

# Metrics for Assessing Facilitation



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**Advanced Cyberinfrastructure - Research and Educational Facilitation:  
Campus-Based Computational Research Support**

# NSF ACI-REF Project

Supports ACI Facilitation at six universities:

- Clemson, USC, Hawaii, Harvard, UW Madison, Utah

A key evaluation goal is to identify the project's impacts on:

- ACI-REF Assessments
- Outreach Assessments
- ACI User Assessments
- Impact Assessments

<b>NSF Org:</b>	<a href="#">OAC</a> <a href="#">Office of Advanced Cyberinfrastructure (OAC)</a>
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<b>Award Number:</b>	1341935
<b>Award Instrument:</b>	Standard Grant
<b>Program Manager:</b>	Kevin L. Thompson OAC Office of Advanced Cyberinfrastructure (OAC) CSE Direct For Computer & Info Scie & Enginr
<b>Start Date:</b>	March 1, 2014
<b>End Date:</b>	August 31, 2017 (Estimated)
<b>Awarded Amount to Date:</b>	\$5,295,574.00
<b>Investigator(s):</b>	James Bottum <a href="mailto:jb@clemson.edu">jb@clemson.edu</a> (Principal Investigator) Maureen Dougherty (Co-Principal Investigator) Gwen Jacobs (Co-Principal Investigator) James Cuff (Co-Principal Investigator) Paul Wilson (Co-Principal Investigator)

## ABSTRACT

The Advanced CyberInfrastructure - Research and Educational Facilitation: Campus-based Computational Research Support project develops and implements strategies that serve to advance our nation's research and scholarly achievements through the transformation of campus computational capabilities and enhanced coupling to the national cyberinfrastructure environment. Among the project's collaborating institutions are the University of Hawaii, the University of Southern California, the University of Utah, the University of Wisconsin, and Clemson and Harvard Universities. The project brings together education and research institutions that are committed to the vision of advancing scientific discovery through a national network of Advanced Cyberinfrastructure (ACI) Research and Education Facilitators (ACI-REFs). Working together in a coordinated effort, the project is dedicated to the adoption of models and strategies to leverage the expertise and experiences of its members to maximize the impact of investment in research computing. Located on the campuses and fully embedded in their local environment, the mission of the ACI-REFs is to extend the reach and impact of campus and national research computing infrastructure on the science conducted by students and faculty.



# Evaluation Goals (Facilitation)

## ACI-REF Assessments

- Number of consultations with faculty and students
- Length of engagements
- Affiliations of consulted



## Outreach Assessments

- Number and titles of training sessions offered on campus
- Number of attendees of training sessions
- Attendee satisfaction data

# Evaluation Goals (ACI User, Impact)

## ACI User Assessments

- Number of ACI users and projects, and affiliations
- Number of departments and names
- Number of external ACI users

## Impact Assessments

- Research dollars awarded to ACI users
- Publications by ACI users
- Advanced degrees conferred by departments using ACI

Although we perform these other assessment, too, I want to focus now only on Facilitation Assessments.



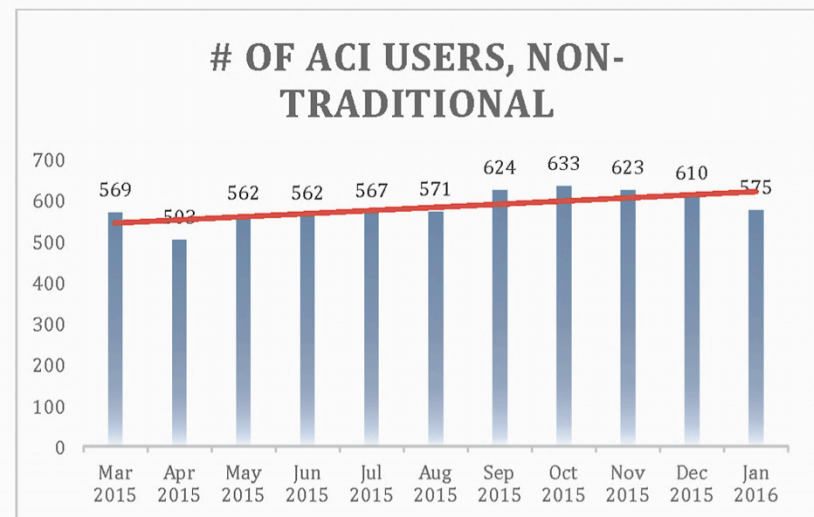
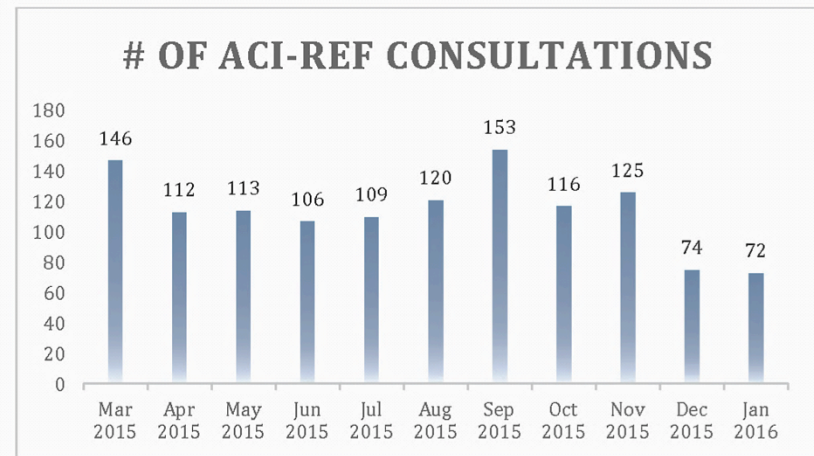
# Project Reporting

Data is collected and analyzed at standard intervals.

- Monthly: per individual site
- Yearly: across all sites

Project emphasizes the long-tail of ACI research.

- A goal is to positively impact “non-traditional” users, who are most typically from the Life Sciences, Social Sciences, and Humanities.



# Project Reporting

## Some things to consider:

- What units of measurement will be used?
  - *For ACI-REF, common units are needed for aggregation. We use traditional and non-traditional classifications for users, accounts, departments.*
- What information will be needed?
  - *USC accounts are based on a Project Investigator. We record information about their department and their project members.*
- Is the information accurate and current?
  - *At USC, we run PI names through a faculty/staff directory database to ensure that our ACI user information is current.*

# Collecting, Processing, and Reporting Metrics

## 1. Create a record

Record all Facilitation activities!

## 2. Process data

Clean, backfill, check for accuracy, sort, count and organize.

## 3. Add to report

Add descriptive stories as well as statistics to provide a fuller picture of Facilitation.



# Collecting Metrics

## Workshop example:

- Whether or not you require registration for a workshop, you will need to ensure that attendees sign in.
  - *Previously: we used paper sign-in sheets*
  - *Now: we request self-sign via gsheets*
- Pros and cons of using gsheets:
  - *Alleviates need to make sign-in sheets and to manually transcribe attendees.*
  - *It can be easy to miss people who don't sign in and makes it more difficult to identify no-shows afterwards.*

HPC Workshop Attendance\_perm ☆

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A	B	E	F
Workshop	Firstname	Campus	Users
Linux 3/8/17	Andy	HSC	1
Linux 3/10/17	Siming	UPC	
Linux 3/10/17	Qin	UPC	
Linux 3/10/17	Yun	UPC	
Linux 3/10/17	Jonathan	UPC	4
HPC 3/17/17	Qifan	UPC	
HPC 3/17/17	Paulo	UPC	
HPC 3/17/17	Dan	UPC	3
Software 4/12/17	Darryl	HSC	
Software 4/12/17	David	HSC	
Software 4/12/17	Yu (Phoebe)	HSC	
Software 4/12/17	Yibu	HSC	
Software 4/12/17	Meng	HSC	5
Software 4/14/17	Yun	UPC	
Software 4/14/17	Mehdi	UPC	
Software 4/14/17	Matt	UPC	
Software 4/14/17	Yi hao?	UPC	4





# Processing Metrics

## Office hours example:

- Fill in all missing data.
- Rename for reporting, sort several ways, tally users and departments and dept. type (traditional/non-traditional).
- Summarize assistance for qualitative reporting.

HPC Office Hours Attendance ☆ 📁

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A	B	F	G	H	I
04/18/17	Lokesh	ENGR	EE	Troubleshooting using GPUs and k	
04/18/17	Adarsha	ENGR	EE	Troubleshooting using GPUs and k	
04/18/17	Ying	ENGR	AME	scale up matlab code on PC to clu	
04/18/17	Chunyang	ENGR	MSE	Out of disk space - causing proble	
04/18/17	Fatemeh	ENGR	EE	Lumerical FDTD license issue	
04/18/17	Steven	ENGR	CS	Helped new user setup for class pr	
04/18/17	Kevin	ENGR	CS	Helped new user setup for class pr	
04/11/17	Lokesh	ENGR	EE	Getting started with using GPUs ar	
04/11/17	Adarsha	ENGR	EE	Getting started with using GPUs ar	
04/04/17	Siyuan	ENGR	MFD MASC	MASC class, how to decrease que	
04/04/17	Fatemah	ENGR	EE	Couldn't open a gui, having proble	
04/04/17	Ruru	ENGR	MFD MASC	MASC class Walltime exceeded &	
04/04/17	Mehdi	ENGR	MFD PET	"Permission denied" error when sta	
4 sessions	14 assists		11	ENGR AME, CS, EE, MASC, MSE, PET	
	12 uniq users		1	MED NCCC	



# Reporting Metrics

## Workshops example (qualitative)

- Total number of attendees was 26.
- 4 workshops offered, 2 on main campus, 2 on health sciences campus.
- 'Introduction to Linux' (10 attendees), 'Introduction to HPC Cluster Computing' (x2) (6 total attendees), 'Installing Software on HPC' (10 attendees).

## Facilitation assessments (quantitative)

April 2017 Assistance Type	# Instances	# Assistances /Attendees (#Unique Users)	# Traditional Departments* (#Unique Users)	# Non-Trad. Departments* (#Unique Users)
Office hours	4	14 (12)	6 (11)	1 (1)
Consultations	4	12 (11)	2 (3)	1 (8)
Email assistance	20	20 (20)	3 (11)	4 (4)
Training sessions	5	5 (23)		

# Conclusion

## Reporting serves many purposes:

- Forces record keeping
- Useful for other reports and presentations
- Enables continuous assessment of Facilitation services

## Suggestions for improving reporting:

- Revisit measures for assessment
- Develop common tools to support metrics collection and processing
- Identify data to support statistical models for evaluating Facilitation

## Finished!

- For more info, see the ACI-REF [Best Practices of Facilitation](http://aci-ref.github.io/facilitation_best_practices/) website:  
[http://aci-ref.github.io/facilitation\\_best\\_practices/](http://aci-ref.github.io/facilitation_best_practices/)