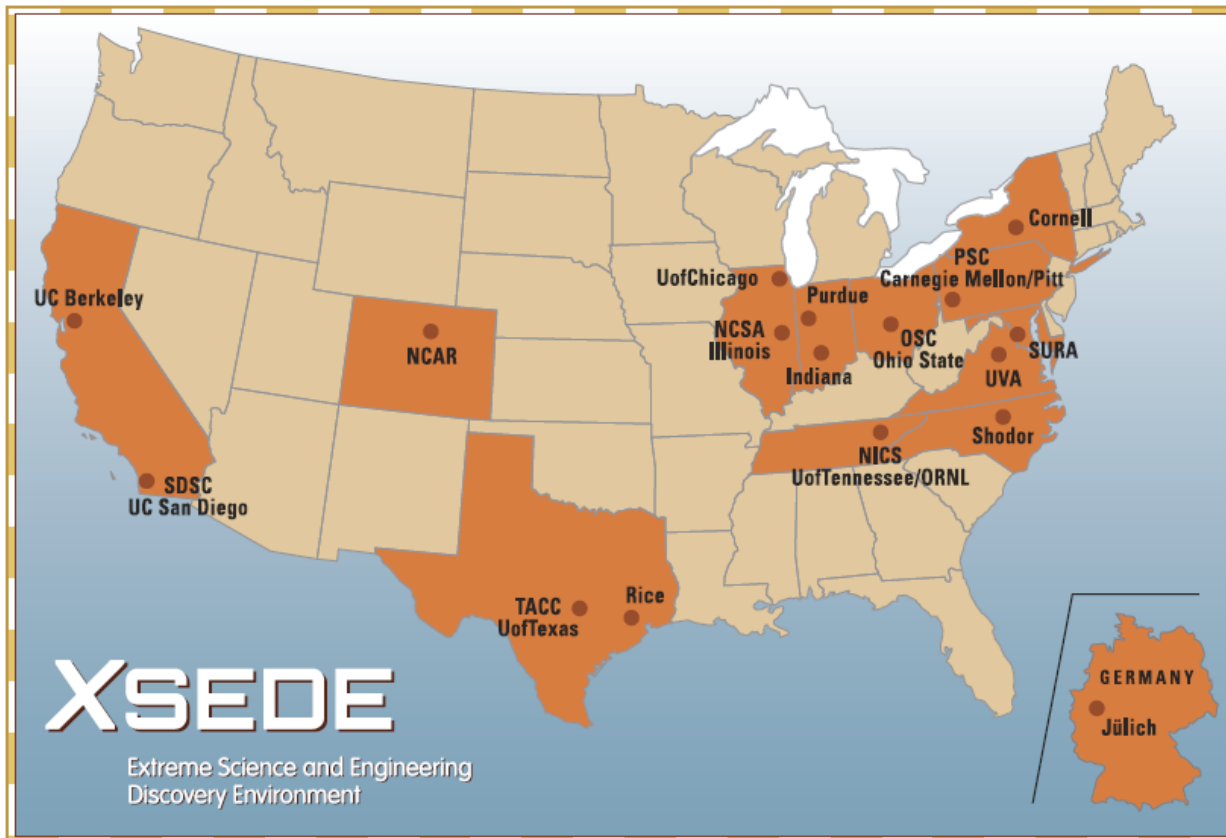


Orientation

- [XSEDE](#) – Extreme Science and Engineering Discovery Environment
 - Cyber infrastructure funded by NSF; a single virtual system
 - 16 supercomputers & high-end visualization and data analysis resources
 - 16 partner institutions
- [TACC](#) – Texas Advanced Computing Center
 - [Ranger](#) – Sun Constellation Linux Cluster
 - [Longhorn](#) – Dell Linux cluster
 - [Stampede](#) – Dell Linux cluster
- [CAC](#) – Cornell Center for Advanced Computing
 - [HPC Systems](#) – general use and private clusters
 - [Red Cloud](#) – on-demand research computing service



XSEDE



110311



XSEDE Resources at TACC/UT Austin

RESOURCE NAME	MANUFACTURER / PLATFORM	PEAK TERAFLUPS	DISK SIZE (TB)	AVAILABILITY
Ranger	Sun Constellation System	579.3	1730.0	Production through 2013-02-04
Lonestar	Dell PowerEdge Westmere Linux Cluster	302.0	1000.0	Production through 2014-01-31
Stampede	Dell Dell Power Edge C8220 Cluster with Intel Xeon Phi coprocessors	9000.0	14336.0	Coming Soon



2. Allocations



XSEDE Allocations

Allocations provide computing, storage, and support services.

- 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
- Education – for classroom instruction and training sessions
 - Up to 200,000 core-hours, for 1 year
 - Submit CV and abstract, Awarded/2 weeks

<https://portal.xsede.org/web/guest/allocations>



Ranger Allocations

- Stampede is scheduled for deployment in early January 2013
- Ranger and Spur will be decommissioned Feb 4, 2013
 - Move your files off Ranger/Spur \$WORK and \$SCRATCH by 3/31/13
 - Current Ranger/Spur users will receive more information by email
- When does your Ranger/Spur allocation expire?
 - If before Dec 31, 2012, request Stampede in your renewal request
 - If after Dec 31, 2012, you will automatically receive an allocation on Stampede, amounting to 1/3 of your Ranger/Spur balance on January 6, 2013. Allocation expiration dates will remain the same.



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