RESEARCH COMPUTING FACILITATORS AT WISCONSIN

UNIVERSITY OF WISCONSIN–MADISON

CENTER FOR
HIGH THROUGHPUT
COMPUTING

- **Development of distributed computing technologies like HTCondor**
- **Computing infrastructure for UW-Madison research**
- **Research Computing *Facilitation***

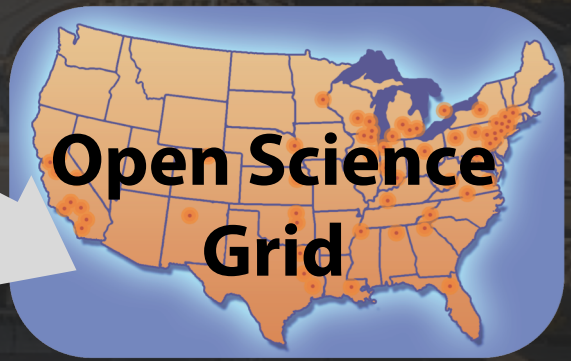
Agile, Shared Compute Systems

"submit locally, run globally"

Campus Grid

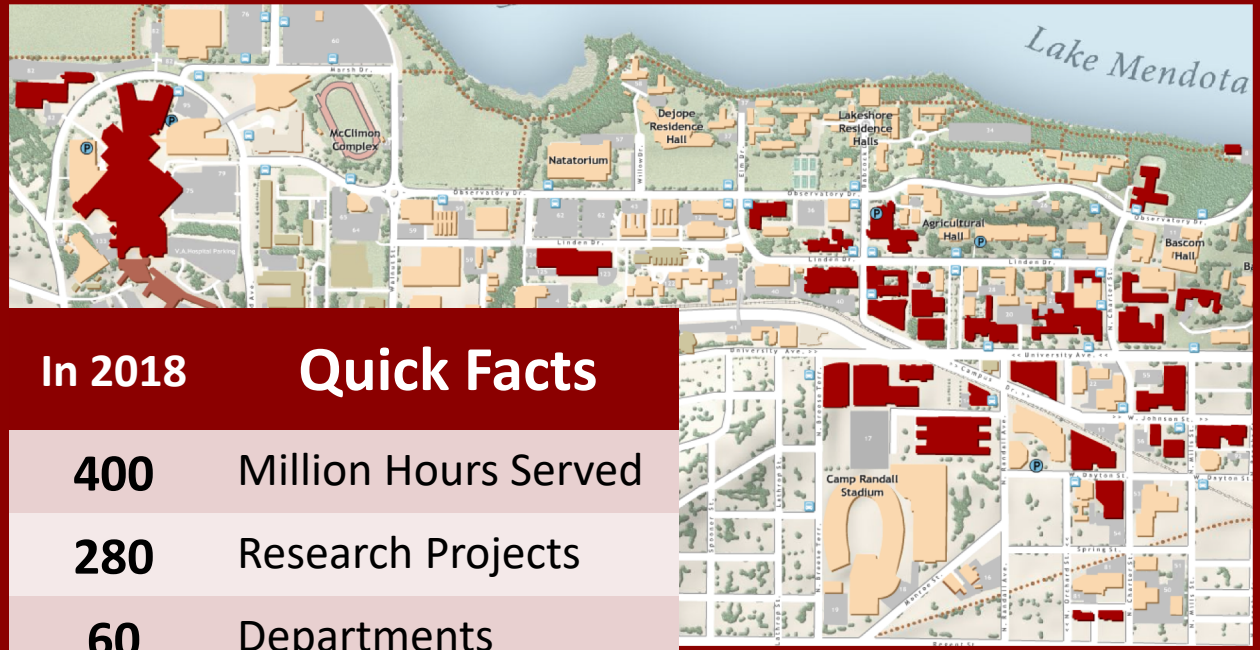
CHTC
pool

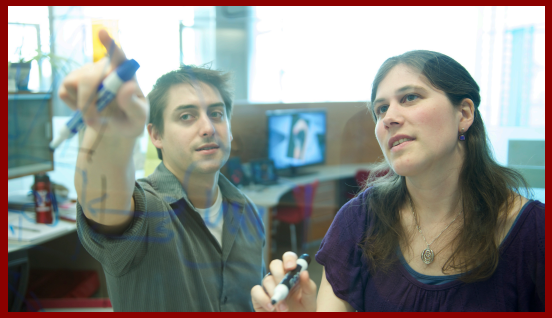
The Cloud



CENTER FOR HIGH THROUGHPUT COMPUTING

serving computational research across campus





In 2018 Quick Facts

400	Million Hours Served
280	Research Projects
60	Departments

chtc.cs.wisc.edu

Research Computing *Facilitation*

accelerating research transformations

proactive engagement

personalized guidance

teach-to-fish training

technology agnostic

collaboration liaising

upward advocacy

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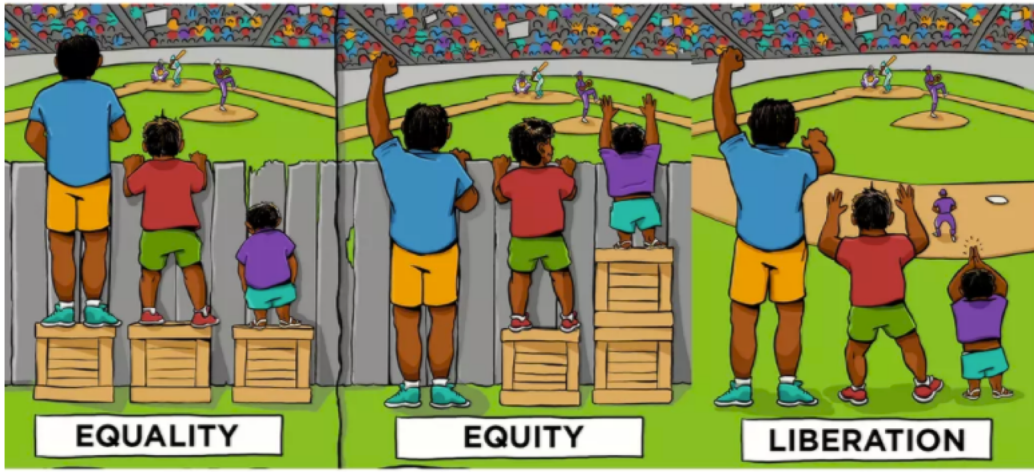
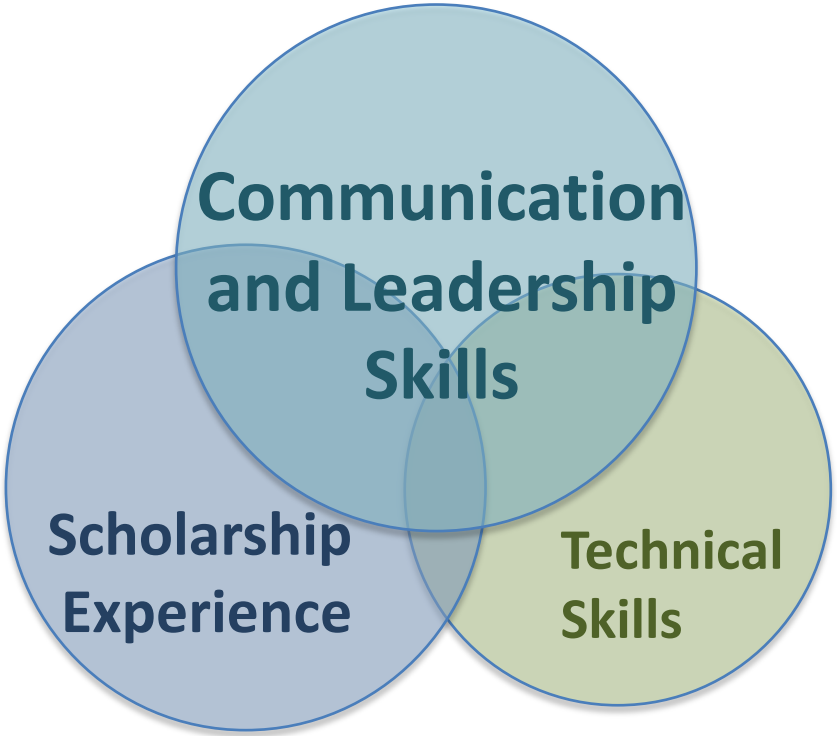
On Engaging the Long Tail …



interactioninstitute.org – Arthur Maquire

Research Computing Facilitators



designated, dedicated, deliberate

Research Computing Facilitation

1. Meet with <u>every</u> potential new user.

Research Computing Facilitation

1. Meet with every potential new user.
2. Ask progressively for details.

Research Computing Facilitation

1. **Meet with every potential new user.**
2. **Ask progressively for details.**

- *Tell me about your research …*
- *… and how does computing fit in?*
- *What is your near-term bottleneck?*
- *How are your running it now?*

  (the compute/data requirements?)

  (your computing background?)
- *How much/big do you **need** to run?*

Research Computing Facilitation

1. **Meet with every potential new user.**
2. **Ask progressively for details.**
3. **Set expectations.**

If you …

> execute your work ***this way***

> requiring ***these learning steps*** and ***this much time***

Then you …

> can reach your research goal after ***this much walltime*** and

> could really achieve ***this much more research outcome***

Research Computing Facilitation

1. **Meet with every potential new user.**
2. **Ask progressively for details.**
3. **Set expectations.**
4. **Follow up with the personalized plan in #3.**
5. **Make ongoing support accessible.**

over-emphasize your willingness to help!

Facilitation

=

Engineering

Research Computing Facilitation

1. **Meet with every potential new user.**
2. **Ask progressively for details.**
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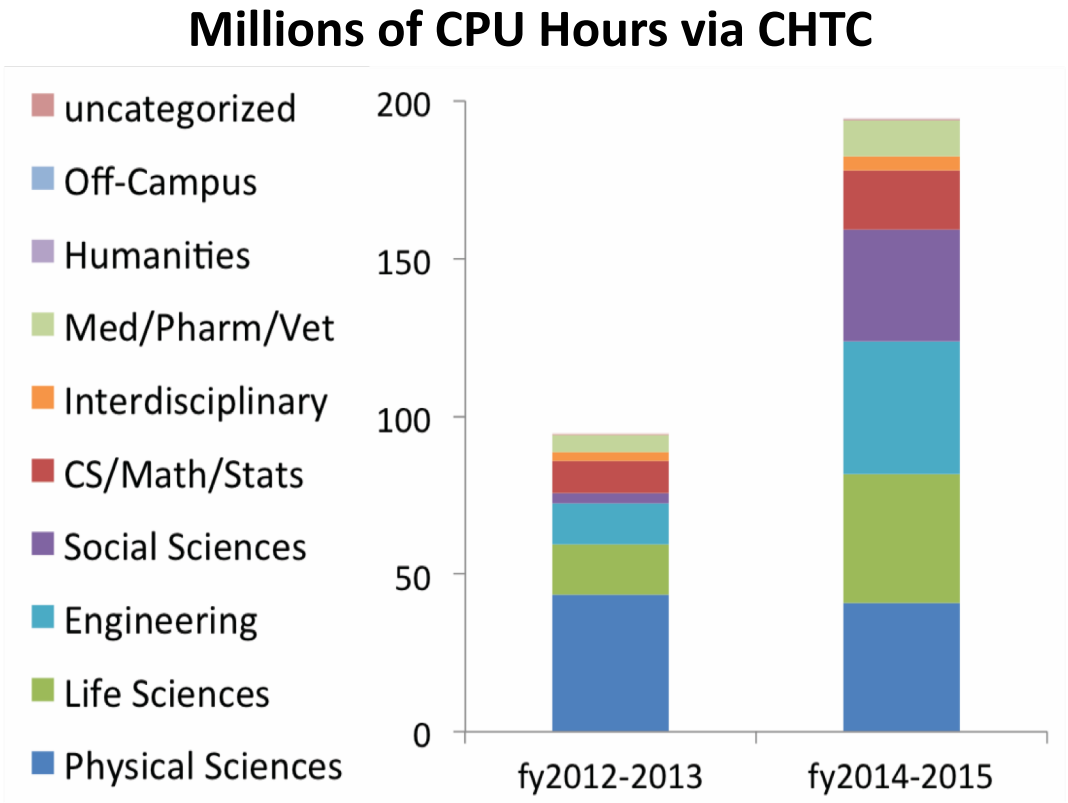
4. **Follow up with the personalized plan in #3.**
5. **Make ongoing support accessible.**

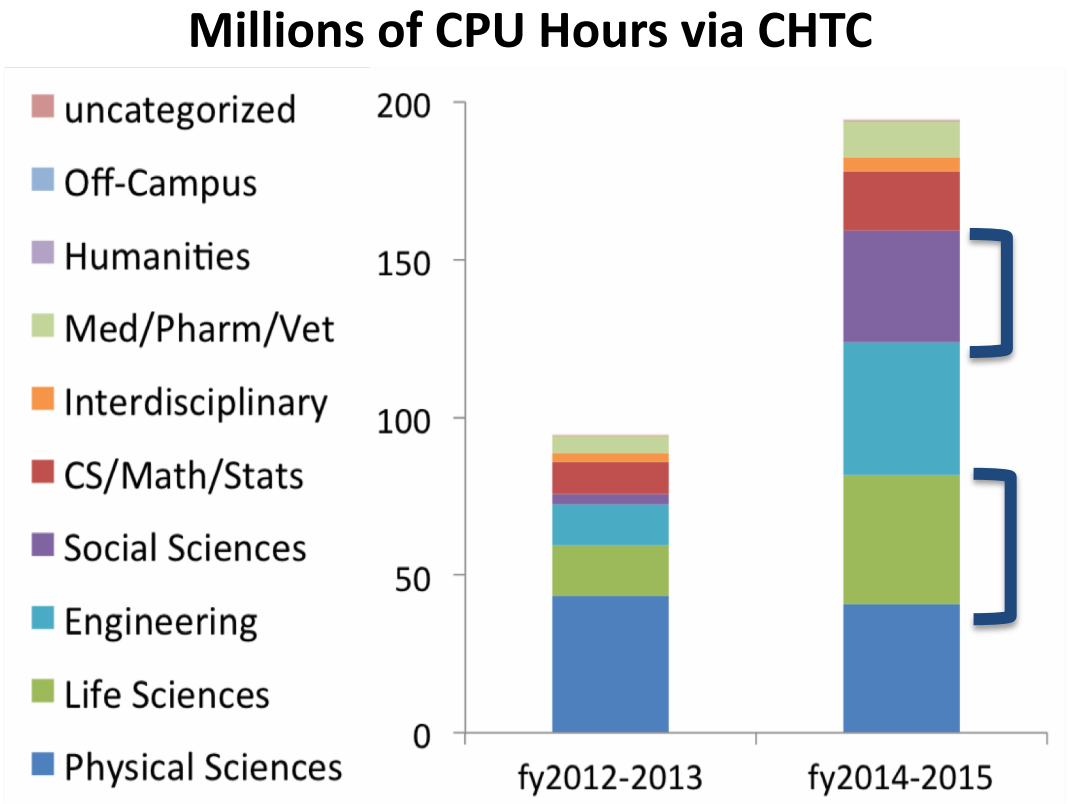
over-emphasize your willingness to help!

Understanding Facilitator Impact



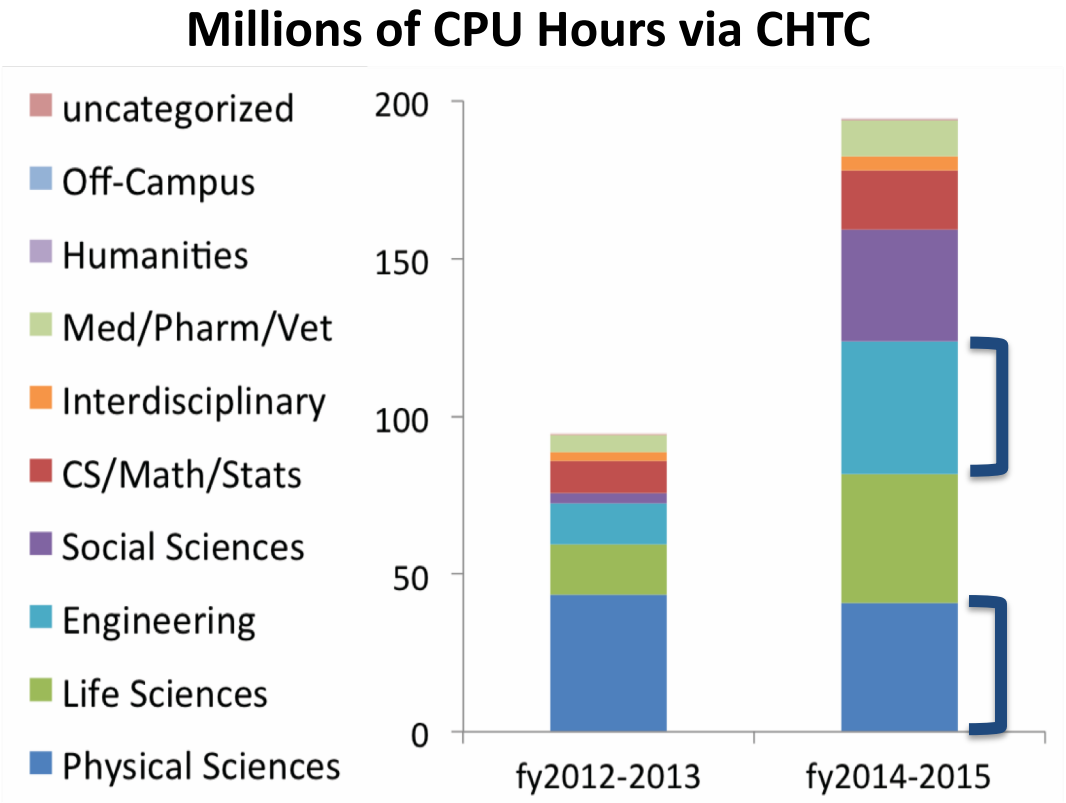
Facilitators hired: Jan 2013, Nov 2014

Impact Across Domains



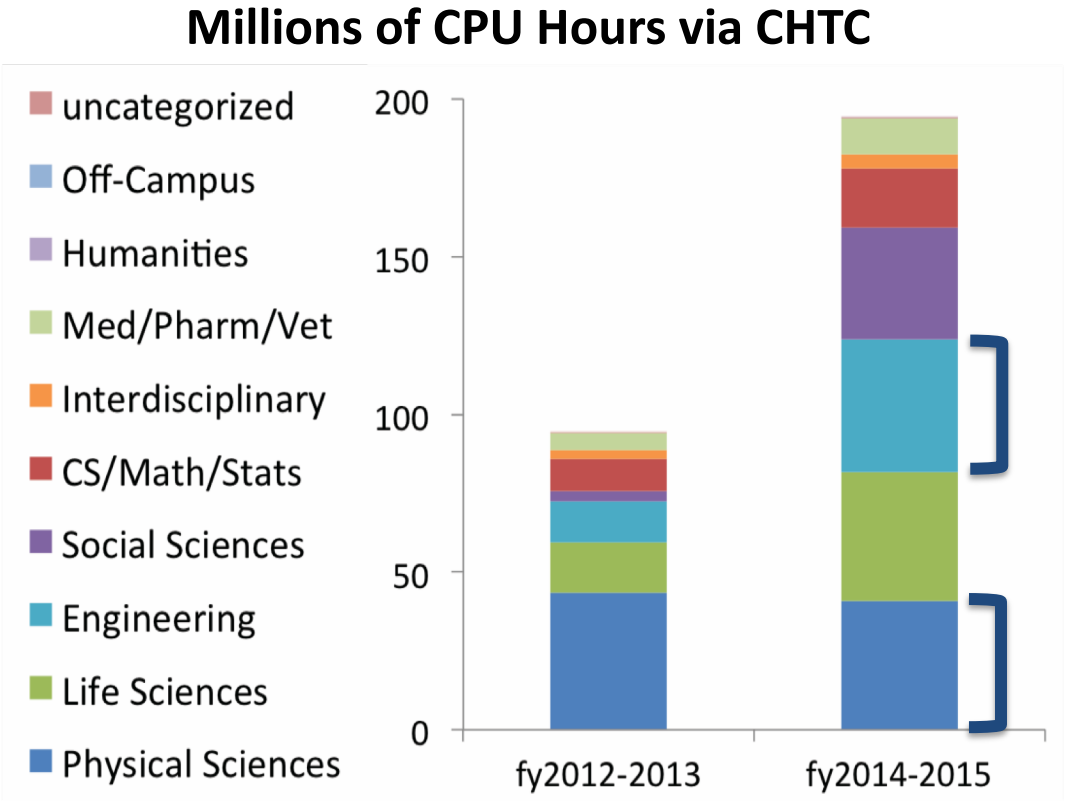
>95% high *throughput* computing

Impact Across Domains



>60% high *throughput* computing

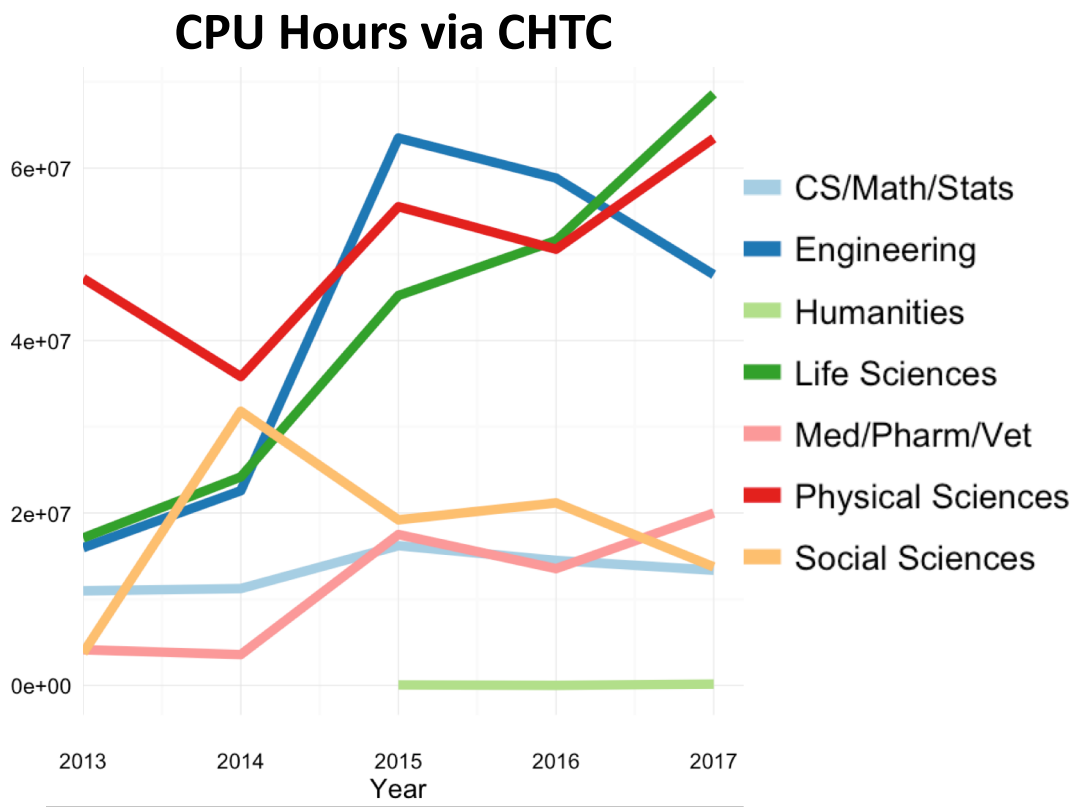
Impact Across Domains



>60% high *throughput* computing

[Future Directions for NSF Advanced Computing Infrastructure to Support U.S. Science and Engineering in 2017-2020]

Impact Across Domains



In 2018	
Research Groups Supported	280
Researcher Consultations	495
Office Hours Visits	420

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

ECAR Research Bulletin | May 16, 2016

Lauren Michael, University of Wisconsin–Madison
Bruce Maas, University of Wisconsin–Madison

Overview

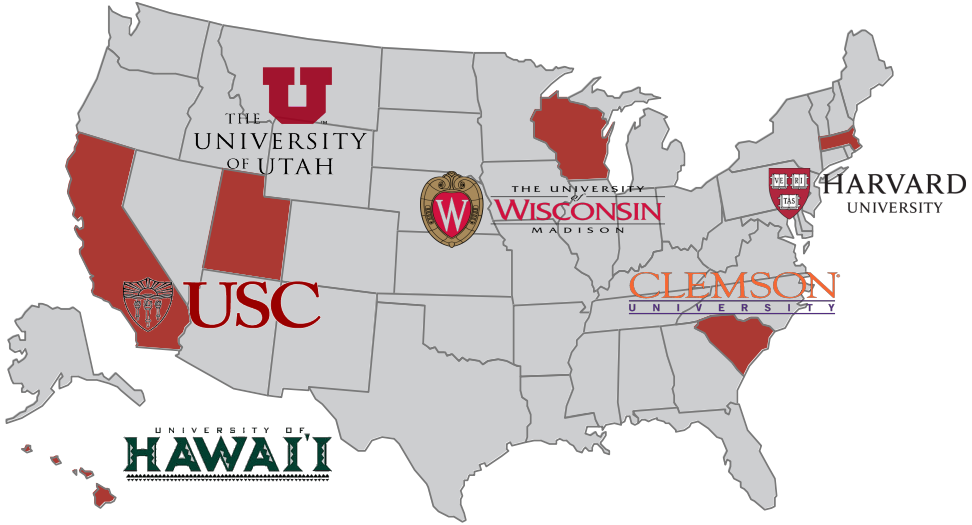
As the roles of core, campus-supported IT services for research have expanded—including the emergence of cloud-based models—the benefits of on-campus human support and user engagement have become increasingly apparent. Ongoing challenges in securing research funding reemphasize a need to demonstrate 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

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

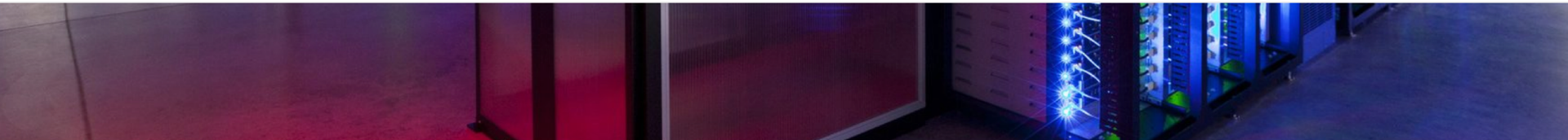
ACI-REF
Advanced CyberInfrastructure
Research & Education Facilitators



aciref.org

CARCC.ORG

Campus Research Computing Consortium



Let's Talk

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