ACCESS | Advancing Innovation

How to ACCESS!

Agenda

- Overview of the ACCESS project (15 minutes)
- Getting started (60 minutes) - Break
  - Account creation, using the website, the ACCESS User Portals
- Resource Providers & Allocations (45 minutes)
- Finding and Getting Help (30 minutes) - Lunch
  - Knowledge Base, Ask.CI, Documentation, Training, Affinity Groups, etc.
- Ticketing (30 minutes)
- User Tools (45 minutes) - Break
  - Open OnDemand, Pegasus
- Metrics of ACCESS Resources with XDMod (30 minutes)
- MATCH Services & Community Engagement CCEP (15 minutes)
  - MATCHPlus, MATCHPremier, and CCEP
- Open ended Q&A (30 minutes) - Adjourn

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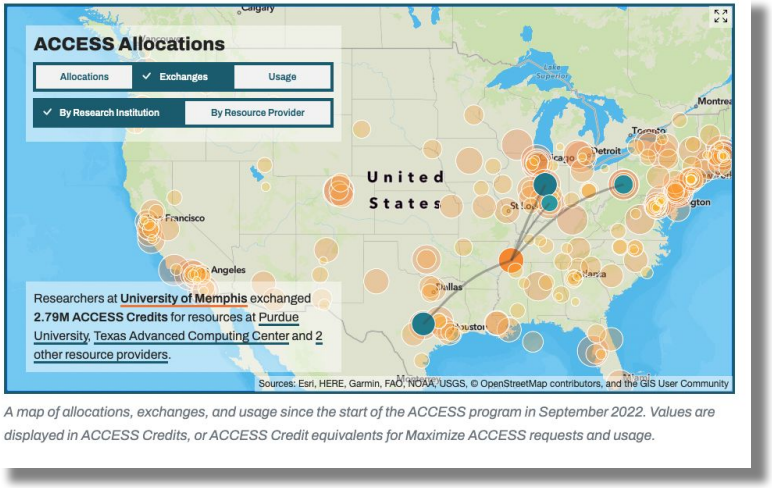
ACCESS Project Overview

NSF ACCESS Program Structure

ACCESS Allocations



A map of allocations, exchanges, and usage since the start of the ACCESS program in September 2022. Values are displayed in ACCESS Credits, or ACCESS Credit equivalents for Maximize ACCESS requests and usage.

Interactive allocation activity map available at allocations.access-ci.org (see Updates menu)

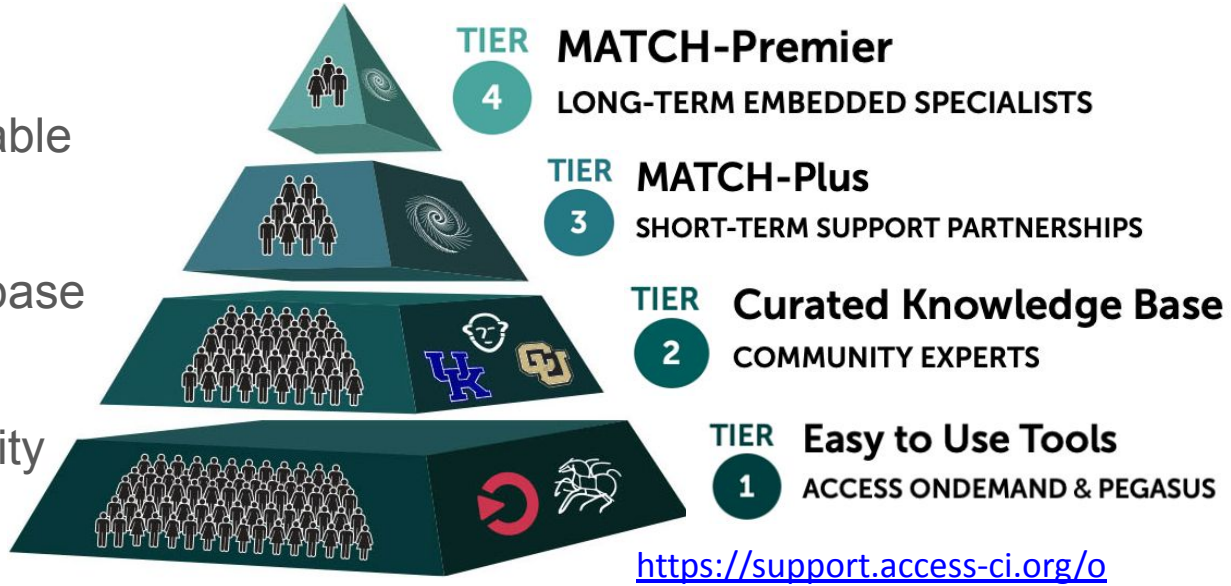
- Led by Pittsburgh Supercomputing Center, National Center for Atmospheric Research, and National Center for Supercomputing Applications
- Allocations Service goals are to create
  - **an open, inviting, and democratized allocations marketplace**
  - **an efficient, scalable, and simplified request and review framework**
  - **a robust, decentralized, and flexible software platform**
- Continuous Improvement and Diversity, Equity, and Inclusion efforts central to the project
  - DEI Facilitator on management team to ensure diverse, equitable, and inclusive spaces and services
- Five Innovative Pilots are advancing Allocations Services to integrate new resources and engage new communities

Researcher Support Services

Shelley Knuth, Alana Romanella, Dylan Perkins (University of Colorado Boulder)
Ewa Deelman, Mats Rynge (U. Southern California)
John Goodhue, Julie Ma, Andrew Pasquale (MGHPCC)
James Griffioen, Vikram Gazula, Tony Elam, Joel Adams (Univ. Kentucky)
David Hudak, Alan Chalker (Ohio Supercomputer Center)

https://support.access-ci.org/

- Enable innovative research through equitable and scalable support
- Four tiers of support
- Tools, growing knowledge base
- Match-making with experts
- Student engagement
- Engagement from community
- CSSN incentives



https://support.access-ci.org/ondemand

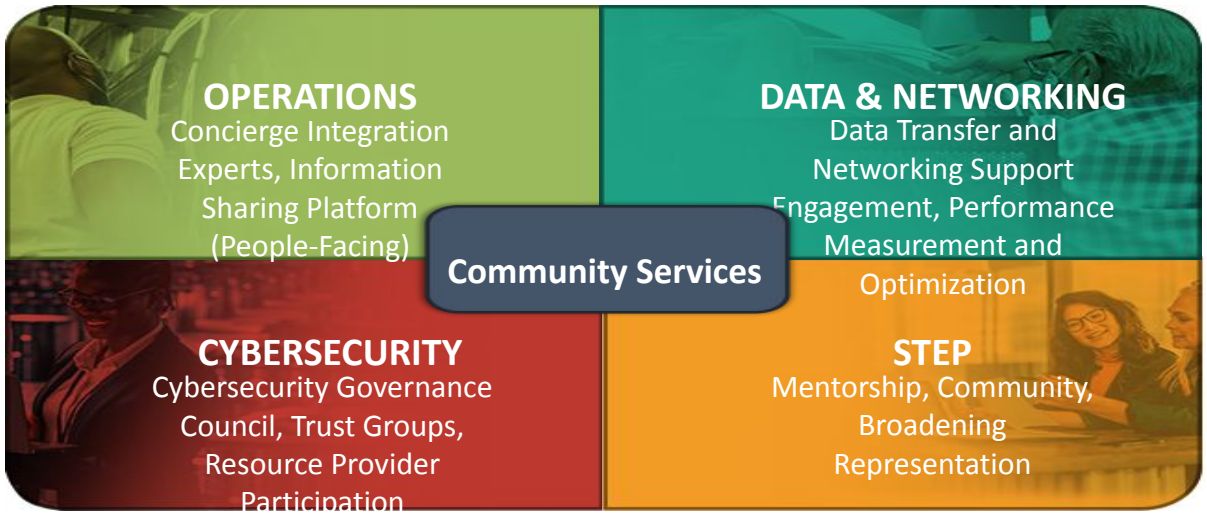
ACCESS Support

ACCESS Operations

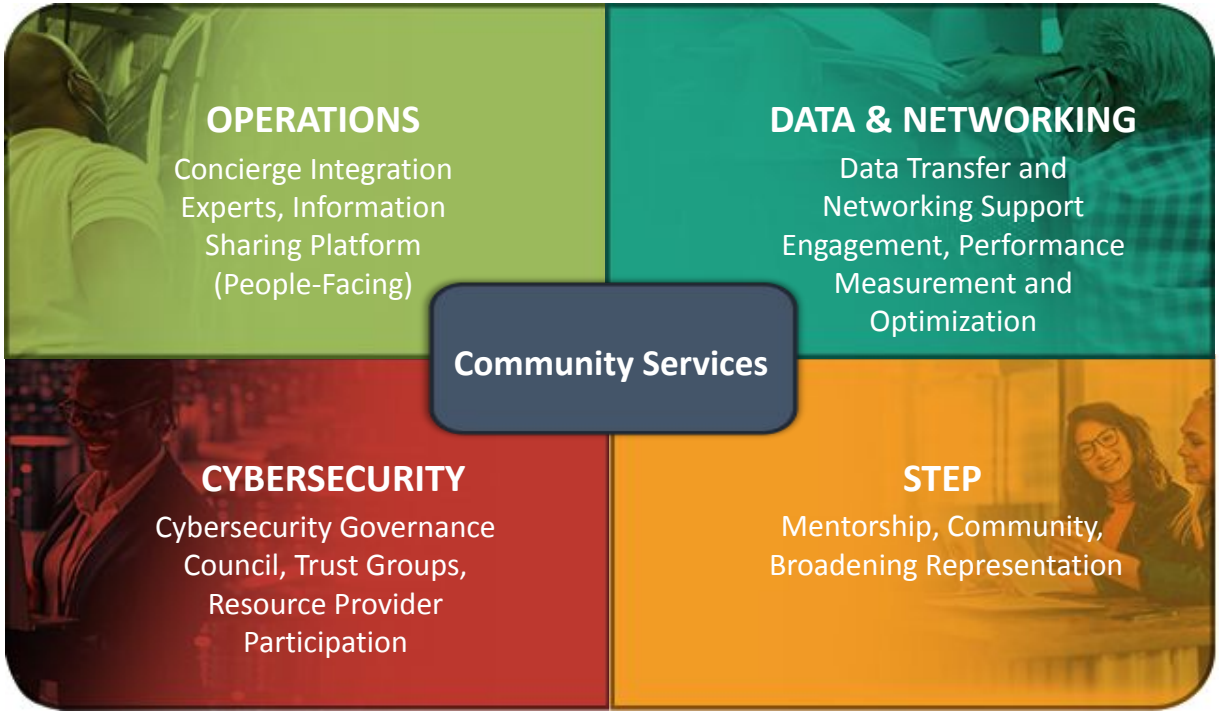
Principal Investigator
- Tim Boerner (NCSA)

Co-Principal Investigators
- JP Navarro (ANL/UChicago)
- Derek Simmel (PSC)
- Winona Snapp-Childs (IU)

Deputy Project Director
- Leslie Froeschl (NCSA)



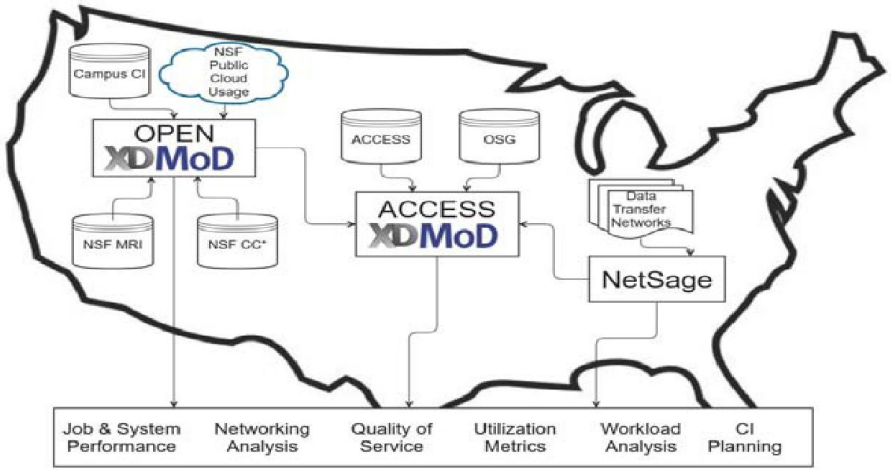
ACCESS Operations



ACCESS Monitoring & Measurement Services

Roswell Park (Furlani), Buffalo (White, Jones, DeLeon, Simakov), Tufts (Patra)

TACC (Barth, Harrell, Cawood), SDSC (Smallen), Case Western (Chaudhary), Indiana (Schopf)



NSF National Computational CI

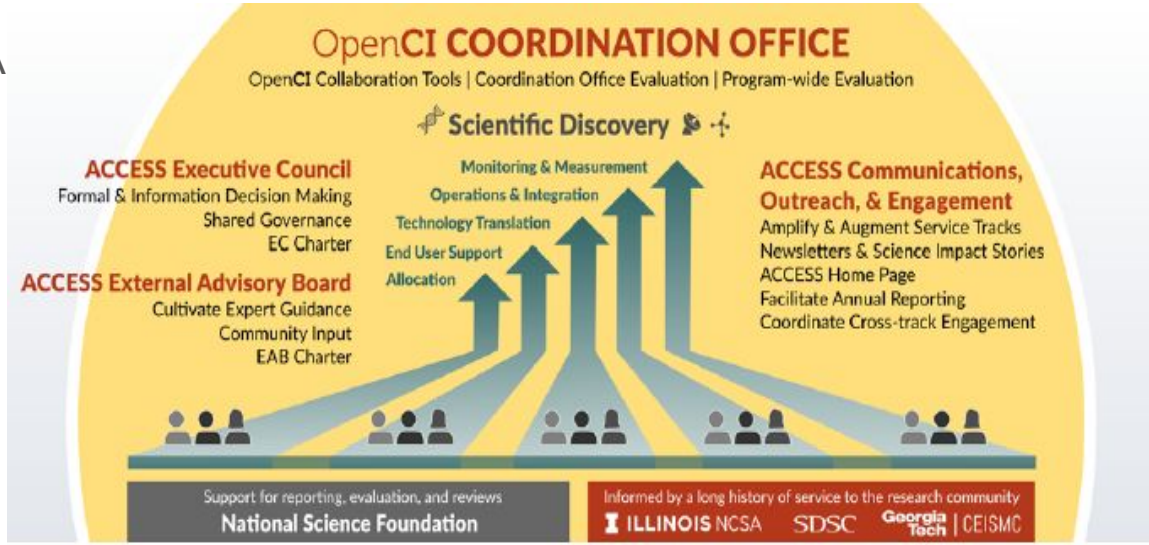
- Continued development of XDMoD
  - Back by popular demand ☺
- Open XDMoD broader use
- New Open Data Analytics Framework
  - Jupyter Notebook, Python, etc
  - Creative, ad hoc analytics
- Analytics for National CI
- Workload performance analyses
- Network traffic leverage NetSAGE
- Application diagnose/optimize
- CI Simulator for predictive analysis
- Energy use pilot

OpenCI ACCESS Coordination Office

PI: John Towns (NCSA/Illinois)
co-PIs: Lizanne DeStefano (CEISMIC/Georgia Tech); Shawn Strande (SDSC/UCSD)

- Deep knowledge of XSEDE
- Emphasis on seamless transition

- Facilitate shared governance via EC and EA
- Collaboration tools to support inter-track communications
- Branding
- Coordinate outreach, DEI, and evaluation efforts across the program
- Stakeholder communications on ACCESS impact & opportunities
- Informal co-advisors from 5 large programs



ACCESS Governance

- Executive Council (EC)
  - established with formal charter
    - top-level coordination and governance
    - ensure high operational efficiency and user-centric performance
  - 5 PIs each with voting rights; some additional ex-officio roles
- External Advisory Board (EAB)
  - established with formal charter
    - advises EC with advice on the various services provided by ACCESS
  - currently discussing how various governance elements comprise and overall governance structure

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Getting Started

In This Section

- The access-ci.org website
- Getting an ACCESS account
- Portals
- Tag Taxonomy

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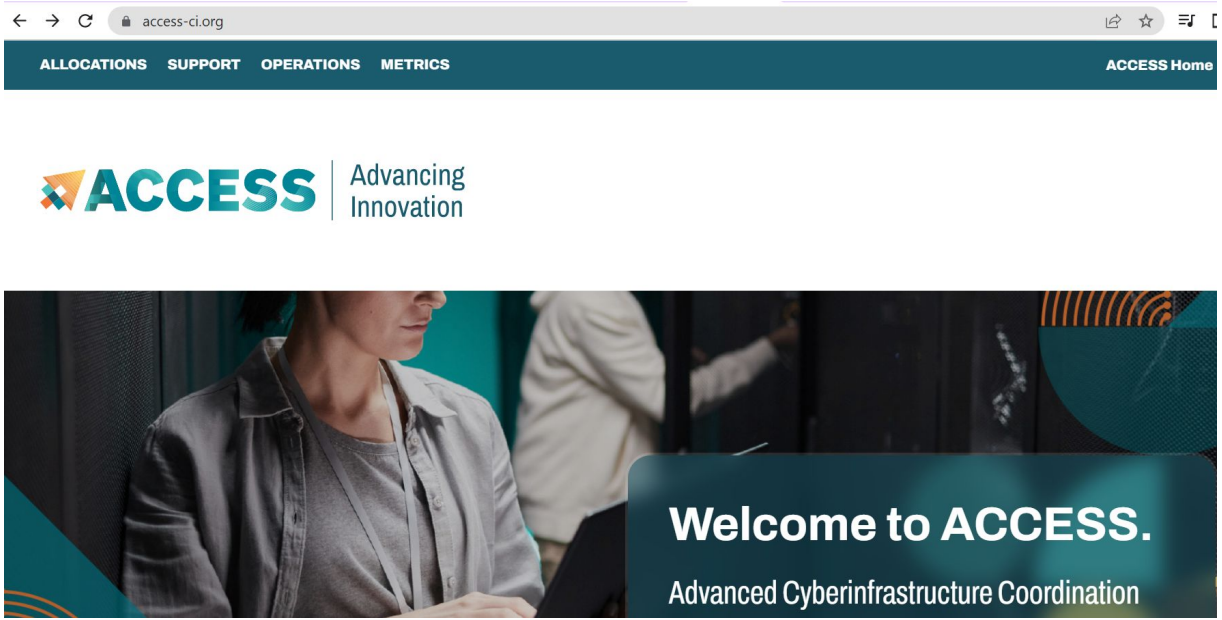
The Website

https://access-ci.org/



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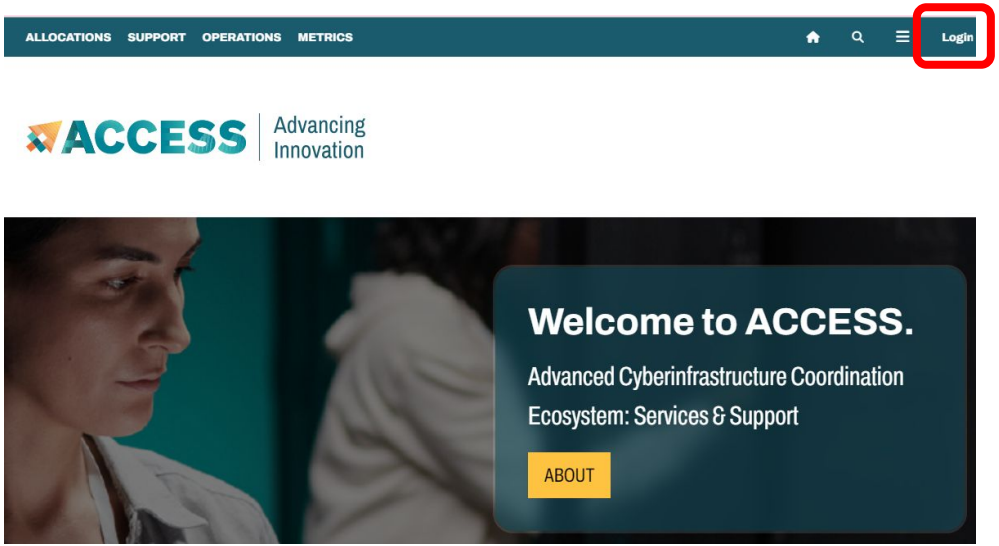
Getting an Account

- Can use an existing account
- Or get a new ACCESS account



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Getting an Account

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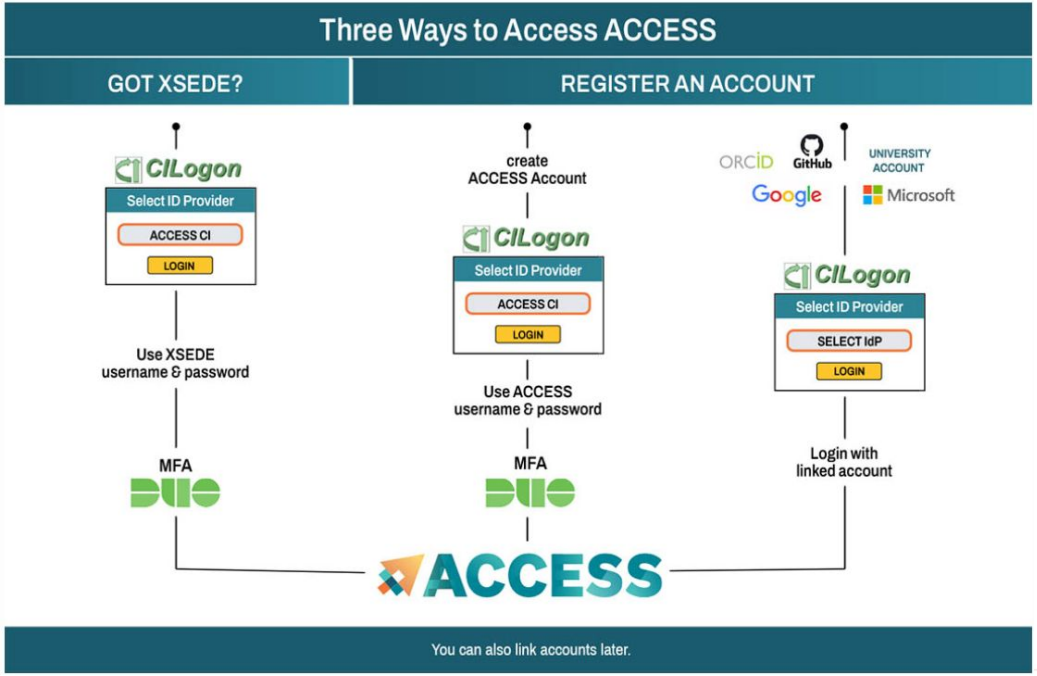
Getting An Account



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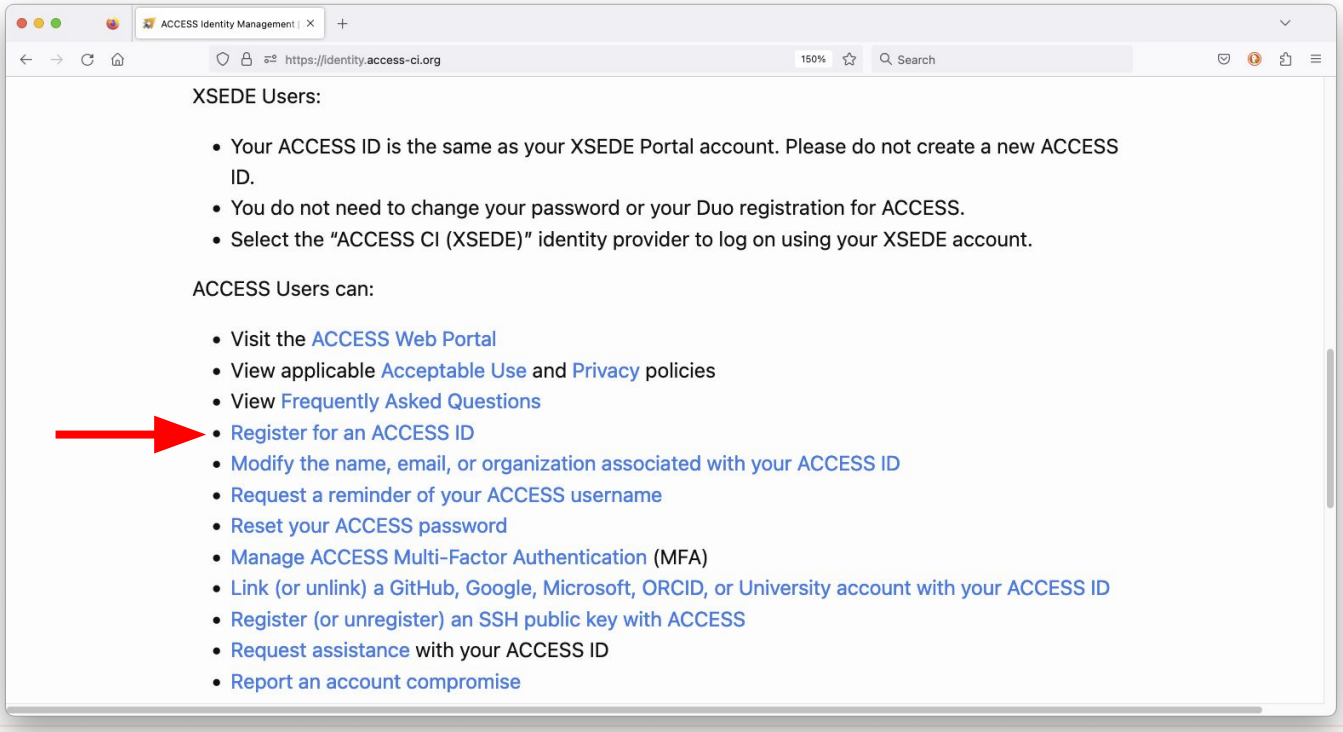
identity.access-ci.org



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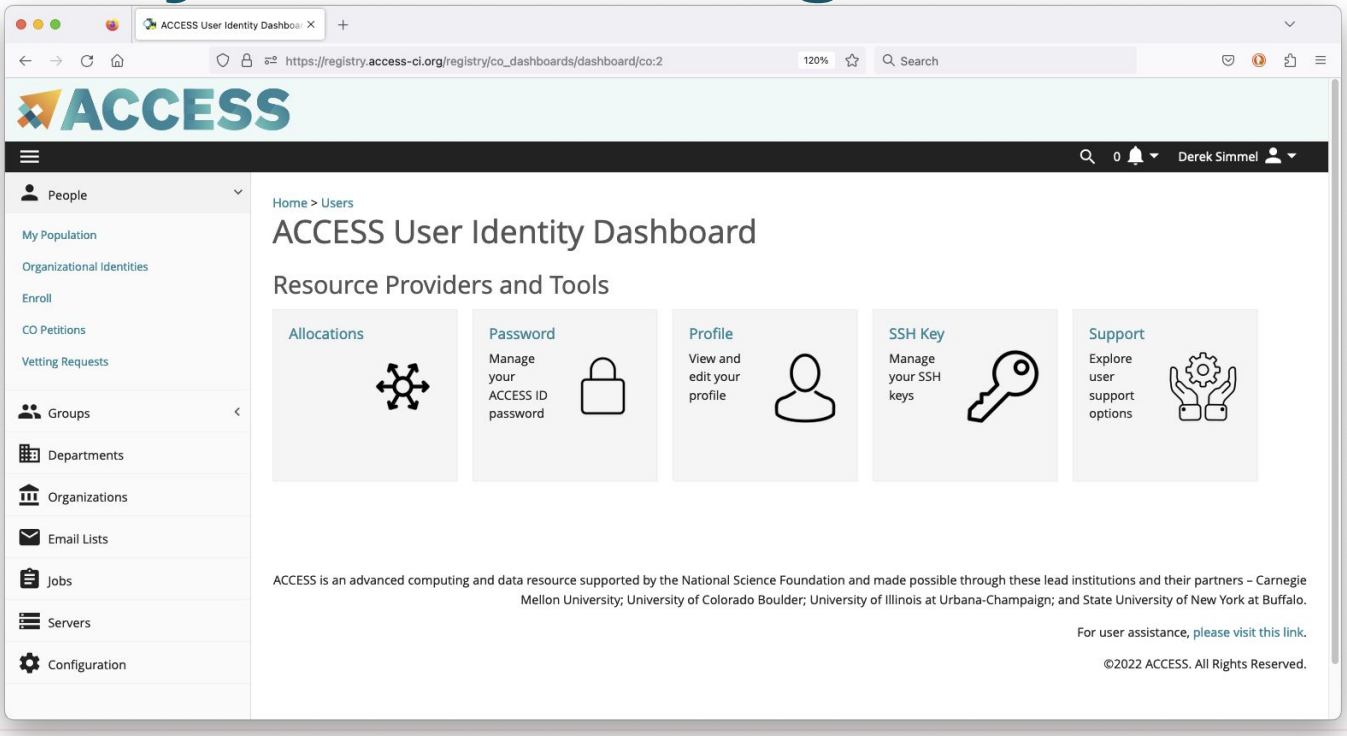
registry.access-ci.org



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Using your Account

- With your ACCESS account you can:
  - Manage your profile and interests
  - Join Affinity Groups
  - Submit a ticket
  - Request and manage your allocations
  - Add an event

Let’s see a demonstration!

https://access-ci.org/

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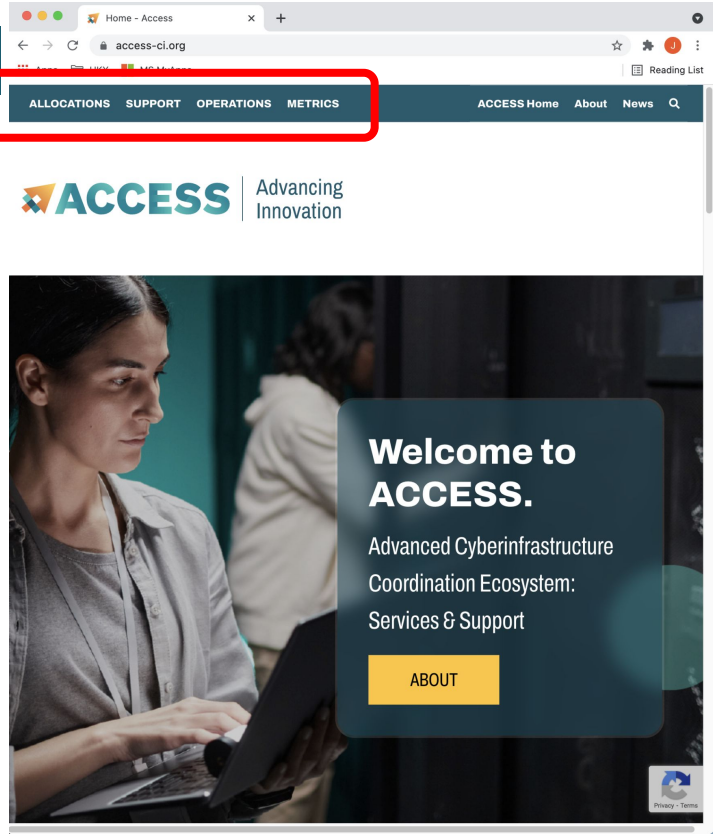
The ACCESS User Portal

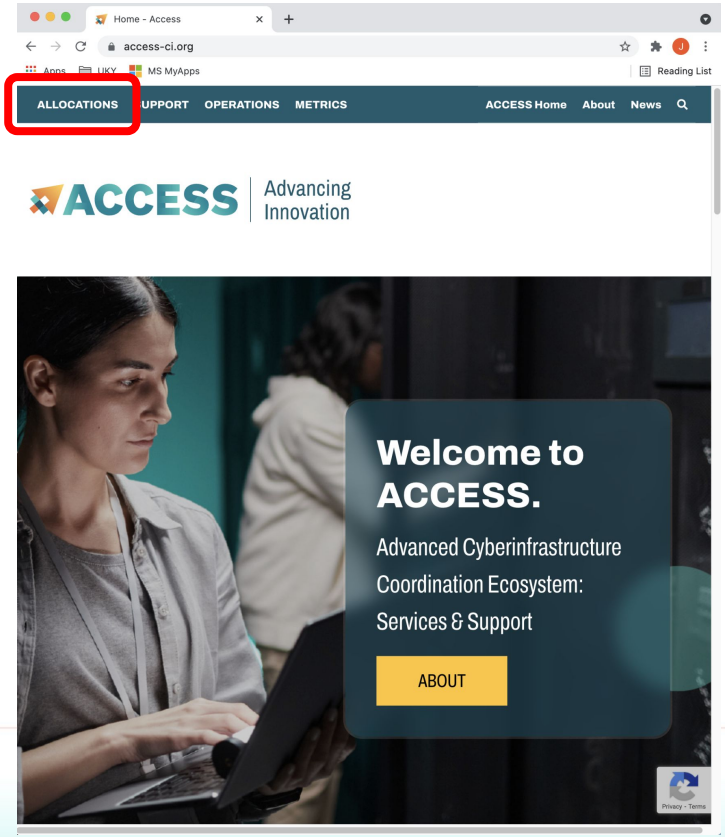
The site *access-ci.org* is organized into four broad areas:

- *Allocations*: Requesting and administering Allocations
- *Support*: Documentation and support for ACCESS users
- *Operations*: Infrastructure support for RPs & developers.
- *Metrics*: Monitoring/measuring usage of ACCESS Resources.



The Four ACCESS Service Portals

- Each ACCESS service has its own portal that can be accessed from *access-ci.org*
- E.g., clicking *Allocations* takes you to the Allocations portal: *allocations.access-ci.org*



ACCESS Support

NSF

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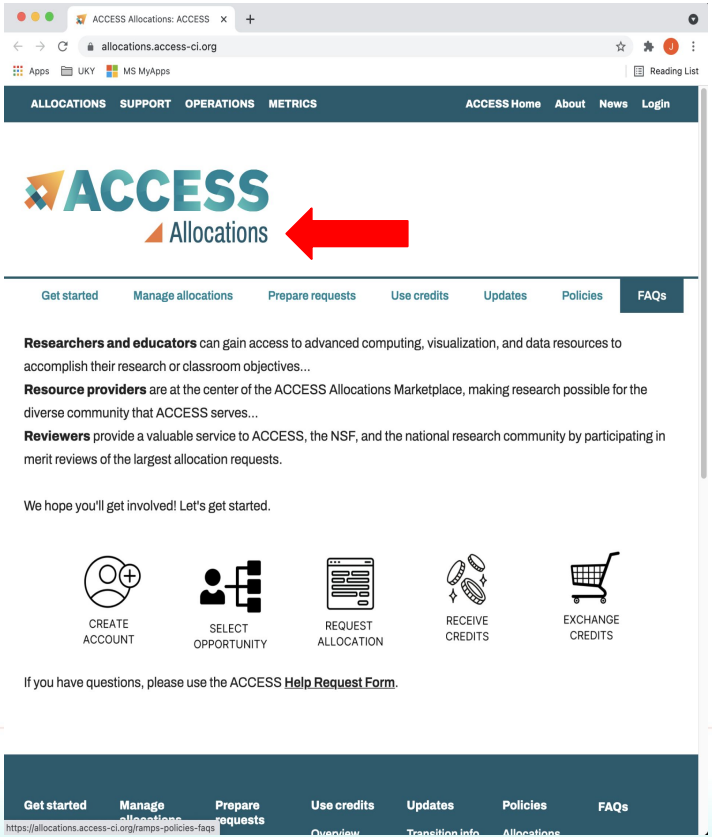
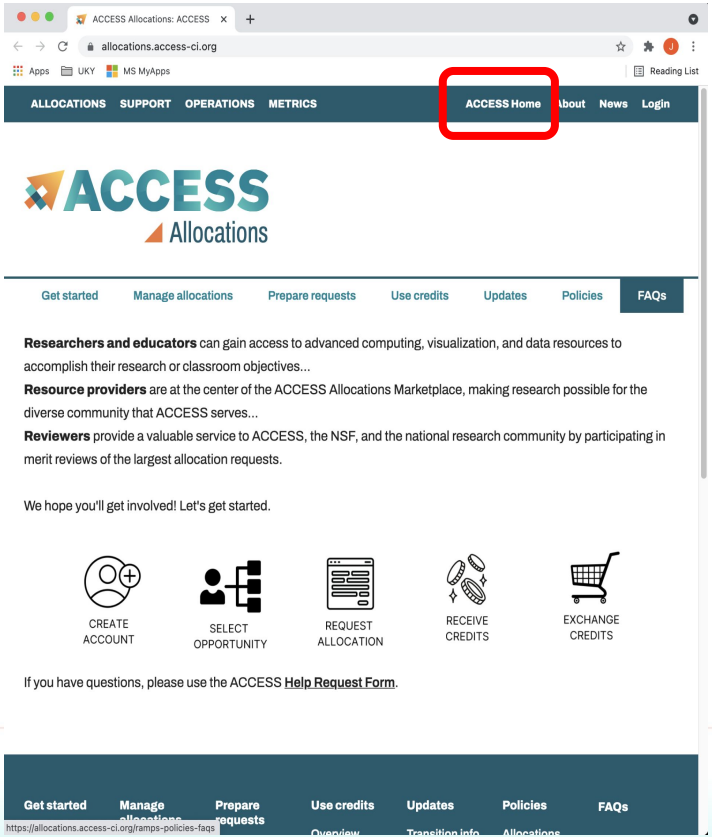


The Four ACCESS Service Portals

- Clicking *Access Home* will always return you back to the top-level *access-ci.org* portal…



ACCESS Support

NSF

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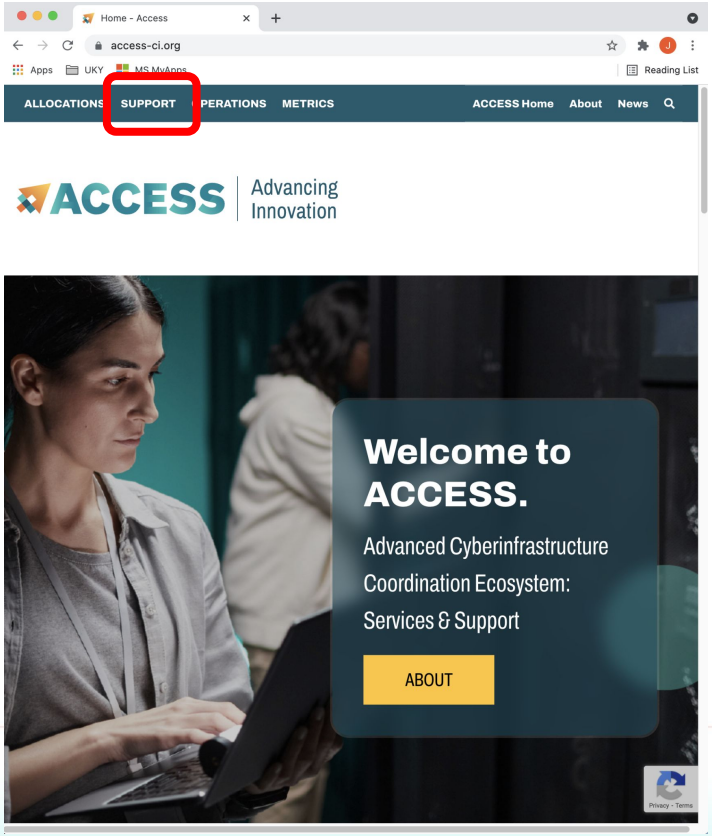
- Likewise, clicking *Support* takes you to the Support portal: *support.access-ci.org*



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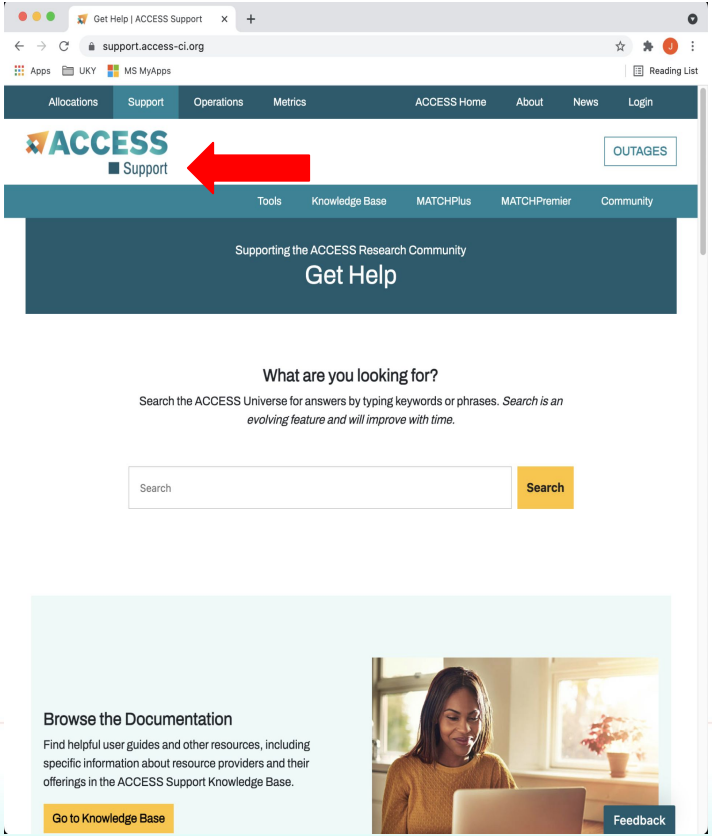
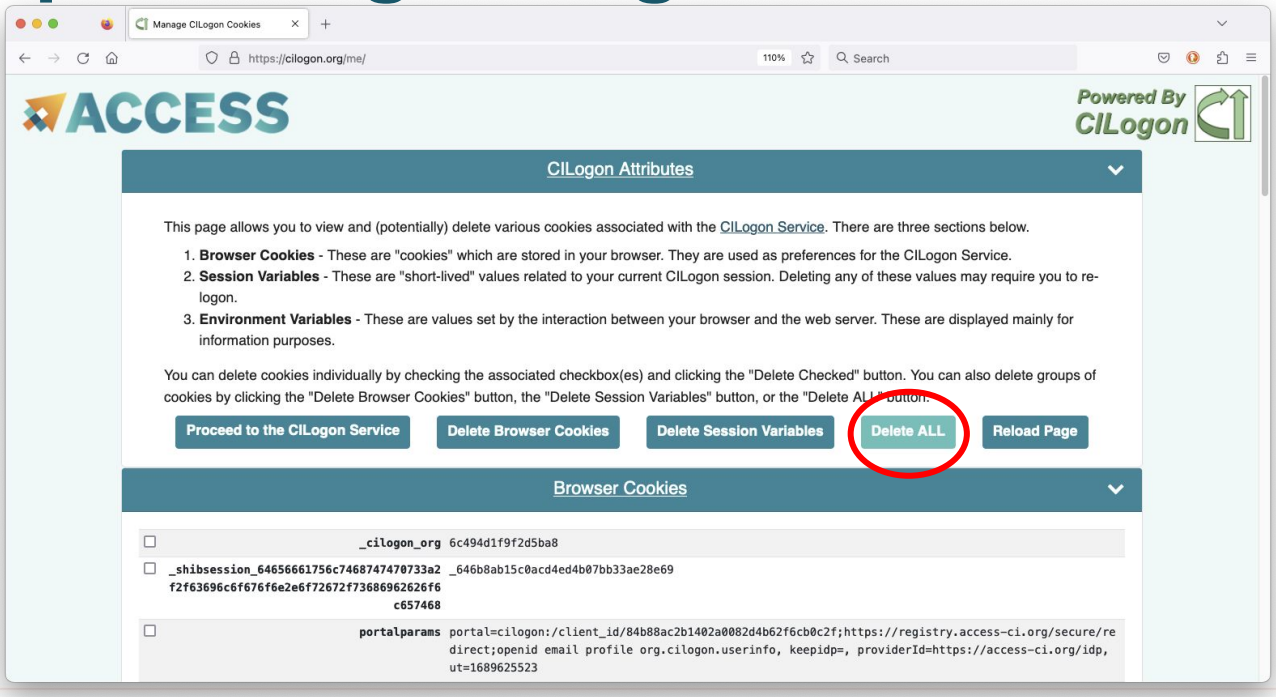


ACCESS Support

NSF

Troubleshooting Logon https://cilogon.org/me



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Resource Providers & Allocations

In This Section

- Resources Available
- Project Types
- Preparing Requests
- ACCESS Credits
- Using Credits
- Managing Allocations

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Resources: Multi-core Compute

- **Anvil (Purdue)** — 1,000 AMD Milan nodes, 128 cores per node, large memory nodes available
- **Bridges-2 (PSC)** — 504 AMD Rome nodes, 128 cores per node, large memory nodes available; extreme memory (4 TB) nodes allocated separately
- **DARWIN (U Delaware)** — AMD Rome nodes with 0.5 TB, 1 TB, and 2 TB memory options
- **Delta (NCSA)** — 124 AMD Milan nodes, 128 cores per node
- **Expanse (SDSC)** — 728 AMD Rome nodes, 128 cores & 1 TB NVMe per node
- **KyRIC (U Kentucky)** — Five large-memory (3 TB, 6 TB) nodes, 300 TB storage
- **Rockfish (Johns Hopkins U)** — 368 Intel Cascade Lake nodes, 48 cores per node; 10 large-memory nodes (1.5 TB) allocated separately
- **Stampede 2 (TACC)** — Intel Skylake & Knights Landing nodes ***(retiring Sept 2023)***

Resources: GPU Computing

- **Anvil GPU (Purdue)** — 16 nodes, 4 NVIDIA A100 GPUs each
- **Bridges-2 GPU (PSC)** — 24 nodes, 8 NVIDIA V100 GPUs & 7.68 TB NVMe per node
- **DARWIN GPU (U Delaware)** — Large-memory nodes with three different GPU architectures: AMD MI50, NVIDIA T4 & V100
- **Delta GPU (NCSA)** — 4 node configs: 100 nodes w/ 4x A100s; 100 w/ 4x A40 GPUs; five w/ 8x A100s; one w/ 8x AMD MI100 GPUs
- **Expanse GPU (SDSC)** — 52 nodes, 4 NVIDIA V100 GPUs each
- **Rockfish GPU (Johns Hopkins U)** — 10 nodes, 4 NVIDIA A100 GPUs and 1 TB NVMe each

Resources: Novel Computing

- **ACES (Texas A&M U)** — Composable PCIe fabric with Intel Sapphire Rapids cores, Graphcore IPUs, NEC Vector Engines, Intel Max GPUs, Intel FPGAs, Next Silicon co-processors, NVIDIA H100 GPUs, Intel Optane memory
- **FASTER (Texas A&M U)** — 180 nodes on a composable fabric, 2x Intel Ice Lake processors each, 260 NVIDIA GPUs (five different architectures)
- **Jetstream2 (Indiana U)** — Cloud environment with AMD Milan nodes, and 90 nodes with 4x A100 GPUs
- **Hive (Georgia Tech)** — 484 Intel Cascade Lake nodes. No allocation necessary for Hive Gateway access!
- **Ookami (Stony Brook U)** — 176 nodes with Riken/Fujitsu A64FX processors; additional nodes with AMD Milan,Thunder X2, and Skylake/V100 architectures
- **Open Science Pool (PATh)** — High-throughput computing environment leveraging fair-share access to contributed compute capacity

Resources: Storage

- **Open Storage Network (OSN)** — Cloud object storage resource, comprised of geographically distributed pods, accessed via S3 interfaces
- **Ranch (TACC)** — Large-scale, tape-based archival storage system

Computer-linked storage options also available for *Jetstream2, Delta, Bridges-2, Expanse, and DARWIN* and are requested alongside compute allocations for those resources.

Allocations: Why & How

- *Allocation* — an amount of units on a resource that can be used over a defined period of time
- Resource providers use allocations to manage how — and how much — resource time is divided up among *projects*
  - *Projects* may have allocations on more than one resource
- Your project allocation(s) ensure you have access to the resources you need to accomplish your research & education objectives

To use resources in the ACCESS ecosystem, you need to start by requesting a project and getting an allocation.

Allocations: Project Types

- ***Explore ACCESS*** — for getting started, evaluating resources, dissertations, small-scale activities
- ***Discover ACCESS*** — for modest-scale work, opportunity to request courtesy review of their plans
- ***Accelerate ACCESS*** — for more experienced researchers with mid-scale needs
- ***Maximize ACCESS*** — for largest-scale projects, continued close scrutiny of most demanding computational work

If you're not sure, *start here!* You can upgrade later when you know more about your needs and the resources.

Allocations: Preparing Requests

- ***Explore ACCESS***
  - Only requires an abstract, reviewed by RPs for suitability
- ***Discover ACCESS***
  - One-page write-up, reviewed by RPs for suitability
- ***Accelerate ACCESS***
  - Three-page proposal, subject to panel & RP review
- ***Maximize ACCESS***
  - 10-page proposal & supporting material subject to panel & RP review

Check the website for details on how to prepare the documents required, and any special documents (e.g., a grad student project requires a letter from their advisor).

All requests require basic information about the project lead, the nature of the activities being pursued, supporting grant details (if any), and planned resource use.

Your abstract or write-up should touch on your project's goals, how you plan to use resources, and any software you need. Covering these topics helps us connect you with appropriate resources for your work.

Allocations: ACCESS Credits

- ACCESS Credits are a universal unit designed to simplify a researcher's entry into the ecosystem
  - Allows you to defer resource selection "homework" until you have initial success with your request
- Credits are ***exchanged*** for resource-specific units after project is reviewed and awarded
  - For one or several resources, one exchange or several
  - Need not be compute-oriented resources

Allocations: Using Credits

- Credit-based awards permit researchers to conduct non-trivial amounts of work
- You exchange ACCESS Credits for resource-specific units
  - One resource or several resources
  - Small amounts or larger amounts
- Exchange rates defined based on relative performance of resources
  - E.g., GPU-hours “cost” more than core-hours
- You can explore exchange rates at *allocations.access-ci.org/exchange_calculator*

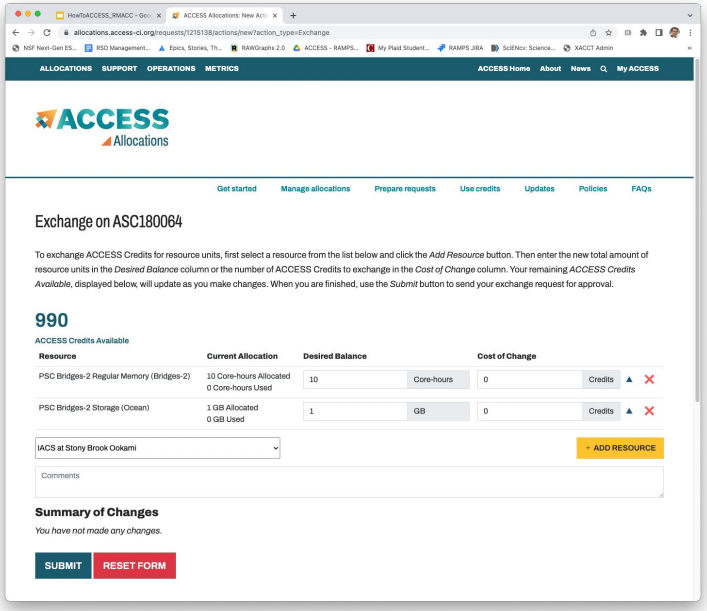
Project Type	ACCESS Credits
Explore ACCESS	400,000
Discover ACCESS	1,500,000
Accelerate ACCESS	3,000,000
Maximize ACCESS	n/a

1 ACCESS Credit defined as 1 core-hour on SDSC Expanse or PSC Bridges-2, with suitable adjustments for other resources and units, typically based on relative resource performance

Allocations: Managing Projects

Once you've been awarded your project, there are several tasks you need to be aware of

- **Exchange** — You need to *exchange* ACCESS Credits into resource-specific units
- **Add Users**—You can share your allocations with collaborators and students by adding users to the corresponding resources
- **Supplement** — Once you've consumed your first allotment of credits, you ask for the second half via a *supplement*
- **Extension** — If the calendar end date of your project or supporting grant changes, you can request an *extension*
- **Transfer**—You can exchange resource units for units on other resources via a *transfer*



Allocations Demo: Explore ACCESS

1. Choose the project type that's right for you
   Not sure? Start with Explore ACCESS. You can always upgrade later
2. Find the resources that meet your needs
   Check out the Resource Catalog and the ACCESS Support knowledge base
3. Prepare and submit your request
   You'll need a title, abstract, a CV (PDF only), and supporting grant details (if any)
4. Exchange ACCESS Credits for Resource time
   The Exchange interface or Exchange Calculator will help you with the math
5. Add other users and start using the resources
   Each user needs their own account. Check ACCESS Support site for resource docs

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Finding & Getting Help

In This Section

- ACCESS Knowledge Base
  - Documentation
  - Q&A Forum
- Events & Training
- Affinity Groups

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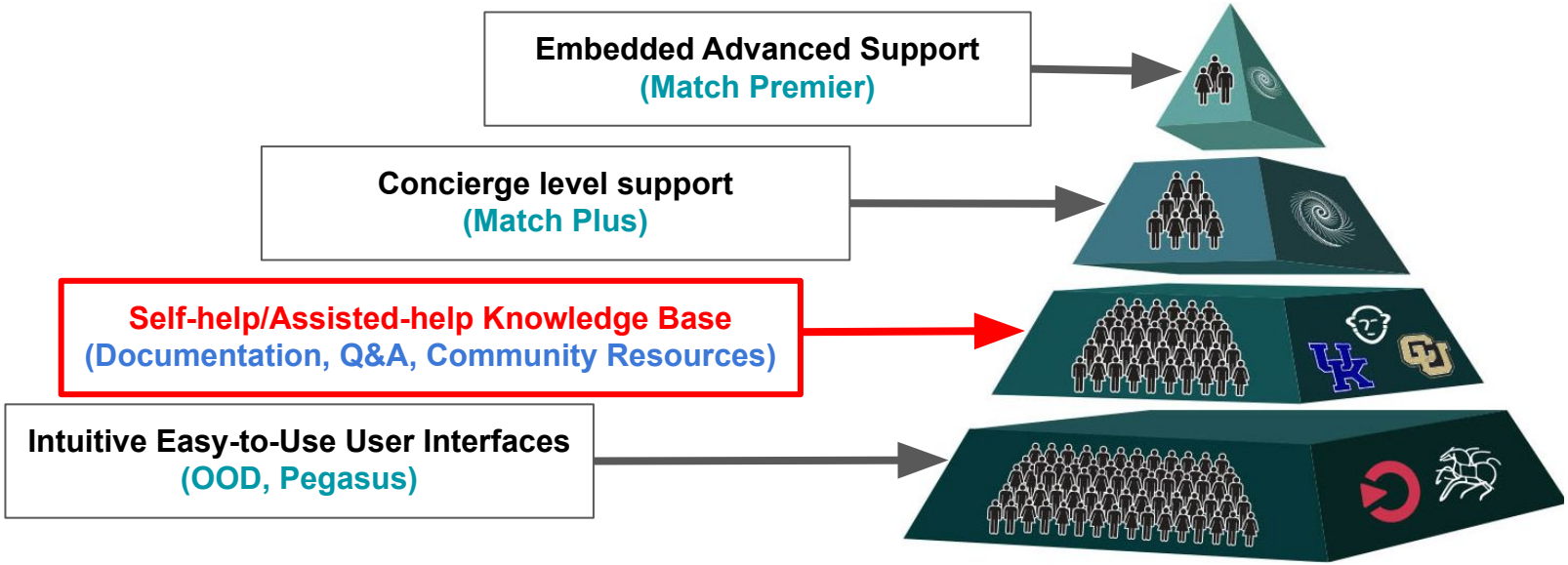
Recall: The Support Pyramid



ACCESS Knowledge Base Components

Self-help Knowledge Base Components

- Documentation → Confluence
- Community Contributed Information → Crowd-source Resources (Support Portal)

ACCESS Knowledge Base Components

Self-help Knowledge Base Components

- Documentation → **Confluence**
- Community Contributed Information → **Crowd-source Resources (Support Portal)**

Community/Expert-help Knowledge Base Components

- Q&A Forums → **Ask.CI**
- Community Groups → **ACCESS Affinity Groups (Support Portal)**

ACCESS Knowledge Base Components

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- Documentation → **Confluence**
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Community/Expert-help Knowledge Base Components

- Q&A Forums → **Ask.CI**
- Community Groups → **ACCESS Affinity Groups (Support Portal)**
- Ticket System → **Jira Service Management**

RP and ACCESS Team Knowledge Base Components

- Documentation for RP/ACCESS → **Confluence Spaces, Shared Google Drives**
- Q&A Channels → **Slack**

ACCESS Knowledge Base Components

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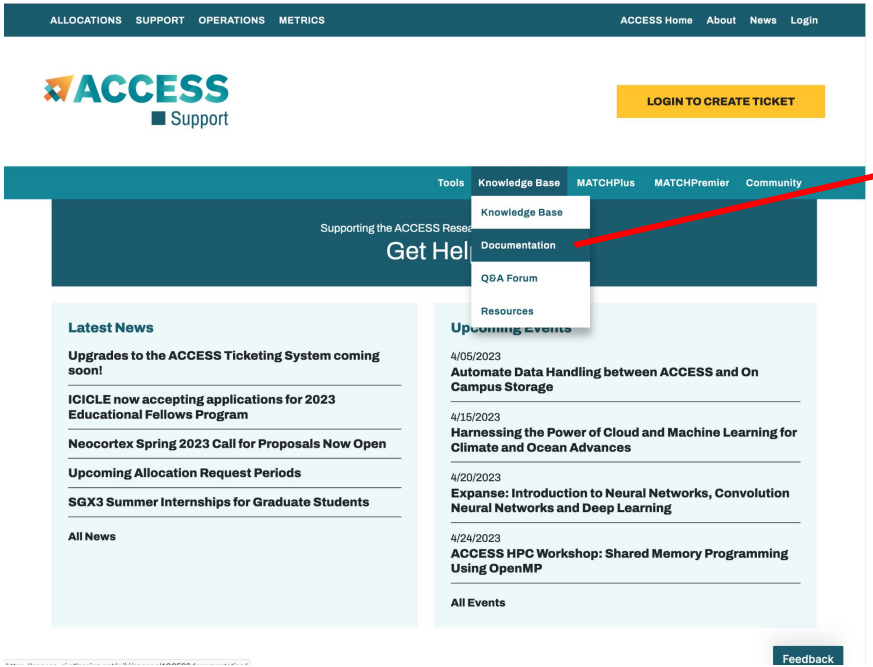
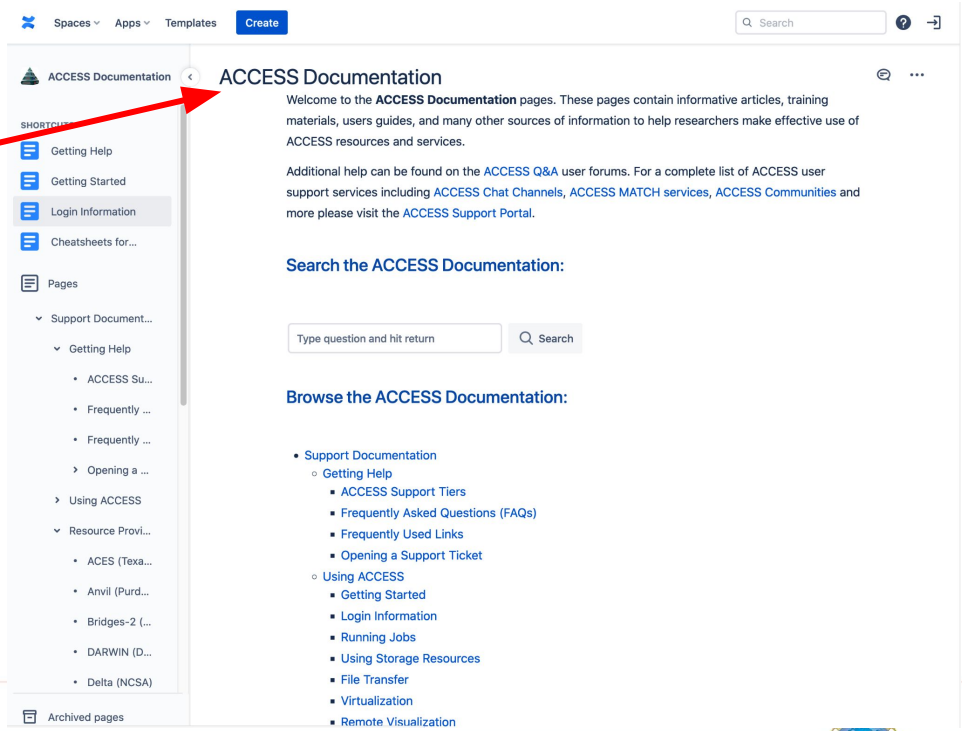
Support Documentation

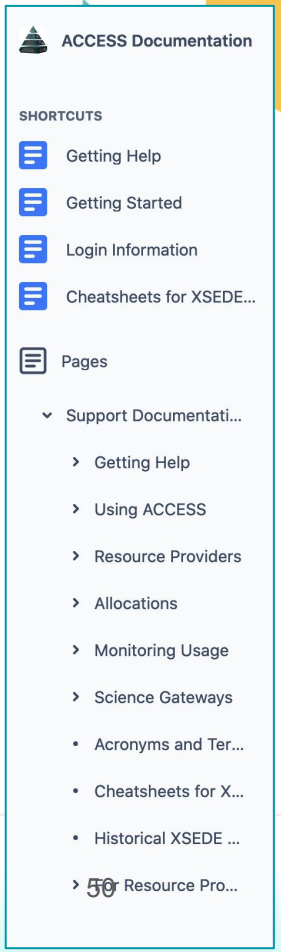




ACCESS Support

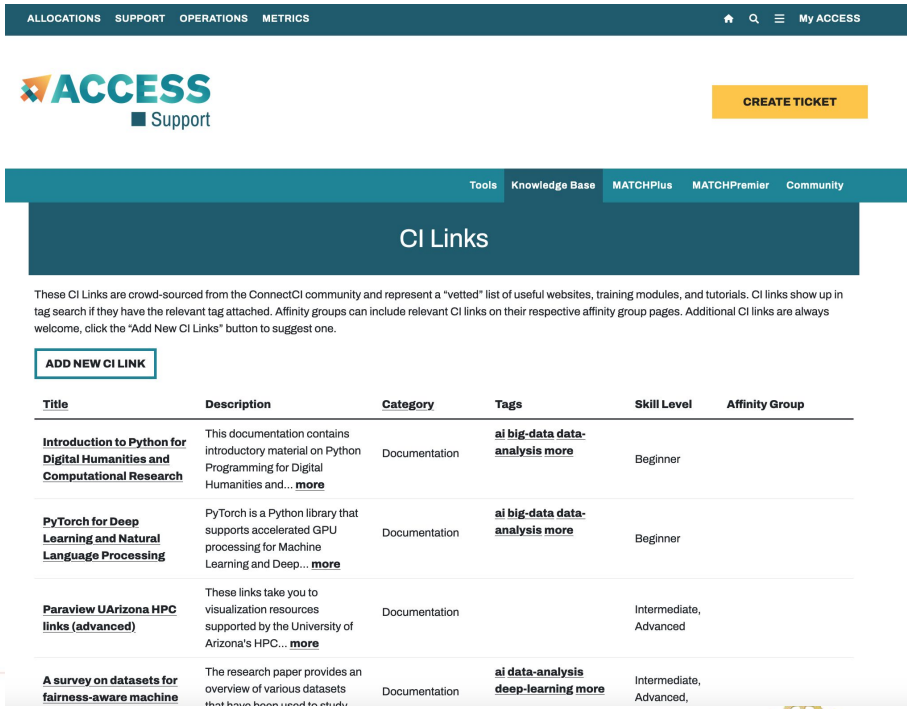
Support Documentation

- Hosted in Confluence to support shared editing
- All ACCESS team members and “RP Editors” can edit documents
  - Distributes the update effort
  - Distributes the responsibility, expertise, and trust
- Documents are edited in a “Pre-release” space
  - Allows for review by team members prior to publication
  - Allows documents to be worked on over time
- Changes are pushed out nightly to the “public” space (https://access-ci.atlassian.net/wiki/spaces/ACCESSdocumentation/)
  - Pages are anonymized before being published
  - Commenting/history is not available in the public space
- Currently hosts several hundred pages of documentation



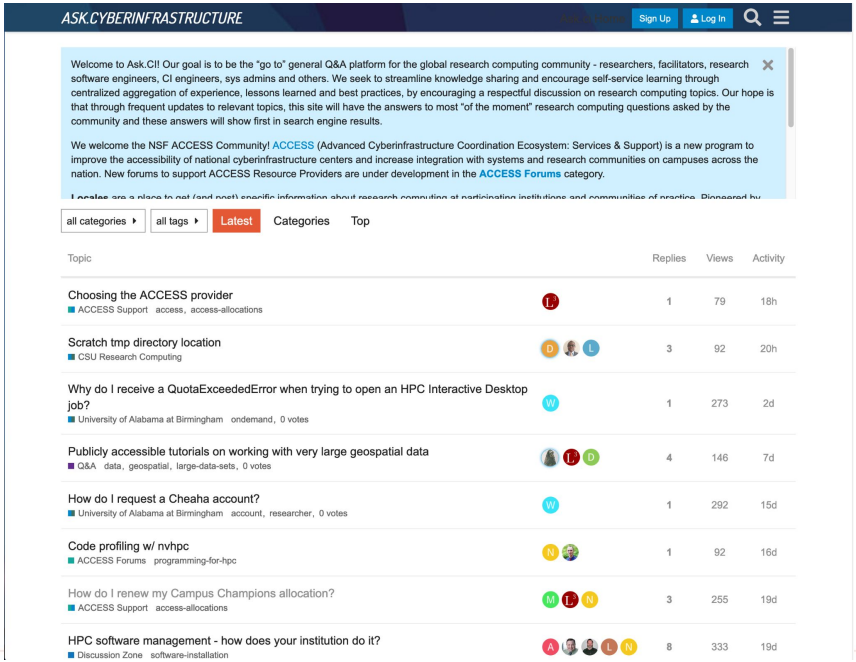
Community Contributed Information

- A key goal is to leverage information created by the Community and make them searchable by users
- ACCESS Support Team identified a list of useful information resources developed and hosted by the community. CI Links are regularly scanned/indexed
- Community can contribute additional resource via the ACCESS Support Portal
- Community resources are not hosted by ACCESS, but rather direct users to the site
- Community resources are not reviewed or vetted by ACCESS team members – but are monitored and often used by team members
- Some early metrics
  - 52 new CI Links (+226%)



Q&A Forums

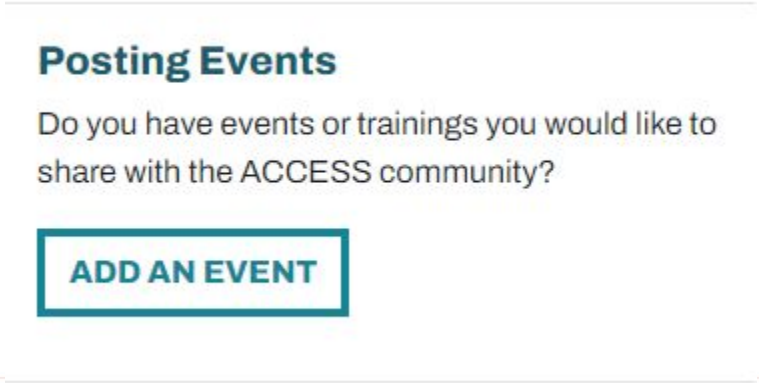
- Builds on the success and enhances the Ask.CI system, integrating it into ACCESS Support Portal
- Has a large number of Community Q&A Forums where users can pose questions or answers questions based on their own experiences
- Some early metrics
  - 54 new topics on Ask.CI (+126%)
  - 154 new posts on Ask.CI (+121%)
  - 56 new signups to Ask.CI (+124%)
  - 30 new Ask.CI contributors (+115%)
  - 230k Ask.CI pageviews (+127%)



The Training Approach

Community Driven Events

We very much want to encourage the community to drive the development of trainings and events. Anyone with and ACCESS account can create an event on the ACCESS Support portal. Incentives for hosting an event can be found in the CCEP program (more on this later).



The Training Approach

Long-Standing Relationship with PSC

Pittsburgh Supercomputing Center has a long history of providing trainings/workshops to the research community. It made sense to work with them to maintain the relationship and for them to provide these monthly workshops.

Industry Partners

HPE, IBM, Microsoft, Google, Dell, AMD, Amazon/AWS, Lenovo, NVIDIA, Intel and Globus

We received letters of support from several industry partners.

Globus and Nvidia are the first partners to provide training for ACCESS.

Have to be strategic about the content of training from Industry

- Audiences
- Sales

The Approach - Industry

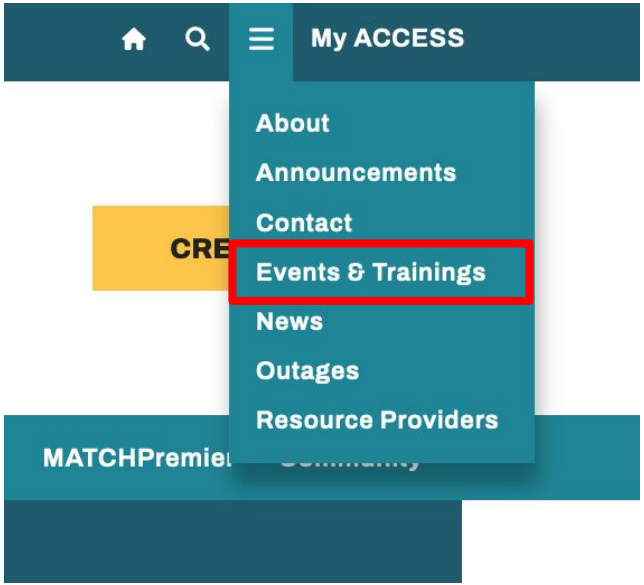
Industry Training Policy

ACCESS Support (at its discretion) will only provide advertising / community awareness for industry training events. Industry training providers are responsible for handling all logistics for such events (including registration, account creation, content publishing, etc.).

Should Industry training providers have existing partnerships with research computing providers (whether affiliated with ACCESS or not), they are welcome to partner with them to deliver the training. ACCESS Support is willing to provide general input as to content that would be of interest to the ACCESS community.

Finding Training & Events

- First click on the dropdown menu
- Then click on Events & Trainings
- You can also search the Knowledge Base for any keywords



Events Pages

Upcoming Events and Trainings

Title	Date	Time	Description
Automate Data Handling between ACCESS and On Campus Storage	4/05/2023	12:00 PM MDT - 12:30 PM MDT	As the volume of data generated continues to explode, the need to move data quickly and reliably for analysis, collaboration, and storage increases. Whether you want to move data off expensive instruments, sync data between local and remote resources, publish data to portals, or even archive data for long-term

Filter by

Event Type: - Any -

Affiliation: - Any -

Affinity Group: - Any -

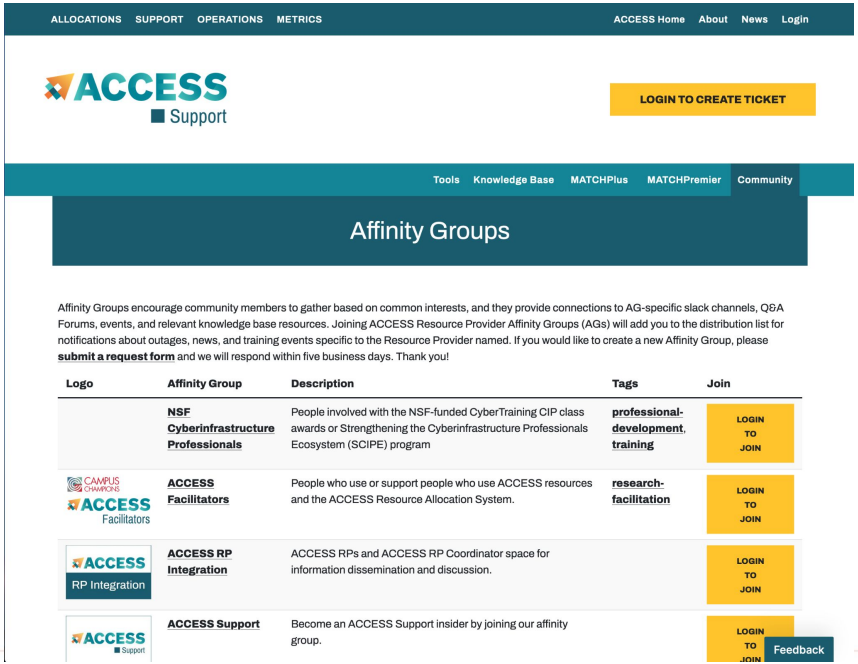
APPLY

How to ACCESS! Morning Summary

- ACCESS Overview
- access-ci.org website
  - User portals
- Account creation, profiles, linking accounts
- Tickets
- Resource Providers
- Allocations
- Knowledgebase, documentation, trainings/events

Affinity Groups

- Affinity groups have been developed as part of the CSSN to increase community involvement and exchange of ideas
- While not as focused on creating documentation, they do provide a source of knowledge that can be invaluable to user, particularly new users coming into the community



Self help Demo

Let’s see a demonstration!
https://support.access-ci.org/

This work is supported by the National Science Foundation of the United States under the award 2138286

ACCESS | Advancing Innovation

Ticketing

In This Section

- General tickets
  - Suggestions
- Cybersecurity tickets

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Creating a Ticket

Still need help?

Open a Ticket

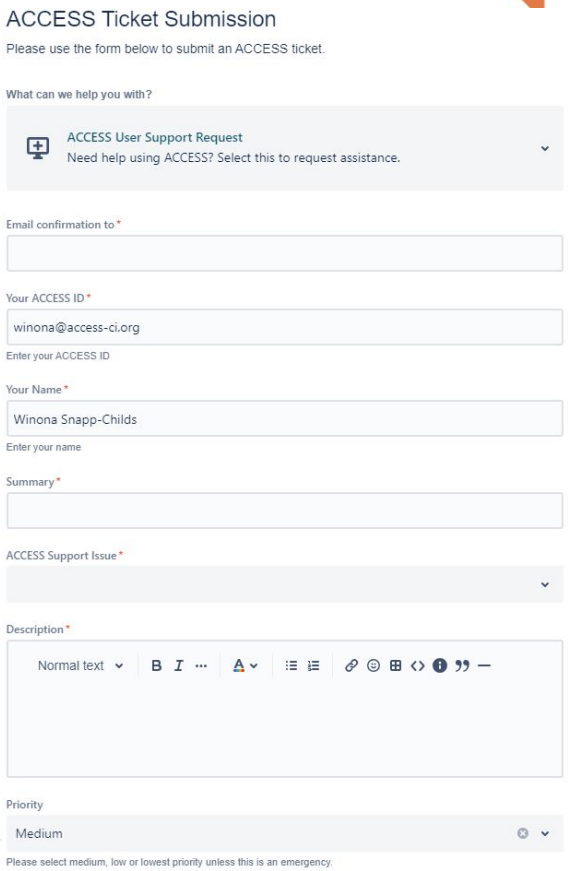
If you can't find the support you need via the documentation or community support forums, open a ticket for expert help. Our help desk will route your request to the appropriate team.

CREATE A TICKET

This work is supported by the National Science Foundation of the United States under the award 2138286

Creating a Ticket

- Features to Highlight
  - Dropdown menu for issues
  - Keywords
  - Summary auto populate



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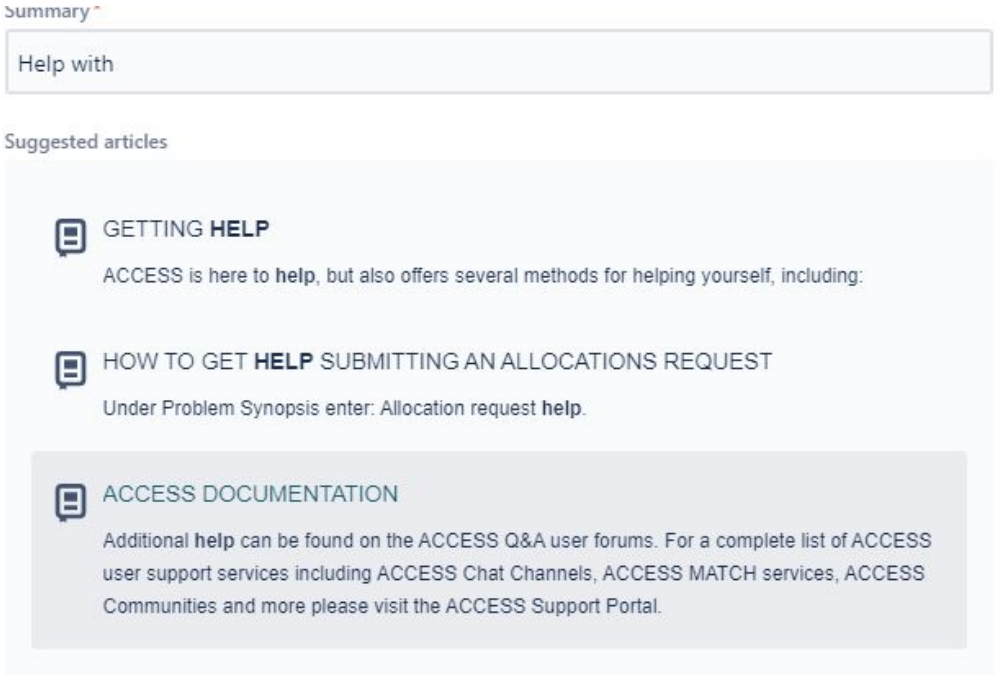
Suggested Documentation



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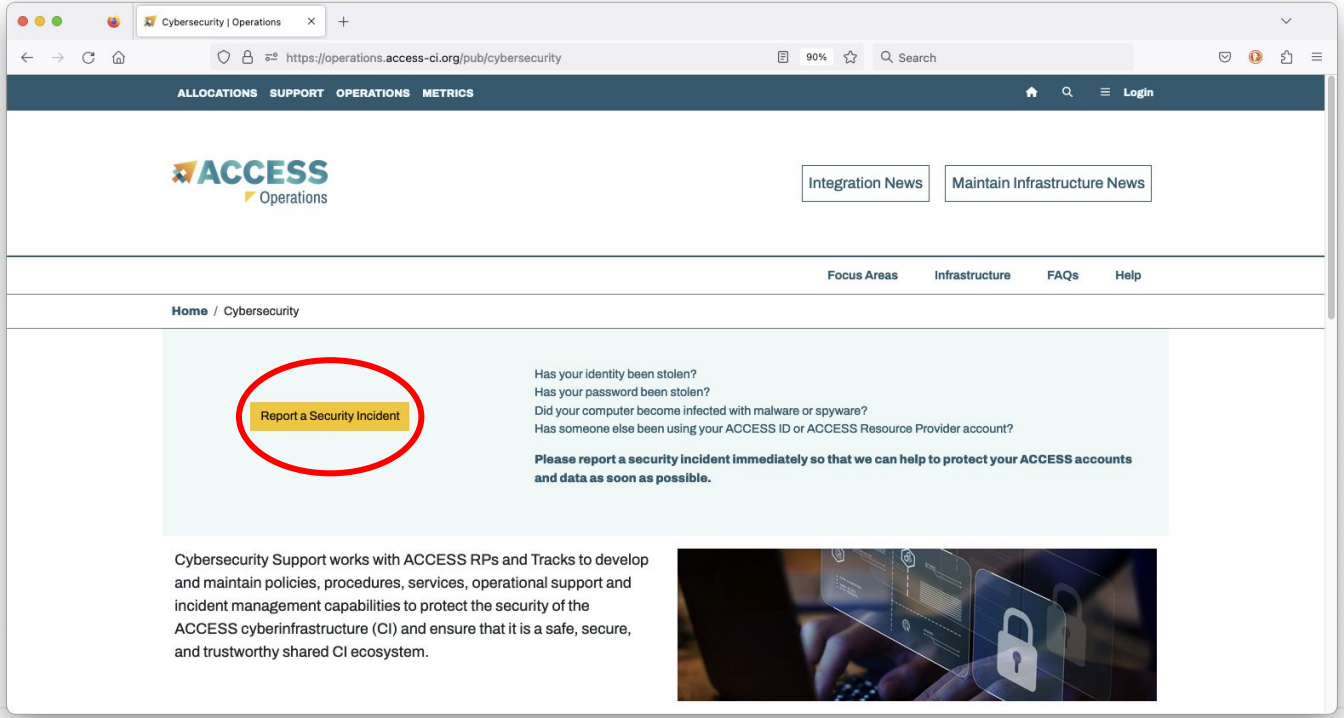
ACCESS Cybersecurity

https://operations.access-ci.org/pub/cybersecurity



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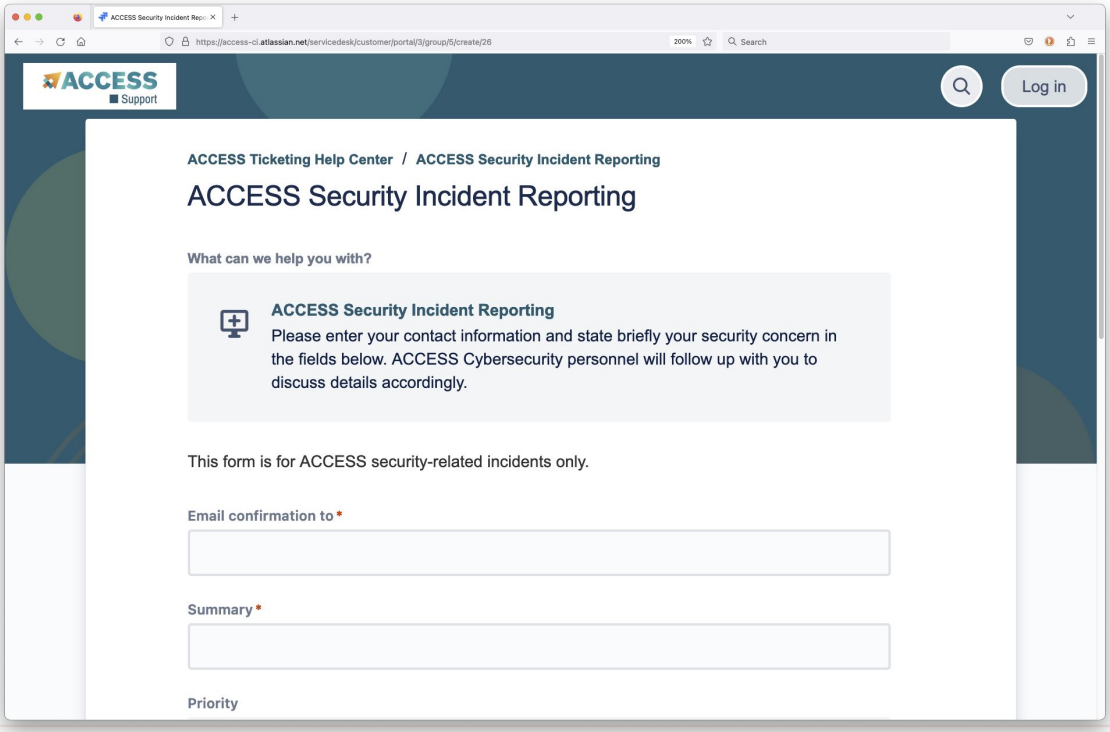
Incident Reporting Form



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Self help Demo

Let’s see a demonstration!
https://support.access-ci.org/

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ACCESS | Advancing Innovation

User Tools

In This Section

- Open OnDemand
- Pegasus
- XDMoD

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Recall: ACCESS Support

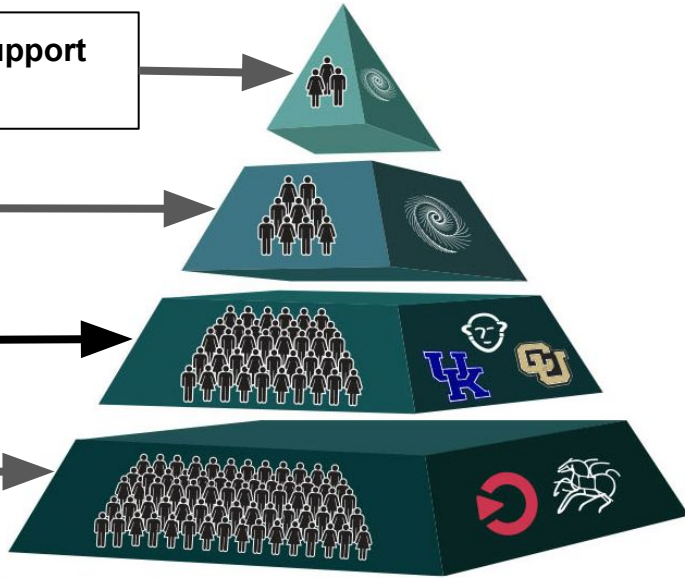
Integrating tools, information, community and experts

Embedded Advanced Support
(Match Premier)

Concierge Level Support
(Match Plus)

Self-help/Assisted-help Knowledge Base
(Documentation, Q&A, Community Resources)

Intuitive Easy-to-Use User Interfaces
(OnDemand, Pegasus)



ACCESS Support

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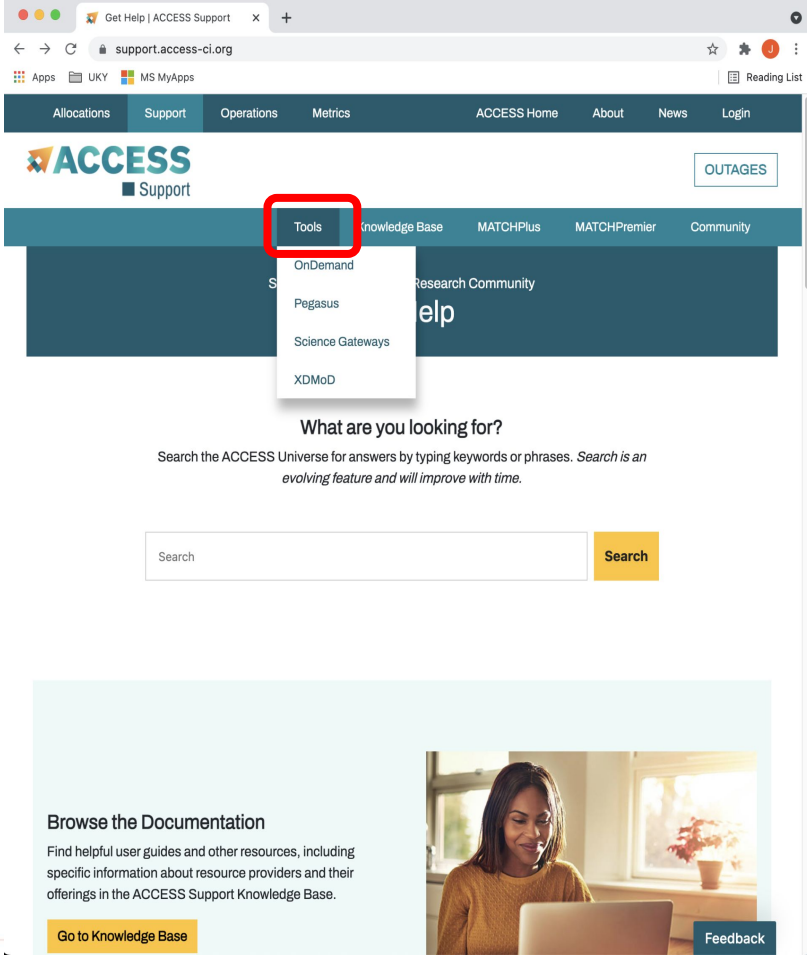
Tools

Clicking the Tools menu exposes the following tools:

- OnDemand
- Pegasus
- Science Gateways
- XDMoD



ACCESS Support

NSF

ACCESS Support Strategy

Reduce the need for support by simplifying access to resources

Powerful Tools & Workflows

OnDemand

INTEGRATED WEB-BASED INTERFACES

Schedule jobs, manage files, create remote visualizations and use a host of other valuable services.

Pegasus

AUTOMATED WORKFLOWS

Simplify complex data workflows on distributed computing resources, such as clusters, grids, and clouds.

Pegasus is a user-side capability

ACCESS OnDemand Goals

Improve productivity for researchers by integrating Open OnDemand with ACCESS services (e.g, authentication, support portal, and metrics)

Decrease effort for resource providers to install, configure, and update OnDemand through managed releases with accompanying integration roadmaps

This work is supported by the National Science Foundation of the United States under the awards 1534949, 1835725, and 2138286

Why Use Open OnDemand?

Access your organization's supercomputers through the web to compute from anywhere, on any device.

Zero installation

Run Open OnDemand entirely in your browser. No client software installation required.

Easy to use

Start computing immediately. A simple interface makes Open OnDemand easy to learn and use.

Compatible with any device

Launch on any device with a browser—even a mobile phone or tablet.

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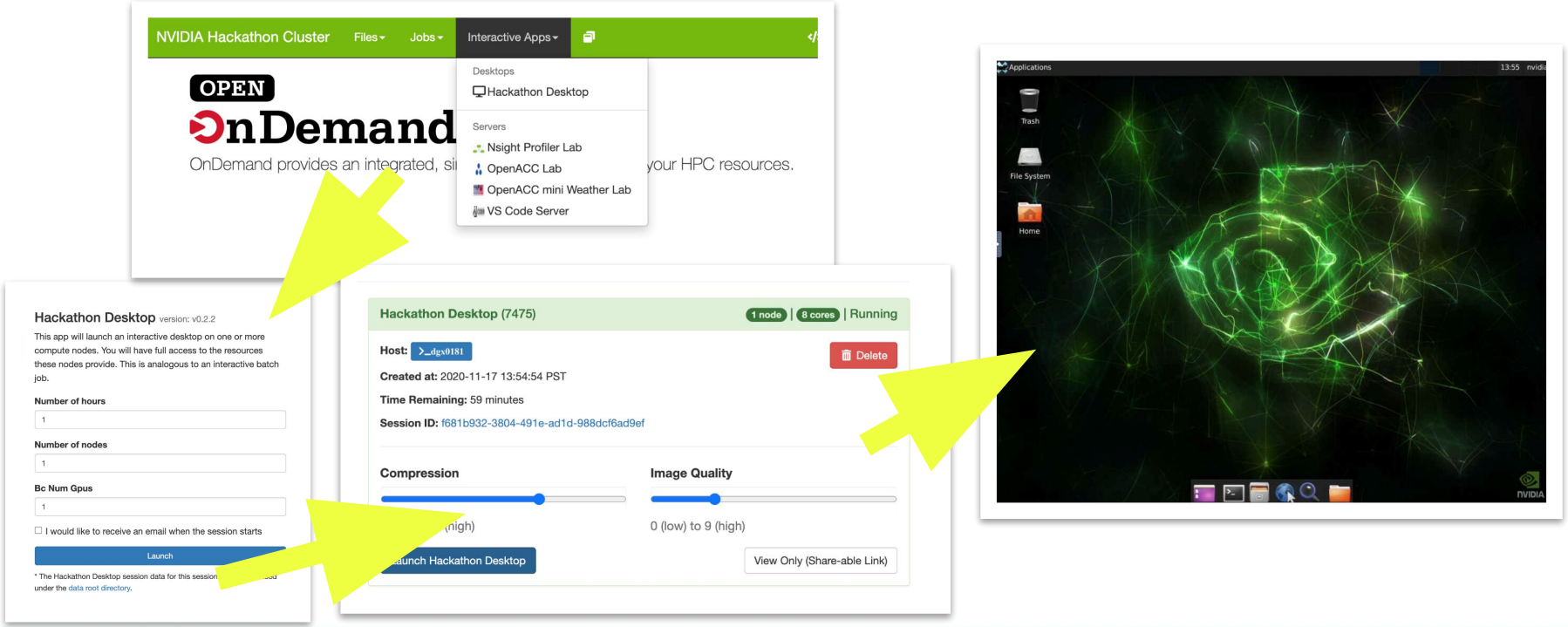
Open OnDemand Desktop Example



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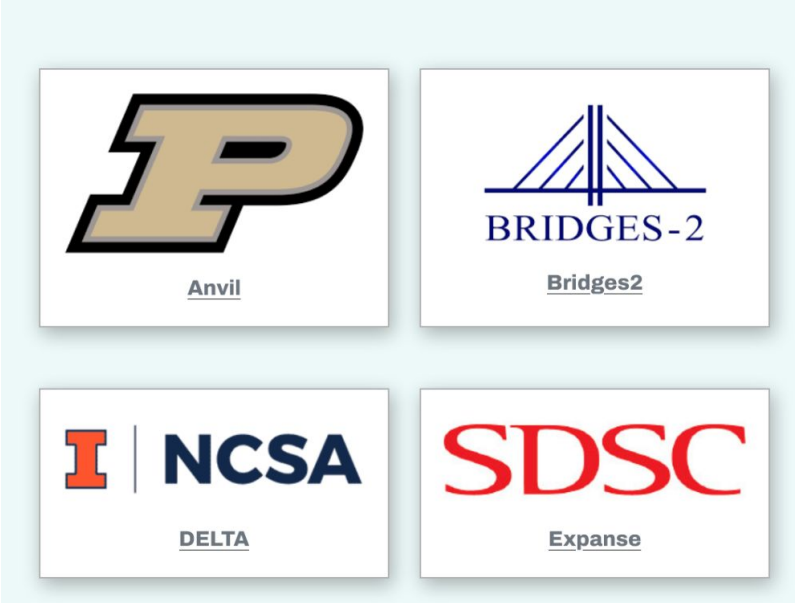
OnDemand Pilot

Initially targeted current OnDemand deployments on four ACCESS resources.

Held meetings with each RP to gather input on OnDemand



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OnDemand Deployments

Now deployed at **7 out of 12** possible RPs

Hive

FASTER

Rockfish

ACCESS Support

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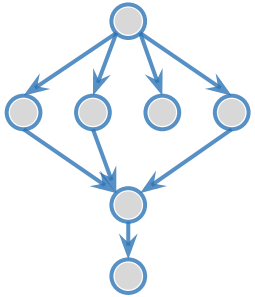
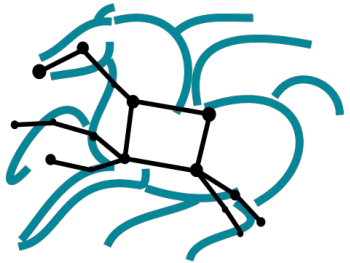
ACCESS Pegasus



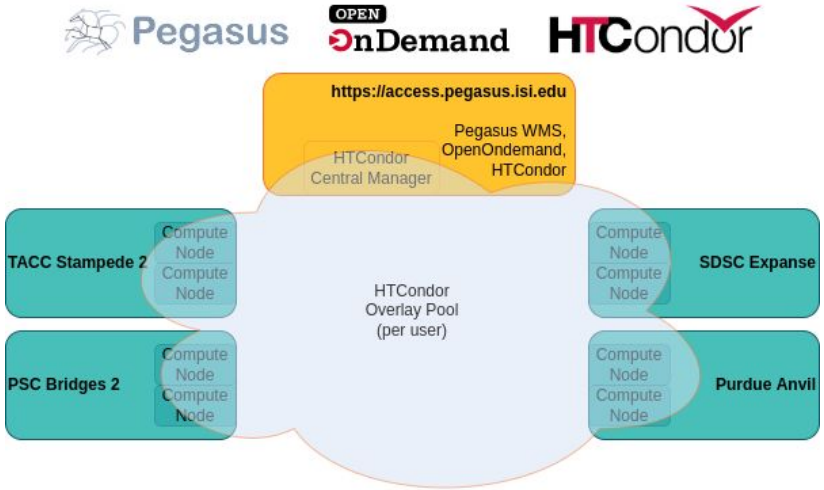


- ACCESS Pegasus, a complete hosted environment to run high throughput (HTC) workflows across multiple ACCESS resources.

- Includes OpenOndemand web interface, Jupyter notebooks for workflow creation and management, and HTCondor Annex to submit pilot jobs to ACCESS resources.

- Provisionable resources:
  - *Purdue Anvil*
  - *SDSC Expanse*
  - *PSC Bridges 2*
  - *IU Jetstream2*

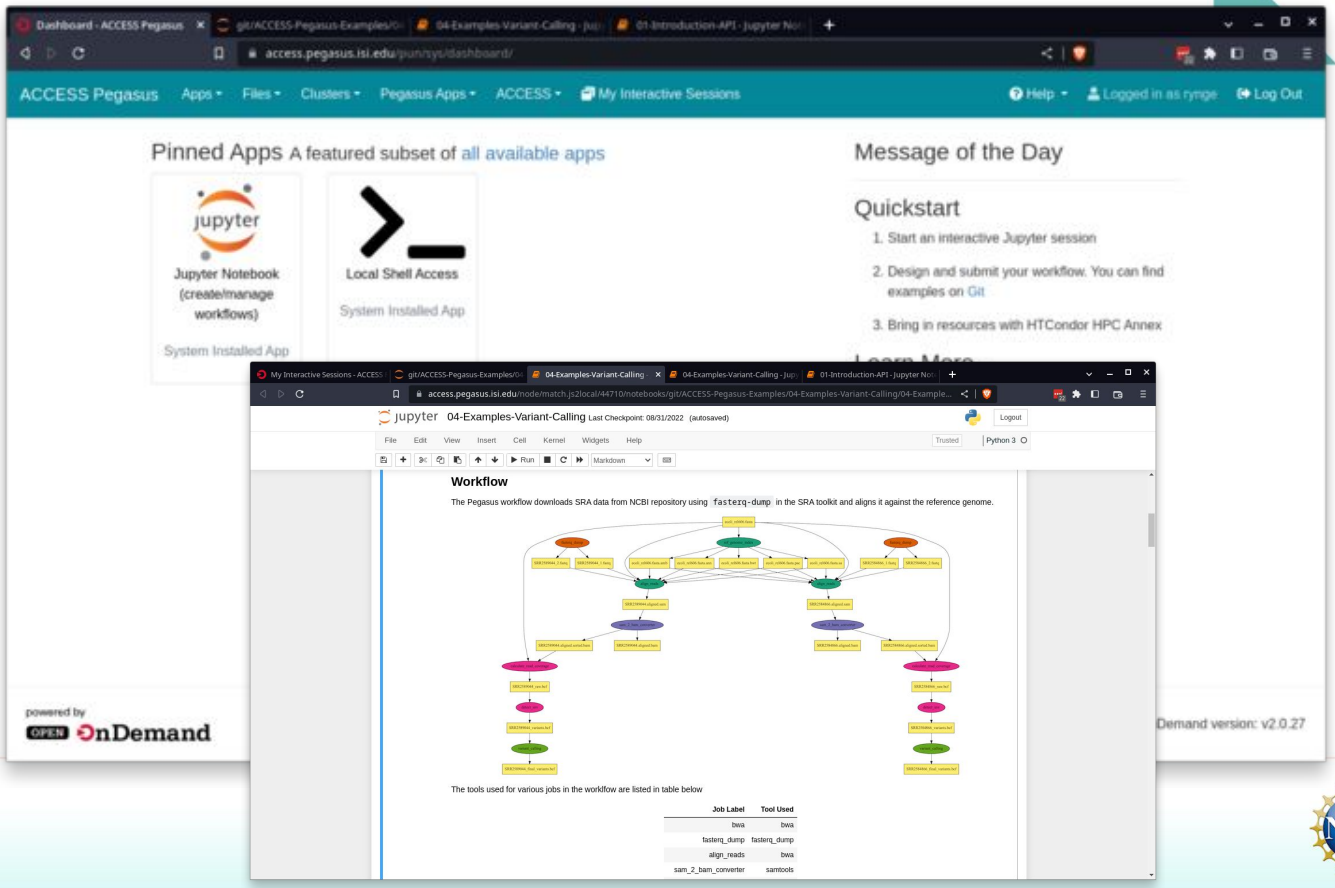
- HTCondor pool created dynamically across one or more of the above resources



OpenOndemand + Jupyter for Workflows

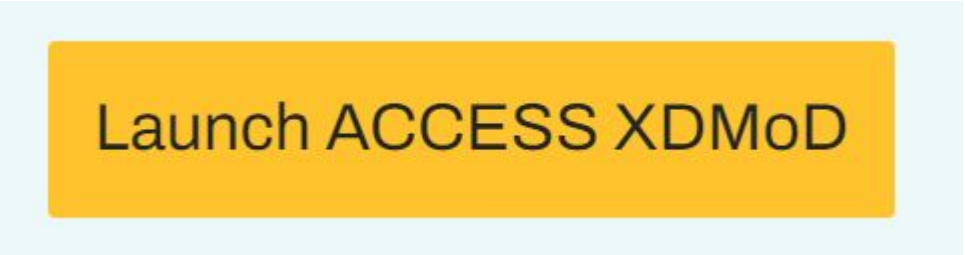
CILogin with your ACCESS ID and institutional login

All ACCESS users with an active allocation automatically have access



Metrics with XDMoD

https://metrics.access-ci.org/



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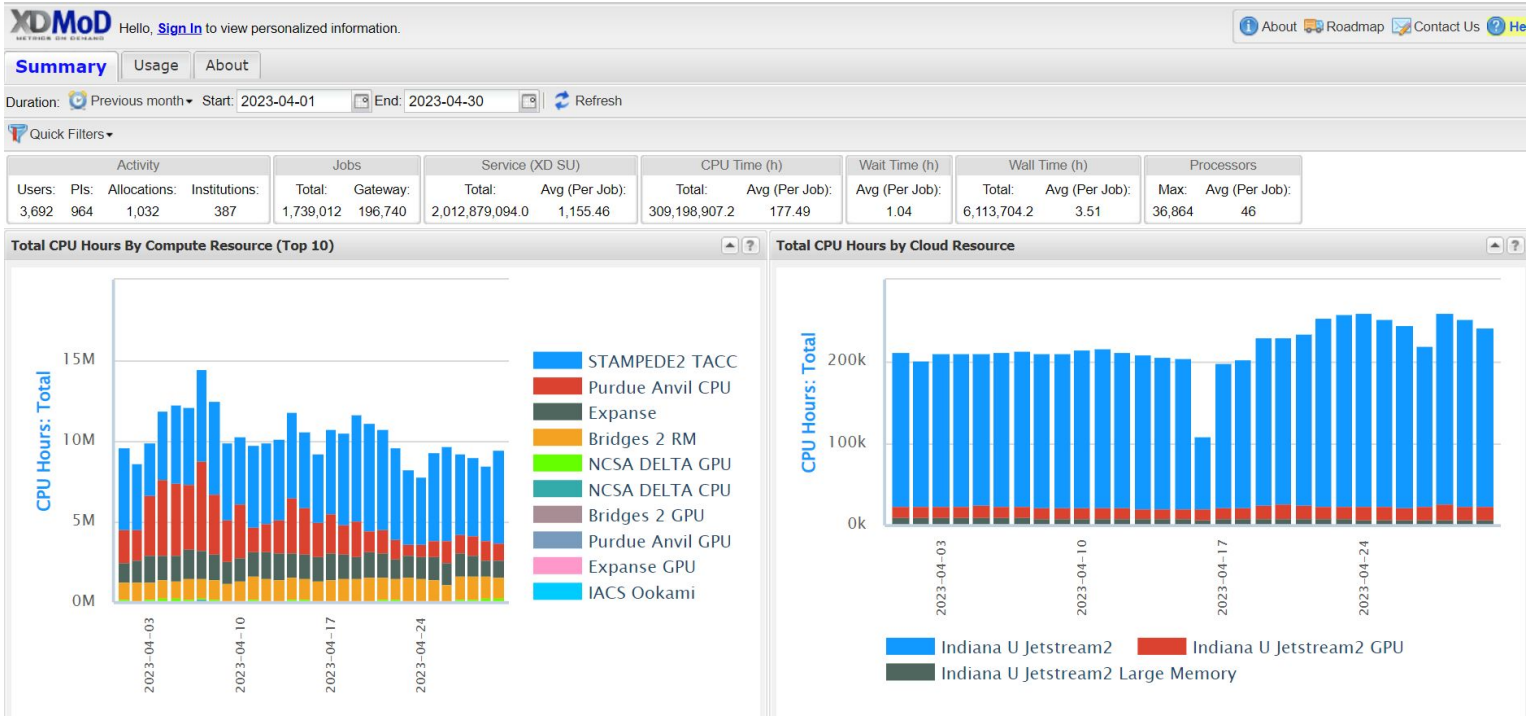
Metrics with XDMoD



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ACCESS | Advancing Innovation

ACCESS MATCH Services and Community Engagement

In This Section

- CSSN
- MATCHPlus
- MATCHPremier
- CCEP

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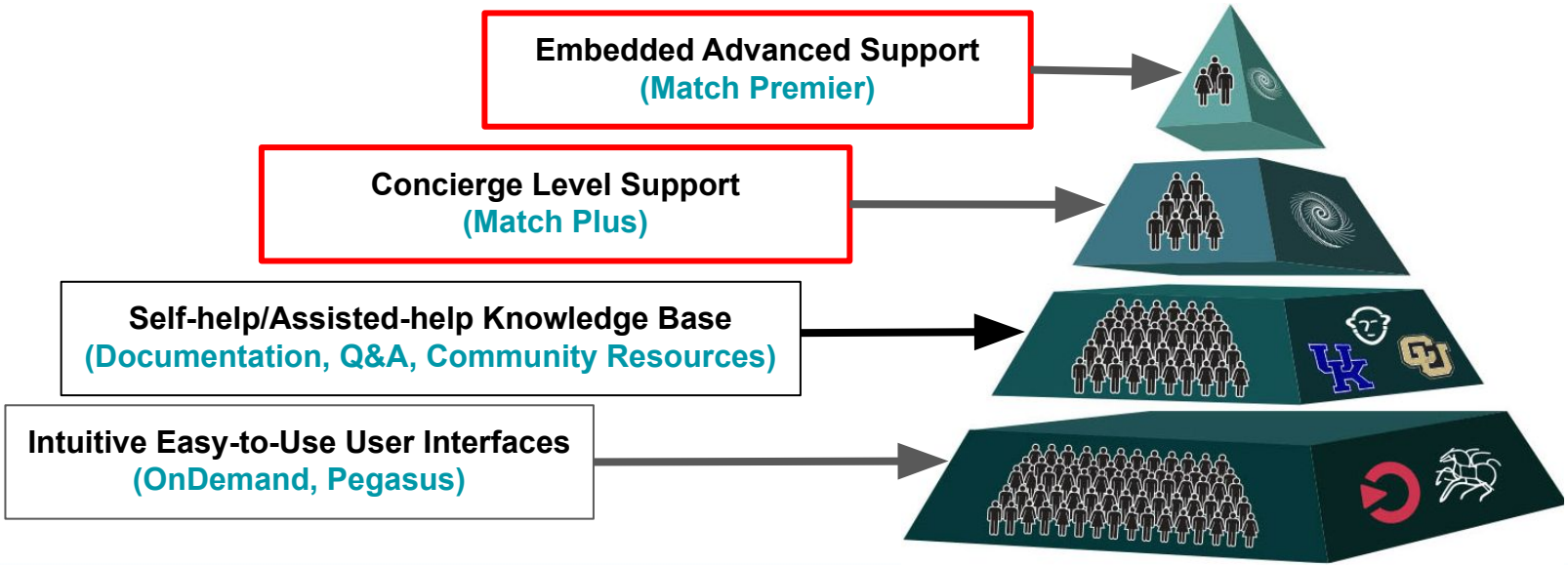
Recall: The Support Pyramid



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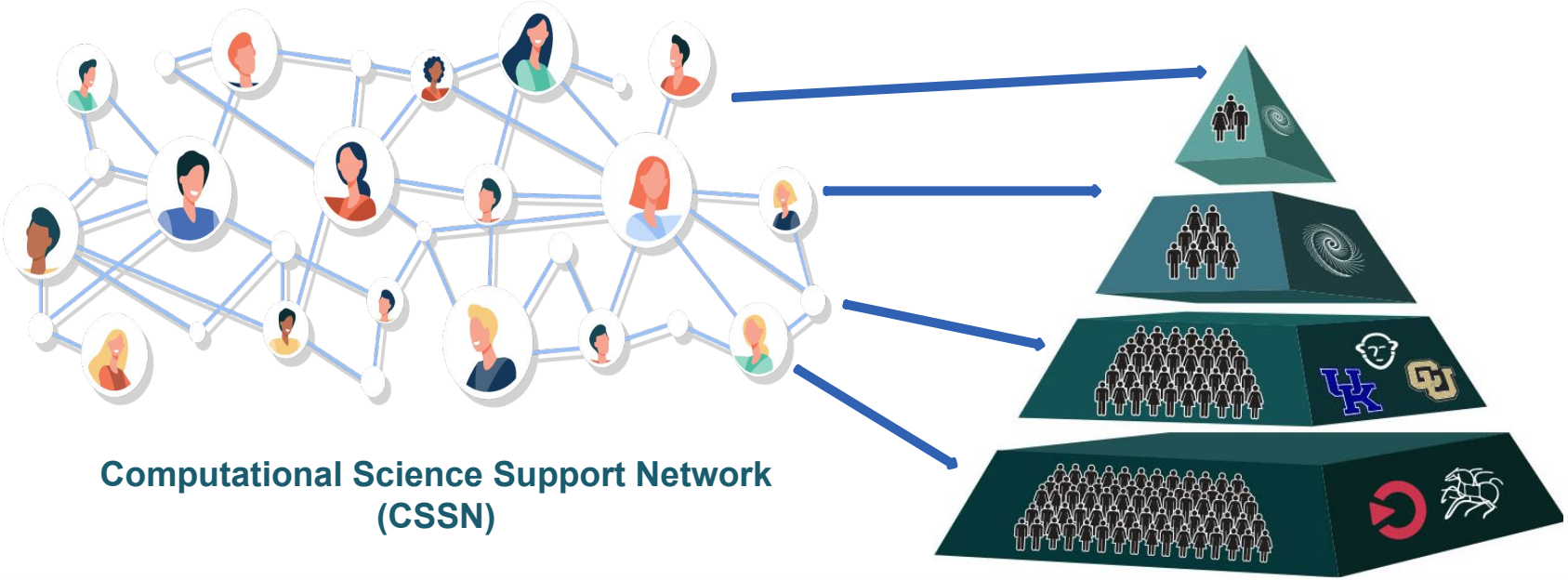
Engaging the Community



Computational Science Support Network (CSSN)

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MATCH Services

- Provide researchers with support when tools, self-service knowledge base and ticket submission options are not sufficient
- Create a scalable approach to providing support
- Proven methodology from Northeast and CAREERS cyberteams, adapted to national scale

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MATCH Plus Engagement Process

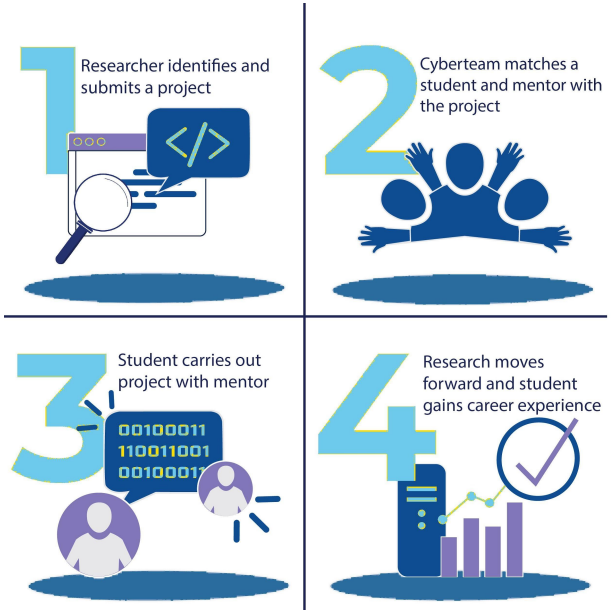

Image courtesy of CAREERS Cyberteam

Users often need short-term assistance transitioning to a new resource (e.g local cluster to ACCESS resource), or removing a roadblock (e.g. replacing a stage in a workflow to better performance/scale)

What we provide:

- Researcher can submit a project via the MATCH Plus Page
- We match projects with a student and an experienced mentor
- This is a ~ 6-month engagement

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Apply for MATCHPlus

Receive expert CSSN research support

Collaborate with a mentor/student pairing

Work with subject matter experts

Benefit from support dedicated to advancing your scientific research

REQUEST A PILOT ENGAGEMENT

Fill out our online form

Join our Mentors

Leverage your expertise

Mentor a student research facilitator

Help advance scientific breakthroughs

Help drive evolving and emerging research

BECOME A MENTOR

Fill out our online form

Be a Student-Facilitator

Gain cutting-edge research experience

Work with a CSSN mentor and expert

Help drive scientific research

Showcase your expertise, learn new skills and gain experience

JOIN MATCHPLUS

Fill out our online form

https://support.access-ci.org/matchplus

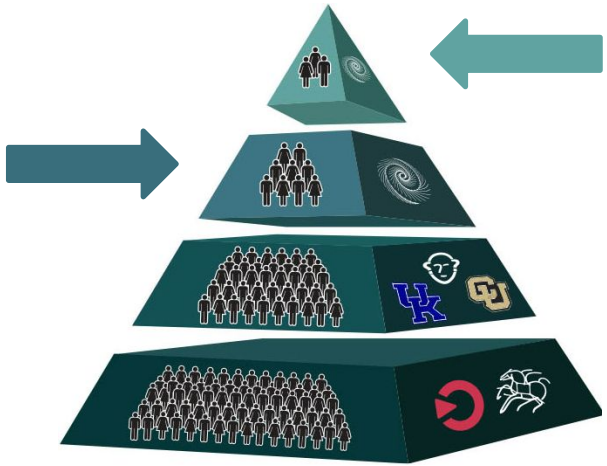
MATCH Engagements

M+ = R + SM

MATCH Plus

Researchers assisted by a student and their mentor

< 6 MONTHS, "funded" by ACCESS Support



MP = R + C

MATCH Premier

Researchers assisted by an expert consultant

6+ MONTHS, funded by researcher

ACCESS Support

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CSSN Community Engagement Program (CCEP) Evolution/Creation

- Community Engagement & Building
- Travel Rewards for Contributions
- Multiple Tiers ($750-$2500)
- Open to all:
  - 18+
  - New and existing ACCESS users
  - US-based institution

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CCEP Opportunities for Travel Grants

Community Grants

- Pre-planned, pre-approved efforts
- Submit a lightweight written outline of proposed work
- Reviewed by Community Grants committee

Contribution Rewards

Tier 1

- Contributions to the knowledgebase of existing literature and links
- Ask.CI Contributions

Tier 2

- Committee Involvement
- Student Mentorship

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Community Grants

Plans to create **NEW** documentation, videos, tutorials or live events **must be approved before work is started**. Submissions will be reviewed once a month by the community grants committee.

TIER 1 ($1,000)

- ✓ One contribution

Contribution examples:

- An extensive page of technical documentation
- A step-by-step written tutorial
- A recorded workshop or tutorial

TIER 2 ($2,500)

- ✓ One contribution
- ✓ AND one live community event

Live Community Event examples:

- A workshop or tutorial
- A DEI meeting
- A gathering of students/faculty/staff to promote awareness and use of ACCESS resources

Apply two months prior to the conference of your choosing.

Visit here to apply:
https://support.access-ci.org/ccep-pilot

1:1 office hours to assist with submissions is available:
alana.romanella@colorado.edu

Community Contribution Rewards

Please contribute first, then apply for your reward.
Submissions will be reviewed once a month by the Ask.CI committee.

TIER 1 ($750 / $1000 / $2500)

Contributions to the Knowledge Base CI Links, or Ask.CI

- ✓ At least 3 contributions in 12 months ($750)
- ✓ At least 6 contributions in 12 months ($1000)
- ✓ At least 9 contributions in 12 months ($2500)

TIER 1 contribution examples:

- Post a topic or reply on **Ask.CI**
- Submit an already completed tutorial, documentation, or training to **ACCESS Support CI Links**
- Submit a website that contains helpful HPC/research computing documentation to **ACCESS Support CI Links**

TIER 2 ($2,500)

- ✓ Mentor a student for 6 months as part of an active MATCHPlus award*

or

- ✓ Serve on the MATCH Steering, Ask.CI, or Community Grants committees*

** Due to overwhelming interest in mentoring students and serving on our committees, we have closed applications for mentor and committee positions at this time. We will reopen applications in June. Thank you for making our pilot a success!*

Q
&
A