Implementing FAIR practices and metrics in Physical Sciences research communities

Thursday 4 April 2019

Natalie Meyers

Preservation Tools Techniques and Policies

RDA P13

Philadelphia PA

RDA & FAIR

April 2 2 PM

- **WG -** Exposing Data Management Plans: Situating Plans in the Data Management Action | Room: Congress A (Remote Access Available)

April 3 10 AM

- **IG -** Research Data Needs of the Photon and Neutron Science Community: Approaches to FAIR Data Publishing within Large-Scale Analytic Facilities |

April 3 12 Noon

- **WG -** FAIR Data Maturity Model: First Face-to-face Meeting | Room: Commonwealth D (Remote Access Available)

April 3 2:30

- **BOF -** Harmonizing FAIR Descriptions of Observational Data | Room: Commonwealth A2 (Remote Access Available)
- **IG -** RDA-SHARC (SHAring Rewards & Credit): Evaluating FAIRness Practise - Need for Integrated Ecosystem of Assessment Linked to Crediting and Rewarding Mechanisms Room: Congress A (Remote Access Available)

April 3 4:30 PM

- **BOF -** Using Schema.org and Enriched Metadata to Enable/Boost FAIRness on Research Resources | Room: Congress C (Remote Access Available)

April 4 9:00 AM

- **BOF -** Assessing FAIR Data Policy Implementation in Health Research | Room: Commonwealth A1 (Remote Access Available)

April 4 11:00 AM

- **IG -** RDA/WDS Certification of Digital Repositories: Build TRUST to be FAIR - Emerging Needs of Certification in Life Sciences, Geosciences and Humanities| Room: Commonwealth D (Remote Access Available)
- **IG -** Preservation Tools Techniques and Policies: Researcher's Tools for Attaining Knowledge Preservation | Room: Commonwealth C (Remote Access Available)

Recent Workshops

MPS FAIR Hackathon(Feb 27-28 2019) NSF Award No. 1839030

- Mix of ideas, demonstrations, and hands-on sessions
- Final Report in progress re FAIR in physical science disciplines with emphasis on gap analysis to accelerate further adoption, R&D, etc.
  - What about the FAIR principles is confusing and how can they be explicated?
  - This training was great, but I also need…
  - The tools presented here were ok, but I really need…

Resources:
https://mpsfair.crc.nd.edu/
https://osf.io/km8db/

https://mpsfair.crc.nd.edu/index.php/hackathon/schedule

MPS FAIR | Hackathon Details | FAIR Reading

HACKATHON DETAILS

- About the Hackathon
- Schedule
- Workshop Location
- Workshop Participants
- Workshop Resources

MPS FAIR HACKATHON WORKSHOP FEB 27-28 2019

SHORTCUT TO THE: FAIR PRINCIPLES
RESOURCES: HTTPS://OSF.IO/KM8DB/

Wi-Fi: code is FEB19

Lactation Room -> Carver Floor 2 Westin

Schedule

Day 2 Feb 28th, 2019

Morning		Breakfast	***Breakfast on your own:*** *nearby options for a quick breakfast include Jamieson Avenue (1 min away), Panera Bread (3 min away), 350 Dula Bagels, 401 Dulany St (3 min)*		
	8:00	**Coffee/Tea**	**Coffee/Tea Service at the Hackathon Avail starting at 8 AM**		
	8:30	**Keynote**	Day Two Keynote "The Internet and FAIR Data" - George Strawn		
	9:15	**Discussion**	• Keynote Discussion - Moderator Mike Hildreth • MPS FAIR Hackthon Gap Analysis and Final Report Rationale - Hild • Questionnaire Results - What we've brought/got that we can FAIRi • Drexel CODATA March 31-April 1 FAIR and Responsible Research D Workshop Meyers & Schultes • Departure Travel Logistics - RideSharing		
	9:40	**Demo**	Physics - FAIR Ecosystems Demos (from among INSPIRE High Energy P system, CERN Document Server, Reana Reusable Analysis and CERN A Portal) - Discussion Moderator and Presenters TBA		
	10:00	**Breakout**	FAIRifying your data or code : Day Two Breakouts begin		
			Chem	Phys	Consults	Using the PPB Evaluator
		Coffee	*Coffee Service avail during breakouts*		
	11:30	**Discussion**	Regroup for Discussion & Demonstrate outputs		
			OSF & FAIR	MPS GAP Analysis	Using the PPB Evaluator	Phys

https://mpsfair.crc.nd.edu

https://osf.io/km8db/

https://osf.io/km8db/

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MPS FAIR Hackathon

Public | 0

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Wiki

MPS FAIR Hackathon Schedule | Group Notes

Shortcut to the: FAIR Principles

Wi-Fi: code is FEB19

Lactation Room is CARVER

SDSC's Research Data Services to Host First U.S. GO FAIR Office

Files

Filter

Name	Modified
MPS FAIR Hackathon	
Google Drive: Group Notes	
MPS FAIR Hackathon Group Notes.gdoc	2019-02-28 10:29 AM
OSF Storage (United States)	
Pre-Hackathon Questionnaire	
OSF Storage (United States)	
MPSQuestionnaire.pdf	2019-02-20 08:19 PM

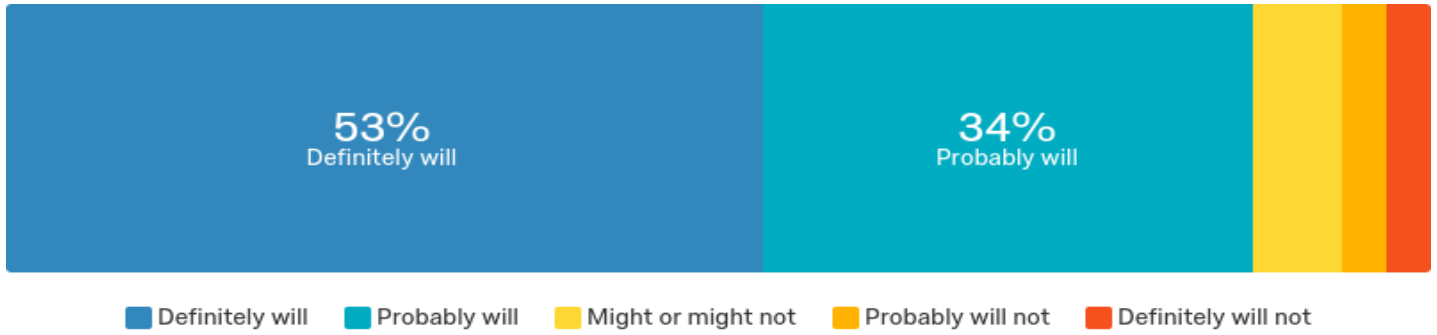
Citation

Components

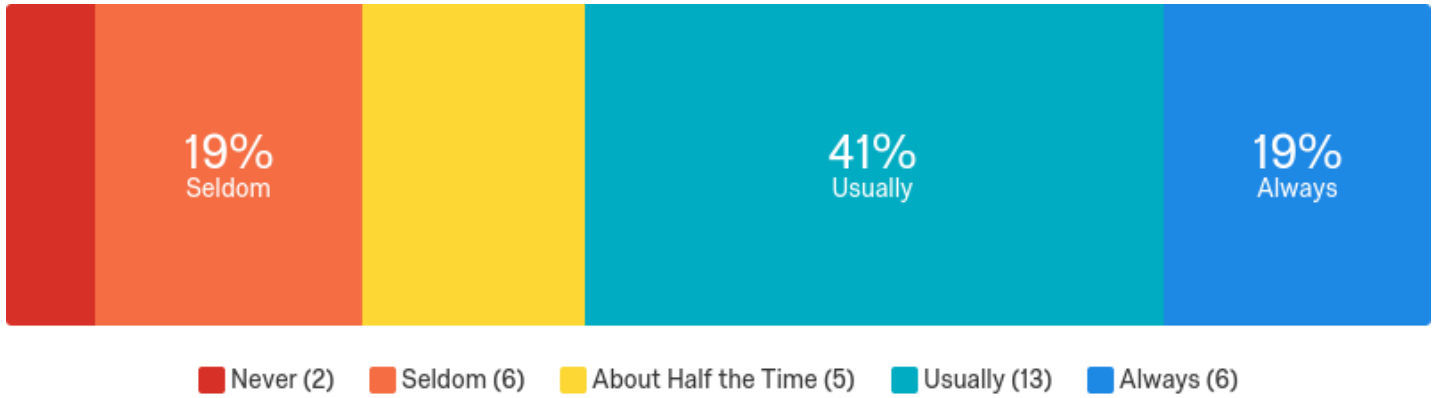
- Pre-Hackathon Questionnaire
  Meyers, Hildreth, Habermann & 18 more
- Presenter Slides for Demos and Talks
  Meyers, Berta, Bolton & 19 more
- MPS FAIR Hackathon Keynote Feb 28 2019
  Strawn
  Keynote by George Strawn
- Read-Aheads
  Meyers, Berta, Bolton & 18 more
- Drexel-CODATA FAIR workshop Abstract
  Meyers, Berta, Bolton & 17 more
  Abstract and resources for a practice paper to deliver at Drexel-CODATA FAIR workshop March 31 April 1.
- Rethinking the Academic Reward System

Does your Organization, Repository Provider, or disciplinary society currently offer FAIR-related training materials or training programs ?

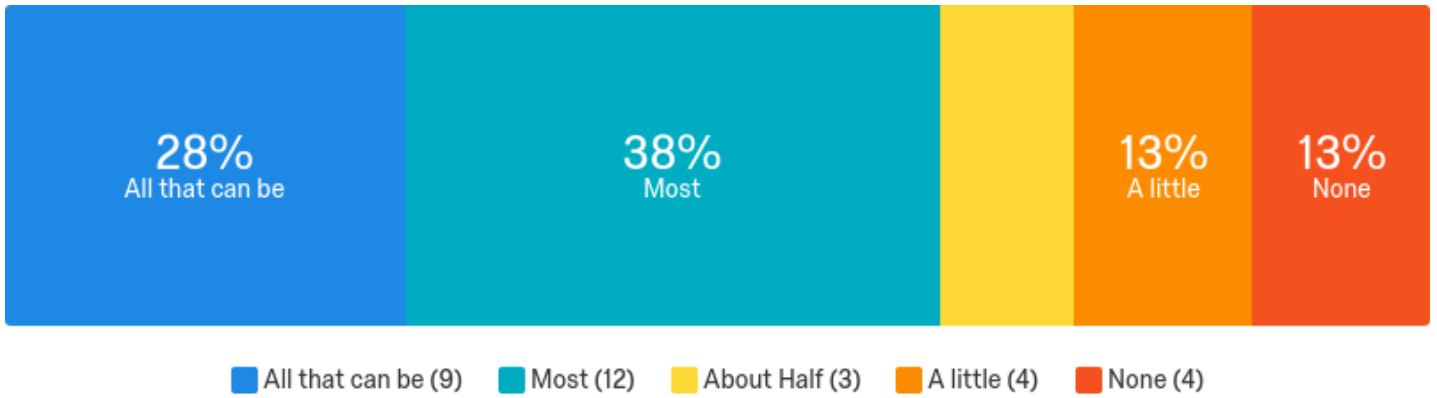
Do you anticipate publishing or sharing your own data or code over the next five years?



In the past, how often have you made your research data free to access, reuse, repurpose, and redistribute?



Is any of your data or code published or shared now on a repository or website?



Gaps and Hoped for Solutions

- Need (more) Tools to make the FAIRifying more automated & easy to accomplish
- Schema specific metadata quality and disciplinary specific FAIRNess indicators
- More training
  - FAIRifying RDM Training repositories of re-usable training materials: e.g. (Data Management training clearinghouse)
  - interest in ontology modeling
  - To effect cultural change, also need to provide training for funder reviewers & evaluators as well as publication reviewers / editors.
- Enhanced hooks/specs (scientific annotation tech & practice maturing)
- Collection level metrics
- Metrics that identify ways to improve FAIRness

Community, Cost/Benefit, Sustainability

Important element of culture change is developing a "Community of Practice"

-MPS Hackathon Group Notes

Should also include a cost / benefit analysis of FAIRifying data, particularly early in research / data lifecycle and workflow processes.

. . . moments of convergence require political, organizational, administrational, economic and technological efforts to turn technology into an infrastructure accessible for all

Strawn & Wittenburg in *Common Patterns in Revolutionary Infrastructures and Data*

We need strategies for scaling and sustaining community practice.

- FAIR PUBLISHING GUIDELINES FOR SPECTRAL DATA AND CHEMICAL STRUCTURES Workshop Desc

In the end, our research study, like most analyses, is just a drop in the huge bucket of information learned from the LHC. Its details should not obscure the larger question: ***how shall we, as a community, maintain the LHC data set so that it can continue to provide information across the decades?***

@MattStrassler

FAIR Metrics

Researchers' concern for being quantified in "yet another over-simplistic but reportable way" for tenure & promotion or for documenting comparative departmental "success"

Understanding/implementing FAIR reporting or metrics along an aspirational continuum could be problematic and fraught with tension for repositories who manage heterogeneous data sets and expose "FAIRness" scores

George Strawn and Futures . . .

The Internet changed how science and society function; FAIR Data may bring on a science revolution of the same magnitude as the science revolution of the 17th century (by enabling reuse of all science outputs —not just articles)

George Strawn, *MPS FAIR Hackathon Address*

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