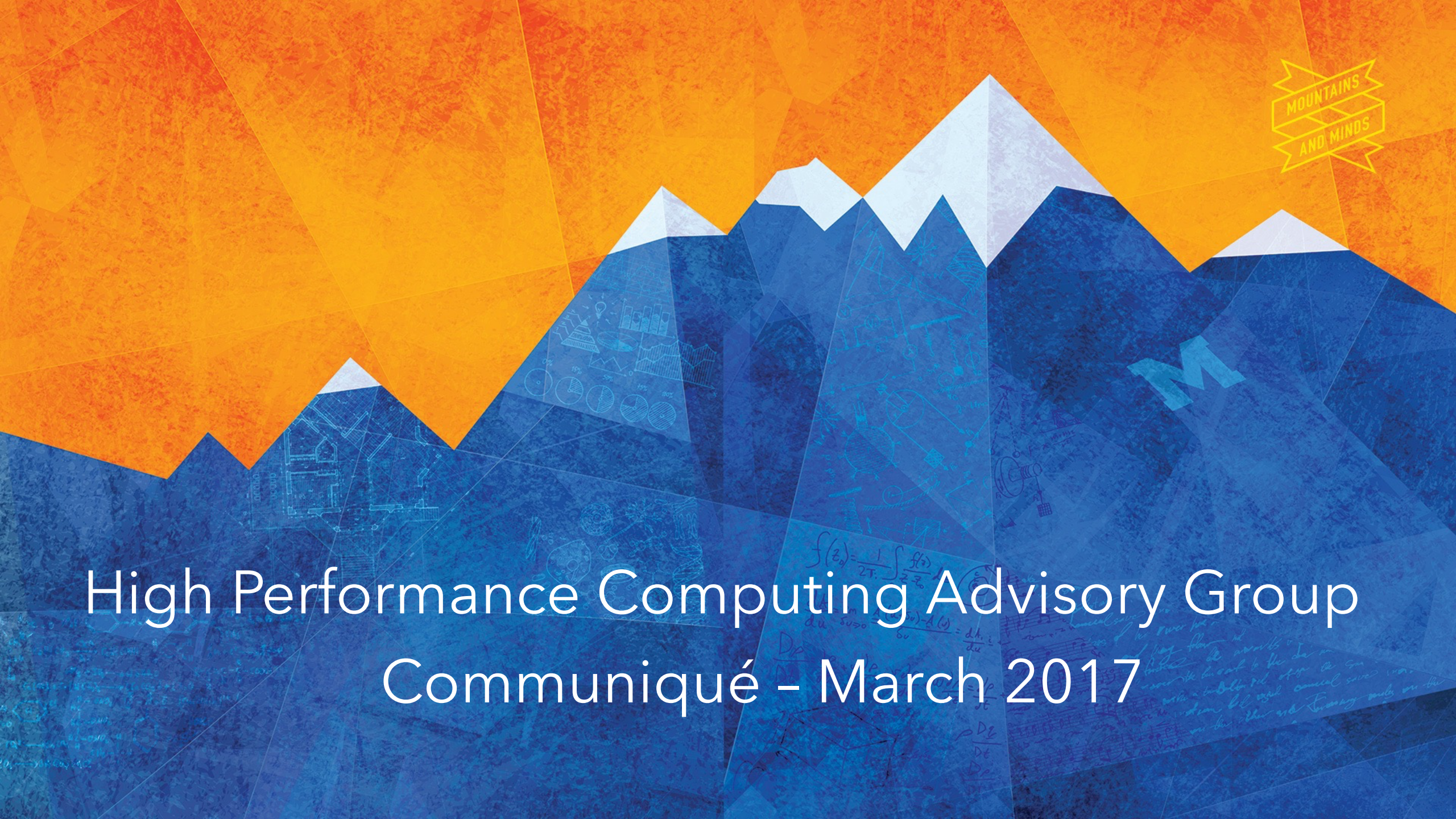
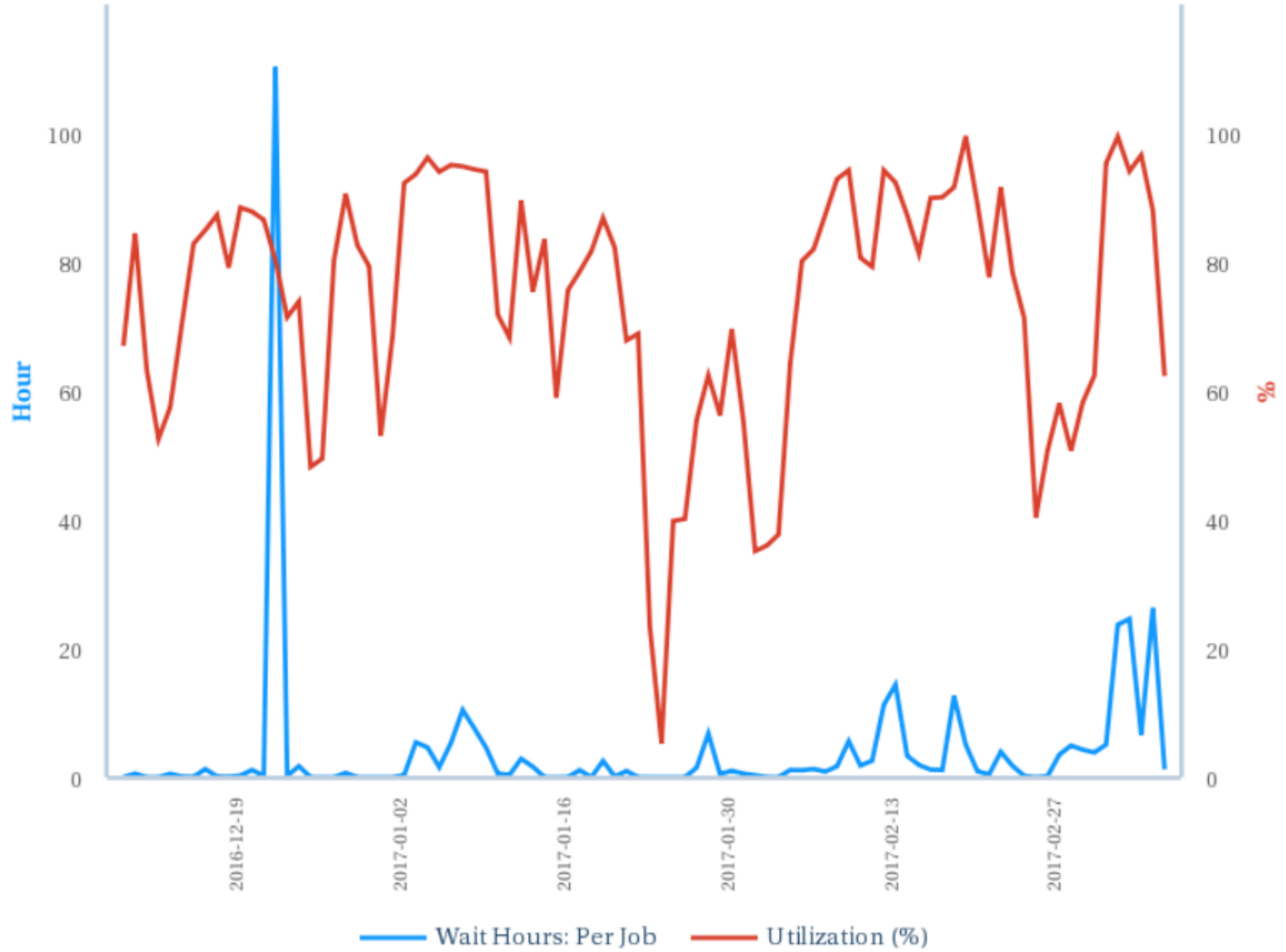


High Performance Computing Advisory Group Communiqué – March 2017

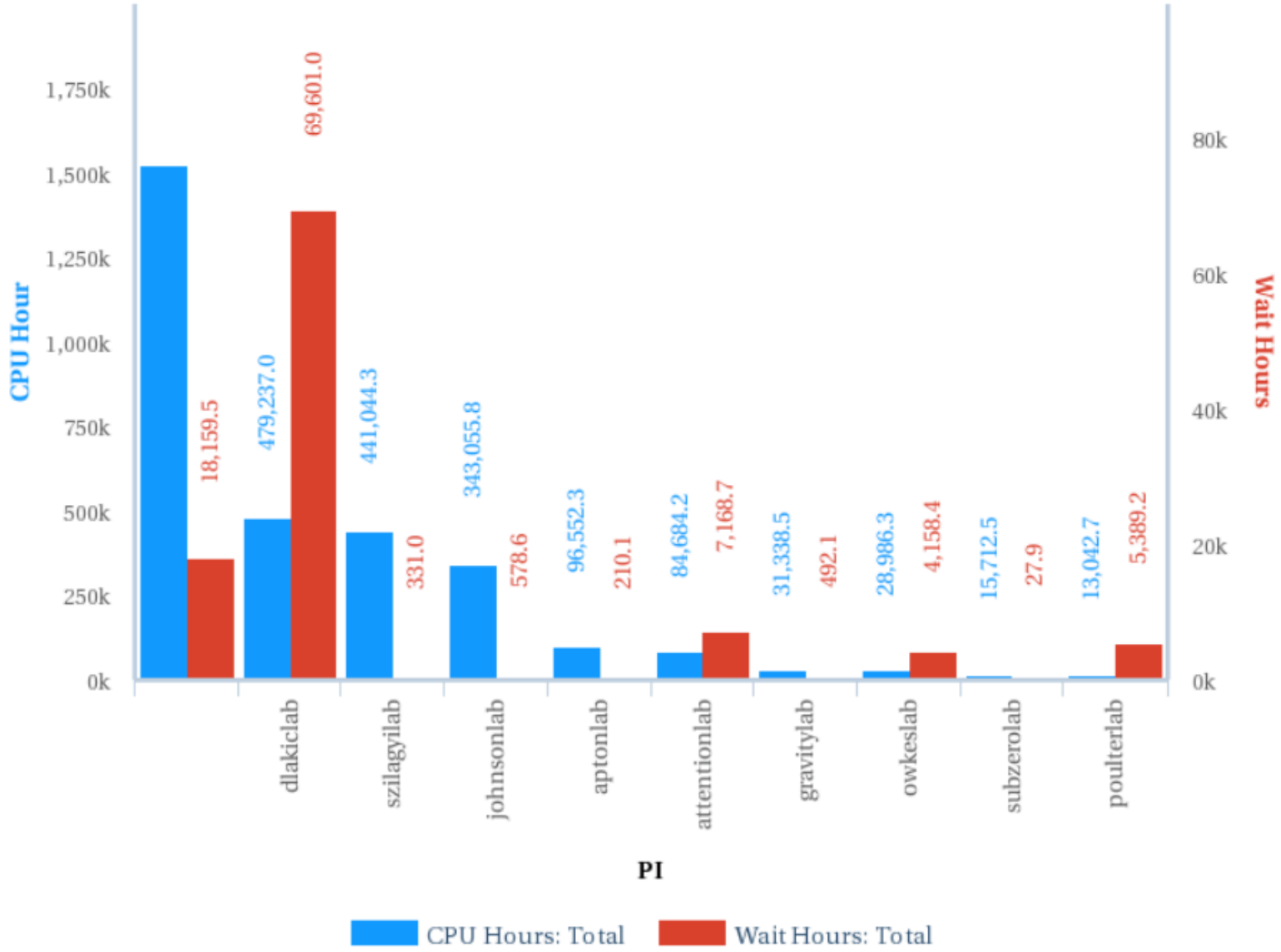
Hyalite Usage: Utilization & Wait



Dec 9, 2016 – Mar 9, 2017

MONTANA STATE UNIVERSITY

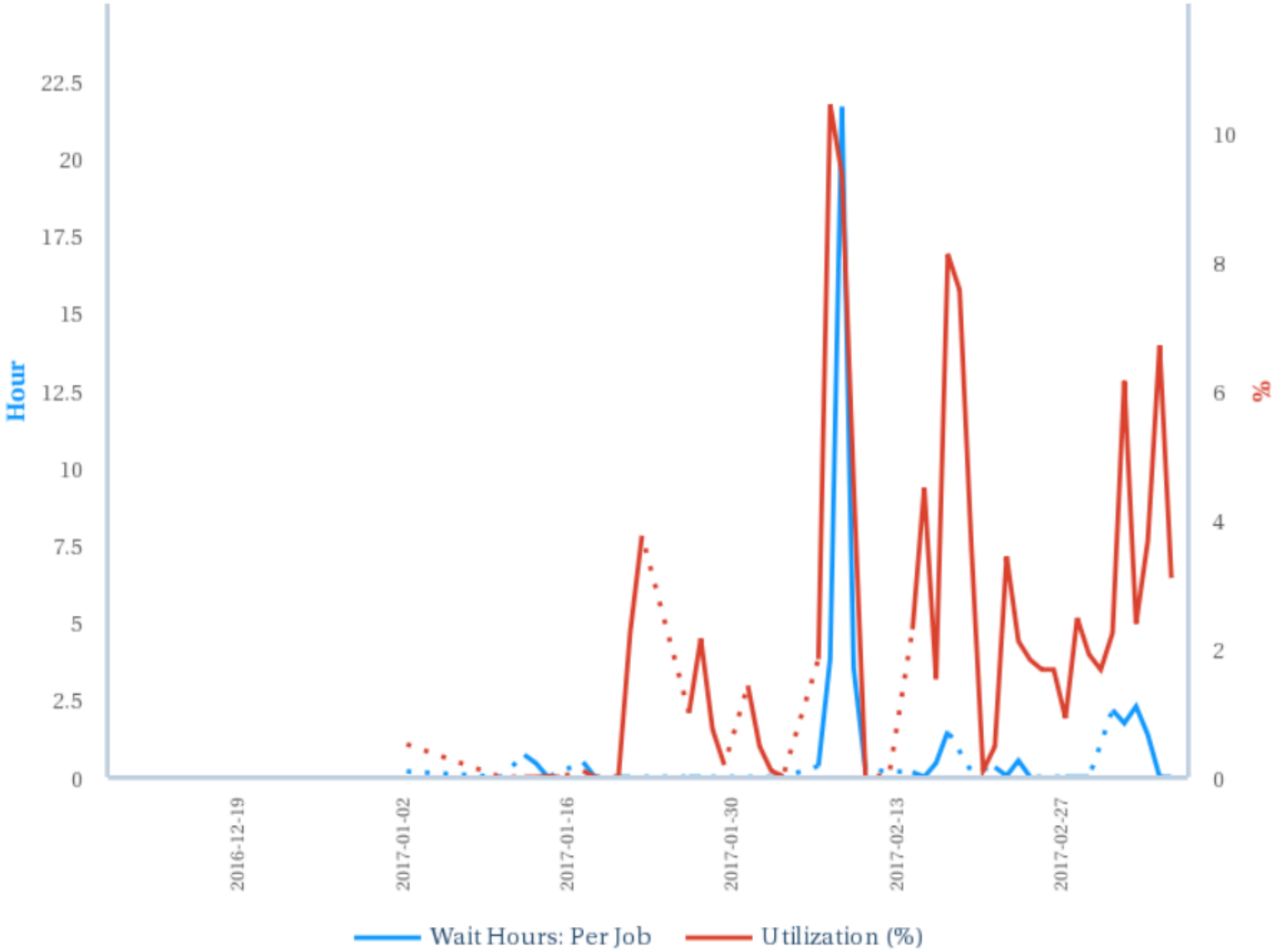
Hyalite Usage: CPU & Wait Hours



Dec 9, 2016 – Mar 9, 2017

MONTANA STATE UNIVERSITY

Hyalite Usage: New User Utilization & Wait

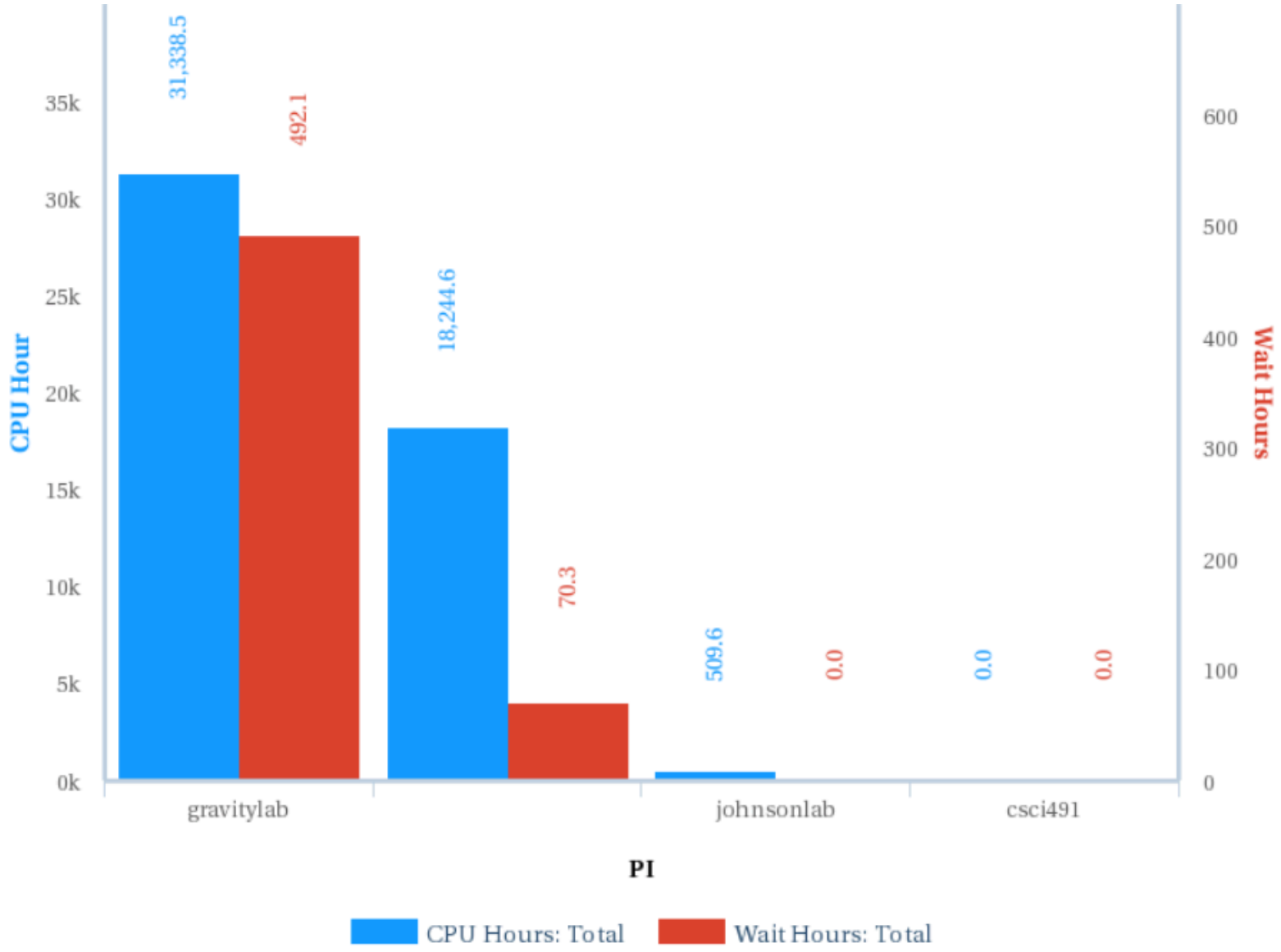


Dec 9, 2016 – Mar 9, 2017

New users composed 33%
(17 of 52 total)

MONTANA STATE UNIVERSITY

Hyalite Usage: New User CPU & Wait Hours



Dec 9, 2016 – Mar 9, 2017

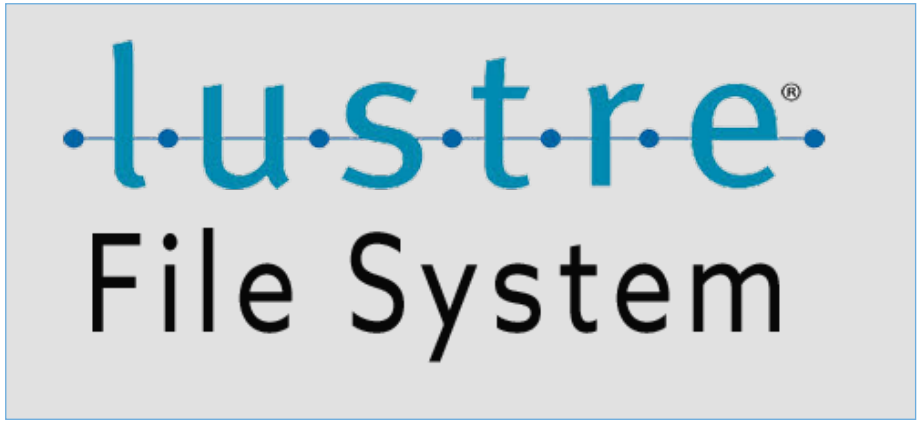
New users composed 33%
(17 of 52 total)

MONTANA STATE UNIVERSITY

Hyalite Storage Update

- Storage nearing full (76%)
- Robinhood Policy Engine installed and working well
- Deep Dive on Storage
  - Guests 88TB over budget
  - 30% of usage by 2 contributor groups
  - SCRATCH policy unenforced
- First Step: Email Request
  - Big improvement in just a few days: 76% => 62%

- Next Steps
  - Roll out SCRATCH policy: notify => recycle => delete for files over 90 days old
  - Review current storage policy (WORK, STORE)



MONTANA STATE UNIVERSITY

Utilization of new nodes

- Queue usage
  - Xlarge Usage (40 cores, 1.5TB RAM)
    - 129 jobs, 8.8k CPU hours (since 1/26)
    - Being used (good!)
    - Idle a lot (not so good)
  - Very little usage of unsafe
    - 165 jobs at 1k hours used
  - In same period:
    - Default queue: 161,498 jobs using 950k CPU hours
    - Priority queue: 30,094 jobs using 262k CPU hours
- Big RAM nodes:
  - Still Working on stats for jobs requesting >64GB RAM.

EFAC proposal: CHMY513

- "active learning through hands-on, interactive molecular mechanical and quantum chemical simulations"
- Availability and rapid turnaround for undergraduate class schedule
- 8 additional nodes, 64 GB RAM each, 3 year support

HPC Marketing and Outreach

- Setting up "RCi Office Hours" in first floor of Renne
  - 2 hours, twice a week
  - Starting in April
  - "Ask me about: …"
- Help more users to use XSEDE Resources
  - Few users take advantage of NSF HPC
  - Will contact heavy users of hyalite and try help them to onboard

ALCES FLIGHT

ITC is currently in discussion with USGS through their Northern Rocky Mountain Science Center (NOROCK) located in Bozeman to gain access to an on-demand, cloud-based HPC cluster platform named Alces Flight. Alces Flight is a commercial product based on Amazon Web Services that allows users to create virtual compute clusters of any size and capacity. A dashboard is available to monitor the cluster in real time, and a marketplace (Alces Flight Gridware) makes it straightforward to deploy scientific software packages on its nodes. Through our agreement with NOROCK we would be able to provide Alces Flight for free to research faculty and staff on campus as a pilot project.

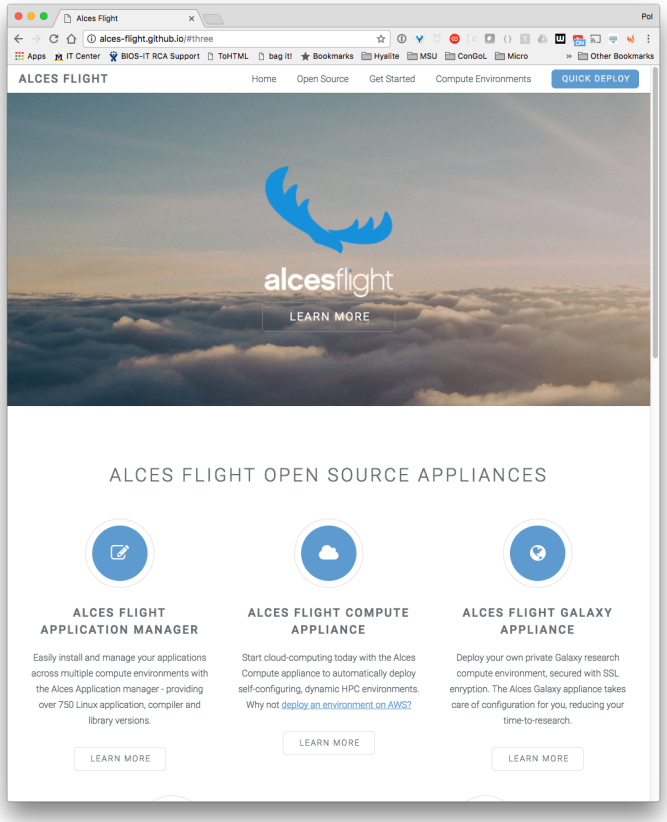
Alces Flight: http://alces-flight.com/

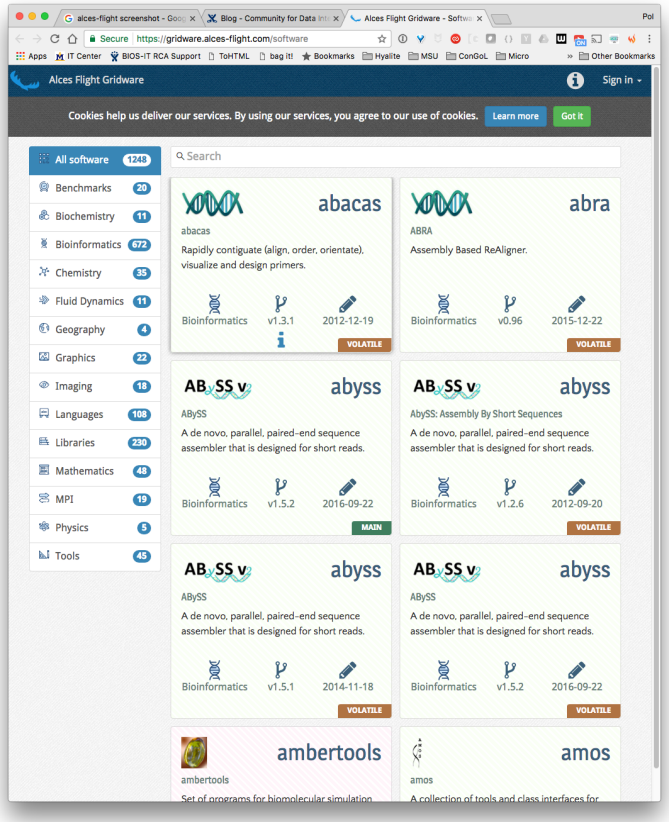
Alces Flight Gridware: https://gridware.alces-flight.com/software

MONTANA STATE UNIVERSITY

ALCES FLIGHT: Description

- Collaborative HPC + Cloud project with USGS
- Alces Flight is management software for provisioning HPC resources in the cloud
  - SLURM HPC Cluster
  - Galaxy
  - Individual Compute
  - Lots of packages
- Project is in its initial stages





MONTANA STATE UNIVERSITY

ALCES FLIGHT: invitation

USGS-IT and MSU-ITC would like to invite you to an Alces Flight Technical Talk next Wednesday March 15th from 2-4pm.

The talk will be hosted by USGS Cloud Hosting Solutions' (CHS) Chief Cloud Solutions Architect and AWS subject matter expert Jeff Carson, and USGS CHS IT Specialist Courtney Owens. The talk will provide a quick overview of technologies and services involved, and an overview of Alces Flight. The talk will cover:

- Quick overview of Alces Flight and the technologies and services involved
- The Alces default environment and creation of CloudFormation scripts
- A run-down of USGS architecture and modifications made from the standard CloudFormation scripts
- The Alces self-service dashboard and job auto-scaling

There will be a live demo of an “R job” which will highlight how to access Alces through USGS Jumpbox, ssh into a login node, search and install packages, load packages, sync data from S3, and run a job. We will concluded with questions and discussion.

Please let us know if you are interested in joining this presentation by sending an e-mail to Thomas Heetderks at thomas.heetderks@montana.edu

Once attendees are configured a meeting invite will be sent out with location.

MONTANA STATE UNIVERSITY