OSG Impacts to Researchers and Campuses

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Area Coordinator, Researcher Facilitation

OSG All Hands Meeting, JLab, March 18-21, 2018
Services & Resources

- OSG Connect Facilitation
  (also XD allocations)
- On-Site Training
- OSG School
- Campus Integration Facilitation

+help from software, facOps, Ops teams!!

http://support.opensciencegrid.org
Opportunistic Usage in the Last Year

Opportunistic Payload Wall Hours by VO (Top 20)

Total Opportunistic Wall Hours

116.7 Mil
Proactive Engagement
meet with every new user, virtually!

Personalized Guidance

Teach-to-fish Training

Collaboration Liaising

Inward and Upward Advocacy
All OSG Connect Usage
(including campus and XD - 60+ total campuses)

103.7 Mil

125.3 Mil

486

152
OSG Connect Usage
(OSG submit points - 45+ total campuses)

30.7 Mil

25.0 Mil

337

94
OSG Connect Projects
(OSG submit points)
OSG Connect Usage Patterns
(OSG submit points)
OSG Connect Fields of Science

Long-Tail Fields!

Walltime Per Field of Science

- Training: 4.020 Mili
- Medical Sciences: 3.937 Mili
- High Energy Physics: 3.503 Mili
- Astrophysics: 2.694 Mili
- Engineering: 1.887 Mili
- Physical Chemistry: 1.736 Mili
- Biological Sciences: 1.526 Mili
- Economics: 1.324 Mili
- Biophysics: 1.288 Mili
- Evolutionary Sciences: 1.121 Mili
- Statistics: 1.043 Mili
- Physics and astronomy: 1.033 Mili
- Chemistry: 733 K
- Ecological and Environmental Sciences: 674 K
- Bioinformatics: 635 K
- Zoology: 411 K
- Physics: 388 K
- Fluid Dynamics: 301 K
- Computational Condensed Matter Physics: 283 K
- Neuroscience: 200 K
- Biological and Critical Systems: 184 K
- Computer and Information Science and Engineering: 161 K
- Chemical Engineering: 138 K
- Multi-Science Community: 90 K
On-Site Training

**Schedule**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
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<tbody>
<tr>
<td>1:00 - 1:25</td>
<td>Introduction to the Open Science Grid [(Slides)]</td>
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<tr>
<td>1:25 - 2:00</td>
<td>Job Scheduling with HTCondor</td>
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<tr>
<td>2:00 - 2:30</td>
<td>Organizing Large-scale Submissions</td>
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<tr>
<td>2:30 - 3:00</td>
<td>Coffee break</td>
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<tr>
<td>3:00 - 3:30</td>
<td>Multi-Step Workflows via DAGMan</td>
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<td>3:30 - 4:20</td>
<td>Managing Data for OSG Jobs</td>
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<tr>
<td>4:20 - 4:30</td>
<td>Wrap up, feedback for the workshop</td>
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**In 2018 ...**

- RMACC
- The Quilt 2018
- Internet2 TechX
- JLab Training during OSG AHM

For materials: https://github.com/SWC-OSG-Workshop and https://support.opensciencegrid.org/support/solutions/articles/12000037330-dhtc-training-events
JLab Training

Thursday, 9:00am-12:30pm
room F224/225
OSG School

https://opensciencegrid.org/user-school-2019
## High-Level Curriculum

<table>
<thead>
<tr>
<th>Day</th>
<th>Morning</th>
<th>Afternoon</th>
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<tbody>
<tr>
<td>Monday</td>
<td>Intro to HTC and HTCondor</td>
<td>Executing HTC Workloads</td>
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<tr>
<td>Tuesday</td>
<td>Intro to Grids; Troubleshooting</td>
<td>Intro to OSG; LARP</td>
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<tr>
<td>Wednesday</td>
<td>Software Portability</td>
<td>Free Choice</td>
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<tr>
<td>Thursday</td>
<td>HTC Data Handling</td>
<td>Large Data; Grid Security</td>
</tr>
<tr>
<td>Friday</td>
<td>Optimizing Workflows</td>
<td>HTC Impact Showcase</td>
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OSG School 2018

July 9-13
65 learners, including 8 research CI staff
>15 using HTC/OSG after
8 instructors
4 helpers
OSG School 2019 - Apply Now!

https://opensciencegrid.org/user-school-2019
# Top Contributors and Users of Opportunistic Resources

## Top 10 Facilities

<table>
<thead>
<tr>
<th>OIM_Facility</th>
<th>Sum</th>
</tr>
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<tbody>
<tr>
<td>Fermi National Accelerator Laboratory</td>
<td>25730622.953611124</td>
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<td>Syracuse University</td>
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<td>University of Nebraska</td>
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<td>Brookhaven National Laboratory</td>
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<tr>
<td>California Institute of Technology</td>
<td>2565076.9172222214</td>
</tr>
</tbody>
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## Opportunistic Pilot Wall Hours by Site (Top 20)

- FermiGrid
- MWT2 ATLAS UC
- SU ITS
- UColorado_HEP
- Caltech CMS Tier2
- Nebraska-Omaha
- AGLT2
- Nebraska-CMS
- Bellarmine University
- UCSD CMS Tier2
- GLOW
- FNAL USCMS Tier1
- SPRACE
- Brookhaven ATLAS Tier1
- UF HPC
- AMNH
- LSU SuperMIC
- MIT_SUBMIT
- UPRM_HEP
- SWT2 ATLAS UTA
CC* Collaborative Support

Campus Cyberinfrastructure (CC*)

PROGRAM SOLICITATION
NSF 19-533

REPLACES DOCUMENT(S): NSF 18-508

National Science Foundation
Directorate for Computer & Information Science & Engineering
Office of Advanced Cyberinfrastructure
Division of Computer and Network Systems

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):
February 20, 2019

4. Campus Computing and the Computing Continuum

Local campus computing resources have emerged as an important aggregated and shared layer of scientific computing, as evidenced by the growth in Open Science Grid (an NSF-funded distributed scientific computing fabric of shared computing clusters across more than 100 institutions) productivity that will approach two billion CPU hours delivered in scientific computing for the calendar year 2018.

February 20, 2019
What’s Next for Campuses and Researchers?

Tune in tomorrow ...
Services for Multi-Institutional Collaborations

See Pascal Paschos’ talk, tomorrow afternoon!
Researchers and Campuses at AHM!

Researchers:

- David Stern/Carol Lee *(Entomology, UW-Madison)*
- Alessandro Peri *(Economics, CU Boulder)*
- Don Krieger *(Neuroimaging, UPitt)*
- Thomas Britton; Richard Jones *(GlueX/JLab)*

Campuses*:

- Fermilab
- Syracuse
- Rutgers
- American Museum of Natural History
- JLab
- UIUC/NCSA
- UNL

*including institutions, national labs, etc.; you know ...
opensciencegrid

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