

# The CI Ecosystem & The Four Facings

**Dan Voss**

**University of Miami/Florida State University**

**Professional Presenter/Consultant/Contractor/Graduate Student**

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**2018 ACI-REF  
Virtual Residency  
Intermediate Workshop**

# The CI Ecosystem & The Four Facings

randomly scattered throughout presentation  
to keep you (and me) on our toes

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# Secret Agenda!



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# Are You Lonely?

- I was....
- How many at your institution do what you do?
- You're already ahead since you're here!



# Why, What, How?

When Google can't help...

- Communities of Practice
- Synchronous Training
- Asynchronous Training
- Conferences
- Other Entities



# Communities of Practice

- Campus Champions!
- SIGHPC Education Chapter
- The Carpentries
- Coalition for Academic Scientific Computing (CASC)
- Campus Research Computing Consortium (CaRC)
- XSEDE Service Providers Forum
- Cyberinfrastructure State & Regional Groups



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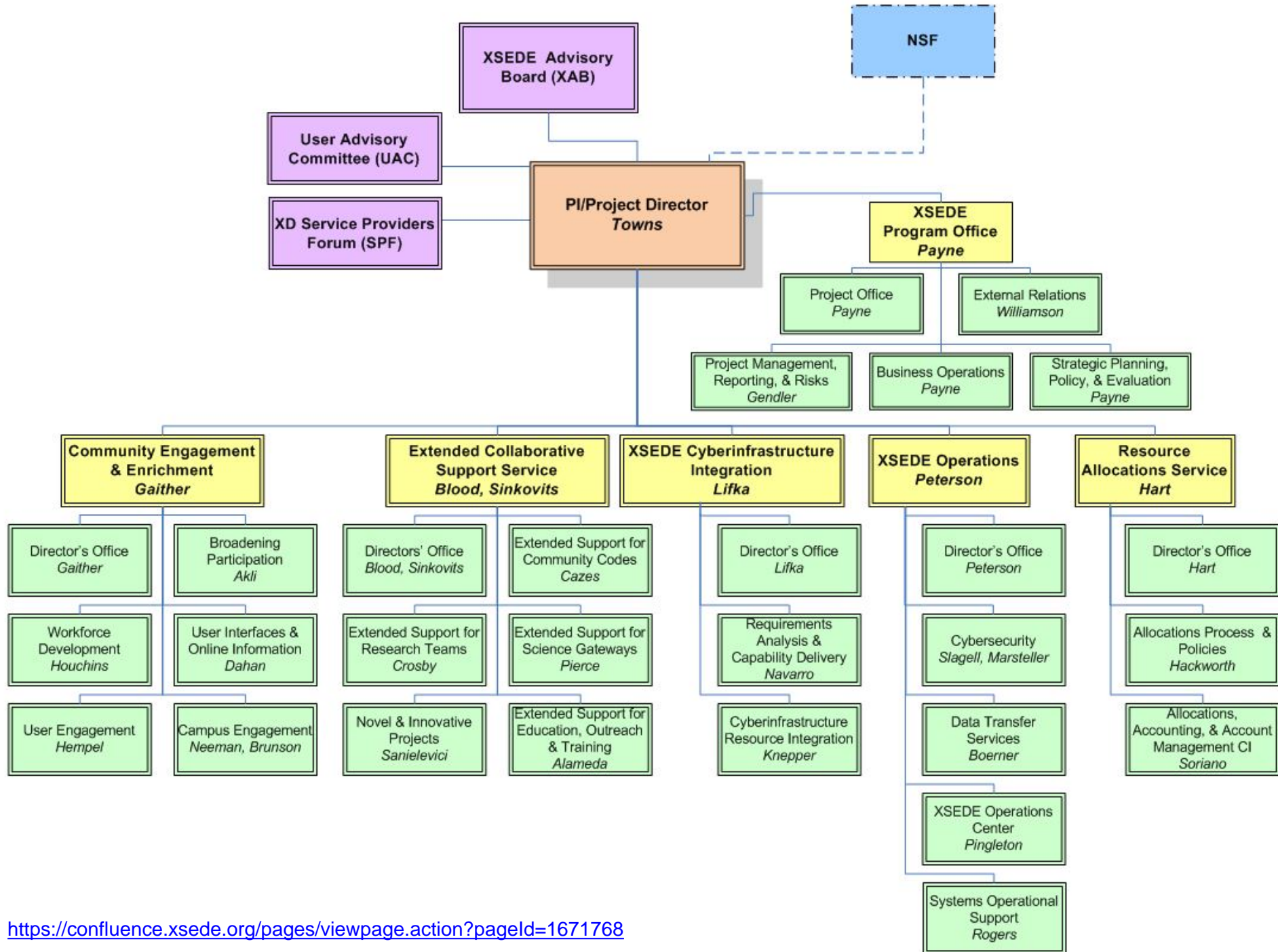


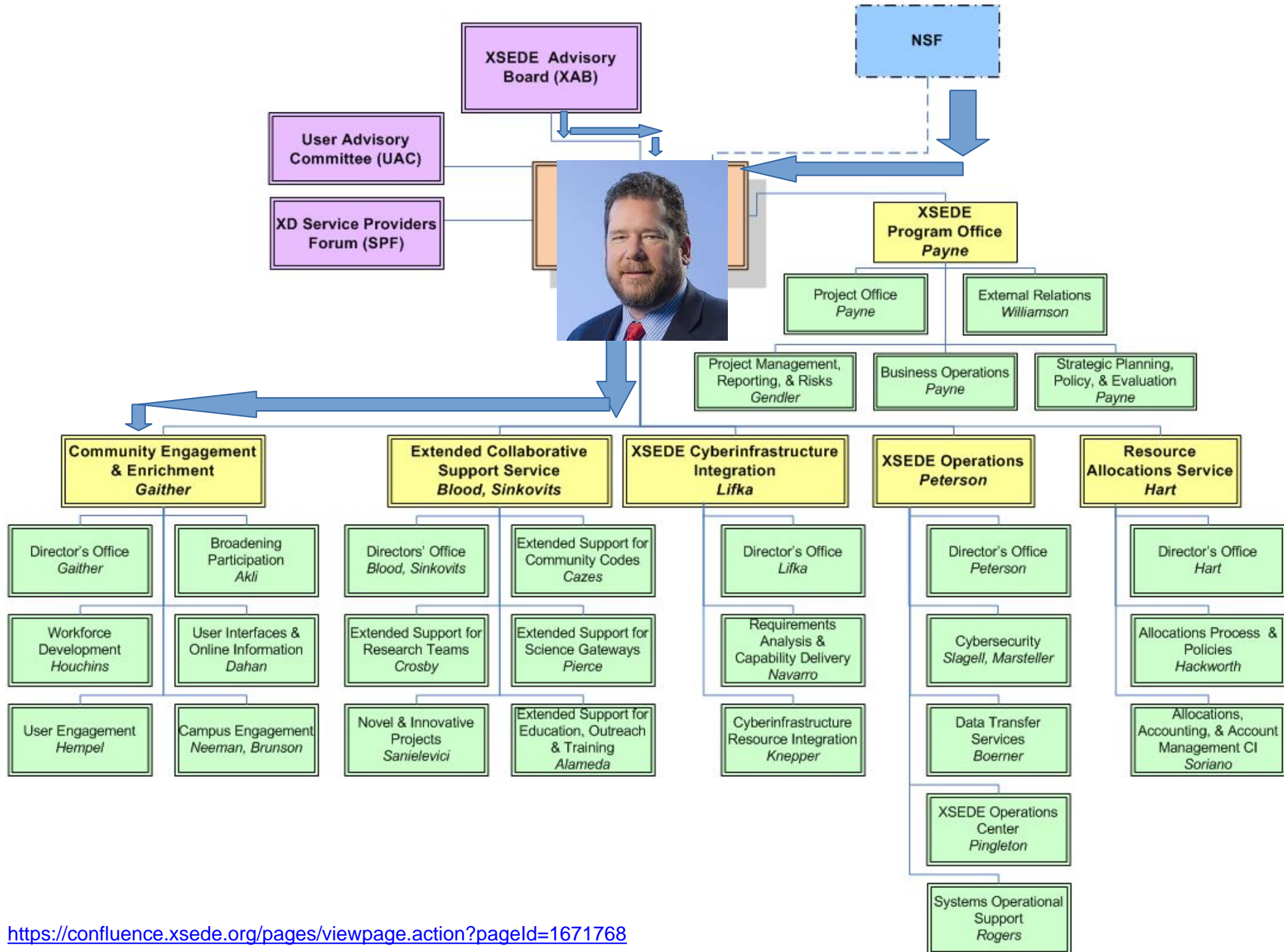


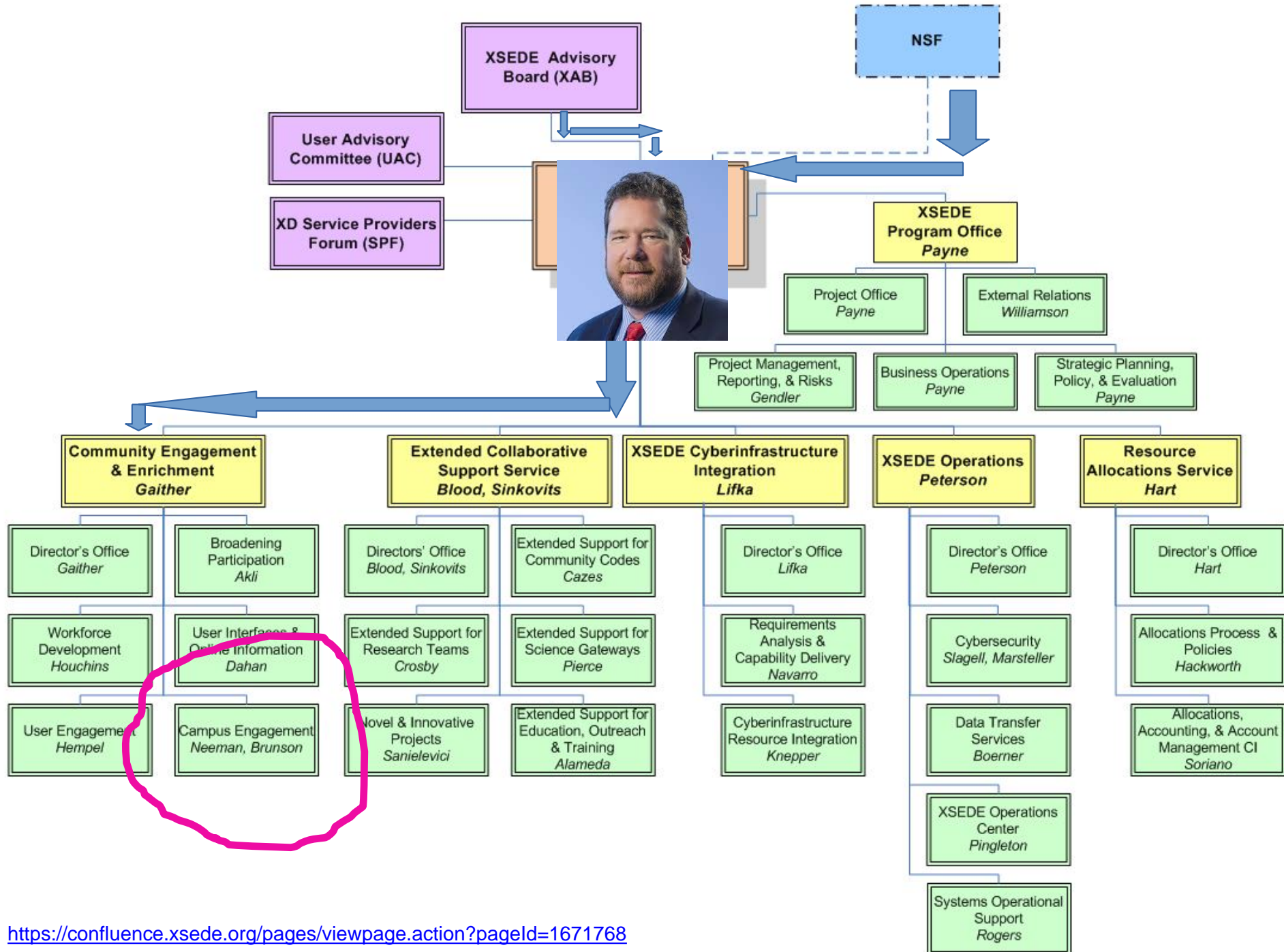
# Champions – the “breadth” group

- ~500 champions from 250+ US academic and research-focused institutions help their local researchers to use CI, especially large scale and advanced computing
- FREE to join with letter of collaboration
- Funded via XSEDE project (but no longer XSEDE focused)
- All flavors of campus research computing professionals (directors, sysadmins, user support, trainers, coordinators, etc.)
- Plus new “affiliates” – from organizations that serve the larger community (XSEDE, Internet2, Globus, BDHubs, National Centers, etc.)
- <https://www.xsede.org/campus-champions>













**Community Engagement  
& Enrichment**  
*Gaither*

Director's Office  
*Gaither*

Broadening  
Participation  
*Akli*

Workforce  
Development  
*Houchins*

User Interfaces &  
Online Information  
*Dahan*

User E  
A

Campus Engagement  
*Neeman, Brunson*





**Community Engagement  
& Enrichment  
Gaither**

Director's Office  
Gaither

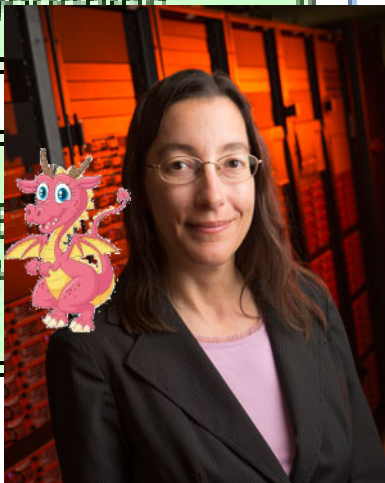
Broadening  
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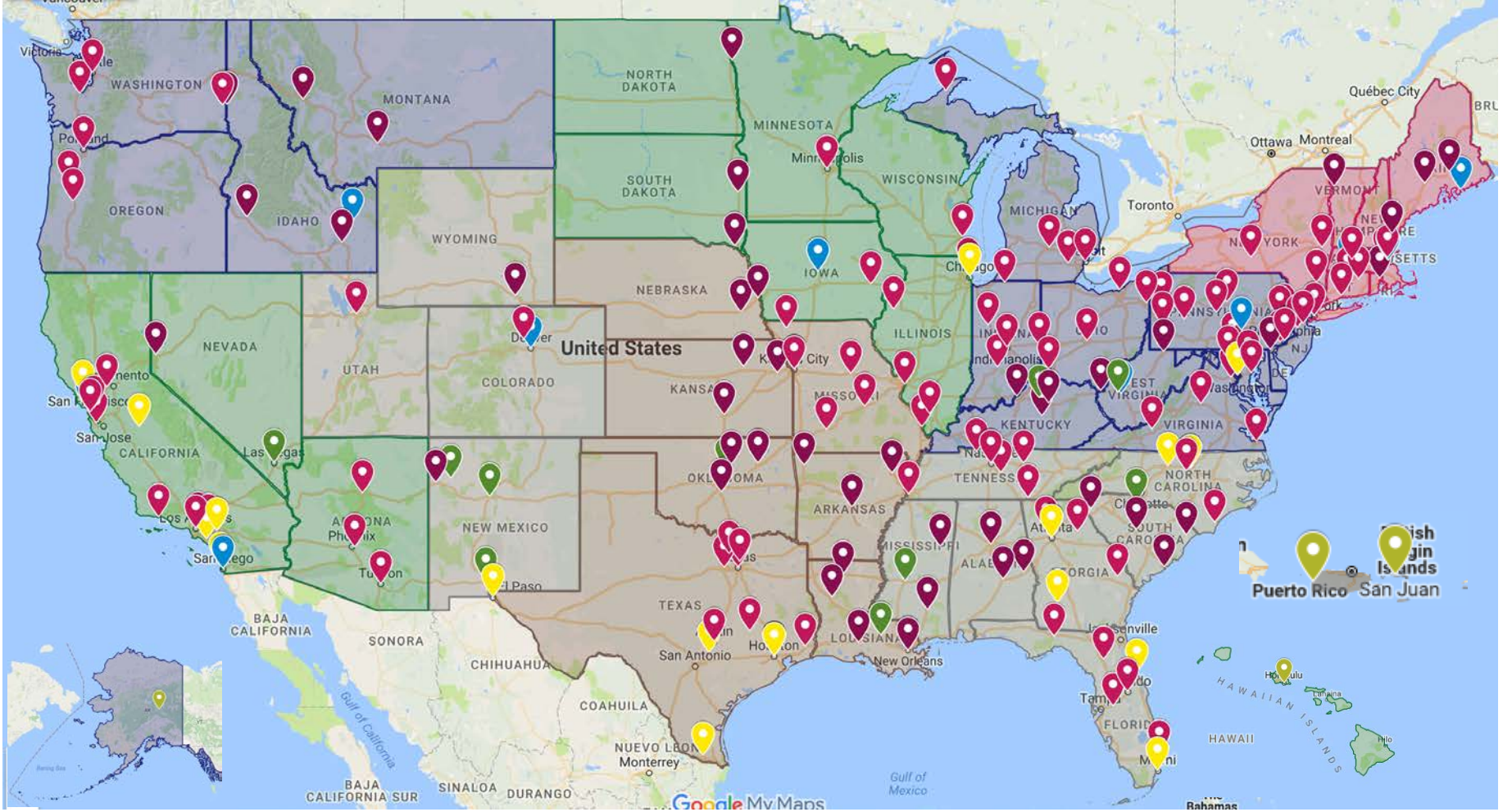
User Interfaces &  
Online Information  
Dobson

User E  
A

Can  
Ne







# Campus Champion Leadership Team

Champion Leadership Team		
Name	Institution	Position
Dana Brunson	Oklahoma State University	Campus Engagement Co-manager
Henry Neeman	University of Oklahoma	Campus Engagement Co-manager
Marisa Brazil	Purdue University	Champion Coordinator
Jeff Pummill	University of Arkansas	Champion Science Coordinator
Jay Alameda	University of Illinois Urbana-Champaign	Champion Technology Coordinator
Aaron Culich	University of California-Berkeley	Champion Leadership Team (2017-2019)
Alla Kammerdiner	New Mexico State University	Champion Leadership Team (2017-2019)
Doug Jennewein	University of South Dakota	Champion Leadership Team (2018-2020)
Timothy Middelkoop	University of Missouri	Champion Leadership Team (2018-2020)
Julie Ma	MGHPCC	Champion Leadership Team (2018-2020)
Hussein Al-Azzawi	University of New Mexico	Champion Leadership Team (2018-2020)
<b>Terms ending July 2018:</b>		
Jack Smith	West Virginia Higher Education Policy Commission	Champion Leadership Team
Dan Voss	University of Miami	Champion Leadership Team

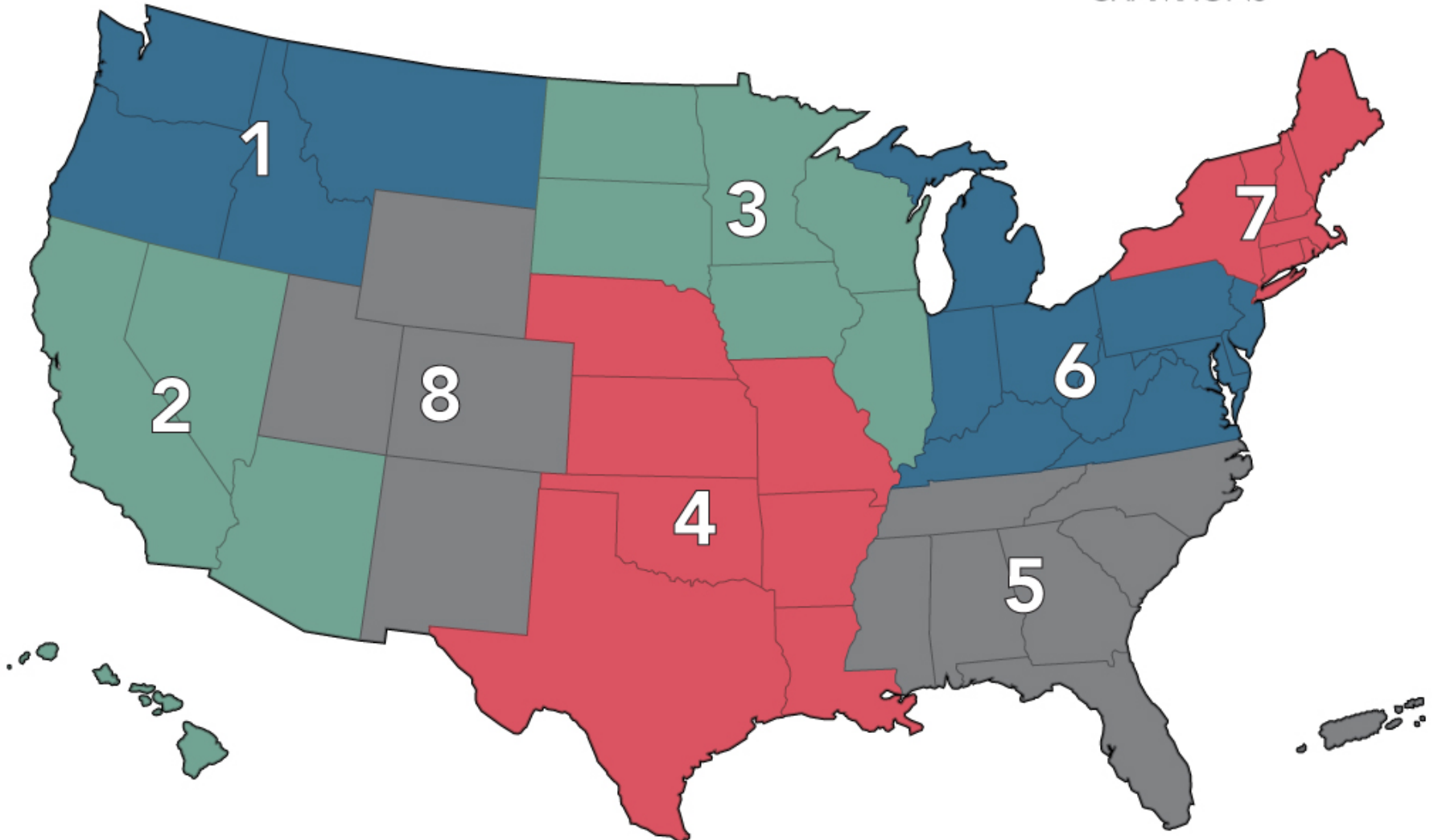


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# Regional Champion Territories



# Campus Champion Regional Leaders

CHAMPION	INSTITUTION	DEPUTY CHAMPION	INSTITUTION	REGION
<a href="#">Ben Nickell</a>	Idaho National Labs	<a href="#">Nick Maggio</a>	University of Oregon	1
<a href="#">Ruth Marinshaw</a>	Stanford University	<a href="#">Aaron Culich</a>	University of California, Berkeley	2
TBD	TBD	<a href="#">Aaron Bergstrom</a>	University of North Dakota	3
<a href="#">Dan Andresen</a>	Kansas State University	<a href="#">Timothy Middelkoop</a>	University of Missouri	4
<a href="#">Mark Reed</a>	University of North Carolina	<a href="#">Craig Tanis</a>	University of Tennessee, Chattanooga	5
<a href="#">Scott Hampton</a>	University of Notre Dame	<a href="#">Stephen Harrell</a>	Purdue University	6
<a href="#">Scott Yockel</a>	Harvard University	<a href="#">Scott Valcourt</a>	University of New Hampshire	7
<a href="#">Anita Orendt</a>	University of Utah	<a href="#">Shelley Knuth</a>	University of Colorado	8



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# Four Facings?



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About 650,000 results (0.25 seconds)

### Four Smart Ways to Finish a Facing Edge - Threads

<https://www.threadsmagazine.com/2016/05/.../four-smart-ways-to-finish-a-facing-edg...>

May 1, 2016 - Faced neckline and armhole edges are smooth, crisp, and well supported. **Four** methods for finishing a **facing's** outer edge. **Facings** provide a smooth, clean finish to garment edges, typically at the neckline, armholes, and center-front openings.

- How to Create Facings** May 2, 2016
  - Video: How to Attach an All-in-One Facing** May 2, 2016
  - Cut Longer Facings for Better-Looking Garments** Aug 12, 2013
  - Facing a Facing** Feb 7, 2011
- [More results from www.threadsmagazine.com](#)

#### People also ask

- What is a shaped facing? ▼
- What is facing and interfacing? ▼
- What is facing up in retail? ▼
- What is a self facing in sewing? ▼

[Feedback](#)

### NMSU: Facings Made Easy

<aces.nmsu.edu> > ... > [How-To Publications](#) > [Clothing Publications](#)

Grade the seam allowance by trimming the **facing** narrower than the garment seam allowance to prevent bulk (Figure 4). Clip the seam allowances on the ...

### 4 Fantastic Facings: How To Get That Professional Finish | The ...

<https://www.thecreativecurator.com/4-fantastic-facings/>

Sep 29, 2016 - **Facings** are used to give a professional finish by finishing the raw edges of ... **Four Fantastic Facings** - Sewing Beginners - The Creative Curator ...

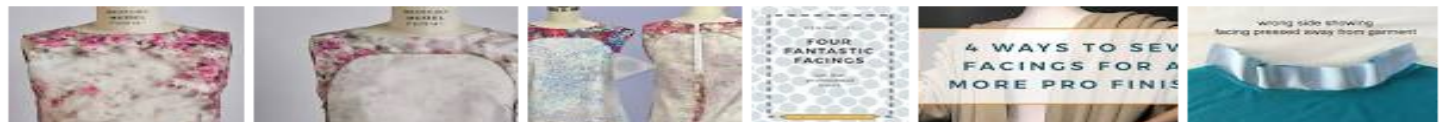
### 4 {BEST} ways to make a FACING pattern and sew it. - Sew Guide

<https://sewguide.com/how-to-sew-facings/>

Learn how to sew **facing** in 4 different ways ; this is the best edge finish for necklines and armholes and even hems of your garments.

[Shaped Facing](#) · [How to Join the back and ...](#) · [Extended Facing / Self ...](#)

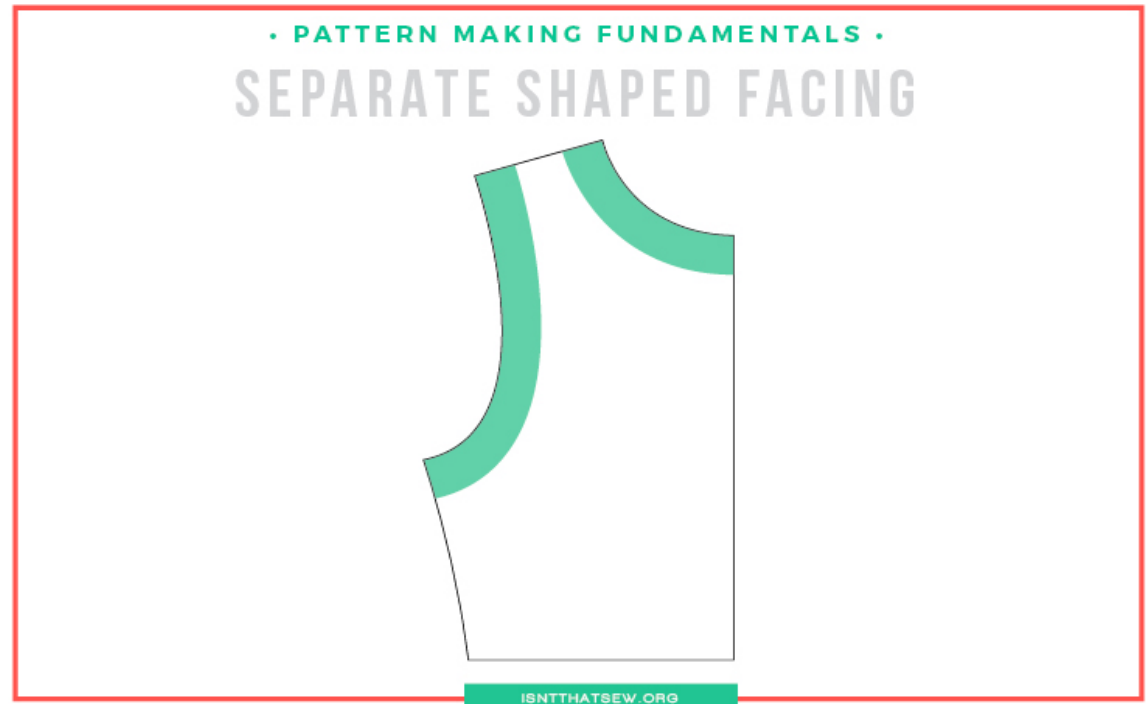
#### Images for four facings



# Four Facings?

Facing is mostly used to finish the edges in:

1. Necklines
2. Armholes
3. Hems
4. Openings



# Four Facings?

There are basically three types of facing:

1. Shaped facing
2. Extended facing
3. Bias facing

**Doh! Kills that idea**



# Communities of Practice

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# SIGHPC Education Chapter

- Virtual chapter of the Association for Computing Machinery's (ACM) Special Interest Group in HPC.
- It recently merged with the International HPC Training Consortium (IHPCTC), whose purpose is the promotion of, interest in, and knowledge of applications of HPC.
- Their focus is on promoting leading practices for HPC training and education.
- Joining is inexpensive and gets you a discount at SC.
- <http://www.sighpc.org>

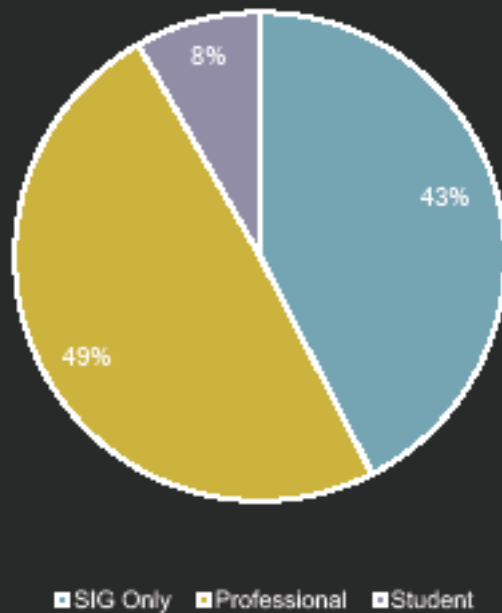




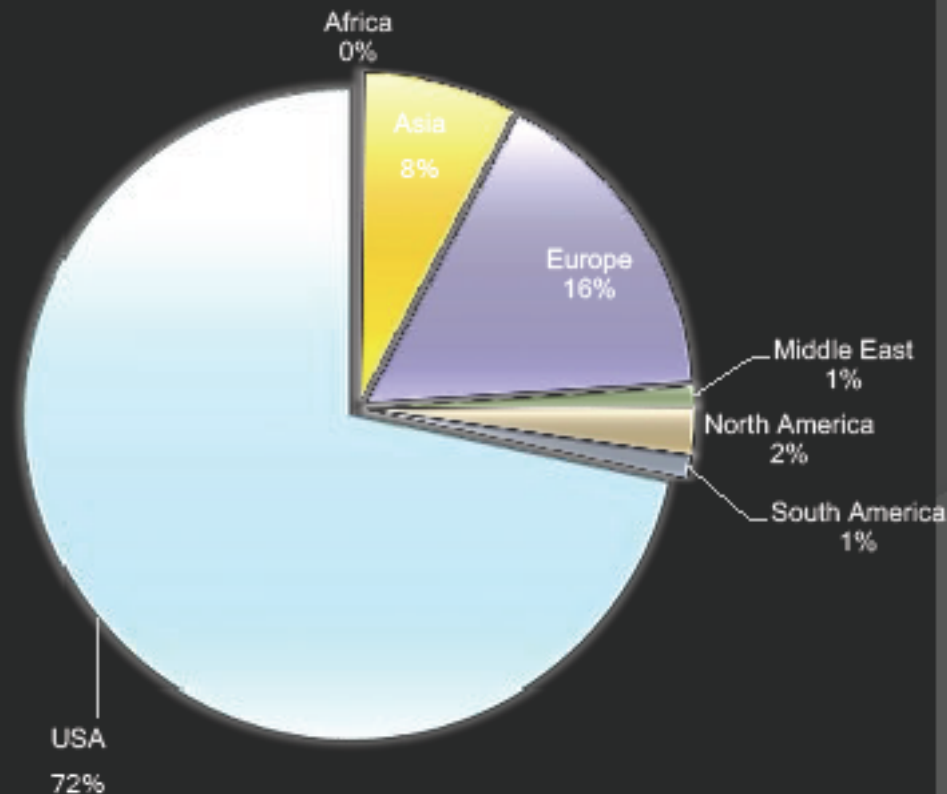
# Who are we?

1,522 members as of 1 Nov  
Up 4.9% over 2016

Member Type



50 different countries  
25% from outside North America



# ACM SIGHPC/Intel Computational and Data Science Fellows (cont.)



- ◎ Award includes
  - \$15,000 stipend
  - Travel to SC
  - Complimentary Technical Program registration
- ◎ Award is renewable
  - 5 years maximum renewal
  - Actual number based on graduation date as specified in application
  - Contingent upon satisfactory progress towards degree
- ◎ Second Cohort:
  - Applicants from ?? countries & ?? disciplines
  - 12 people selected
- ◎ Meet a student face-to-face:  
**students@SIGHPC.org**

# Four Chapters



HPC Big Data

HPC Resource Constrained

HPC Education

HPC Systems Professionals



# SIGHPC Services You Might Not Know About

Webinar Series

Travel Grants

Professional Recognition

Digital Library Publications

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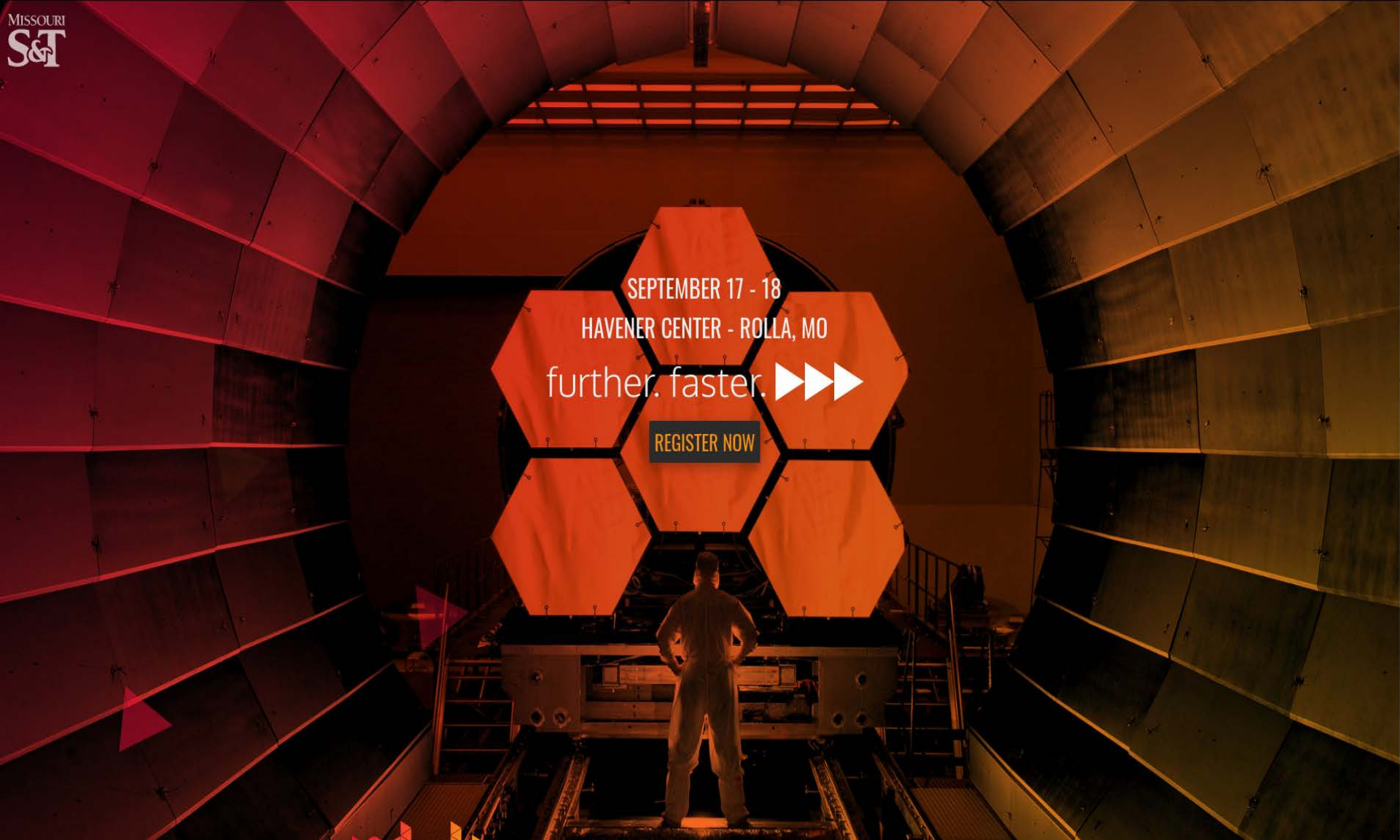


# The Carpentries

- Volunteer instructors teaching basic lab skills for research computing (over 450!)
- Collaboratively developed lessons (over 200 people contributed to 2016.06 version)
- Research based pedagogy & instructor training certification
- HPC Carpentry efforts ongoing
- <https://software-carpentry.org/join/>







SEPTEMBER 17 - 18

HAVENER CENTER - ROLLA, MO

further. faster. ▶▶▶

REGISTER NOW



ABOUT

REGISTER

PARTNER WITH US

SCHEDULE

LODGING



<https://rtd2018.mst.edu>



ABOUT

REGISTER

PARTNER WITH US

SCHEDULE

LOGGING

This overview of the schedule shows the general flow for the event. Note that there may be other events occurring throughout the sessions and workshops; details on all events will be added to the calendar below as they are set. *Events and times subject to change.*

## SATURDAY & SUNDAY

*Separate registration required. More information to follow.*

8am Data Carpentry Day 1 - Genomics
8am Data Carpentry Day 2 - Genomics

## MONDAY

8:30am Registration
9:30am

<https://rtd2018.mst.edu>





# Four Facings?



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# CASC

- Coalition for Academic Scientific Computing
- “HPC Directors club”
- 86 member institutions
- Federal Relations
- Meets 2x per year usually in DC area.
- \$4K/year to join
- <http://casc.org>



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# CaRC

- Campus Research Computing Consortium
- NSF funded Research Coordination Network with 28 collaborating institutions
- [https://www.nsf.gov/awardsearch/showAward?AWD\\_ID=1620695](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1620695)
- Surveyed community to understand challenges and values.
- Aim is to develop ways for more to join.



# Facing 1?



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# Sponsors/Stakeholder facing roles



The Count!



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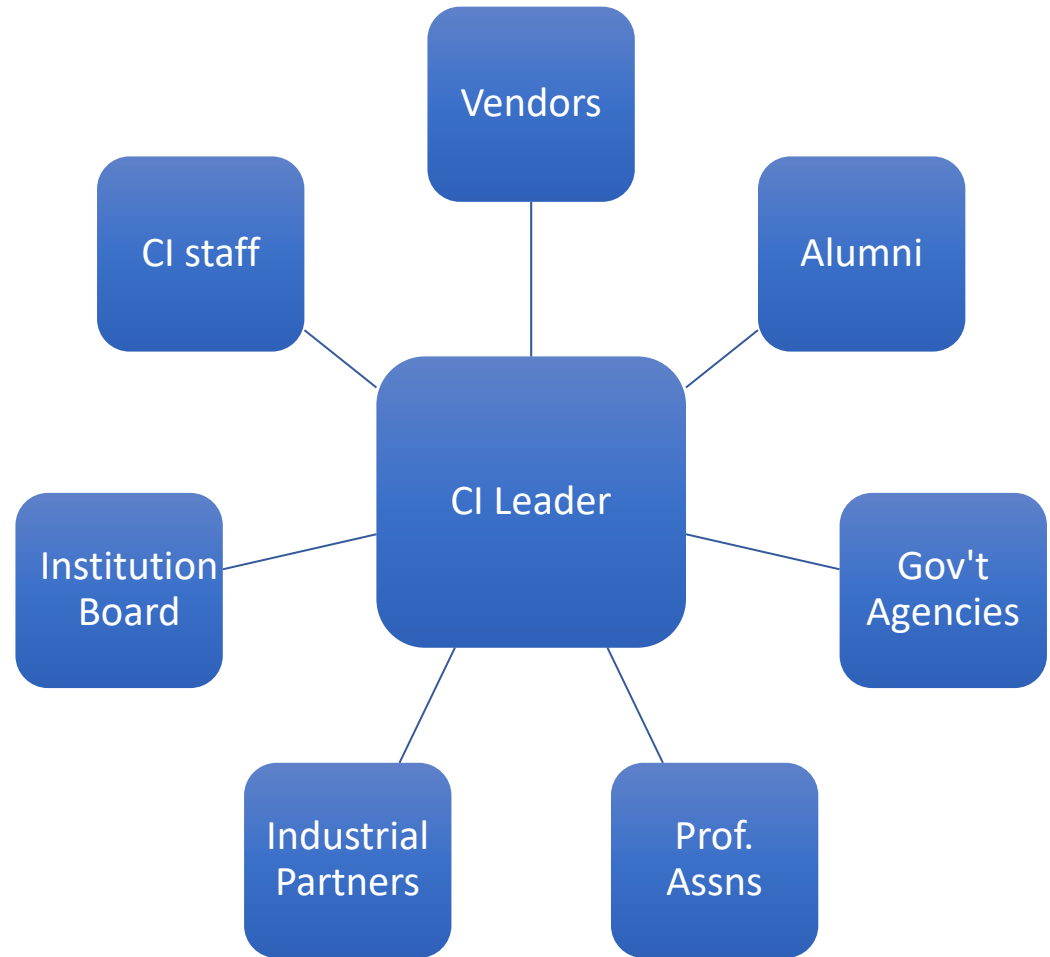
# Sponsors/Stakeholder facing roles



- Knows his numbers!
- Dresses well (sort of)
- Speaks & writes professionally



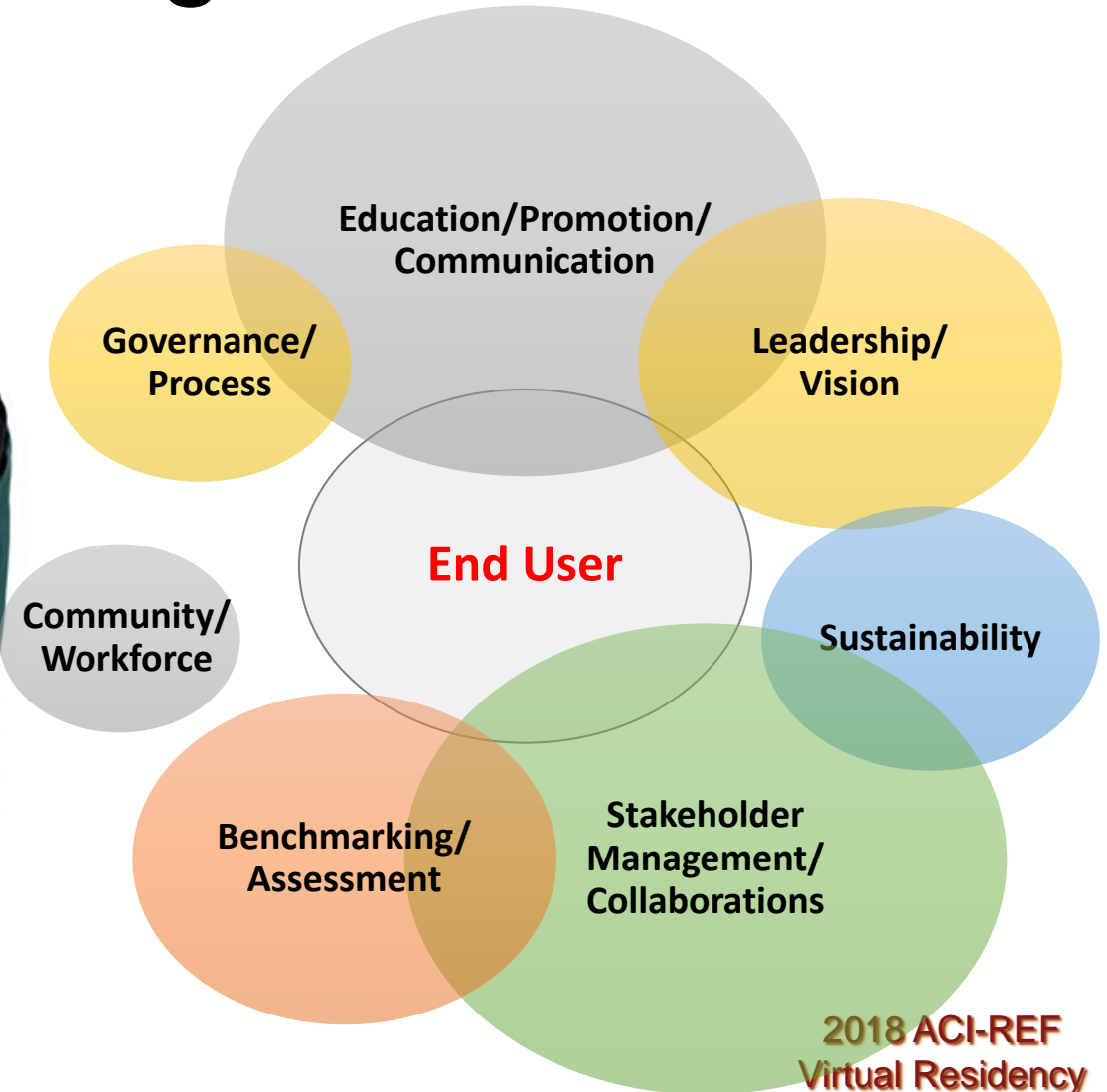
# Sponsors/Stakeholder facing roles



# Sponsors/Stakeholder facing roles



# Sponsors/Stakeholder facing roles





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# XSEDE Service Providers Forum

- This group includes the Supercomputing Centers that are allocated by XSEDE, resources that are partially allocated, and resource and service providers of many sorts, including Campus Research Computing Centers who provide resources only to their campuses.
- <https://www.xsede.org/about/governance/spf>



# XSEDE Service Providers Forum

**XSEDE Service providers forum are provide services and resources:**

- Level 1: Fully integrated into XSEDE allocations system (e.g. Stampede, Comet, Bridges)
- Level 2: Partially allocated by XSEDE (e.g. Xstream, Supermic, OSG, SGCI)
- Level 3: Provide something to someone, somewhere (OU, OSU, KSU, MSU, YOUR NAME HERE)

**Benefits: Get to hang out with Dan Stanzione every 2 weeks and here about what the big centers are up to.**

- <https://www.xsede.org/web/site/about/governance/spf>
- Join via letter requesting to join – examples available



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# Cyberinfrastructure State & Regional Groups

- [OneOCII](#) - Oklahoma
- [ShowMeCI](#) - Missouri
- KanShare - Kansas
- [SSERCA](#) - Florida
- [NYSERnet](#) - New York
- [MARIA Alliance](#) – Virginia
- [Great Plains Network](#) (CI group and Research Platform group)





# Synchronous Training

- [Linux Clusters Institute](#) (LCI) holds introductory and intermediate workshops on HPC system administration. These workshops have been extremely successful, typically attracting 20-40 pre-service and in-service HPC system administrators per workshop, demonstrating a strong national need for this training.
- **Virtual Residency:** In operation since summer 2015, the Virtual Residency (VR) is a national informal education program that trains Cyberinfrastructure (CI) Facilitators on effective methods for serving their research and education constituents, especially focusing on professional (soft) skills (because much of the technical content that facilitators need is available via other opportunities).
- **XSEDE Monthly Series on HPC topics**
  - <https://www.psc.edu/xsede-hpc-series-all-workshops>
  - Big Data, MPI, OpenMP, OpenACC, and GPUs. These are offered as live multicast workshops to ~25 sites per month.
- **XSEDE Course Calendar**
  - <https://portal.xsede.org/course-calendar>
  - In-person, multi-cast, and webcast



# Asynchronous Training

- [XSEDE online training](#)
- [ACI-REF leading practices of facilitation](#)
- <https://www.youtube.com/XSEDETraining>



# Conferences

## National (US):

- [PEARC](#): [PEARC18](#) is July 22-26, 2018 - if you only go to one conference, go here.
- [SC Conference Series](#): Always the week prior to Thanksgiving in November. [SC18](#) is in Dallas, TX, November 11-16, 2018.

## Regional:

- [RMACC HPC Symposium](#) - Colorado, August 7-9, 2018
- [Oklahoma Supercomputing Symposium](#) September 25-26, 2018, Norman, Oklahoma
- [Great Plains Network Annual Meeting](#) -- Usually around June 1 in Kansas City.

- Campus Champion Regional Groups



# Facing 2?



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# Systems Facing Roll



Oscar the Grouch!





# Systems Facing Roll



“OSCER” the Grouch?



2018 ACI-REF  
Virtual Residency  
Intermediate Workshop

# Systems Facing Roll



- Never leaves his garbage can
- Underground lair = data center
- Semi-grouchy?



# Can Oscar the Grouch teach a new generation of scientists?

5 October 2011

Like 0 Share Tweet + reddit this!

STEM.EDU



THE TRASH-LOVING OSCAR THE GROUCH WILL HELP KIDS GET INTERESTED IN STEM THIS SEASON ON PBS'S SESAME STREET. (PHOTO: FROM [HTTP://WWW.SESAMESTREET.ORG](http://www.sesamestreet.org))

Many blogs in this column have advocated for charismatic and dynamic role models to get kids interested in science. Well, someone waved her magic wand and answered our call. In September, USA Today and the major TV networks reported that the producers of the hugely popular Sesame Street will introduce science to its pre-school audience. Crazy though it may sound, the new Fall season of the PBS classic will be brought to you by the letters S, T, E and M . . . more commonly known as the STEM subjects —Science, Technology, Engineering and Math.

Now in its 42<sup>nd</sup> season, Sesame Street and its cast of characters Elmo, Cookie Monster, Big Bird, Ernie, Oscar the Grouch and the rest of the gang will build bridges, launch rockets, and think through problems that require trial and error, observation, and data collection. In other words, they'll be asking our toddlers to think like scientists and engineers.



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# Systems Facing Roll



1. Partnership & Communications
2. Internal & External Security & Privacy
3. Systems Environment Management
4. Virtualized Layers
5. Physical Systems
6. Data Center



# Systems Facing Roll



1. Partnership & Communications
2. Internal & External Security & Privacy
3. Systems Environment Management
4. Virtualized Layers
5. Physical Systems
6. Data Center
7. Donuts/Energy Drinks!





# Systems Facing Roll



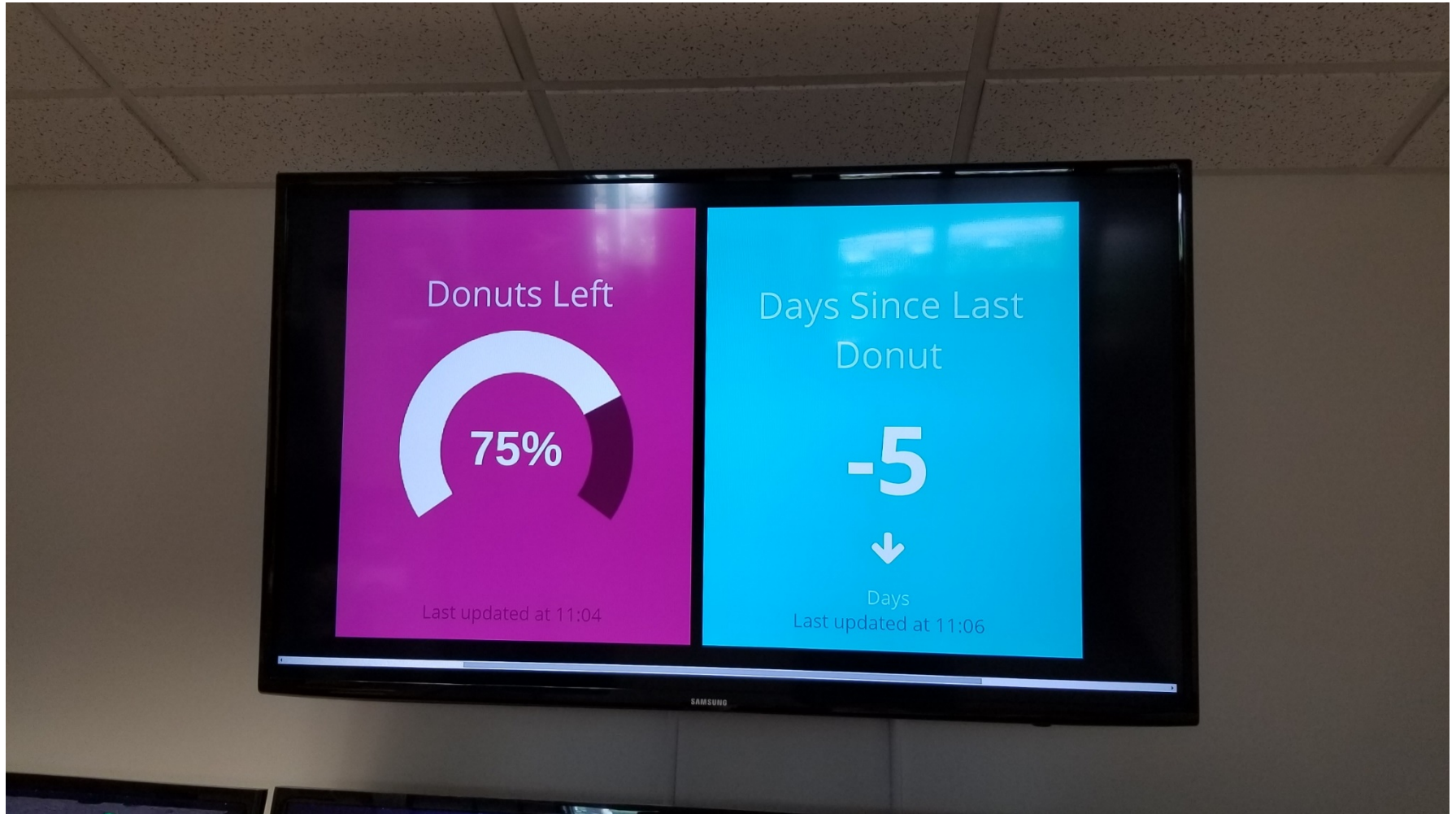
3. Systems Environment Management
4. Virtualized Layers
5. Physical Systems
6. Data Center
7. Donuts/Energy Drinks!



2018 ACI-REF  
Virtual Residency  
Intermediate Workshop



# Systems Facing Roll



## 7. Donuts/Energy Drinks!

2018 ACI-REF  
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Intermediate Workshop



# Other Entities

- Science Gateways Community Institute (SGCI)
- Clemson-led Advanced Cyberinfrastructure Research & Education Facilitators (ACI-REF)
- CyberAmbassadors
- United Kingdom Research Software Engineer Association
- Working Towards Sustainable Software for Science Practice and Experiences
- US Research Software Sustainability Institute



# Science Gateways Community Institute (SGCI)

- The [SGCI](#), founded in 2016, offers a workforce development service area with:
  - Internships
  - Mentoring
  - Travel funding to conferences for undergraduate and graduate students
  - Connections to the Young Professional Network
  - Support for gateway-related career paths



# ACI-REF

- 2013 NSF funded project (mentioned earlier by Henry)
- Advanced Cyberinfrastructure Research & Education Facilitator Work with users -- researchers and educators -- to help them improve their research and/or education productivity using advanced cyberinfrastructure.
- Funded ACI-REFs at 6 institutions:
  - Clemson U
  - Harvard U
  - U Hawai'i
  - U Southern California
  - U Utah
  - U Wisconsin



Slide from Neeman's XSEDE16 presentation  
ACI-REF: Toward a National CI Workforce

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# Facing 3?



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# Researcher Facing



Elmo!



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# Researcher Facing



## 1 Engage researchers

Engage researchers as a partner to co-create and co-learn research activities and relevant advanced computing capabilities to provide possible solutions to facilitate and/or transform research.

## 2 Facilitate collaboration

Connecting and coordinating interactions between researchers and technology providers

## 3 Provide communication

Provide regular communications to the campus or external research community

## 4 Solve complex problems

Actively solve problems and enhance learning with full awareness of the local and larger research computing and data landscape.



# CyberAmbassadors

- 2017 NSF CyberTraining project developing an open source curriculum on interpersonal communication and mentoring skills for CI professionals.
- Targeted at giving CI professionals the skills they need to communicate effectively and to strengthen very diverse teams of researchers.
- The first objective for the program is to develop a curriculum that builds professional skills (communications, teamwork, leadership) within the context of large scale, multidisciplinary computational research.
- The pedagogical approach is grounded in constructivism and socioculturism, and will combine practice training exercises with examples from real multidisciplinary research.
- The second objective is to pilot, evaluate and revise the curriculum with existing CI professional groups.
- The third objective is to develop a curriculum to “train the trainers.”
- This final step is designed to exponentially grow the impact of this curriculum, by preparing a diverse team of facilitators who can offer professional communication skills training at their own institutions and via regional or national events.



# United Kingdom Research Software Engineer Association

- [UKRSEA](#), which has 20 participating universities, was founded to support Research Software Engineers, who focus on:
  - Reproducibility
  - Reusability
  - Accuracy

of data analysis and applications created for research.

UKRSEA's goal is to foster career paths for academic RSEs and to ensure that the role of academic RSEs is recognized and rewarded. RSE associations are also forming in the US and Australia.



# Working Towards Sustainable Software for Science Practice and Experiences

- [WSSSPE](#) started in 2013 and is a community-driven organization focused on:
  - Sustainability of research software

Their workshops – typically two per year on different continents – are organized as interactive working groups for discussions, with actions beyond the workshops, and anyone interested can contribute.



# US Research Software Sustainability Institute

- [URSSI](#) has been funded by NSF in 2018
  - Goal: Focused on research software and on building the community.
  - Vision: Improve how individuals and teams function, and to advance research software and the STEM research it supports.



# Facing 4?





# Software/Data Facing



Big Bird!



# Software/Data Facing



Big Henry!



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# Also Facing 4...



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# Snuffy Debugging

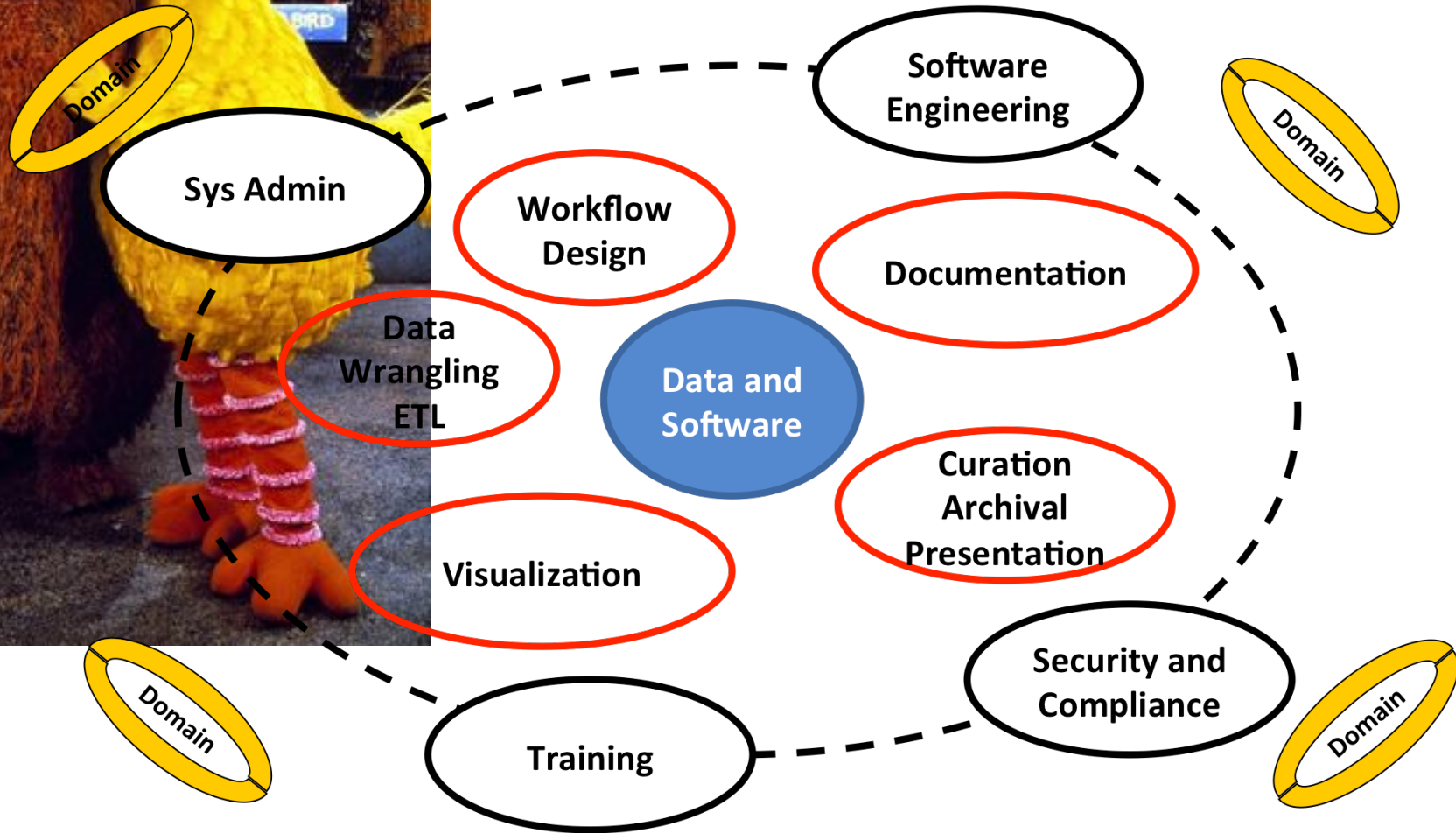


Snuffleupagus!



2018 ACI-REF  
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# Software/Data Facing Role



# Inspiration

“Never doubt that a small group of thoughtful people could change the world. Indeed, it’s the only thing that ever has.”

Margaret Mead

“Far and away the best prize that life offers is the chance to work hard at work worth doing.”

Theodore Roosevelt





# Thanks!

Special thanks for slide content from all of the internet and the PEARC18 CC101 Workshop, A Report to CC on CI Professionalization Workshop Outcomes by Scott Yockel (Harvard), Patrick Schmitz (Berkeley), Tom Cheatham (Utah) and Dana Brunson for slide content from ACI-REF VR 2017, CI Milieu (Mafia, Peeps, Homies). Some of these are adapted from the Virtual Residency paper Henry Neeman, Hussein M. Al-Azzawi, Aaron Bergstrom, Zoe K. Braiterman, Dana Brunson, Dirk Colbry, Eduardo Colmenares, Akilah N. Fuller, Sandra Gesing, Maria Kalyvaki, Claire Mizumoto, Jeho Park, Anita Z. Schwartz, Jason L. Simms and Rustomji Vania, 2018: "Progress Update on the Development and Implementation of the Advanced Cyberinfrastructure Research & Education Facilitators Virtual Residency Program." Proceedings of PEARC'18, to appear.

<https://www.thoughtco.com/facts-about-mount-rushmore-104819>

[http://muppet.wikia.com/wiki/Mount\\_Rushmore](http://muppet.wikia.com/wiki/Mount_Rushmore)

<https://www.thewrap.com/top-13-sesame-street-characters-ranked-from-cookie-monster-to-mr-snuffleupagus-photos/>

[http://muppet.wikia.com/wiki/Count\\_von\\_Count](http://muppet.wikia.com/wiki/Count_von_Count)



# Thanks!

<https://www.aaas.org/blog/stemedu/can-oscar-grouch-teach-new-generation-scientists>

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[http://muppet.wikia.com/wiki/Mr.\\_Snuffleupagus](http://muppet.wikia.com/wiki/Mr._Snuffleupagus)

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