

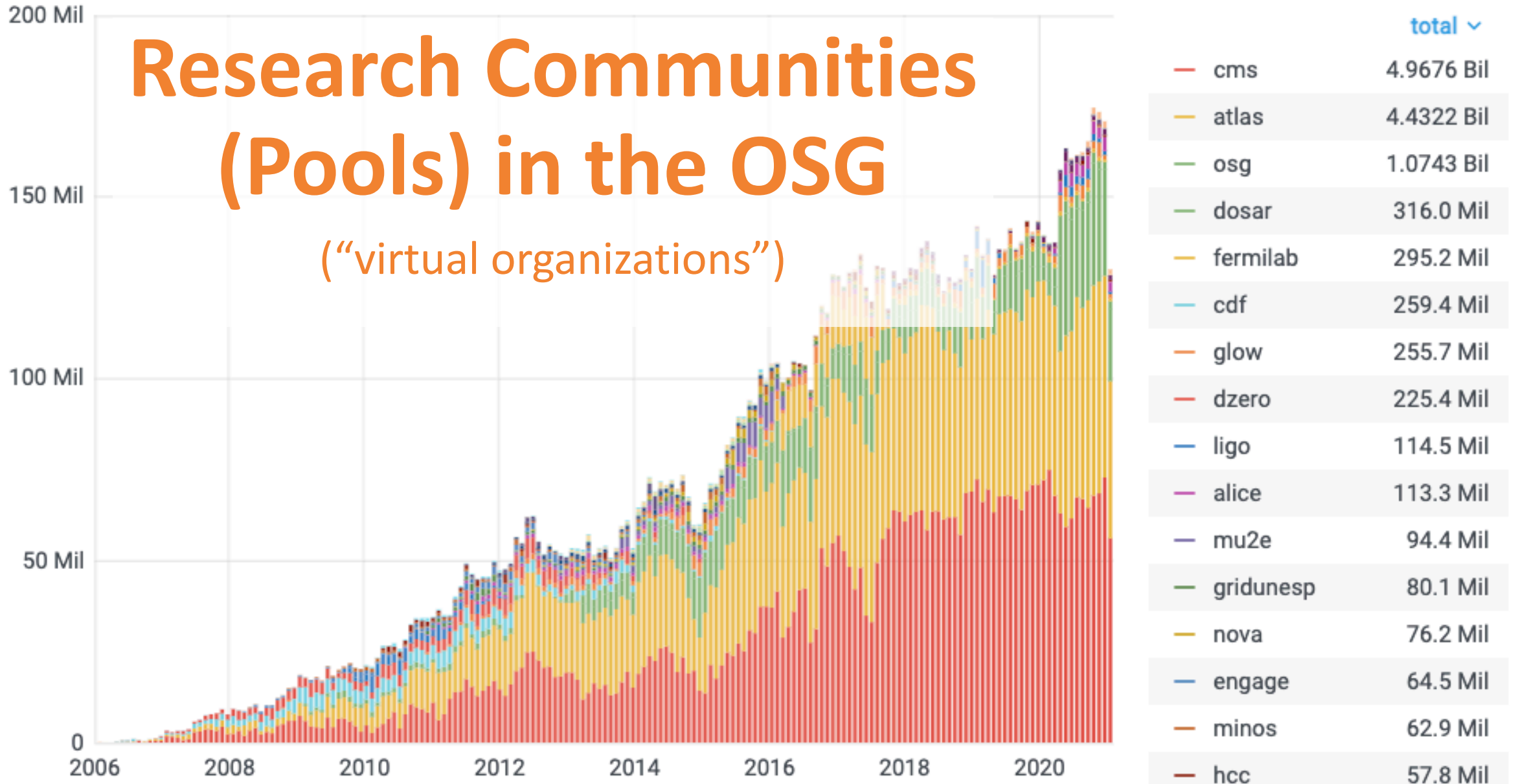


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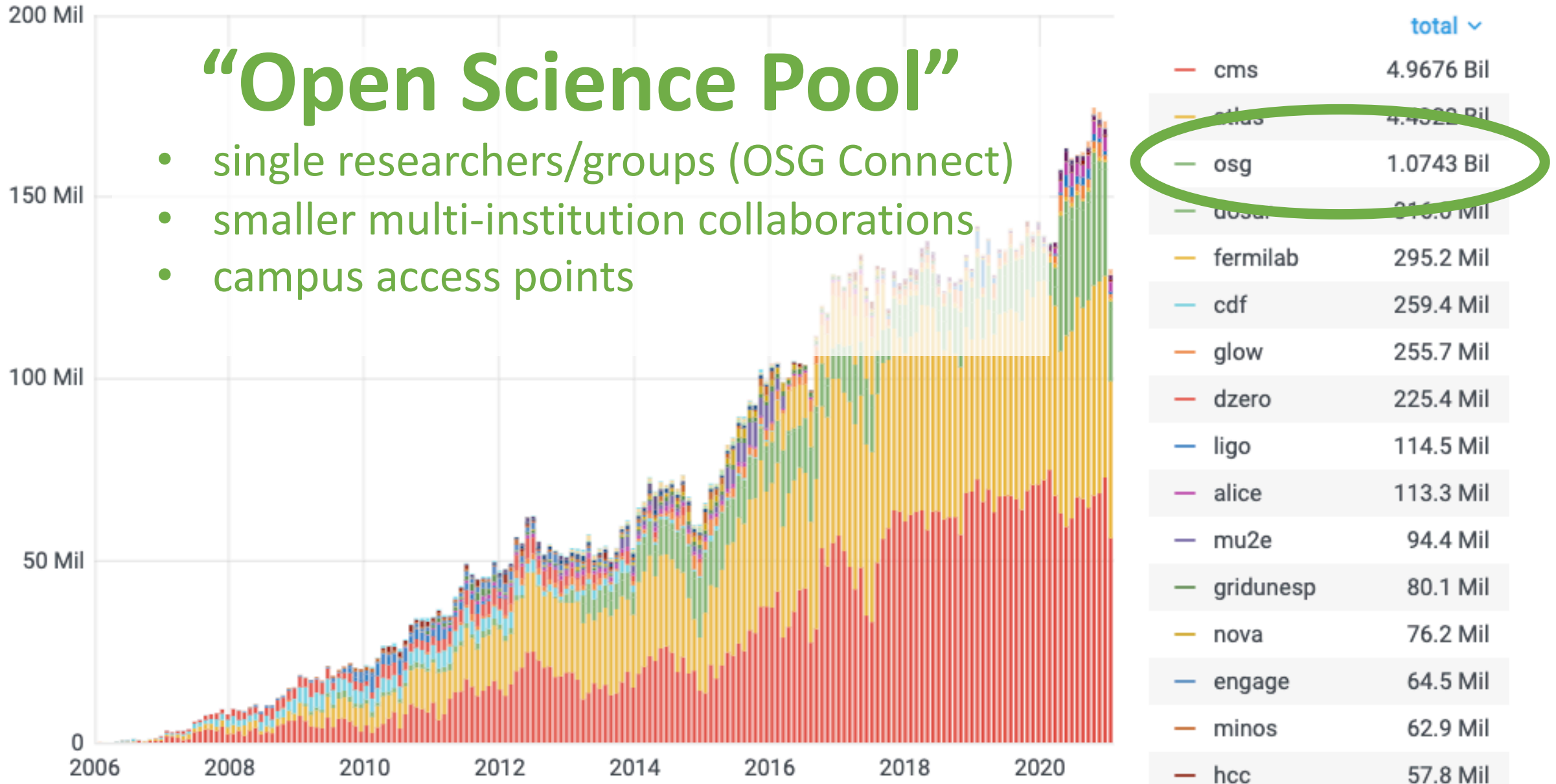
Submit locally, run globally.

The State of OSG Impact on Research

Total Core Hours per Month



Total Core Hours per Month

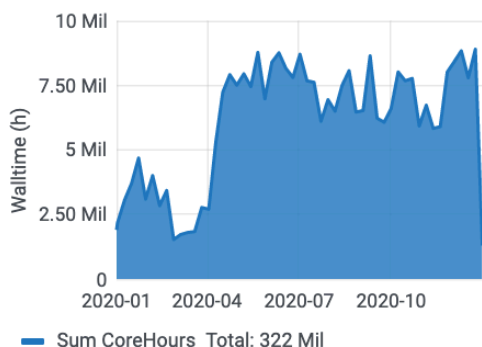




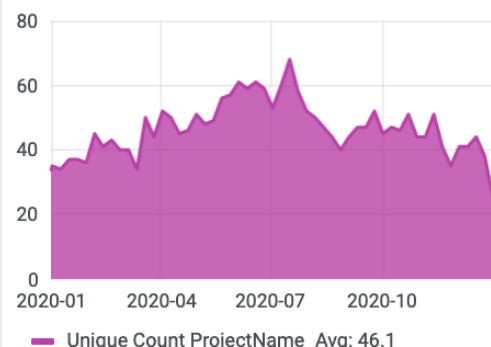
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Open Science Pool in 2020

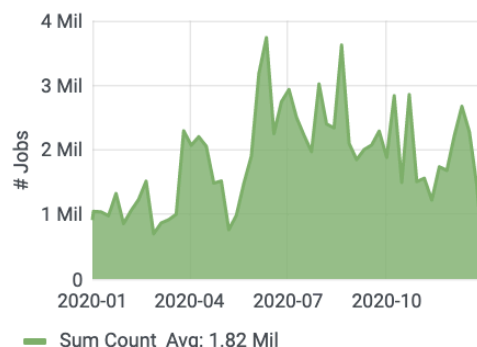
Wall Hours per 7d



Active Projects per 7d



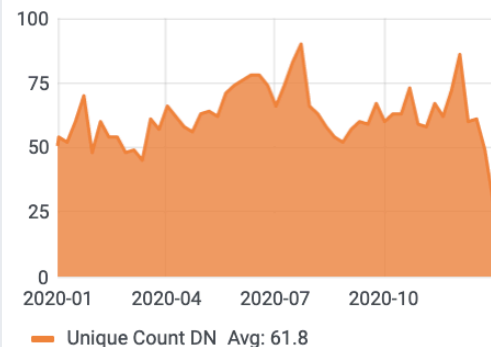
Total Jobs per 7d



Active Users

388

Active Users per 7d



Active Projects

183

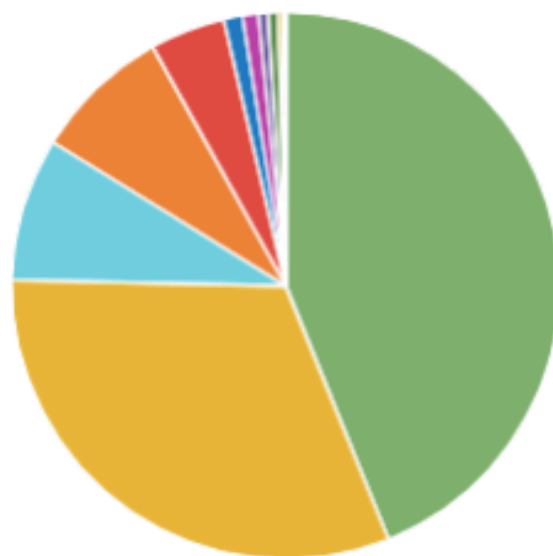
	total
COVID19_FoldingAtHome	86 Mil
CpDarkMatterSimulation	35 Mil
COVID19_Stanford_Das	26 Mil
Hawaii_Doetinchem	16 Mil
chemml	12 Mil
REDTOP	12 Mil
CompBinFormMod	11 Mil
WSU_3DHydro	11 Mil
LancasterPPS	8 Mil
FEClui	7 Mil
molcryst	5 Mil
SourceCoding	5 Mil
DemoSims	5 Mil
SNOplus	5 Mil
spt.all	4 Mil
IBN130001-Plus	4 Mil
EvolSims	3 Mil
electrolytes	3 Mil
eht	3 Mil
IceCube	2 Mil



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Open Science Pool

Core Hours by Field of Science

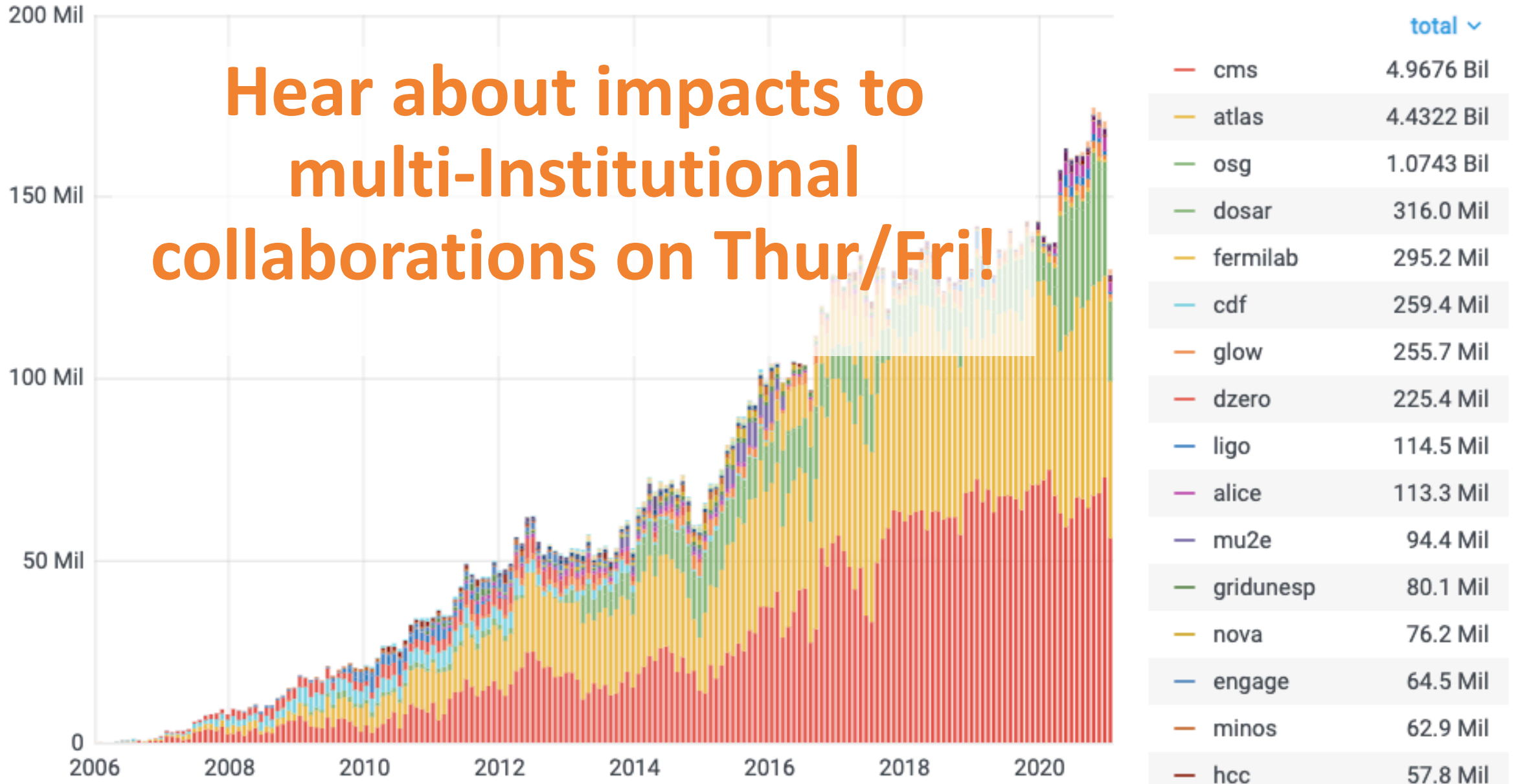


	total
Biological Sciences	133.4 Mil
Physics	95.7 Mil
Astronomy	25.7 Mil
Chemistry	24.7 Mil
Engineering	13.47 Mil
Integrative Activities	3.34 Mil
Mathematics	2.834 Mil
Agricultural Sciences	1.712 Mil
Health	1.679 Mil
Education	746 K
Computer Sciences	546 K
Other	90.4 K
Economics	87.4 K
Earth and Ocean Sciences	13.70 K
Other Social Sciences	0.0047

Core Hours by Institution

	total
Folding@Home Consortium (FAHC)	86.7 Mil
Massachusetts Institute of Technology	35.4 Mil
Stanford University	26.4 Mil
University of Pittsburgh	22.1 Mil
University of Hawaii at Manoa	15.0 Mil
Fermilab	12.39 Mil
Rochester Institute of Technology	12.31 Mil
New Mexico State University	12.14 Mil
Wayne State University	11.62 Mil
University of Chicago	8.40 Mil
University of Pennsylvania	8.35 Mil
University of North Carolina at Chapel Hill	7.09 Mil
Lancaster University	6.01 Mil
University of Arizona	5.64 Mil
Arizona State University	5.60 Mil
University of Wisconsin-Madison	5.04 Mil
LSU School of Public Health	3.69 Mil
Georgia Institute of Technology	3.49 Mil
Rutgers, The State University of New Jersey	2.150 Mil
Brookhaven National Laboratory	2.079 Mil

Total Core Hours per Month





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Examples Presented Today!

Data mining in genomics by high-throughput computing (2020 David Swanson Awardee)

Zhonggang (John) Li

Online

11:40 - 12:05

Computational biology on OSG (2021 David Swanson Awardee)

Nicholas Cooley

Online

12:05 - 12:30

Towards design of folding inhibitors against SARS-CoV-2 proteins

Amir Bitran

Online

13:45 - 14:10

Modeling demand for medical resources

James P. Howard

Online

14:10 - 14:35

On the development and extension of Bayesian historical borrowing to single-level and multilevel models

Sinan Yavuz

Online

14:35 - 15:00



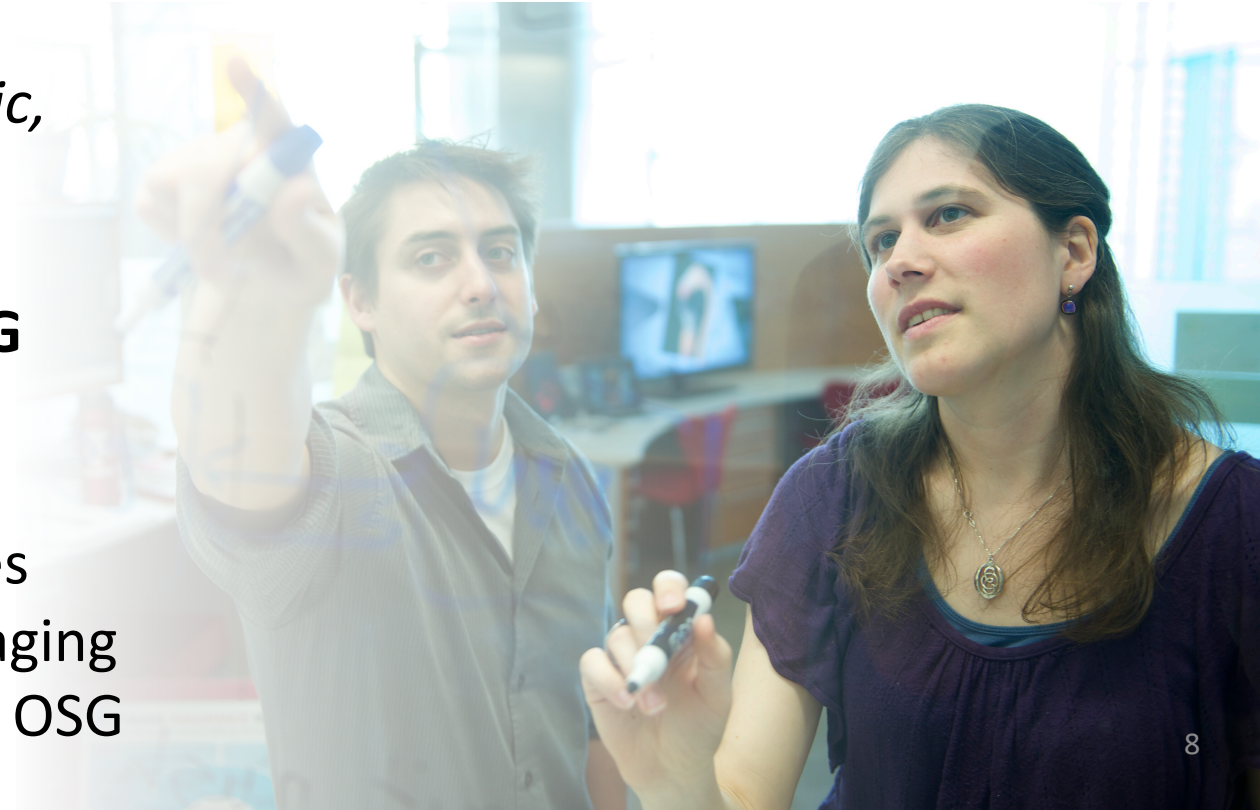
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Free for US researchers!

OSG Connect

FREE access to the Open Science Pool via an OSG-supported access point; no allocation/proposal necessary

- **osgconnect.net > “Sign Up”**
- *available to researchers at any U.S. academic, government, or non-profit organization*
- includes:
 - **obligate initial consultation with an OSG Research Computing Facilitator**
 - online documentation and examples
 - access to OSG’s central software modules
 - (roughly) unlimited scratch; space for staging large data/software, with caching across OSG





Open Science Grid

Free for US researchers: OSG Connect

OSG **CONNECT**

Support ▼ Login Sign Up

OSG **CONNECT**

Front door to the **Open Science Grid**

Documentation [here](#)

Free computing power for US researchers


Login

Sign Up



Open Science Grid

OSG User Documentation

 **opensciencegrid** help desk

Welcome Lauren Michael
Agent Portal | Edit profile - Sign out

[Home](#) [Solutions](#) [Forums](#) [Tickets](#)

How can we help you today?

 [SEARCH](#)





Email the OSG Connect Support Team


- [+ New support ticket](#)
- [Check ticket status](#)

Knowledge base

Overview

Overview / Welcome (5)

-  [Is the Open Science Grid for You?](#)
-  [Registration and Login for OSG Connect](#)
-  [Policies for Using OSG via OSG Connect Submit Servers](#)
-  [Acknowledging the Open Science Grid](#)





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OSG Connect in 2020

Active Projects:

2018: **95**

2019: **117**

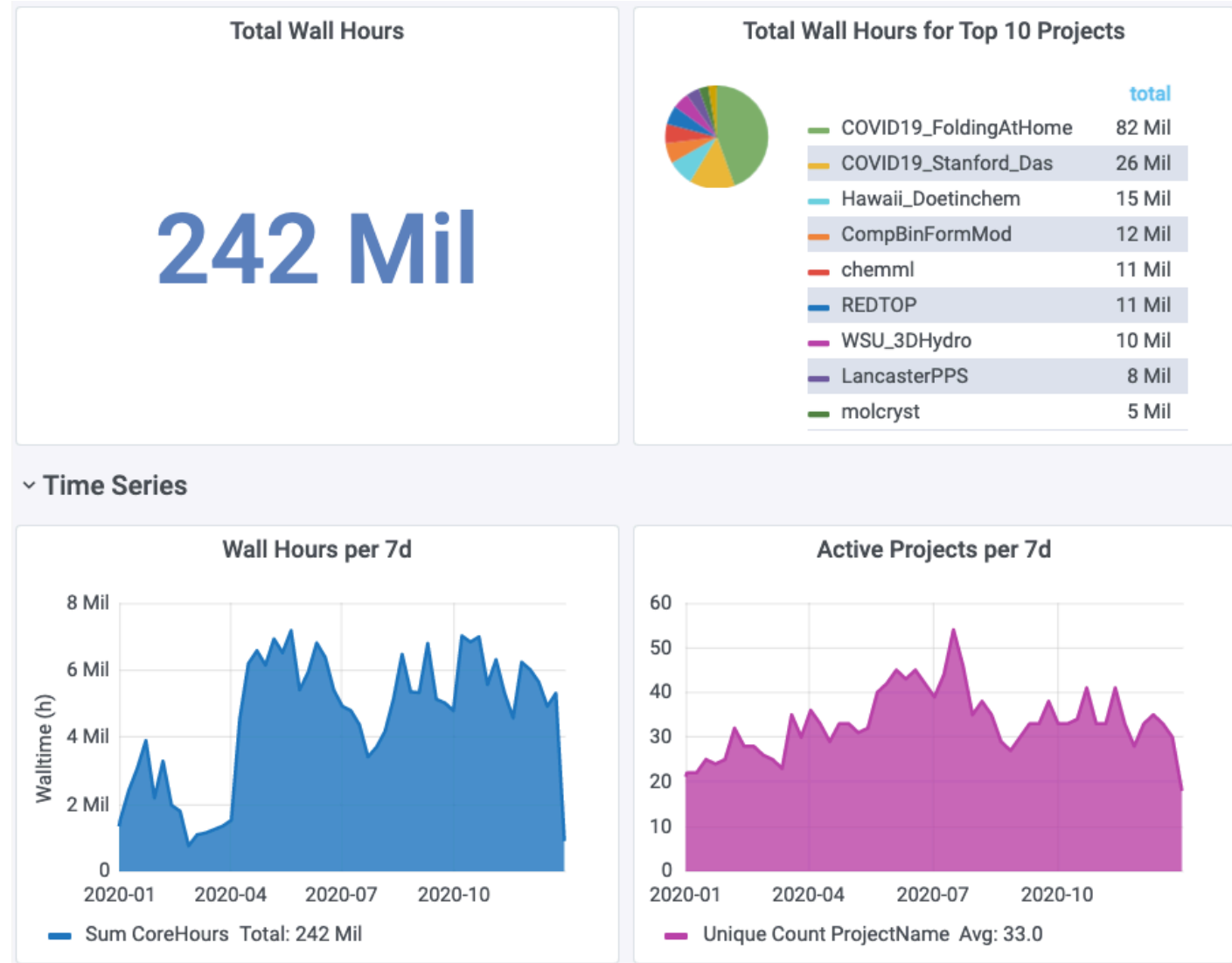
2020: **151**

Total Usage: (million hrs)

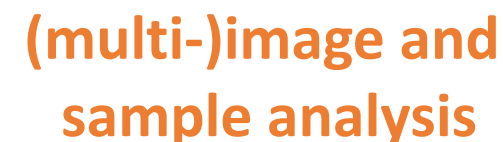
2018: **35**

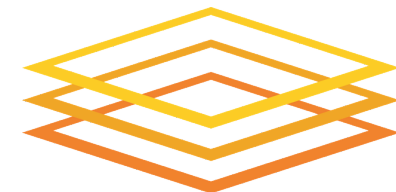
2019: **103**

2020: **294**



Is your problem potentially computable as lots of independent pieces? For example ...





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Is it OSG-able?

Is your work computable as lots of *laptop-sized* pieces?

Per-Job Resources	Ideal Jobs! up to 10,000 cores, per user!	Still Advantageous! 100s to 1000s cores per user	Less so ...
cores (GPUs)	1 (1; non-specific)	<8 (1; specific GPU type)	>8 (or MPI) (multiple)
Walltime (per job)	<10 hrs* *or checkpointable	<20 hrs* *or checkpointable	>20 hrs
RAM (per job)	<few GB	<20 GB	>20 GB
Input (per job)	<500 MB	<20 GB	>20 GB
Output (per job)	<1 GB	<20 GB	>20 GB
Software	<i>'portable' (binaries, transferable, containerized, etc.)</i>	<i>most other than →→→</i>	<i>licensed software; non-Linux</i>



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OSG Connect for 'Big Data':

82 of 103 Data Caching Users in 2020!

Working Set Snapshot	# OSG Connect users
>10TB	1
5-10TB	2
1-5TB	5
0.5-1TB	5
0.1-0.5TB	12
<0.1TB	57

Read Multipliers	# OSG Connect users
>10k	2
5-10k	2
1-5k	3
100-1k	1
10-100	5
<10	69

See Frank's talk this morning for some specific examples!



Open Science Grid

OSG User School 2021

For Researchers, Research CI Staff, and Gateway Developers!

- (usually) week-long, in-person education program on using dHTC and OSG
 - **In 2020 & 2021: “OSG Virtual School” half-time over two weeks**
- presentations, hands-on exercises, and group activities!
- ongoing access to the Open Science Pool via OSG Connect

<https://opensciencegrid.org/outreach/>

• Important Dates TBA

- Applications open: March 2021
 - School dates TBA
- Decisions: by May 2021





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More Examples of dHTC-Enabled Research Outcomes

- **OSG** and **PATH** Websites
 - <https://opensciencegrid.org/>
 - <https://path-cc.io/>
- **Past OSG All-Hands Meetings:**
 - <https://opensciencegrid.org/all-hands/>
 - researcher and campus/admin perspectives
- **OSG User School “Showcase” Presentations**
 - <https://opensciencegrid.org/outreach/>
- **HTCondor Week Presentations**
 - https://research.cs.wisc.edu/htcondor/past_condor_weeks.html
 - researcher and campus/admin perspectives





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Bring These Benefits to YOUR Campus!

- Point users to OSG Connect, today! osgconnect.net > Sign Up
- Catch Tomorrow's Presentations for Campuses:

OSG services for campuses	<i>Lauren Michael</i>
<i>Online</i>	11:00 - 11:25
CC* and campus computing	<i>Kevin Thompson</i>
<i>Online</i>	11:25 - 12:00
Technical overview of OSG services for campuses	<i>Brian Bockelman</i>
<i>Online</i>	12:00 - 12:30



Open Science Grid

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- Catch Tomorrow's Presentations for Campuses:

A vision for campus participation in the OSG Consortium	<i>Eric Sedore</i>
<i>Online</i>	13:30 - 13:40
Advancing data intensive science at George Washington University	<i>Clark Gaylord</i>
<i>Online</i>	13:40 - 13:55
Using OSG to facilitate research computing at a regional university	<i>Dr Jeremy Evert</i>
<i>Online</i>	13:55 - 14:10
Connect campus users to remote dHTC resources using OSG access points	<i>Sajesh Singh</i>
<i>Online</i>	14:10 - 14:25



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Submit locally, run globally.

US Researchers Can Use Open Science Pool, NOW!

osgconnect.net > Sign Up

Questions

Lauren Michael, lmichael@wisc.edu

Research Facilitation Lead (campuses and researchers), OSG



This work was partially supported by the NSF grants OAC-2030508, OAC-1841530, OAC-1836650, and MPS-1148698