FEDERAL DEMONSTRATION PARTNERSHIP
Redefining the Government & University Research Partnership

Finance, Audit, & Costing Committee

Co-Chairs:

Michelle Bulls, NIH OPERA

Jim Luther, Duke University

September 23, 2021

Virtual Committee Session

Co-Presenters

- Rick Fenger – University of Washington
- Melissa Korf – Harvard Medical School
- Nate A. Martinez-Wayman – Duke University
- Tim Reuter – Stanford

Agenda

- NIH update
- Updates from May Meeting
  - Treasury Offset Program (Tim Reuter)
  - DLT Working Group Partnership with NSF & Treasury Update from May meeting (Rick Fenger/Nate Martinez-Wayman)
- Data Access/Sharing – A Costing Life Cycle Discussion
  - Review of ThoughtExchange Data
  - Where to from here?
- Q&A

NIH Update

F/A/C: DLT Working Group Partnership with NSF & Treasury

Co-chairs

- Nate Martinez-Wayman, Duke University
- Richard Fenger, University of Washington

Federal Partner Leads:

- Mike Wetklow, NSF
- Craig Fischer, Treasury (FIT)
- Tammie Johnson, Treasury (FIT)

Precursor: LoC Survey

Post Award Management Draw-downs (LoC): Quantifying workload associated with post award management, specifically grant drawdowns. In this project grant recipients will quantify the specific workload by FTE of preparing for drawdowns, drawing funds, and reconciling the funds from the existing institution accounting systems with the Federal Government drawdown systems. Attention will also be given to the number of different drawdown systems used by the FDP members.

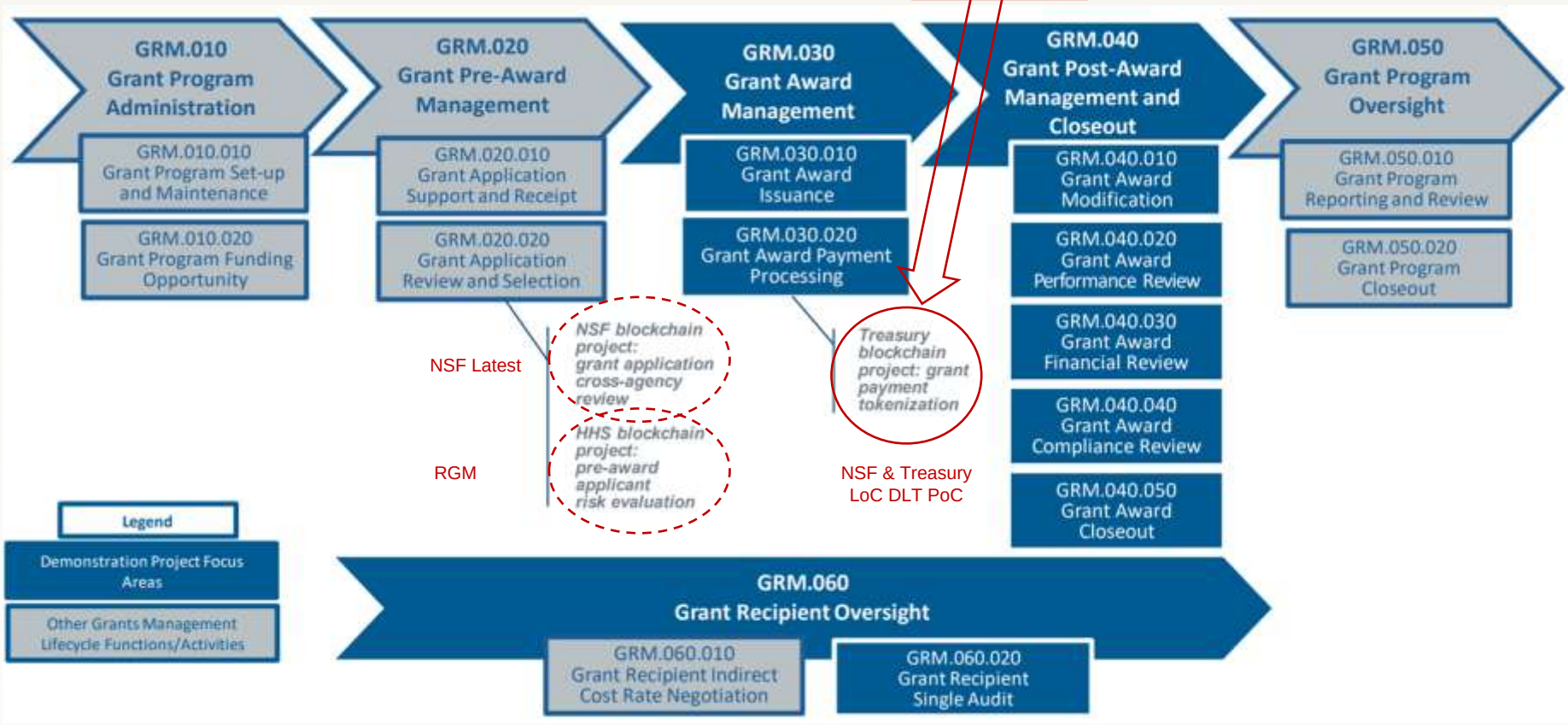
OG:RAD Survey	**Highlights**
Feedback received	62 responses; representative of all FDP members
Basis	5 draw systems: ACM$, ASAP, G5, ~~GPRS~~, PMS *(now 4 with the retirement of GPRS)*
Points of interest to explore	How workload correlates to institutional volume How workload correlates to number of systems used How workload correlates to developed institutional tools
Final Findings	10/2021

FAC: LoC Survey Delivery Status

Reviewed and approved waiting for approval to release

FAC: DLT Workgroup
-NSF & Treasury PoC

MITRE Grant Life-cycle and the LoC



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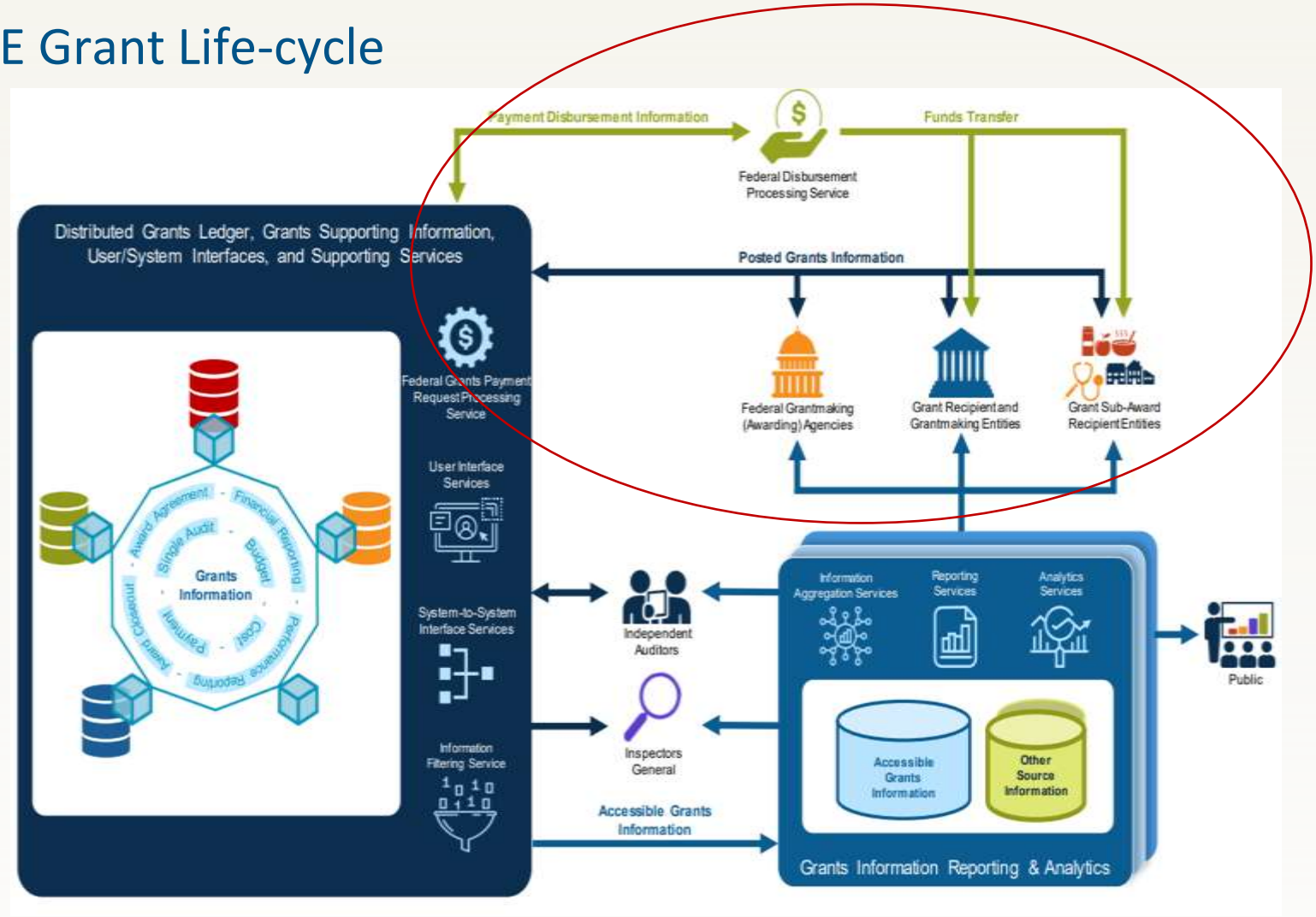
MITRE Grant Life-cycle



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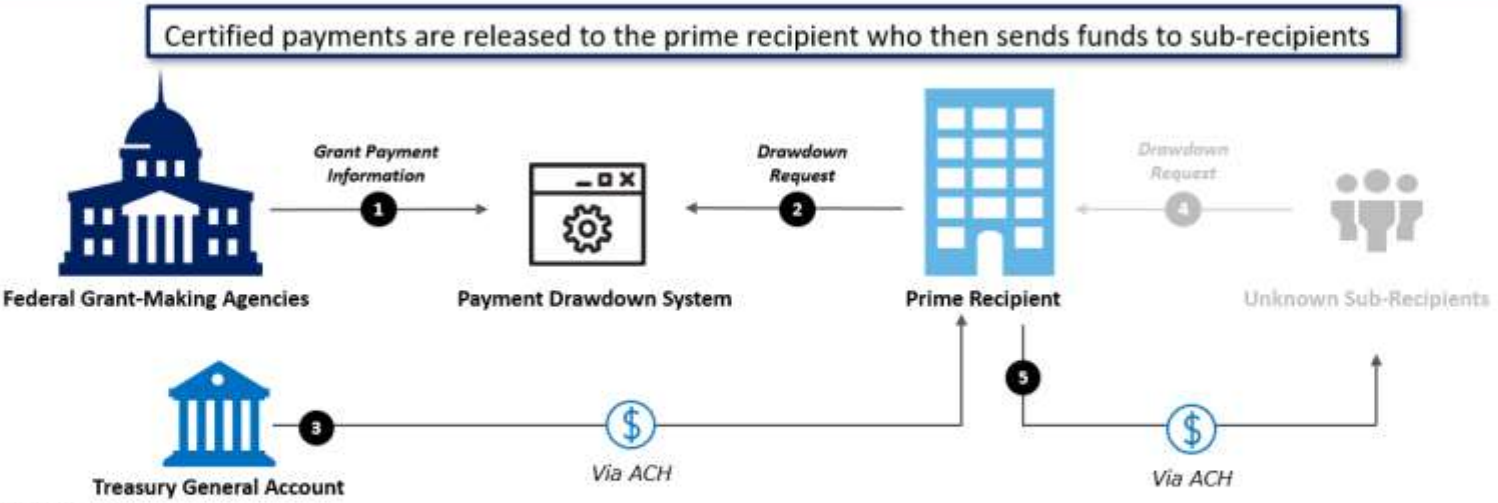
-NSF & Treasury PoC

High Level Current State Grants Payments Flow

Today, the grant payments flow comprises of the Department of the Treasury, the awarding agency, and the prime and sub recipients. Certified payments are only sent to the prime and they manage payments to the subs independently.



Current Process

1	Federal Grant-Making Agencies (e.g. NSF) send grant payment information to the payment drawdown system
2	Prime recipient/grantee requests a drawdown from the payment drawdown system
3	Once Certifying Official certifies payment, the funds are released from the Treasury General Account via automated clearing house (ACH)
4	The sub-recipient(s) requests a drawdown from the prime recipient
5	Once prime recipient approves payment, the funds are released to sub-recipients via automated clearing house (ACH)

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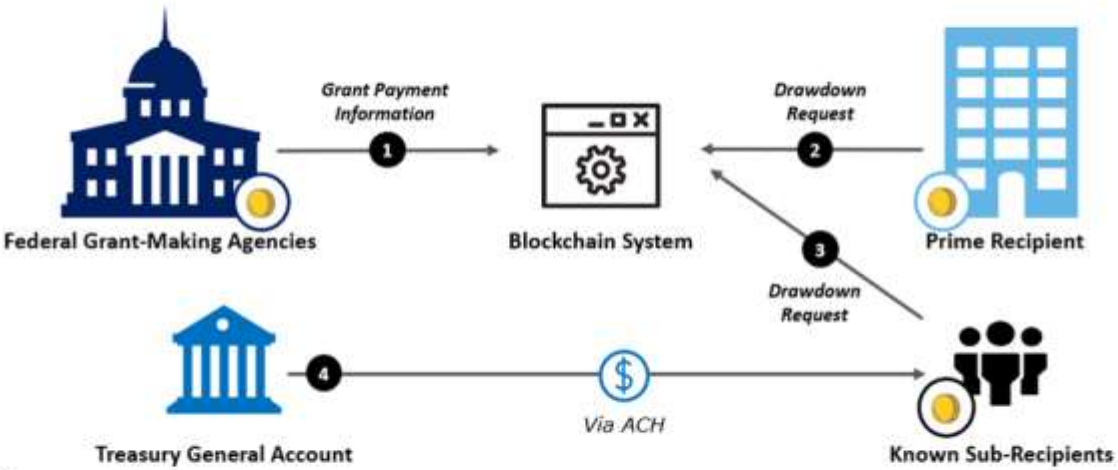
High Level Future State Grants Payments Flow

Treasury and federal grant-making agencies have increased visibility into prime recipient and sub-recipient grant payments using blockchain.

Certified payments are released directly to the sub-recipients without a pass-through intermediary



Proposed Future Process

1. Federal Grant-Making Agencies create a token that captures grant payment information and is recorded on the blockchain
2. Prime recipient requests a token drawdown and receives token in digital wallet
3. After the prime creates a subgrant, the sub-recipient(s) requests a token drawdown into their digital wallet and requests to redeem tokens via ACH
4. Once the Agency's Certifying Official certifies payment, the funds are released directly to the sub-recipient from the Treasury General Account via ACH

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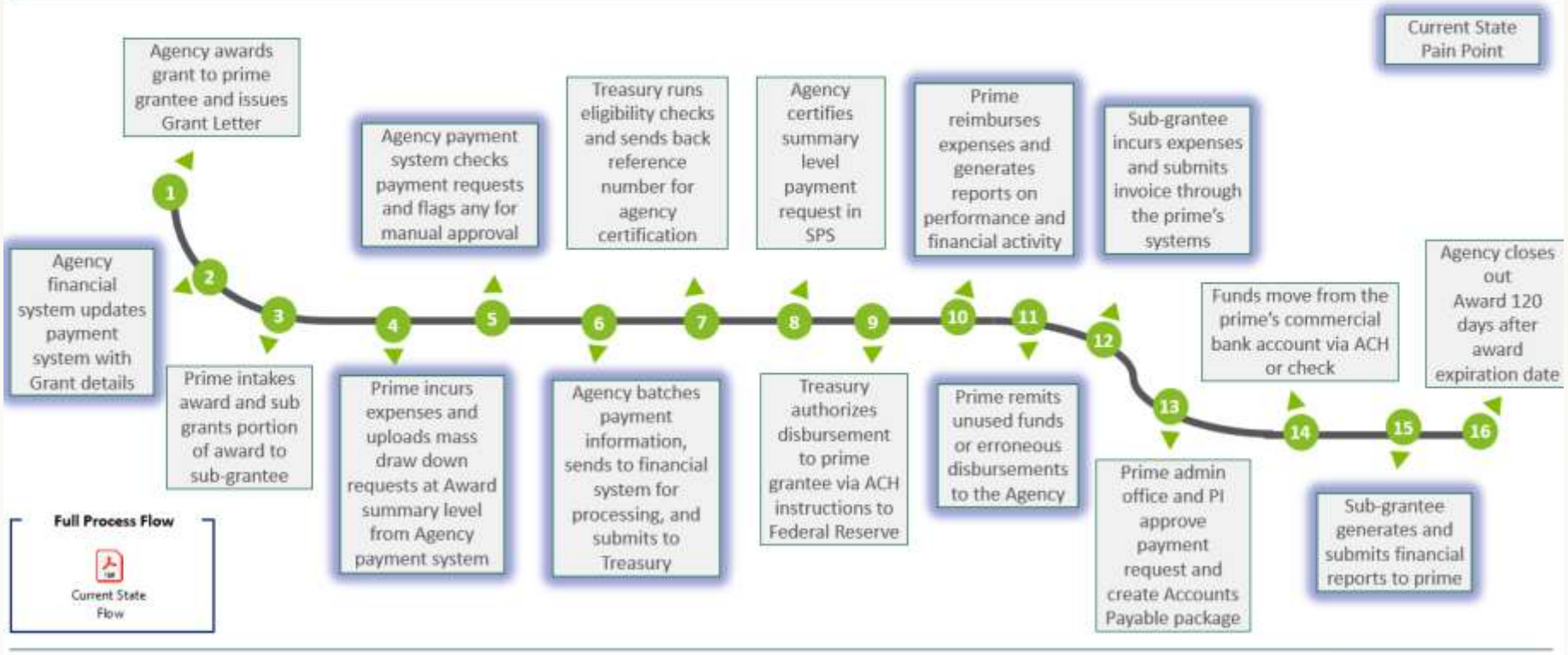
-NSF & Treasury PoC

Detailed Current State Grants Payments Flow

The end-to-end flow of grant payments today from NSF's perspective includes manual processes, substantial administrative and reporting burden, and a lack of visibility between actors. Highlighted boxes are further detailed on the subsequent slides.



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-NSF & Treasury PoC

Current State Pain Points and Implications for DLT Solution

Additional details on the nature of the current state pain point and what the DLT solution would need to do going forward to resolve the issue.

Process Step	Pain Point and Implications for DLT Solution
2 Agency financial system updates payment system with Grant details.	**The solution should interface with the financial system at least daily:** There is a 1-2 day lag in the payment system reflecting actions in the financial system, resulting in occasional payment request failures.
4 Prime incurs expenses and uploads mass draw down requests at Award summary level from Agency payment system.	**DLT will consolidate payment systems and expand data capture:** Rather than requesting payment in multiple systems with redundant data inputs, grantees can go into 1 system and enter line-item detail.
5 Agency payment system checks payment requests and flags any for manual approval.	**DLT will expand the level of automated checks:** Payment systems today can only run limited checks (e.g. funds availability). DLT token line-item detail will enable checking expenses against Grant terms & conditions.
6 Agency batches payment information, sends to financial system for processing, and submits to Treasury.	**DLT can set invoice transaction threshold:** Today the interface between the payment and financial system can fail if there are too many invoices. DLT can enforce a limit and set a queue on requests to be processed.

FAC: DLT Workgroup

-NSF & Treasury PoC

Current State Pain Points and Implications for DLT Solution

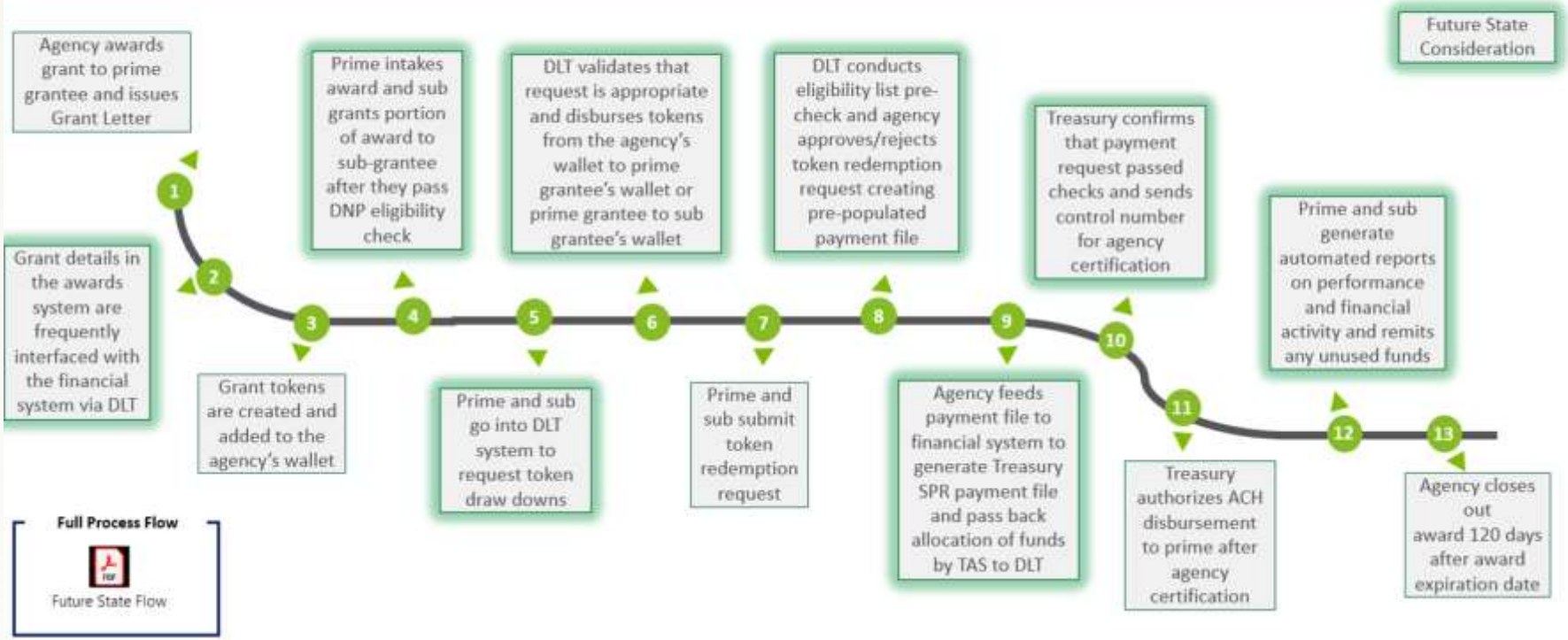
Additional details on the nature of the current state pain point and what the DLT solution would need to do going forward to resolve the issue.

Process Step	Pain Point and Implications for DLT Solution
10 Prime reimburses expenses and generates reports on performance and financial activity.	**DLT will automate grantee reports:** Grantees face extensive burden completing the SF-425 and SF-270 reports which will be populated through the data tracked on the DLT token and awards systems.
11 Prime remits unused funds or erroneous disbursements to the Agency.	**DLT will automate funds remittance:** Today the remittance of funds is a cumbersome, time-intensive process for grantees. DLT tokens can be remitted digitally within seconds to the originating appropriation account.
12 Sub-grantee incurs expenses and submits invoice through the prime's systems.	**DLT may provide visibility into sub-grantee spending:** Awarding agencies have poor visibility into sub-grantee expenses which the DLT token is capable of providing category and/or line-item level visibility into.
15 Sub-grantee generates and submits financial reports to prime.	**DLT will automate sub-grantee reports:** Sub-grantees have a reporting burden to the prime and Federal agencies which will be consolidated and automated using DLT.

FAC: DLT Workgroup
-NSF & Treasury PoC

Detailed Future State Grants Payments Flow In Scope

The end-to-end flow of grant payments will be designed to increase near-real time data transparency to improve reporting burden, cash management, and the customer experience. Highlighted boxes are further detailed on the subsequent slides.



FAC: DLT WG - Volunteers

- Adam Mall, University of Michigan
- Bryan Van Sickle, University of Michigan
- Ilora Sullivan, University of Michigan
- Nick Rafferty, University of Michigan
- Angela Klein, University of Iowa
- Jeff Vetter, University of Washington
- Julie Fricks, University of Washington
- Arlie Poteet, University of Washington
- Brandon Johnson, Harvard University
- Camille Crittenden, UC Berkeley
- Deborah Goldberg, Columbia University
- James P. Becker, Indiana University
- Heather Pawluk, Indiana University
- Kamala Upadhyaya, Virginia Tech
- Kevin Reyes, University of South Florida
- Sharon Corlett, University of South Florida
- Debra Arent, University of Nebraska
- Paul Gasior, Johns Hopkins
- Sarah Lorbiecki, University of Illinois
- Tim Reuter, Stanford University
- Cathy Thompson, University of Florida

Critical Steps & Parking lot

4 Small working groups:

- "begin a deeper dive on the optimal processes for the normal transactions/processes, the ones that occur 90% of the time"
- "We plan to bring themes to the next full FDP meeting to validate them or receive additional input"

1) Recipient

2) Sub-recipients

3) Admin

4) Reporting

FAC: DLT WG - Small Working Groups

4 Small working groups

1) Recipient

Awards to draw downs. May include key data elements from things like the standardized notice of award

- Awards
- Mods
- Requests and redeem reimbursements

-Andrew Tuznik/Karthik Yarlagadda (Fiscal Service)

2) Sub-recipients

Assess sub portion of the process from invoicing to draws. contrast to FFATA Subaward Reporting System (FSRS) and so on.

- Subaward
- Establish internal controls
- Mods
- Requests and redeem reimbursements

-Tammie Johnson (Fiscal Service)

3) Admin

From audits to controls to biz process assess impact

- Return of funds
- Closeouts
- Audits

-Paul Marshall (Fiscal Service)

4) Reporting

From finance to admin, assess "reporting" and the impact of more/new data and transparency

- Grant
- Agency
- Government-wide
- Internal

-Justin Poll (NSF)

Critical Steps & Parking lot

FAC: DLT WG - Status

1) Recipient - Kicked off

"During the first sessions for the prime recipient **(awards to drawdowns)** and subrecipient **(assess sub portion of the process from establishing a subgrant to draws)**, we discussed systems that were used and overall processes to find out how similar they are"

"In both groups, we identified the **need to tie different types of award numbers back to the original grant** on the blockchain, other transactions and reporting.
Grantees often use a different number from the grantmaking agency and the subgrant numbers used by the prime are often different from the subgrantee's internal number. **Being able to track these numbering schemes on the blockchain will streamline processes including reporting**."

- Confirm with the other groups.

2) Sub-recipients - Kicked off

3) Admin - Kick-off Friday

4) Reporting - Kick-off next week

Treasury Offset Program
TOP

Tim Reuter, Sr. Director Post Award Operations, Stanford University

September 23, 2021 - FDP Finance, Audit and Costing Policies Committee

What is the Treasury Offset Program?

- Source-http://fiscal.treasury.gov/top/
- The Treasury Offset Program (TOP) collects past-due (delinquent) debts, for example, unpaid invoices from federal agencies, (Veterans Administration, Medicare, IRS to name a few) that your institution owes to state and federal agencies.
- If your institution owes the federal government a debt, the law requires agencies to send debts to TOP when the debt is 120 days overdue.
- TOP helps collect that debt by holding back money from a federal payment to your institution by matching the Federal Employer Identification Number (FEIN) of institutions who owe delinquent debts with money that federal agencies are paying (for example, payment on a federal award). When a match happens, TOP offsets the payment to pay the delinquent debt.
- In fiscal year 2020, TOP recovered more than $10.4 billion in federal and state delinquent debts.

What information is Provided to your institution?

- Source-http://fiscal.treasury.gov/top/
- If a payment is offset, TOP will send a letter to your institution.
- The letter states:
  - The agency from whom the payment was scheduled to be paid, the original payment amount and payment date.
  - The agency name, address and telephone number to whom your payment (all or part) was applied, and the amount applied to that debt.
  - A TOP Trace Number (Used by TOP as a reference to the agency)
  - TOP does not have any information on the debt.
  - For questions about your debt, you are instructed to call the agency listed.

How to obtain information RE: the unpaid Invoice/Debt

TOP does not have a copy of the unpaid invoice

You must contact the Agency listed on your letter to obtain a copy of the unpaid invoice.

This can take months. Some agencies are better than others at providing the actual invoice.

What can TOP provide to your institution?

- Source-http://G2G@fiscal.treasury.gov
- If your institution does not receive the letter informing you if an offset, what can you do?
- TOP, upon request, will provide a monthly listing of all offsets to your institution. If requested, they will also provide a copy of the individual letters.
- Send your request to: g2g@fiscal.treasury.gov.
- The G2G Program Manager will provide you a Release of Information Verification Form. You must provide all FEIN and at least 2 Point of Contacts.

Another Potential Impact to your Institution

- An agency may withhold issuing a new award if your institution is shown to have outstanding federal debt.
- If that outstanding debt has been paid via TOP, the specific federal agency reporting may not have that debt marked as paid yet and your institution is reported as being delinquent.
- The agency is not allowed to issue you the award if you are reported as having outstanding federal debt.

Data Management & Sharing

Finance and Costing Discussion

A Life-Cycle Perspective

September 23, 2021 - FDP Finance, Audit and Costing Policies Committee

ThoughtExchange

- What are the **most important things that your institution or the funding agencies can do to more effectively support "COSTING" aspects** of the Data Management & Sharing Lifecycle to reduce burden and support research? ("COSTING" refers to how expenditures will be funded.)

Demographics

Responses

62 Participants

64 Thoughts

909 Ratings

27 Participants shared thoughts — 44%

37 Participants rated thoughts — 60%

36 Participants explored thoughts — 58%

Type of Institution

%		Answer
78%	(47)	Public Research Institution
12%	(7)	Private Research Institution
5%	(3)	Independent Research Institute
3%	(2)	Federal Agency
2%	(1)	Other

Role at Institution

%		Answer
10%	(6)	Faculty
71%	(42)	Administrator
10%	(6)	Faculty Administrator
2%	(1)	Technical
7%	(4)	Other

Discipline

%		Answer
0%	(0)	Humanities
12%	(7)	Social Sciences
14%	(8)	Bio Medical
5%	(3)	Natural Sciences
7%	(4)	Engineering
20%	(12)	Education
8%	(5)	Other
34%	(20)	Not applicable

Response Summary

Top 3 Areas of Concern

%		Answer *(Multi-select)*
12%	(7)	Data Management Plan (DMP) Development
20%	(11)	Data Curation & Metadata Curation (Data dictionary, etc.)
3%	(2)	Data Ingest and Loading
38%	(21)	DMP Monitoring & Compliance - During Life of Award
46%	(25)	DMP Monitoring & Compliance - At Closeout & Post-Closeout
33%	(18)	Data Storage - During Life of Award
68%	(37)	Data Storage - At Closeout & Post-Closeout
9%	(5)	Data Processing
11%	(6)	Publication Fees
53%	(29)	Data Security PHI, HIPAA, Export Controls, FISMA, student data and IP)

What data sets do you currently use, develop, or acquire?

40%	(20)	Institutionally provided
26%	(13)	Sponsor provided
38%	(19)	Data acquired through purchase
44%	(22)	Data acquired through your activities
32%	(16)	Data sharing (with consortium or cooperative agreement)
6%	(3)	Other
22%	(11)	Not applicable

Response Summary

Do you know who pays for data management throughout the Lifecycle of its use?

%		Answer *(Multi-select)*
74%	(37)	Institution (e.g. Info Tech, Library, Department)
34%	(17)	Sponsored grant funds
22%	(11)	Third party (e.g. consortium)
8%	(4)	Other

Frequency of writing DMPs

%		Answer
7%	(4)	Frequently
31%	(17)	Infrequently
26%	(14)	Never
36%	(20)	Not applicable

Do you get necessary support for DMP

%		Answer
24%	(13)	Yes
8%	(4)	No
17%	(9)	Sometimes
51%	(27)	Not applicable

Response Summary

Thought Themes

- Feels like and “Unfunded mandate”
- Uniform cross-agency requirements (costing, etc.) to reduce burden
- Costing
  - Funding - who pays
  - Long-term funding for storage and curation
  - Clear guidance on how to budget these costs
  - Explicitly recognize data collection, transformation and documentation as direct costs
- Clear regulations / concern about grad students, etc. being required to do this and not PI
- Repositories
- NIH Deadline
- Culture change

Faculty Perspective

- **“All parties need to understand that there are real costs associated with DMP's and institution's typically don't have a easy way to identify future co** It is difficult to predict future costs as technology changes.”
- **“more clear guidelines on types of data to be kept and over what timeframe** cannot keep all data forever”
- **“Provide long-term support for disciplinary repositories that can define and curate meta-data** Without curation expertise, data cannot be useful”
- **“Will this be within the 26% admin cap** How we will pay for it”

Data Storage at Closeout & Post-Closeout

- “Provide funding, even after the project, to fund these mandates. Institutional budgets are tight, F&A costs are capped and there are limited sources of funding available to comply with these requirements.”
- “Funding data curation in the "long run." Grants have a finite life, but data need to be maintained for much longer.”
- “more clear guidelines on types of data to be kept and over what timeframe, cannot keep all data forever”
- “Long-term sharing can be very expensive as it is open ended. It means that the institution will have to use indirects for past projects, at the expense of supporting future ones.”

Data Security (PHI, HIPAA, Export Controls, FISMA, etc.)

- “provide secure data warehouses and consistent formats for data and for security”
- “I'm worried about data sharing and PHI and HIPAA”
- “I don't know how to manage these issues from a data security standpoint”

DMP Monitoring & Compliance at Closeout & Post-Closeout

- “Making sure investigators understand the full extent of what will be required to prepare the data and maintain the data as required. There is concern at our institution that investigators may elect to give this responsibility to someone like a grad student, which will not suffice.”
- “Provide shared resources There is a lot of opportunity for efficiencies of scale and for ensuring compliance”
- “Significant burden in monitoring the DMP. Need way to fund this so PI doesn't have to do this and take time away from research”
- “Funding agencies could develop and maintain a set of generic DMPs. Proposers would be asked to choose a plan and describe additions/deviations. Save faculty time and effort in preparing proposals, and improve compliance with agency needs.”

Other Thoughts

- “My university isn't sure if they are allowed to waive F&A on cloud storage. If not, I will just purchase a server”
- “This focus on data is a big culture change and will be expensive”

Overview – A Quintessential "Costing" Issue

- Big $
- Aspects of both direct and indirect charging
  - Requires complex decision-making to allocate
- Evolving science, processes and regulatory environment…
- **Complex internal control environment**
  - Multiple purchasing mechanisms likely
  - Implications on pre, post, and after end of award (e.g. data storage)
  - Central and departmental costs
- **Multiple cost pools: Library, DA, GA, O&M, Equipment, & Base**
- **Lifecycle is broad and complex**

Institutional Example (2018)

- Light microscopy: 30-100Gb/experiment, 100 experiments/researcher, 20-30 researcher/yr. Projection: 300Tb/yr
- CryoEm: Potential storage needs of ~400Tb/yr

Size / Timeframe	Annually	5 Years (one time)	7 years (one time)	Perpetual (one time)
	$0.515/GB	$2.58/GB	$3.61/GB	$12.88/GB
100 GB	$51	$258	$361	$1,288
512 GB	$263	$1,320	$1,848	$6,594
1,024 GB (1 TB)	$527	$2,641	$3,696	$13,189
5,120 GB (5 TB)	$2,636	$13,209	$18,483	$65,945
51,200 GB (50 TB)	$26,368	$132,096	$184,832	$659,456
102,400 GB (100 TB)	$52,736	$264,192	$369,664	$1,318,912

Excludes:
Curation
DMP Support
Tech Support

Luther (APARD): 7/15/2

Cost Implications: Lifecycle Public Data Access Activities

#	Activity	Timing	Sponsor Pay			Institution Pay				External Repositor	
	Lifecycle Public Data Acces Activities (A)	Timing (Pre-Proposal submission, Life of award, Post-Closing)	Direct Charge to Sponsor as direct line item or via Service Center (B)	Separate Supplement / Companion Award (with different period of performance) for Data Storage after period of performance (C)	Budget Line Item for Data Only that is Paid/Accrued at end of Award for Future Data Costs (would require OMB UG approval) (D)	Service Center (likely subsidized by institution but charged to project) (E)	Institution Pay (Admin Capped) (F)	Institution Pay (Uncapped: O&M or Library) (G)	Institutionally Supported Repository (H)	Publisher / Discipl… / Sponsor / Professional Society / One Time (Fig Share) (I)	Institution Covers Cost but then Charges User (J)
1	DMP Development	PRE - PROPOSAL	No								
2	Data Curation & Metadata Curation FAIR, Data dictionary, etc.	LIFE (SOME PRE)	Some sp… allow							N /	
3	Data Ingest	LIFE	Ho…								
4	DMP Monitoring & Compliance through life of award through closeout	LIFE	Hopefully								
5	Data Storage (during life of project)	LIFE	Probably yes								
6	Data Processing	LIFE	Probably yes								
7	Data Storage (post-closeout for publication)	POST/LIFE	Probably no unless feds allow booking an estimate (see UG) or they provide a separate award with different period of performance								Contrary to open access principles depending on implementation (NEEDS MORE DISCUSSION)
8	DMP Monitoring & Compliance - post closeout	POST	Probably No								
9	Data Storage (post-closeout for DMP Compliance)	POST	Probably no unless feds allow booking an estimate (see UG) or they provide a separate award with different period of performance								
10	Cold Data Storage (post-closeout / last resort)	POST	Probably no unless feds allow booking an estimate (see UG) or they provide a separate award with different period of performance								
11	Publication Fees (often based on size and duration of data)	POST	Probably yes								
12	Data Security (PHI, HIPAA, Export Controls, FISMA, student data and IP)	PRE, LIFE & POST	Varies								

Draft

In-Process

NIH Policy Notices & Supplemental Information

Background – FYI
(Provided as context but not to be discussed in detail)

- *Released October 29, 2020, Effective January 25, 2023*
  - NOT-OD-21-013 - Final NIH Policy for Data Management and Sharing
    - **Two main requirements (1) the submission of a Data Management and Sharing Plan (Plan); and (2) Compliance with the approved Plan.**
  - NOT-OD-21-014 – Supplemental Information to the NIH Policy for Data Management and Sharing: **Elements of an NIH Data Management and Sharing Plan**
  - NOT-OD-21-015 – Supplemental Information to the NIH Policy for Data Management and Sharing: **Allowable Costs** for Data Management and Sharing
  - NOT-OD-21-016 – Supplemental Information to the NIH Policy for Data Management and Sharing: **Selecting a Repository** for Data Resulting from NIH-Supported Research

COGR
Council On Governmental Relations

What can we do to prepare - For NIH and all sponsors?

- White paper to “kick the tires” of some proposed solutions:
  - Raise the cap on modular budgets to accommodate increased costs for data management and sharing?
  - Administrative supplements to cover
    - the costs of professional data management support and/or other data management and sharing costs?
    - Cost of long-term data storage
  - Improved shared infrastructure to alleviate costs to individual grant recipients? More programs like STRIDES?
  - Passing on the cost to the beneficiary of the shared data?
  - Separate F&A Cost Pool?
  - Others?
- FAQs or other resources to support faculty in budgeting for these costs
- Resources for the research administrator to help them support their faculty

Completing the Lifecycle: Developing Evidence Based Models of Research Data Sharing

FYI

Research will investigate:

- Institutional infrastructure and service models for public access to research data
- Collect discipline-specific costing information for public access to research data

Within 5 specific disciplines: **environmental science, materials science, psychology, biomedical sciences, and physics**

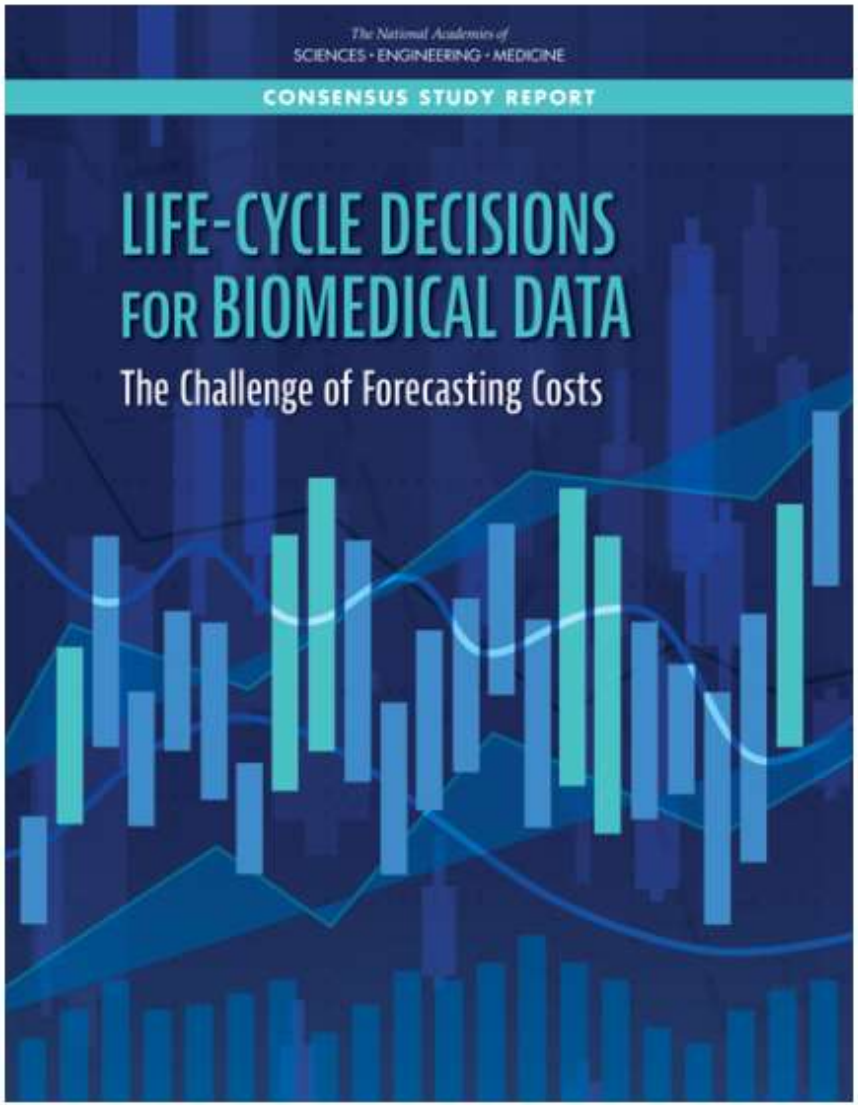
Across 6 academic institutions: Duke University, University of Minnesota, University of Michigan, Virginia Tech, Cornell University, Washington University in St. Louis

PI: Cynthia Hudson Vitale
Director, Scholars & Scholarship
Association of Research Libraries

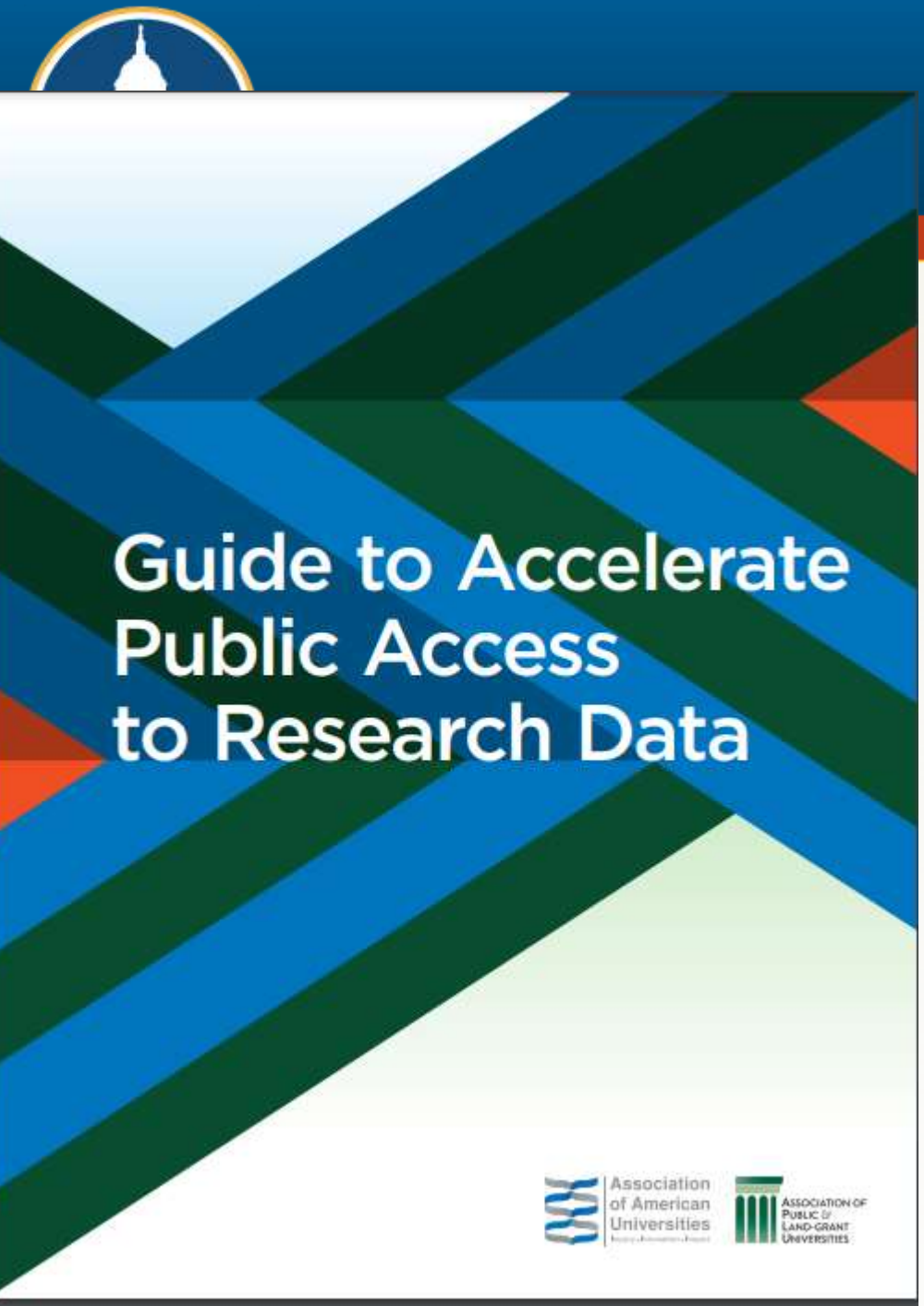
ASSOCIATION OF RESEARCH LIBRARIES

This research has been generously funded by NSF EAGER grant #2135874

FYI - Resources



- NASEM Report on Life-Cycle Decisions for Biomedical Data: The Challenge of Forecasting Costs.
  - https://www.nationalacademies.org/our-work/forecasting-costs-for-preserving-archiving-and-promoting-access-to-biomedical-data



FYI - Resources

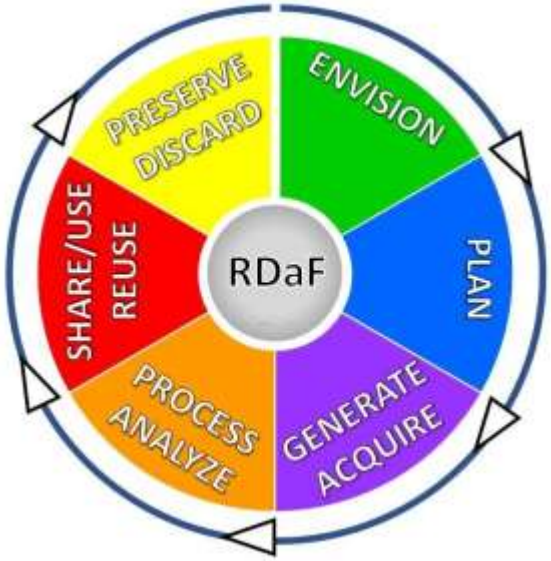
- Accelerating Public Access to Research Data
  - https://www.aplu.org/projects-and-initiatives/research-science-and-technology/public-access/
- Guide to Accelerate Public Access to Research Data
  - https://www.aplu.org/library/guide-to-accelerate-access-to-public-data/file

NIST Research Data Framework (RDaF)

FYI

NIST Special Publication 1500-18

Research Data Framework (RDaF): Motivation, Development, and A Preliminary Framework Core



Robert J. Hanisch
Debra L. Kaiser
Bonnie C. Carroll

his publication is available free of charge from:
https://doi.org/10.6028/NIST.SP.1500-18

https://www.nist.gov/publications/research-data-framework-rdaf-motivation-development-and-preliminary-framework-core

Transition to Q&A

Thanks!

- Logistics & Coordination
  - David Wright (FDP)

- Presenters
  - Rick Fenger – University of Washington
  - Melissa Korf – Harvard Medical School
  - Nate Martinez-Wayman – Duke University
  - Tim Reuter – Stanford