FACULTY HACK @GATEWAYS 23

HPC ED
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HPC-ED Overview + MiniHack

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[*Pilot*] HPC-ED: Building a Federated Repository and Increasing Access through Cybertraining

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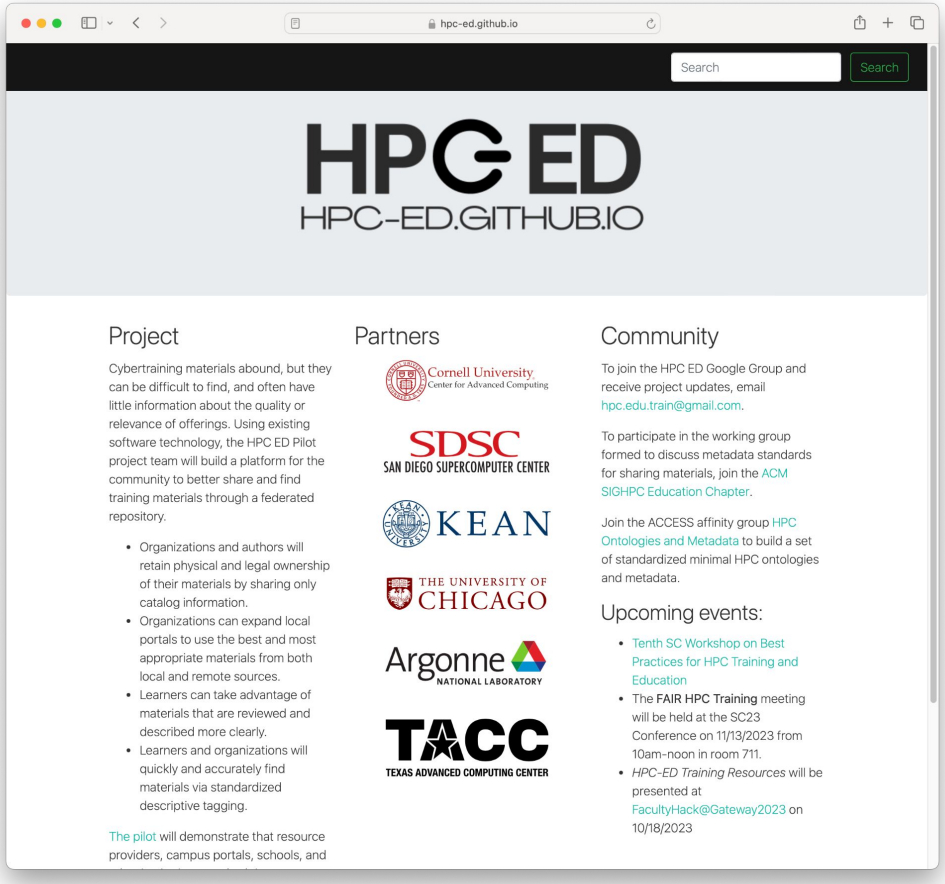
The Problem at Hand

- Computing technologies are rapidly expanding in many sectors
- There is a need for access to high-quality education and training materials to facilitate research computing
- The demand is high for instructional materials encompassing a wide range of topics in advanced computing
- Meeting this demand is crucial



CyberTraining: Pilot: HPC ED: Building a Federated Repository and Increasing Access through Cybertraining is supported by NSF grant OAC-2320977

The Challenge

To meet this need and keep up with the ever-evolving landscape of HPC educational and training material development is to improve how the community shares and finds materials.

The Needs of the Many

- To gauge the needs of the HPC Education and Training community with regard to sharing training materials we sought input from stakeholders.
- We conducted a survey to explore ***interest*** and ***key factors*** related to ***sharing*** and ***discovering*** training and education materials.
- The results of this survey highlighted the barriers to finding relevant materials and the barriers to sharing materials developed.

Survey Methodology

- The survey questions were reviewed by a focus group from the HPC education and training community.
- Invitations to participate were sent out through well-known mailing lists in the HPC support community, such as CaRCC People Network, Campus Champions, Virtual Residents, Coalition for Academic Scientific Computation, and the EDU Special Interest Group on High Performance Computing.
- This effort resulted in a total of up to 112 responses received for each question.
- We were targeting professionals in the HPC support community at research computing centers.

We shared interim results at the Ninth SC Workshop on Best Practices for HPC Training and Education (BPHTE22) at SC22.

About the Respondents

The survey begins with two questions pertaining to the respondent's role and the communities they support. Both questions allowed multiple selections and were answered by all 112 respondents.

Tabulated results show that:

- 84% are, or support, academics
- 71% for both the Grad/Postdoc and Undergrad communities
- 37% of the respondents specifically selected these three options only
- 84% are content authors
- 61% curate appropriate materials for their community
- 25% see themselves as filling all four roles.

About the Respondents

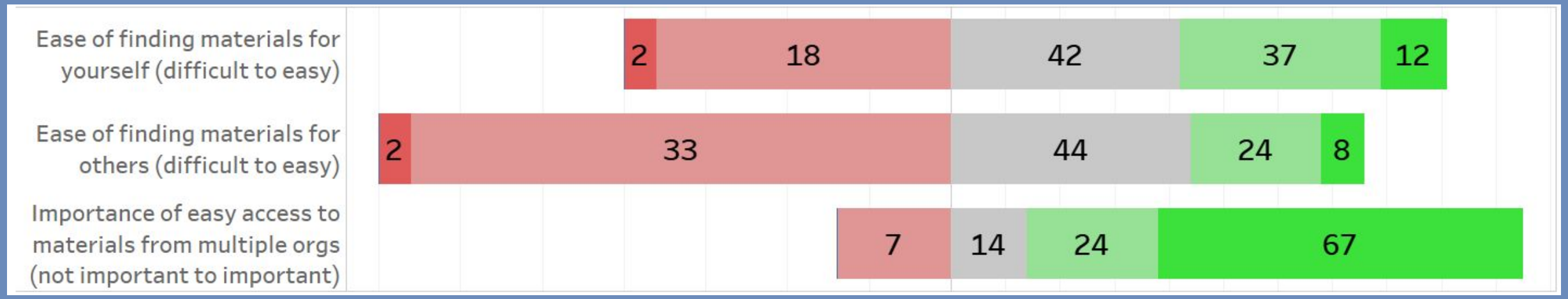
Which communities do you support?

Community	Responses
Academia	94
Grad/Post doc	80
Undergrad	80
Government	25
Pre-college	18
Industry	16
Other	4
Total	**112**

Which communities do you support?

Respondent's role	Responses
Content author	94
Curator collecting appropriate materials for my community	68
Consumer of materials hosted by other organizations	57
Consumer of materials hosted by my organization	35
Other	6
Total	**112**

Survey Results



Finding Materials - Barriers and Roadblocks

What barriers have you encountered when searching for materials?

Barriers encountered	Responses
I can't find materials on the topic I need	35
I can find materials on the topic, but not at the depth or level I need	72
I find too many materials, and I can't effectively sort through them all	44
I am aware of specific appropriate materials, but search engines don't list them in the top results	26
Other	28
Total	**93**

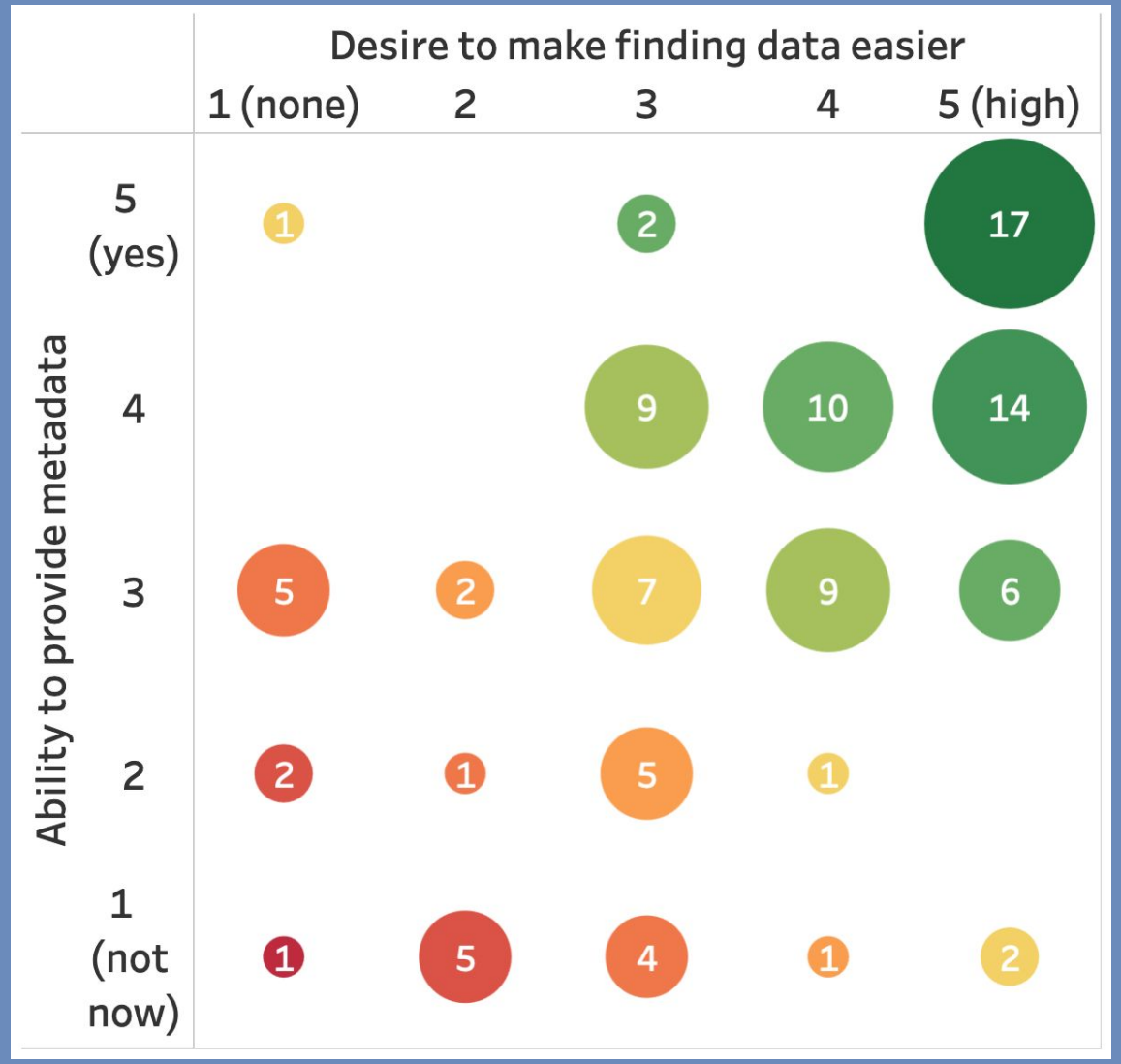
Which barrier, if removed would be most helpful for finding appropriate materials

Barrier to remove	Responses
I can't find materials on the topic I need	12
I can find materials on the topic, but not at the depth or level I need	46
I find too many materials, and I can't effectively sort through them all	29
I am aware of specific appropriate materials, but search engines don't list them in the top results	10
Other	11
Total	**109**

If your organization is not willing and able to provide metadata about your materials in a standard format, what are your roadblocks?

Roadblocks to providing metadata	Responses
Lack of staff time	65
Lack of funding	38
Inadequate staff expertise	28
Our materials aren't in a catalog	37
Other	12
Total	**87**

Survey Analysis



Where do we go from here

Community Engagement / Community Building

- Collaborate with HPC Education and Training Communities
- Build an HPC Professional Trainer Community
- Organize Birds-of-a-Feather Meetings
- Organize Community Hosted Training Material Services

HPC-ED

NSF Award Abstract # 2320977

Allows for the **discovery, identification, and sharing** of **High Performance Computing (HPC) training materials** across a multitude of providers and users. While there are considerable resources for learning about HPC topics online, **the overall environment is highly fragmented and challenging to navigate**. The project aims to **create a federated repository of training materials** with **metadata**, **quality assurance**, and **roadmaps** that can be accessed by both computational resource providers and computational scientists to discover and use these materials. Training providers can list their resources through the repository (HPC ED) and make them accessible to a multitude of portals across the United States and beyond.

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Assessing Shared Material Usage in the High Performance Computing (HPC) Education and Training Community

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We need *your* help!
Let's have *"Jam"* session :)

https://tinyurl.com/hpc-ed-kg42