

Supercomputing at UCSB

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**ENTERPRISE
TECHNOLOGY
SERVICES**

**University of California
Santa Barbara**

Service Overview

- Help UCSB faculty, researchers, students :
 - Understand the capabilities of High Performance Computing (HPC) and get to include it in their research and education work.
 - Get access to local, regional and national HPC resources.
 - Maintenance of accounts, allocations, computing time, grant writing.
 - Provide technical expertise (~10 years of HPC research experience), and user support.
 - Connect UCSB users with the broader community in their field.
 - Provide training, organize workshops and seminars.

Resources Overview

- Triton Shared Computing Cluster (TSCC) at San Diego Supercomputing Center
- Extreme Science and Engineering Discovery Environment (XSEDE)
- UCSB Center for Scientific Computing (CSC) clusters

TSCC

- Encourages campus participation, allowing researchers to use time and storage space on SDSC computing and data resources.
- UCSB purchases blocks of computer hours which researchers may request from the supercomputing consultant.
- Primarily used for educational purposes, but some groups also use it for research.

XSEDE

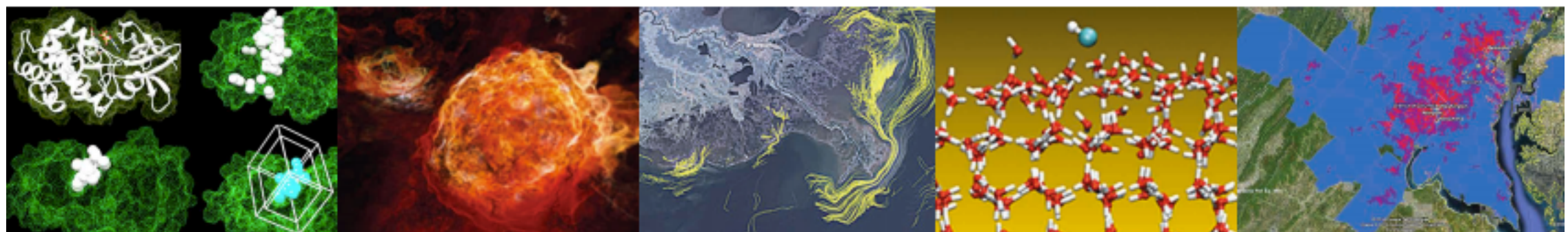
Extreme Science and Engineering
Discovery Environment

XSEDE is an NSF sponsored service organization that provides access to computing resources.

<https://portal.xsede.org>

www.xsede.org

Currently XSEDE supports more than a dozen supercomputers and high-end visualization and data analysis resources.



Available XSEDE Resources

My XSEDE Resources

 System Monitor

Resource	Status	Load	Username	My Jobs
Stampede TACC 	✓ Healthy		burak	R: 0 Q: 0 O: 0
Comet SDSC 	✓ Healthy		burak	R: 0 Q: 0 O: 0
Gordon Compute Cluster SDSC 	✓ Healthy		burak	R: 0 Q: 0 O: 0
Maverick TACC 	✓ Healthy		burak	
Open Science Grid USC 	✓ Healthy		burak	R: 0 Q: 0 O: 0
Ranch TACC 	✓ Healthy		burak	
Greenfield PSC 	✓ Healthy		himmetog	R: 0 Q: 0 O: 0

Workhorse

General purpose,
more Big Data

Big Data

Visualization,
data analysis

High throughput

Long term storage

Large memory, big data

<https://www.xsede.org/resources/overview>

Campus Champions Program

Represents XSEDE on the campus

Campus Champion
Trial Allocation

- Freely available to UCSB
- Used for getting familiar with XSEDE and testing codes

Startup & Educational Allocation

- Requires a short allocation grant
- Used for testing, code development and getting a head start in research
- For classes

Research Allocation

- Requires an allocation grant
- Millions of computer hours available
- Users need to justify their request for hours (via code performance tests)

Support for Scripting Languages (R, Python)

Example:

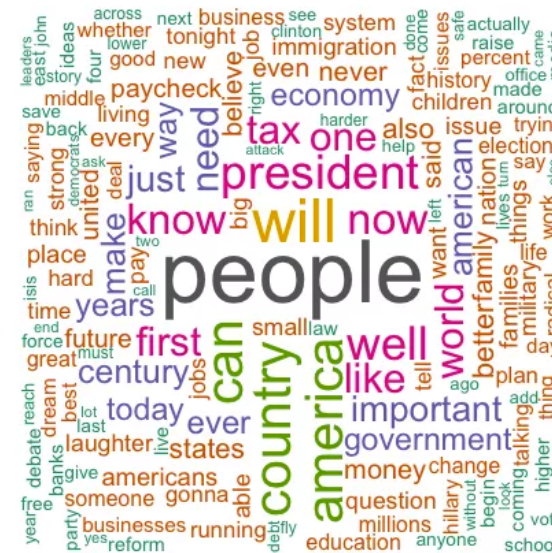
<http://www.presidency.ucsb.edu/>



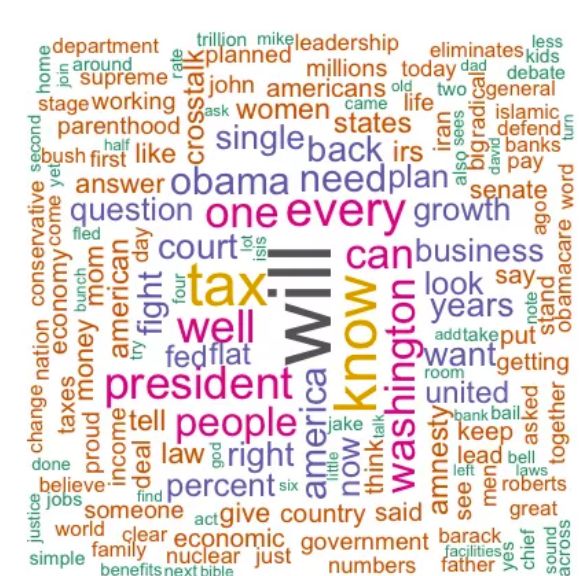
Trump



Bush



Rubio



Cruz

More analysis here:

<http://www.r-bloggers.com/what-the-candidates-say-analyzing-republican-debates-using-r/>