State of the OSG - Council Chair's Perspective

David Swanson, Director, Holland Computing Center
University of Nebraska-Lincoln

Collaborative Vision

- Across the nation, **institutions invest into research computing to remain competitive**

- **Science is a team sport**, and institutions with an island mentality will underperform

- **Integration is key** to success

- **OSG provides services to advance this vision**

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NU Strategic Framework

- The University of Nebraska will pursue excellence [in] regional, national and international … research …

  - Increase external support …

  - Increase undergraduate and graduate student participation …

- Encourage … *interdisciplinary, intercampus, inter-institutional and international collaboration*

- *Invest [campus] resources … to build capacity* and excellence in research

Collaborative Vision

- Nebraska as an **institution invests into research computing to remain competitive**

- **NU Science is a team sport**, and institutions with an island mentality will underperform

- **Integration is key** to success

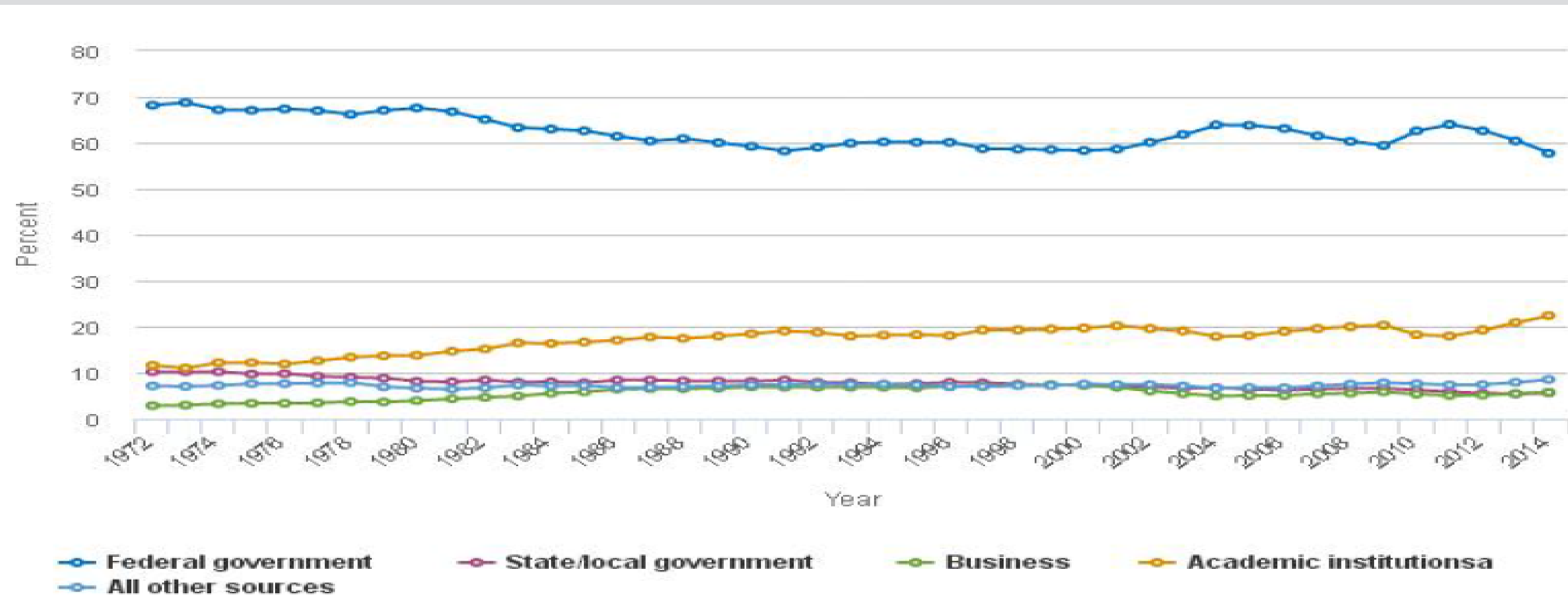- **OSG provides services *to enable NU* to advance this vision**

Trends in Funding Academic R&D in Science and Engineering

National Science Board | **Science & Engineering Indicators 2016**

Figure 5-1

Academic S&E R&D expenditures, by source of funding: FYs 1972–2014

Legend: Federal government, State/local government, Business, Academic institutionsa, All other sources

a Academic institutions' funds exclude research funds spent from multipurpose accounts.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.

Science and Engineering Indicators 2016

Irene Qualters, http://casc.org/?page=F17presentations

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Each green dot represents a cluster registered in OSG

Why Collaborate with OSG?
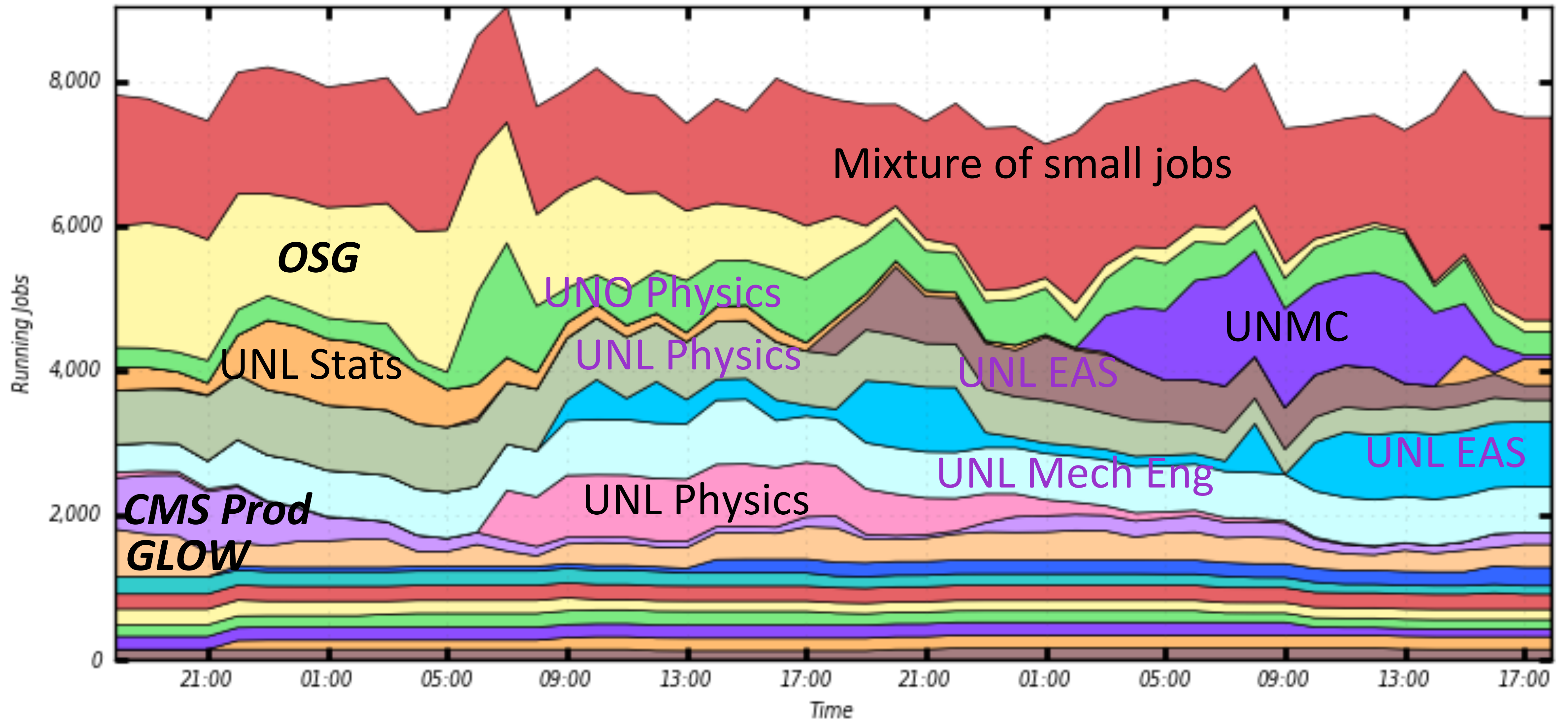
Dana Brunson, OSU

- Assistant Vice President for Research Cyberinfrastructure

- Campus Champions Lead

- "The reason we share is because we want to **get the most impact possible out of our resources**. OSG helps us do that with extremely low labor cost while **maintaining priority for our local users**."
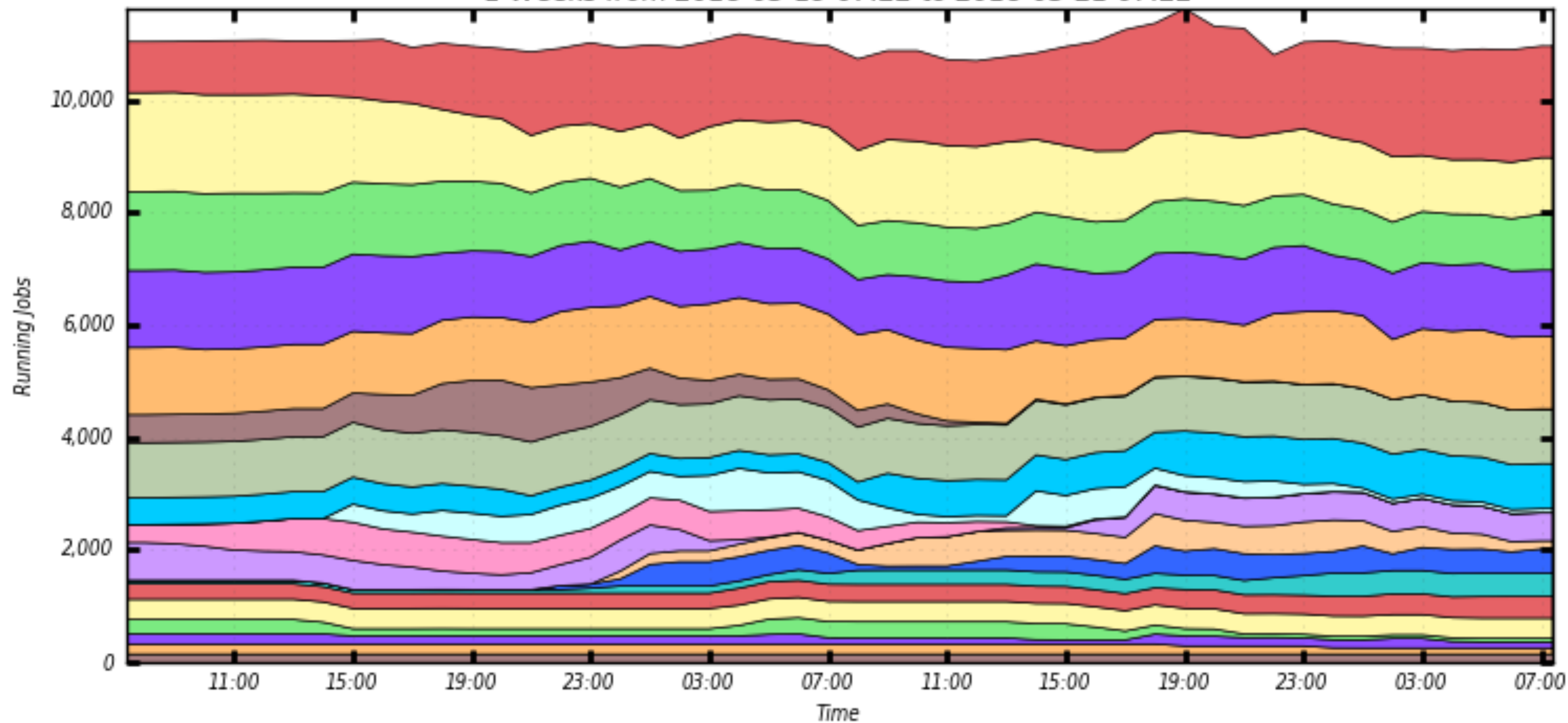

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Local Ownership

- Control collaborations as well as resource

- Skin in the game is important

- Options for providing OSG access

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1 Weeks from 2017-03-04 17:53 to 2017-03-06 17:53

Mixture of small jobs

OSG

UNO Physics

UNL Physics

UNL Stats

UNL EAS

UNMC

CMS Prod
GLOW

UNL Physics

UNL Mech Eng

UNL EAS

Running Jobs

Time

Other	osg	friendln	abrar	dgerdes2
jingchao	hcshao	glimpert	bochen	yuleinku
cmsprod	glow	lujingzhi	zhucq	jianzhang
gaoyur	kklyukin2	jiezhong	slovas	lma12

1 Weeks from 2018-03-19 07:22 to 2018-03-21 07:22

Running Jobs

Time		
Other	jeanjack	hcshao
cmccormick	manoj	zhenjiang
aarthur	lujingzhi	yangh
igladich	chenfang	lltao

avinash	jianzhang
tpaudel	kbash2
nintan2	yuanliu
qswu	jiezhong

Maximum: 11,627 , Minimum: 0.00 , Average: 10,776 , Current: 10,962

Eric Sedore, Syracuse

- Associate CIO for Computing Infrastructure

- Ebb and a flow of research work leads to periods of time with idle resources. Also, a good **portion of the resource base we share is scavenged**

- **…** utilize available OSG resources for **"bursting" where the scale of the job run would take an extended time** on our resources alone

- OSG provides an excellent opportunity for the researchers to **experience the use of large scale computational resources**; there is an experiential/CV benefit

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Barr von Oehsen, Rutgers

- Associate Vice President of the Office of Advanced Research Computing (OARC)

- **Levels the playing field** for small to medium sized non-R1 colleges and universities

- **Gives end users options**. Allows spilling out to other sites when their local cluster is busy

  - **Jobs can start sooner**

  - **Higher utilization of clusters**

- **Helps solve contention** between HPC and HTC jobs

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Dane Skow, NDSU

- Executive Director for Center for Computationally Assisted Science and Technology

- Part of a Portfolio Management strategy

- "… we are making available NDSU computational resources … as our **contribution to the national research computing infrastructure**."

- Our joining with OSG has provided us **operational and technical experience of connecting infrastructures** independent of the contractual business complexities incurred when the exchange of money or services is involved."

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Tessa Durham Brooks, Doane

- Associate Professor, Biology, Doane University

- "The primary benefit is in **providing students with experiences that emulate their future** professional environment. We are more concerned that students **understand the types of tools they can use** to engage in these large scale projects… We have been and are continuing to build ways for **students in the natural sciences to experience these types of workflows**."

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Peter Couvares, LIGO

- Senior Research Staff, CalTech

- "OSG has been invaluable to LIGO's ongoing effort to transition from running almost entirely on collaboration resources, to using shared computing. And I think **OSG's flexible model and approach — and its people** — have been as critical to its success for LIGO as its technology."

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AGRICULTURE & ENVIRONMENT   **ARTS**   **BUSINESS & LAW**   **ON CAMPUS**   **SCIENCE & TECHNOLOGY**   **SOCIETY & CULTURE**

Holland Computing Center aids gravitational wave discovery
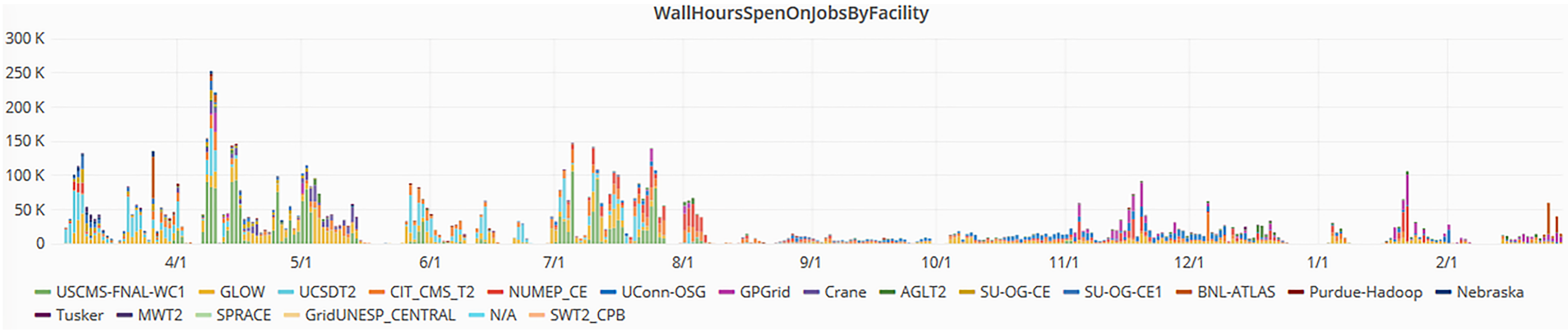
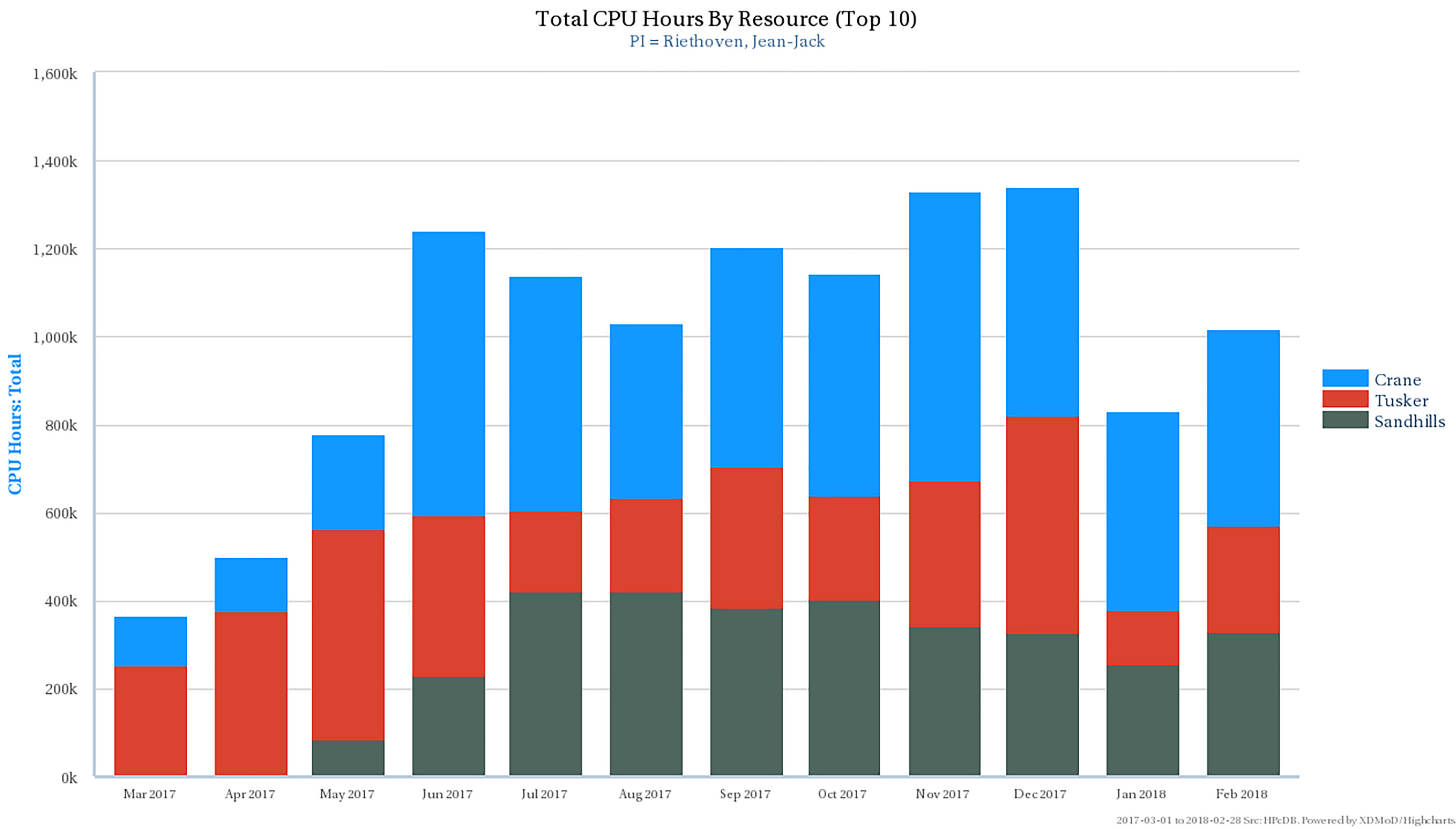9 hours ago in Science & Technology

READ MORE →

Stats:

~10 million CPU hours on OSG,
~10 million on HCC.

179 M opportunistic CPU hours last year

Total CPU Hours By Resource (Top 10)
PI = Riethoven, Jean-Jack

WallHoursSpenOnJobsByFacility

State of OSG Collaboration

- Growing number of participants willing to share resources and contribute to science of all scales

- Science on OSG is a Team Sport

  - OSG enables collaborations of many types and sizes

  - OSG itself is a dedicated collaborative effort

- OSG is impacting a wide variety of researchers and students

Thank you

- NSF

- NRI, UNL

- Utah

- OSG

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Broader Impact

- Nebraska Success Stories

  - Derek Weitzel, Derrick Stollee, Jiang Shu

- courses, grid school

- networking for CMS / OSG has benefited University at large

- Regrets from Jean-Jack Riethoven