RESEARCH COMPUTING FACILITATORS AT

WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

Accelerating Research Transformations

- **Campus history of research computing support**

- **Research computing *facilitation***

- **HTC impact for the long tail**

CENTER FOR HIGH THROUGHPUT COMPUTING

serving computational research across campus

Quick Facts

In 2017	
387	Million Hours Served
280	Research Projects
60	Departments

chtc.cs.wisc.edu

Agile, Shared Compute Systems
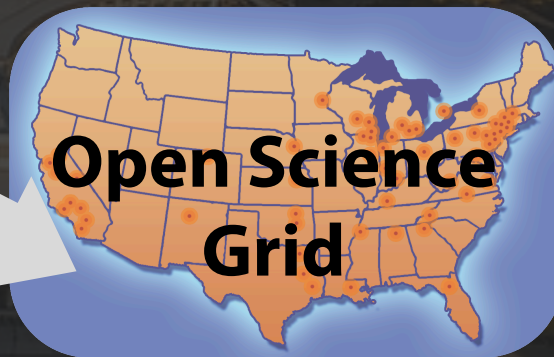
heterogeneous hardware, optimized compute modes

CHTC Pool

GPUs high-memory

single-core

multi-core *MPI*

CENTER FOR
HIGH THROUGHPUT
COMPUTING

HTCondor

Research Computing *Facilitation*

accelerating research transformations

proactive engagement

personalized guidance

teach-to-fish training

technology agnostic

collaboration liaising

upward advocacy

Research Computing *Facilitation*
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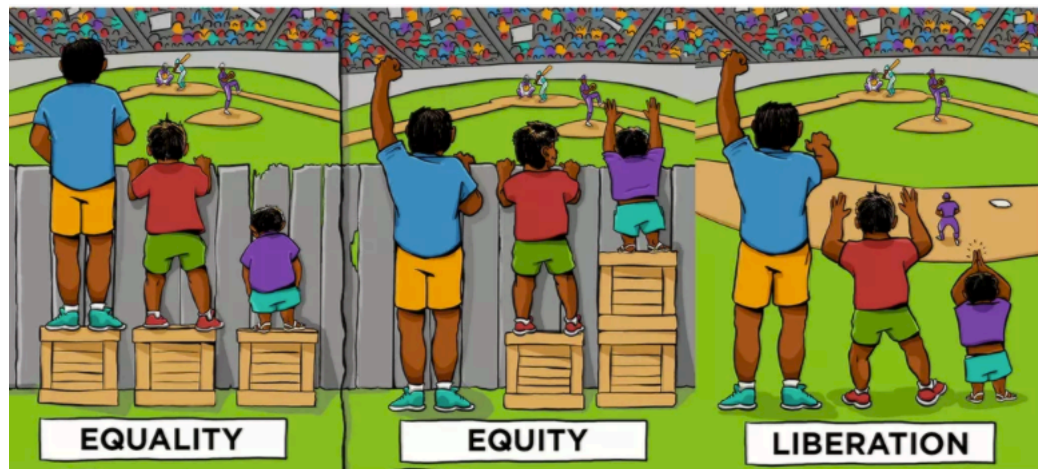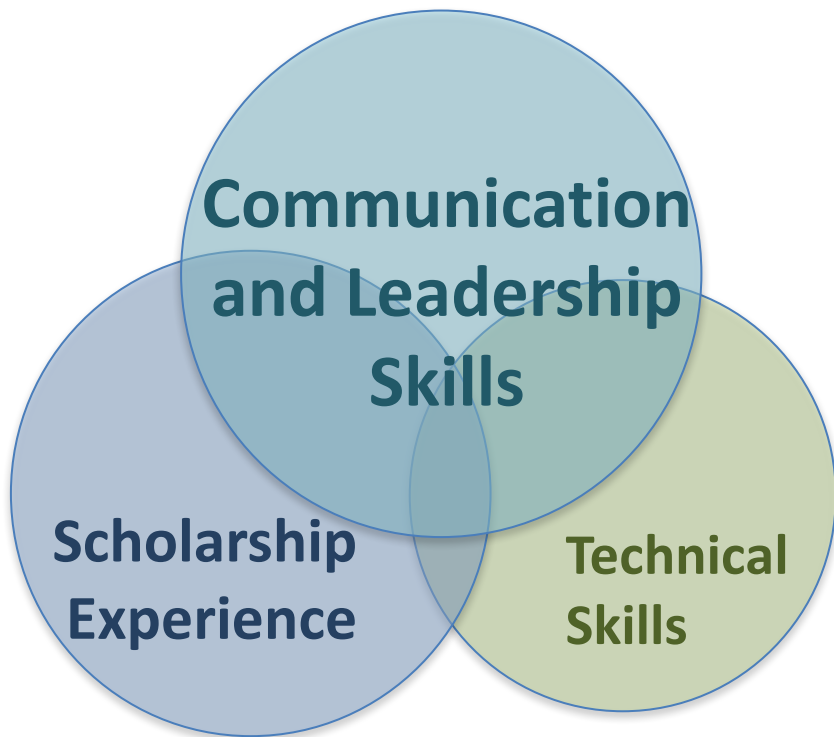collaboration liaising

upward advocacy

On Engaging the Long Tail ...
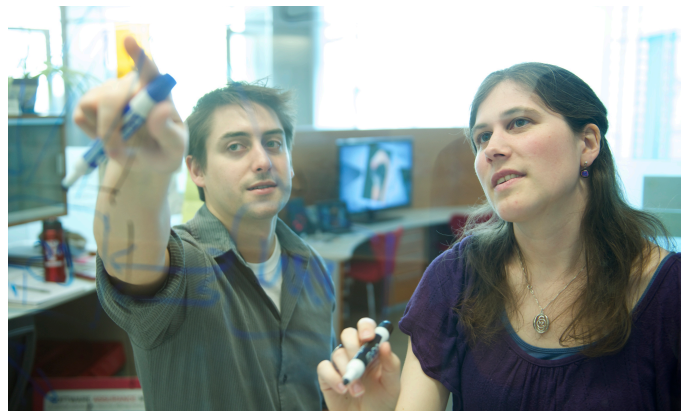

EQUALITY · EQUITY · LIBERATION

interactioninstitute.org – Arthur Maguire

Research Computing Facilitators

Communication and Leadership Skills

Scholarship Experience

Technical Skills

designated, dedicated, deliberate

Understanding Facilitator Impact

Millions of CPU Hours via CHTC

Legend:
- uncategorized
- Off-Campus
- Humanities
- Med/Pharm/Vet
- Interdisciplinary
- CS/Math/Stats
- Social Sciences
- Engineering
- Life Sciences
- Physical Sciences

X-axis: fy2012-2013, fy2014-2015
Y-axis: 0, 50, 100, 150, 200
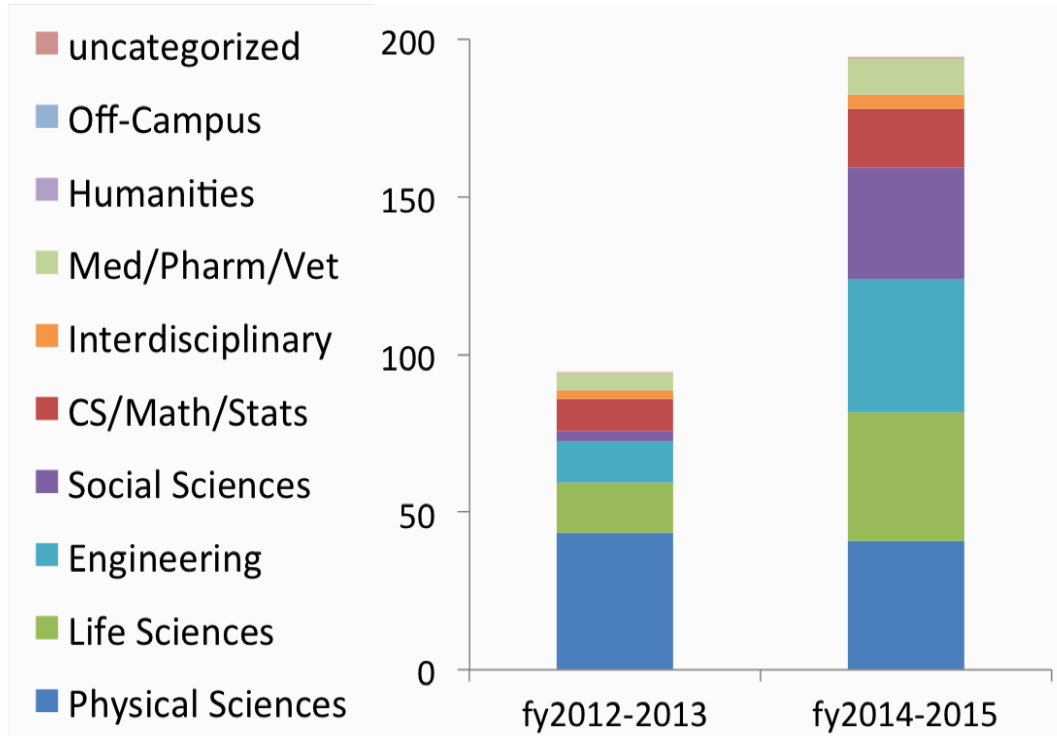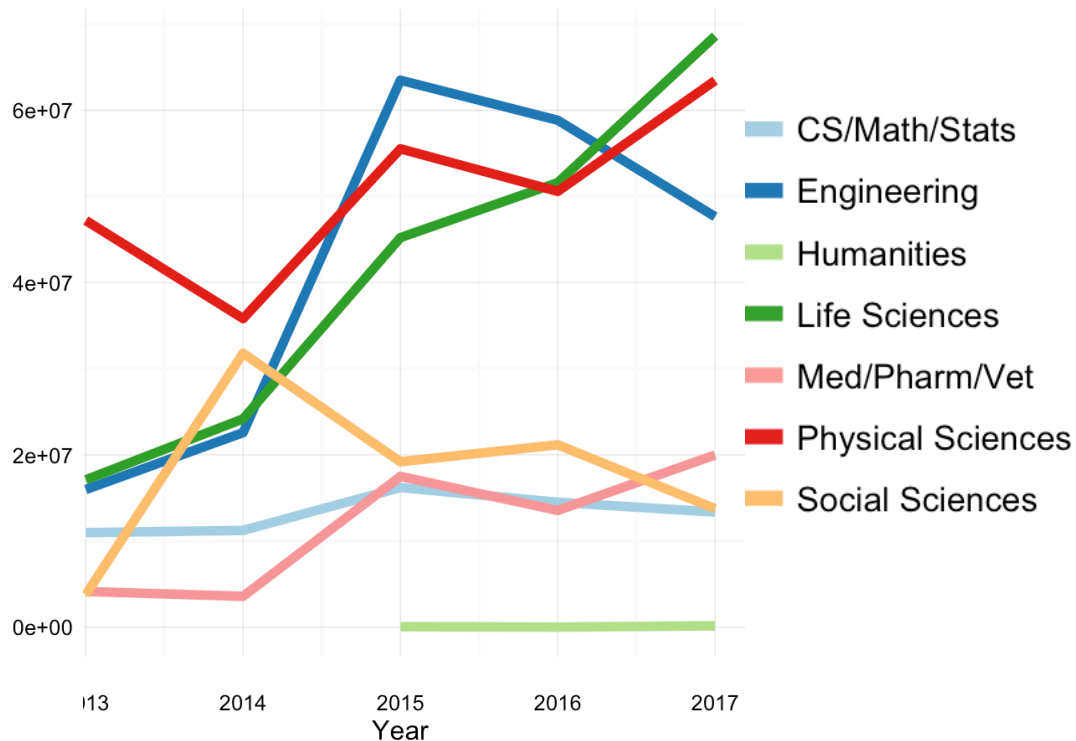
**Facilitators hired:
Jan 2013, Nov 2014**

Understanding Facilitator Impact

Millions of CPU Hours via CHTC

In 2017	
Research Groups Supported	**~280**
Researcher Consultations	**412**
Office Hours Attendance	**349**

Understanding Facilitator Impact

"[The RCF's] value to the overall enterprise is hard to overestimate. Putting someone so capable of explaining procedures in simple but powerful terms greatly enhances the effective power and utility of the millions invested in the hardware."

-Tom Givnish, Botany

"With extensive help from [RCFs] we adapted our workflow to run seamlessly on the HTC platform and have now utilized these resources to construct the largest computed diffusion database in the world."

-Dane Morgan, Materials Science and Engineering

Research Computing Facilitators

The Missing Human Link in Needs-Based Research Cyberinfrastructure

Lauren Michael, University of Wisconsin–Madison

Bruce Maas, University of Wisconsin–Madison

Overview

As the roles of core, campus-supported IT services for research have expanded—including the emergence of cloud-based models—the benefits of on-campus human support and user engagement have become increasingly apparent. Ongoing challenges in securing research funding reemphasize a need to demonstrate significant societal impact via effective and efficient investments. At the same time, many campus research computing providers still face challenges in engaging researchers represented in the "long tail" of computing needs, where potentially significant, compute-enabled transformations to scholarship have yet to be realized. The most common models for research computing resources may already meet the significant needs of well-established or "traditional" users, typically in the physical

A Network of Facilitators on Campus

Campus RCF Community

email list and meetings

training collaboration

A "palette of facilitators"

domain-specificity vs. technology-specificity

shared between units (e.g. Botany-Math departments)

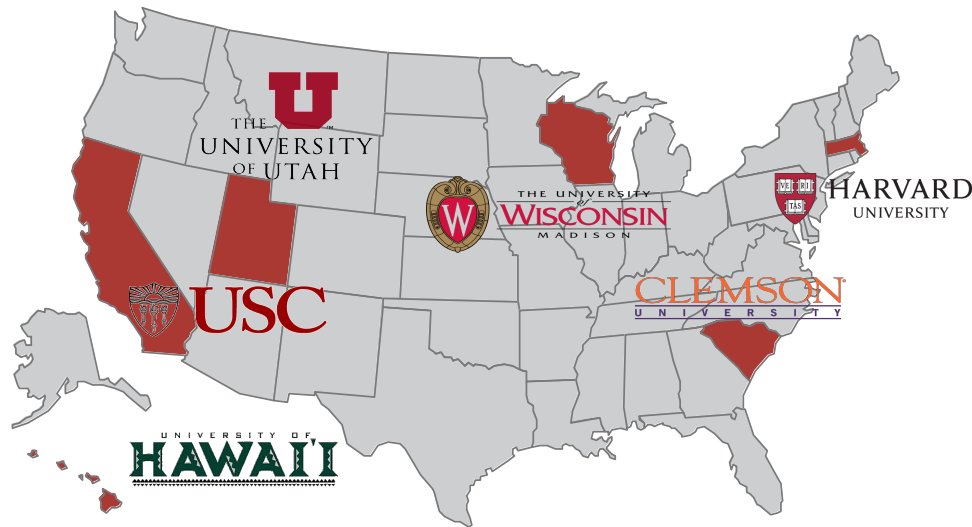in combination with other roles (e.g systems engineer, etc.)

The ACI-REF Network
Advanced Cyberinfrastructure – Research and Education Facilitators

- $5.3M NSF award supporting project leadership and 2 Facilitators at each of 6 partnering sites for 2 years

- research and development of the "Facilitator" role for adoption by the community

aciref.org

ACI-REF Best Practices of Facilitation

What is an ACI-REF, and What Activities Exemplify Facilitation?

Introduction and Main Ideas

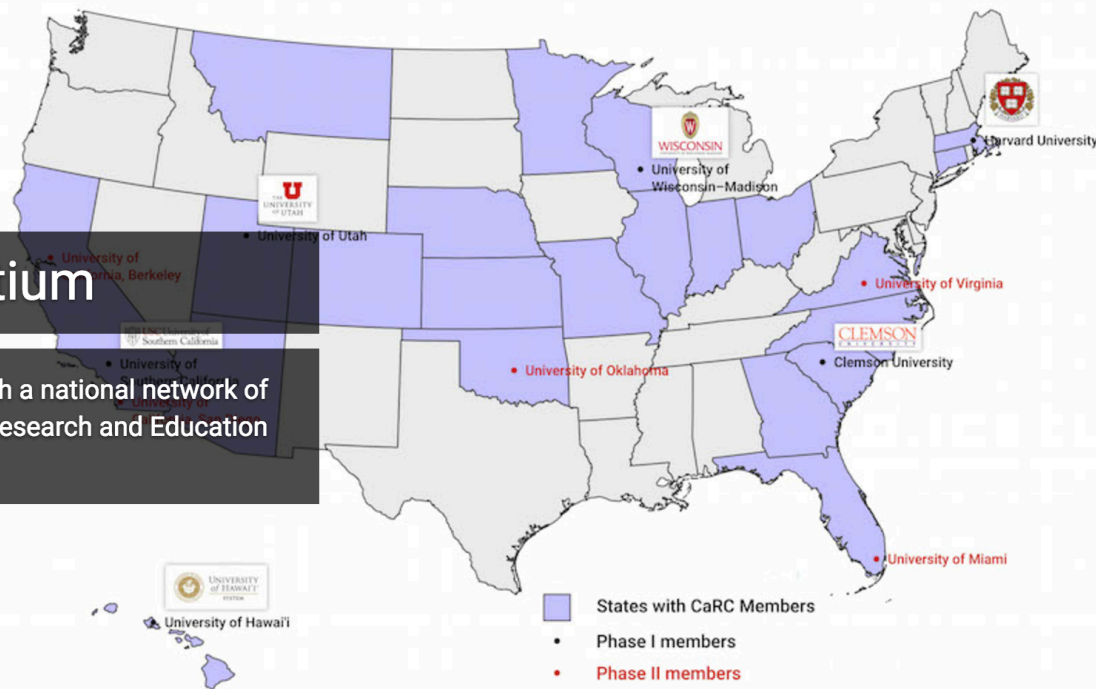## Major Activities of Facilitation

Definitions

Appendix

Contribute

Acknowledgements

Learn more about the ACI-REF program

ACI-REF

Advanced CyberInfrastructure - Research and Education Facilitators

Home | Project | Facilitators | Best Practices | Impact | ACI-REF Blog | Research Computing

WISCONSIN

THE UNIVERSITY OF UTAH

• University of Wisconsin–Madison

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• University of Virginia

A National Consortium

USC University of Southern California

CLEMSON

Advancing scientific discovery through a national network of Advanced Cyberinfrastructure (ACI) Research and Education Facilitators (ACI-REFs).

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Clemson University

• University of Southern California

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States with CaRC Members

• Phase I members

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Let's Talk

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