



Panel: The March Toward the Clouds: MF Perspectives

*Co-leads: Karan Vahi and Brian Dobbins
(On behalf of the CICompass Cloud Infrastructure Group)*

Panel at the 2022 NSF Cyberinfrastructure for Major Facilities Workshop

Session Organization

1. Introduction (10 minutes)
2. Panelists Opening Statements (40 minutes)
3. Polling Results
4. Open Discussion with Panelists (30 minutes)
 - a. *Encourage that most of the chat to be in Whova*
 - b. *Questions can be posed either in Zoom or Whova*

CICompass: Cloud Infrastructure Working Group

Background: In 2020, the CI CoE Pilot (precursor to CICompass) conducted a number of interviews with Major Facilities Managers and Staff regarding their Data Lifecycle. From these interviews, one major theme that trended throughout conversations was that of Cloud Infrastructure. Topics of cost, vendor lock-in, and storage were among the most mentioned as being challenging for Major Facilities to navigate. True to the CI CoE Pilot mission statement, an effort to aid Major Facilities in tackling these hot topics was started.

Charter

- Understand the current practices for Cloud Infrastructure used by MFs
- Research alternative solutions and keep up to date with emerging cloud technologies,
- Develop a general set of best practices that can inform the MFs and how those can be adapted for specific facilities.

Members:

- **CICompass:** Karan Vahi (lead), Erik Scott, Angela Murillo, Mats Rynge, Loïc Pottier, Rajiv Mayani, Jarek Nabrzyski, Chuck Vardeman, Rob Ricci
- **MFs:** Brian Dobbins (NCAR), Frank Wuerthwein (LHC-CMS), Benedikt Reidel (IceCube), Julio Alvarado Negrón (AO), Jeff Glatstein (OOI), Chad Trabant (SAGE/GAGE), Jeff DLB (NCAR), David Hahn (NCAR), Jeff Glatstein (OOI)
- **Other CI Partners:** Jeremy Fischer (Jetstream), Nirav Merchant (Cyverse), Tyson Swetnam (Cyverse), Bruce Berriman (Caltech), Bob Flynn (Internet2), Sharon Broude Geva (UMich)

Meetings are groundwork for possible CI for MF Cloud Technical Report

Major Facilities vs everyone else - what makes our situation different?

Are there any specific differences to NSF Major Facilities (MFs) from other academic and research groups that distinguishes them in terms of adoption of cloud for their operations

Major Facilities vs everyone else - what makes our situation different?

Topics

Storage (huge amounts of legacy data)	1
OSN - why isn't it an all inclusive solution?	1
Consumers (do they want to compute in the cloud, or download? Who pays?)	2
Computing in the cloud	2
Legacy	4
Budgets	5
Outlook	8
Focus on Storage vs Computing in the Cloud	9
Cloud Needs	11
	12
	13
	14



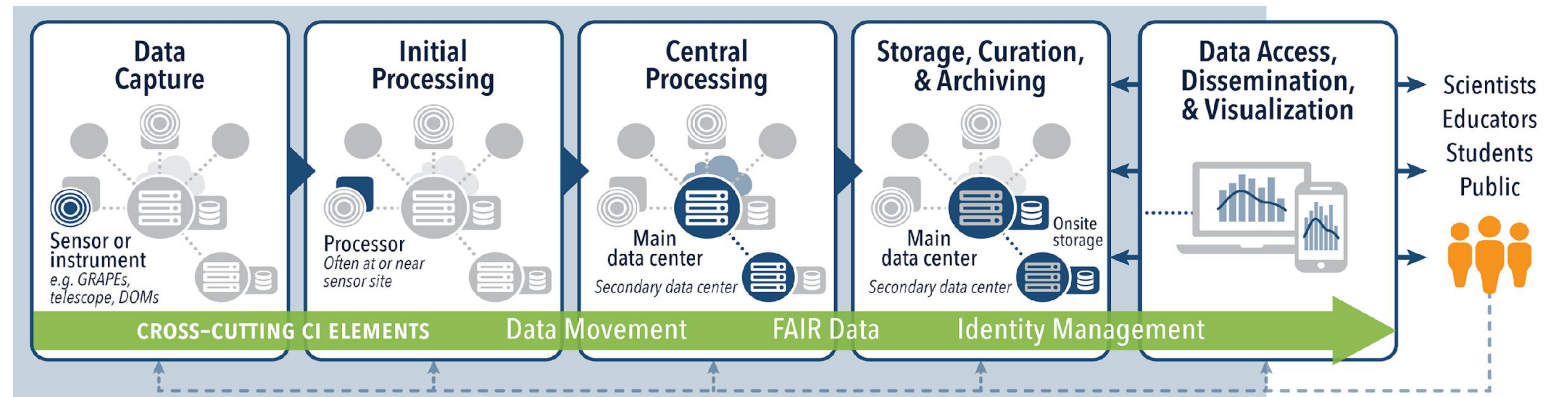
CICompass: Cloud Infrastructure Working Group

Join Us:

- Actively looking for additional MF's participation
 - Anyone can join the group, but discussion will be limited to MF centric topics
 - If you are involved in CI operations and are considering moving part/all of your MF operations to the cloud, we would love to hear from you!
- Meets once every 2 weeks on Mondays 12PM(Noon) Pacific.
- Join mailing list at: <https://groups.google.com/a/ci-compass.org/g/cloud-discuss/>

Cloud Adoption: MF Challenges

- Most of the Major Facilities have been in existence before the term Cloud Computing was even coined.
- Considerable amount of infrastructure (often custom) already built out
- Cloud Adoption provides attractive benefits in terms of increased availability, resilience and durability of data
- **Significant challenges**
 - Software Re-Engineering on how to best leverage the Cloud.
 - Need to continue with their current mandate and mode of operations,
 - Increased costs (indirect costs accounting)
 - Migration of legacy data
 - Training requirements.



Polls for the Audience (Access in Whova)

1. Why is your organization interested in Cloud?
2. What do you see as the biggest impediment to your organization/group adopting cloud more widely?
3. Which of these clouds are you using in your operations currently?

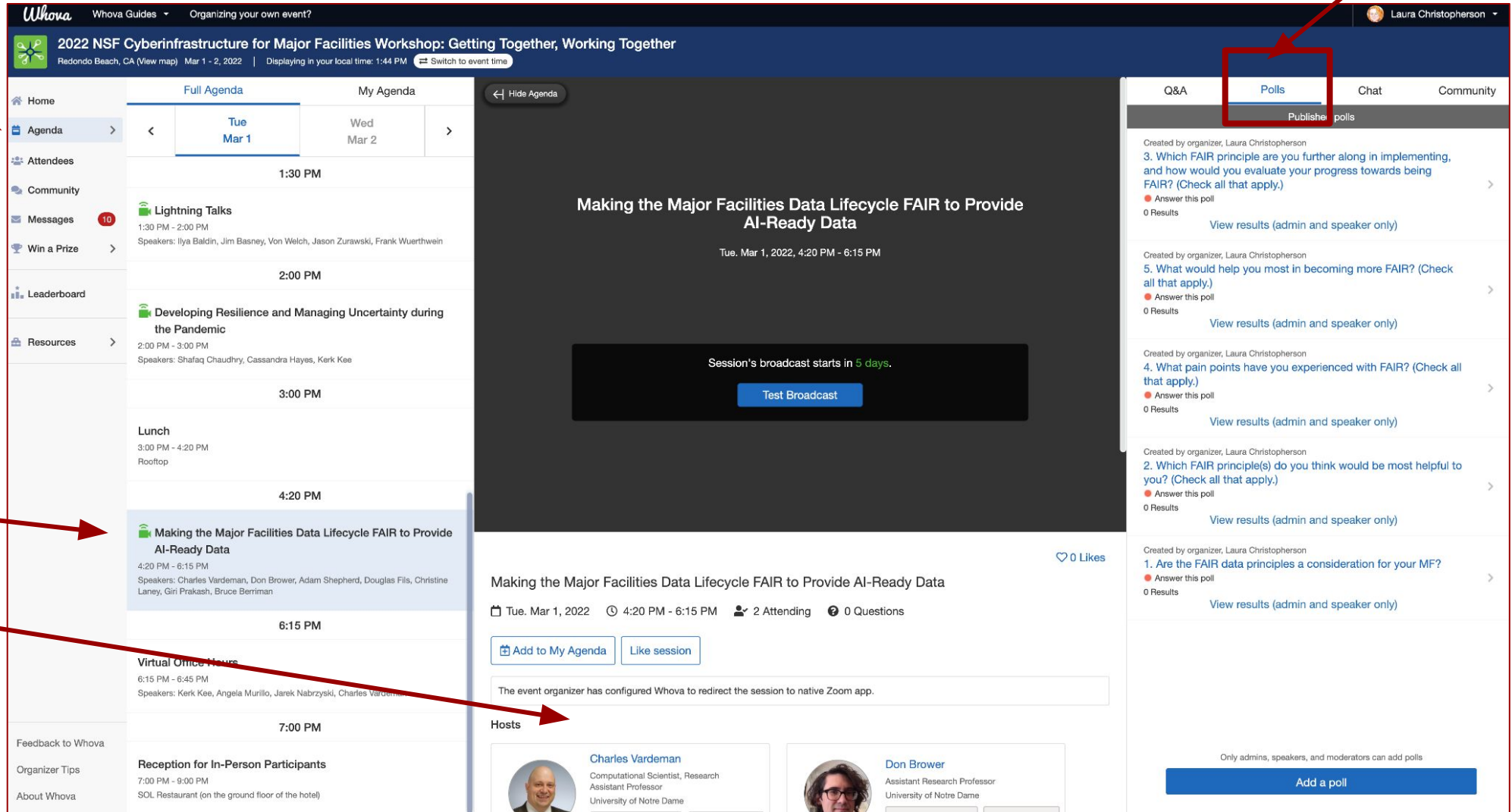
Results will be shared end of panel's opening statements

How to Access the Polls in Whova

3. Click on the Polls tab and please take the polls in the order they are numbered.

1. Go to the Agenda

2. Find the appropriate session and be sure to visit the session's page



The screenshot displays the Whova interface for the "2022 NSF Cyberinfrastructure for Major Facilities Workshop: Getting Together, Working Together". The interface is divided into several sections:

- Left Sidebar:** Contains navigation links: Home, Agenda, Attendees, Community, Messages, Win a Prize, Leaderboard, and Resources.
- Agenda Section:** Shows a timeline of events. The selected session is "Making the Major Facilities Data Lifecycle FAIR to Provide AI-Ready Data" at 4:20 PM. The session details include speakers: Charles Vardeman, Don Brower, Adam Shepherd, Douglas Flis, Christine Laney, Giri Prakash, and Bruce Serriman.
- Session Details:** The main content area shows the session title, time, and a "Test Broadcast" button. Below this, it lists the hosts: Charles Vardeman (Computational Scientist, Research Assistant Professor, University of Notre Dame) and Don Brower (Assistant Research Professor, University of Notre Dame).
- Polls Section:** A red box highlights the "Polls" tab in the top right navigation bar. Below it, a list of polls is shown, numbered 1 through 5. The polls are:
 1. Are the FAIR data principles a consideration for your MF?
 2. Which FAIR principle(s) do you think would be most helpful to you? (Check all that apply.)
 3. Which FAIR principle are you further along in implementing, and how would you evaluate your progress towards being FAIR? (Check all that apply.)
 4. What pain points have you experienced with FAIR? (Check all that apply.)
 5. What would help you most in becoming more FAIR? (Check all that apply.)

Meet the Panel

1. **Bob Flynn**, [PM, Cloud Infrastructure & Platform Services], representing Internet2
“What Do You Need to Ask Yourself when You Move to the Cloud?”
2. **Chad Trabant**, [Deputy Director and Chief Architect], representing Incorporated Research Institutions for Seismology *“Migrating two Major Facilities from on-premise data centers to a common cloud platform mid-merger”*
3. **Jeffrey Glatstein**, [Senior Manager of Cyberinfrastructure], representing OOI,
“OOI Approach to the Cloud”
4. **Benedikt Riedel**, [IceCube Computing Manager], representing IceCube, *“IceCube in the Cloud”*
5. **Brian Dobbins**, [Software Engineer], representing NCAR, *“The March with the Clouds: NCAR”*
6. **David Halstead**, CIO, representing NRAO *“Surging into the Cloud and Grids: Insights into keeping up with the processing workload for the Very Large Array Sky Survey (VLASS)”*

Panelists' slides

Thank You !

Online Presence

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