Research Data Services Partnerships

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Introduction

Library research data services (RDS) programs typically rely on multiple partners to fully support the needs of the institution's researchers. Determining the "why" of any partnership can give libraries insight into reasons for working to maintain a partnership, help identify patterns, or provide data necessary to sunset a partnership.

Taking the opportunity to step back and assess a partnership, potential or existing, can save time and energy for libraries and their partners. While many partnerships occur organically, exploring their origins can help set boundaries and guidance for the partners. This is also part expectation management for all parties—if librarians know why a partnership occurred, they can better serve their group, establish common objectives, and develop connections and meet needs. They can also see where groups may overlap, and where they may be able to bring groups together or reduce duplicative efforts.

Further, partnerships are important in the RDS landscape. As a complex and evolving area, RDS requires flexibility and complementary efforts. No single group, or even a single institution, can do the work of data alone. Efforts like the Association of American Universities and the Association of Public and Land-grant Universities' joint Accelerating Public Access to Research Data (APARD) initiative[1] highlight this fact: by working with the government and leveraging abilities, resources, and experiences across multiple organizations, libraries can provide more robust services. It is critical to note that many libraries will not have the staffing to do this work, nor should they—the complex workflows of an academic organization allow libraries to plug in at critical junctures and to, in many ways, be leaders of data services efforts. Libraries have been providing access to information for thousands of years. Data services, including data management and data literacy, are a logical outgrowth of this core work.

Throughout this report, we highlight working with *partners* and *stakeholders*. We define *partners* as those groups with which libraries have a shared goal. A *partner* may be someone a librarian works beside in RDS efforts—for example, a colleague at a high-performance computing center, a colleague in another department with whom they often provide instruction, or allies they can rely on to move initiatives and efforts forward. A *stakeholder* is an entity or group with a vested interest and the political power related to a particular area. *Stakeholders* of RDS include IT departments, offices of research, grants management, vice chancellors of research, deans or directors of libraries, and many others. Individuals and departments can be both *partners* and *stakeholders*.

Below, we provide a set of tools for libraries to use when assessing their partnerships, including assessing partnerships using a partnership life cycle, defining the continuum of possible partnerships, and creating a catalog. We describe the life cycle of research data management partnerships. Not all partnerships will last the entirety of a librarian's career, and having clear parameters for when to continue or sunset a partnership can reduce ambiguity and free up resources. Recognizing the continuum of possible partnerships can provide the framework by which librarians can understand the nature of each group. From cyclical to seasonal to sporadic, understanding the needs of a type of partnership can help libraries frame their understanding and meet a group where they are. Finally, creating a catalog of partnerships can help libraries see the landscape of the organization, as well as areas for growth.

This approach also aligns with OCLC's 2020 report on *Social Interoperability in Research Support: Cross-Campus Partnerships and the University Research Enterprise*,[2] which highlights the necessity of building and stewarding partnerships. Developing and providing services in a decentralized organization relies on the ability to build trusted relationships. These tools will help libraries achieve sustainable growth that is in concert with their partners, generating robust, clearly aligned initiatives that benefit all parties, their campuses, and their communities.

RDS Partnership Life Cycle

Partnerships are dynamic in nature and highly subject to contextual variants and fast-changing surroundings. Thus, it is important to understand partnerships as a cyclical process that has to be constantly evaluated and revised, taking into account both internal and external factors.

We propose a high-level framework that can be adapted to different scenarios and partnership types. This framework comprises five main stages: 1) scoping and planning, 2) engaging and building, 3) sustaining, 4) measuring and evaluating, and 5) revising or concluding, along with a set of questions that could help stakeholders and partners start and navigate through an RDS partnership.
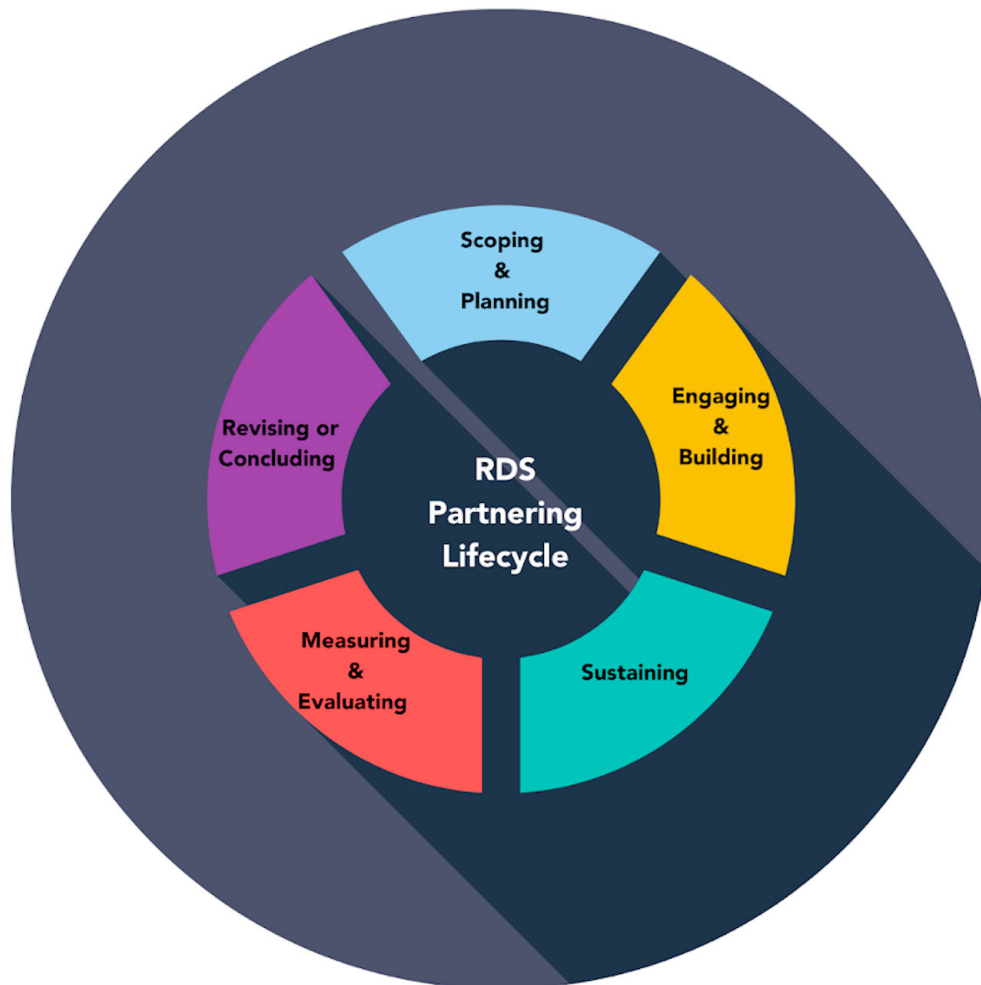
Scoping and Planning

Once a partnership has been envisioned it is important for stakeholders to come together and discuss their individual and collective capabilities, as well as how they plan to commit resources and efforts towards mutual endeavors. At this stage it is important for partners to collectively identify and determine:

- What skills, abilities and resources are players bringing along?
- Why and how do players wish to collaborate?
- What do players expect to get from the partnership?
- What can contribute and what can limit the partnership?
- What are the existing and foreseeable organizational limits and constraints (e.g., personnel, facilities, and financial, policy, or legal restrictions)?
- What are the key concrete and feasible action steps for accomplishing the partnership goals?

By discussing and answering these questions, partners will be capable of anticipating challenges and identifying opportunities. This stage is particularly important for partners to establish a common language and have a shared understanding about what they hope to achieve. This planning is also critical for partners to define the scope of the RDS cooperation, as well as different roles, rights, and responsibilities. Ideally, the plan should account for strategies for the short, medium, and long term and clearly establish a timeline along with common goals and desired deliverables.

Engaging and Building

Successful partnerships are highly dependent on peoples' perceived value of belonging and their willingness to contribute. More than merely recruiting volunteers, assigning tasks with deadlines, and setting up opportunities for regular interactions, this step should consider the partnership as an emerging community of practice based on the principles of collaborative learning and knowledge exchange. While synergy among some groups may develop organically,

stakeholders should also be prepared to adopt strategies to constantly involve people and develop opportunities for collaborative workflows that will enable cross-institutional sharing of content, expertise, and services, as well as keep partners motivated.

Defining champions and liaisons responsible for community housekeeping is also critical. These individuals do not necessarily have to be people occupying formal leadership roles within the partnering organizations or departments. Their role will be one of a concierge who will keep track of multiple projects and tasks and help partners navigate through them and find new connections.

Successful partnerships depend on clear communication, including frequent progress updates that help people to stay connected. It is also important for stakeholders to develop strategies for nurturing existing ties and identify opportunities to enhance connectedness among people and organizations. All interactions should cultivate a safe and welcoming space for members to express their opinions and collaborate.

Some questions that are relevant to this step include:

- What mission and shared beliefs exist and serve as guides for the work of the partnership? What values and codes of conduct will be adopted?
- How do partners prefer to connect?
- What linkages exist and how can they be effectively maintained?
- What linkages should be improved or still need to be established?
- What tools and channels will be used for both formal and informal communication?
- How often will partners get together?
- What is a realistic and desirable workflow for all partners?
- Who will be in charge of bringing groups together and reporting on progress?
- How will cross-institutional and cross-departmental collaboration be handled?

Sustaining

Active participation should be constantly nurtured and facilitated by designated champions/liaisons who also have responsibility for establishing effective channels and venues for communication and cooperation. In that spirit, it is key that expectations for partnership involvement are clear to all players and that collaborative actions are publicly recognized. An incentivization and rewards mechanism that accommodates different roles is important for partnerships' sustainability. Contributions should stay grounded and be acknowledged. This recognition is essential for establishing trusting relationships while preserving transparency and accountability among partners.

Sustainability also includes a continuing exploration of new opportunities to expand the partnership, by recruiting new collaborators or preparing for succession for those in leadership positions. Questions addressing the sustainability aspect of partnerships may include:

- How will progress be managed and communicated? Which channels and approaches will be used? How often will this be done?
- What mechanisms will be adopted to acknowledge and incentivize achievements?
- How are partners going to be held accountable?
- Which strategies will be adopted to bring in new collaborators?
- How will partners prepare for succession?

Measuring and Evaluating

Partnerships should be evaluated periodically by a comprehensive monitoring system, and they should regularly publish reports to demonstrate their added value, determine improvements, and adapt further planning. Collaborative efforts and achievements should be assessed in order to review the initial partnership scope and plan,

which can evolve over time due to changes in partners' interests, resources, and capabilities or even external factors such as new policies and laws. Assessing the performance of a partnership on a regular basis is critical for promoting continuous improvement and providing indicators that will guide decision-making capable of responding to these changes in a timely manner.

Synergy and alignment of the partnership visions, communication and collaboration mechanisms, leadership efficacy, and efficiency of resource usage are examples of dimensions that should be constantly monitored. Performance-based measures demonstrating program and project improvement can assume a number of strategies and protocols. Ideally, partnership assessment should use a combination of diagnostic, interim, formative, and summative measures—both quantitative and qualitative—to allow for richer exploratory and explanatory analyses. The evaluation plans should be clear to all partners prior to their implementation and reports widely shared across all institutions involved.

At this stage, it is important for partners to define:

- What strategies and protocols will be used to assess the performance of the partnership?
- What dimensions will be evaluated?
- Which key indicators will be used to best demonstrate the relevance and efficiency of the partnership?
- How often will these evaluations be conducted?
- Who will be responsible for deploying them?
- How will evaluation reports be shared and communicated with partners?

Revising or Concluding

Based on the previous assessment and self-reflection, partners should prepare for succession of roles; decide whether they should bring in additional partners to help achieve desired results: redefine

initial objectives, roles, and responsibilities; and relocate resources if necessary. At this stage partners may consider maintaining the partnership based on minor or major improvements or even prepare for sunsetting the cooperation before it is terminated indefinitely, by answering the following questions:

- Is the current state of the partnership beneficial to everyone involved?
- Are the initial goals being met? Were project outcomes achieved?
- What are the opportunities for improvement?
- Should the partnership continue and be sustained?
- Should the partnership bring in more partners or remove some partners?
- How will the conclusion of the partnership be handled?
- How will the legacy of the partnership be preserved and made accessible to all partners after termination?

This stage will define if there will be an iteration of the life cycle or if the partnership will be concluded. Partnerships are not expected to last forever, but the dissolution should be considered with care and not be conducted abruptly. Partners should also agree on best alternatives to preserve the legacy of the collaboration, which can serve to prompt new collaborations in the future.

Partnerships: Types and Strategies

Overview

One of the critical challenges with optimizing library research data services support infrastructure is that, almost universally, research universities and organizations have created silos of data support. These silos emerge in part due to the inability of institutions to adapt infrastructure at the same rapid rate as technology. Because of their comprehensive expertise and experience in navigating and

curating information and data through the research life cycle, libraries are uniquely situated to establish partnerships for data services infrastructure. In order to do this efficiently, it is important for libraries to assess different partnership types and strategies to see which ones work best for different stakeholders, as well as to determine their required investment.

Direct Partnerships

For smaller institutions or for libraries creating a new research data service, one of the most impactful ways to deliver research data services is to work directly with research groups by attending group meetings, participating in research discussions, and providing direct training. Libraries are well situated to provide support in data management, training in data analysis and visualization tools, and support for digital literacy. Working directly with faculty and researchers on subject-focused topics promotes the library's relevance and expands awareness, creating opportunities to scale up services and support to a broader community. As direct partnerships succeed and expand interest, many libraries will discover they are not staffed at sufficient levels for project-by-project demands; thus, investing in infrastructural partnerships might be more scalable based on approaches similar to their campus-wide efforts for digital literacy.

Infrastructural Partnerships

Infrastructural partnerships are common mechanisms for delivering research data services at scale. For institutions with an office of research, working with program directors or managers is an efficient way of delivering information and support to researchers. When the library is unable to work directly with researchers to provide support, leveraging the office of research is an excellent way to ensure data services provided by the library are seen by the research community. Furthermore, partnering at the infrastructural level can enable the implementation of new tools without as much pushback from research groups that may be reluctant to alter their workflows. Some examples

could include: providing recommendations for electronic research notebooks; developing templates for data management plans; providing recommendations for institutional, specialized, or general-purpose repositories for publishing and archiving research data; and offering data curation and consultation services.

Spontaneous Partnerships

Different partnerships require different levels of accountability in order to accomplish goals. Identifying the required level of accountability may be important in order to get specific tasks done. Spontaneous partnerships might be quick and nimble to establish when goals between partners are very closely aligned and there is a high level of motivation to work together. These partnerships tend to be most robust when working in a short-term time scale with offices or groups that already have established and trusted relationships with the library. However, if the project includes long-term features, it may be difficult to maintain the partnership in the event of personnel turnover or changes in the established goals. Spontaneous partnerships often happen with motivated individuals or small groups, who could be considered "champions" of an effort.

Contractual Partnerships

Partnerships that are formalized with contracts are useful for a number of reasons. First, they can ensure the parties involved meet specific goals with specific deadlines or expectations with regard to time allocation or completion of tasks. This documentation can protect the goals of a partnership in the event of personnel turnover or some other disruption of service. Contractual partnerships may also be used if there is a transfer of funding or some shared budget relating to the project. It is important to note that staff time as a resource should not be underestimated—institutional knowledge, creativity, and practical skills can be much more valuable than dollars to put towards events.

Seasonal Partnerships

Some partnerships are short-term projects that can be completed over a short period of time and do not require consistent engagement with a set of stakeholders or partners. This type of partnership could include annual events, such as orientations to introduce services to new researchers or assembling committees for teaching workshops. In contrast, other support mechanisms might require more consistent engagement. For example, if a library regularly teaches interdisciplinary programming classes that engage with multiple different courses over the course of the year, a dedicated staff member might be needed to maintain these relationships and ensure consistency over time and adaptability when needed.

Consortial Partnerships

Research libraries within consortia can pull together individuals with similar roles or similar goals across different institutions to share ideas, resources, and effort on particular projects. Consortial partnerships can be useful in leveraging individuals across different institutions with distinct specialities who can work together towards a common goal. For example, if one campus has a data visualization speciality and another has a data ethics speciality, a coordinated consortial group can create infrastructure that allows for sharing useful resources on both topics that can bring common ground between institutions. Furthermore, consortial partnerships allow for ideation and coordination around collective bargaining with publishers that may reduce the cost of acquiring certain collections.

Multi-institutional Partnerships

Multi-institutional partnerships are similar to consortial partnerships, but with a broader set of stakeholders. Research libraries can partner with companies, organizations, or other external institutions to work together towards common goals. These partnerships may be useful for organizing training events with themes of broad interest, and they may

foster broad collaboration and ideation. These partnerships may also be useful for the development of decentralized knowledge sharing and instruction support.

Cataloging Library Research Data Services Partnerships

Developing a service catalog is a common practice in information technology management. Essentially, this practice establishes a compact between users and service providers, and it encourages a continual assessment of current areas of emphasis and potential avenues for investment in the future. A catalog of RDS partnerships can serve a similar purpose. For example, by looking across all RDS partnerships in a catalog, a library can get a sense of what units within and external to the institution are most heavily represented as partners, what aspects of research data practices have programmatic priority, and who the partnerships are aiming to serve. Such a catalog of partnerships should include internal library partnerships, because RDS programs rely on and can leverage expertise across the library in areas such as education, liaisonship, description, collections, technology, and outreach. By maintaining a catalog of partnerships, an RDS program can also track longitudinal changes.

In the appendix to this report, we suggest an RDS partnership framework as a starting point that can be adapted to local needs. The framework has six top level dimensions:

1. **Research Data Service**: Does the partnership focus on a specific service area, such as education, consultation, technology, publishing, or stewardship?
2. **Research Data Life Cycle**: What stages of the research data life cycle does the partnership advance?
3. **Best Practice**: What RDS best practices are represented in the partnership, such as FAIR, ethics, DEI, reproducibility and replicability, compliance, or institutional mission?
4. **Affiliation of Partner**: Who is the partner?

5. **Audience(s)**: Who are the intended audiences of the partnership?
6. **Partnership Life Cycle** (see section above): What is the current maturity of the partnership?

Benchmarking and service design tools are likewise helpful in determining the resources needed to begin and sustain a successful partnership. Related projects and initiatives may exist that can also contribute to a shared understanding and view of the research landscape. Such work informs and underscores the utility of an RDS partnership catalog, and should especially be referenced if it is used by the parent institution or a specific partner. Recent projects of note include the National Institute of Standards and Technology Research Data Framework (RDaF) view of the research data space;[3] the Campus Research Computing Consortium Research Computing and Data Capabilities Model for assessing support for computationally and data-intensive research;[4] the National Academies of Sciences, Engineering, and Medicine Life-Cycle Decisions for Biomedical Data consensus study report on the longevity challenges for research data;[5] and OCLC's Social Interoperability in Research Support: Cross-Campus Partnerships and the University Research Enterprise report[6] that in part describes the multifaceted and often fragmented campus environment for research support. In addition, changes in national, international, and institutional policies can inform the development of or changes to existing partnerships.

While critical to the success of an RDS program, partnerships are rarely simple. They are often unique with external pressures, such as resources, personalities, institutional politics, and personnel continuity. A partnership catalog is an especially effective way for an RDS program to rise above operational demands of each partnership and gather a birds-eye strategic view of the entire partnership portfolio. (See the appendix for a Catalog of Library Research Data Partnerships.)

Annotated Resources to Help RDS Navigate the Partnership Life Cycle

There are a number of existing and well-established resources outside the library world that can be adapted and serve as practical guides to help RDS navigate through the process of redefining or establishing new partnerships. Below, we describe a few options available:

- The Academic-Practice Partnerships Tool Kit[7] and the Partnership Expectation and Outcome Matrix,[8] developed by the American Association of Colleges of Nursing, provide a template to guide institutions from start to finish in developing a partnership.
- The Partnership Planning Process Checklist,[9] proposed by Staten Island Arts, offers a concise instrument that helps to project the timing of the partnership planning process. This instrument was based on the Partnerships Planning Workbook by the University of Massachusetts Amherst,[10] which allows stakeholders to answer a series of questions to help them improve a new partnership or design a different one. Using the workbook, stakeholders can automatically generate a draft plan by completing a series of questions. The workbook is arranged in nine sections: 1) Prepare for partnerships, 2) Explore a shared need, 3) Decide to act in collaboration, 4) Set goals and objectives, 5) Describe activities, 6) Establish timeline, 7) Budget, 8) Plan fundraising, and 9) Anticipate evaluation.
- The Partnership Self-Assessment Tool,[11] developed by the Center for the Advancement of Collaborative Strategies in Health, consists of closed-ended questions to evaluate aspects such as collaboration, management, and nonfinancial and capital resources, with the goal of identifying potential weakness and strengths that can inform the evaluation of the effectiveness and value of partnerships.
- Successful Partnership: A Guide,[12] organized by the Organisation for Economic Co-operation and Development LEED Forum on

Partnerships and Local Governance, offers a very comprehensive overview of what partnerships entails, including a number of recommendations to make partnerships more successful illustrated by some case examples.

- The [Partnership Effectiveness Continuum](#),[13] developed by the Education Development Center, is a research-based tool developing, assessing, and improving partnerships. This tool offers a matrix that assesses six dimensions of partnerships: 1) partnership vision; 2) institutional leadership; 3) joint ownership and accountability for results; 4) communication and collaboration; 5) system alignment, integration, and sustainability; and 6) response to local context. Each dimension consists of indicators and criteria for evaluation on a scale from highly effective to ineffective.

Appendix: A Catalog of Library Research Data Services Partnerships

1. Research Data Service
   Does the partnership have a focus on a specific service area?
   a. Education — developing and delivering educational programming that advances best practices for research data management
   b. Consultation — providing custom guidance to researchers or research teams taking into account best practices for research data management, including discipline norms
   c. Technology — supplying technology solutions that enable researchers to responsibly manage their data[14]
   d. Publishing — maximizing the impact and visibility of data as equivalent to the research findings, ensuring that data is accessible and preserved
   e. Stewardship — maintaining the provenance of research to ensure responsible conduct of research, reproducibility, and critical examination

2. Research Data Life Cycle
   What stages of the research data life cycle does the partnership advance?
   a. Plan
   b. Create or collect
   c. Process
   d. Preserve
   e. Share
   f. Reuse
   g. For funded research also consider:
      i. Pre-award
      ii. Active award
      iii. Post-award
3. Best Practice
   What RDS best practices are represented in the partnership? RDS best practices include dimensions that should be at the forefront of partnerships and can contribute to sustainable success and shared articulated goals.
   a. Findable, accessible, interoperable, reusable (FAIR)
   b. Ethical collections, use, and preservation of research data
   c. Diversity, equity, and inclusion
   d. Policy and compliance
   e. Reproducibility and replicability
   f. Connection to institution mission and values
4. Affiliation with Partner
   Who is the partner? More fine-grained descriptions can be useful based on the focus of the RDS program.
   a. International
   b. Federal
   c. State/province
   d. Local government/community
   e. Nongovernmental nonprofit
   f. Nongovernmental commercial
   g. Consortial
   h. Cross-institution

  i. University

  j. School/college

  k. Department

  l. Unit/lab

  m. Adjacent library partner

  n. For university partners also consider:

    i. Academic

    ii. Faculty affairs

    iii. Research administration

    iv. Technology services

    v. Communications

    vi. Governance

    vii. Other administrative Units

5. Audience

Who are the intended audiences of the partnership?

  a. Faculty

  b. Clinical researchers

  c. Qualitative researchers

  d. Quantitative researchers

  e. Mixed-methods researchers

  f. Students–undergraduate

  g. Students–graduate

  h. Postdoctorals

  i. Research staff

  j. Librarians

  k. Policy makers

  l. Administrators

6. Partnership Cycle (see section above)

What is the current maturity of the partnership?

  a. Scoping and planning

  b. Engaging and building

  c. Sustaining

  d. Measuring and evaluating

  e. Revising or concluding

Example Partnerships

- New England Software Carpentry Library Consortium (NESCLiC)[15]
    - Partnership Type: consortial partnership between New England schools; shares "gold membership" status with the Carpentries. (See the article "Joining Together to Build More" in the Journal of eScience Librarianship.)
    - Research Data Service: education
    - Research Data Life Cycle: process, reuse (could also argue share, create or collect)
    - Best Practice: FAIR, reproducibility and replicability
    - Affiliation: cross-institution
    - Audience: librarians
    - Partnership Cycle: sustaining
- Office of Research Development
    - Partnership Type: infrastructural partnership
    - Research Data Service: education
    - Research Data Life Cycle: plan, share, reuse; pre-award, active award, post-award
    - Affiliation: university, research administration
    - Audience: faculty, researchers, research staff, administrators
    - Partnership Cycle: sustaining
- Dryad[16]
    - Partnership Type: contractual partnership
    - Research Data Service: publishing, stewardship
    - Research Data Life Cycle: preserve, share, reuse
    - Affiliation: nongovernmental nonprofit
    - Audience: faculty, researchers, research staff, librarians, administrators
    - Partnership Cycle: measuring and evaluating
- Library Liaison Graduate Education Series
  Example: Librarians who have subject expertise partnering with the graduate school to provide an outreach and educational

campaign for improving graduate research

- Partnership Type: direct
- Research Data Service: education
- Research Data Life Cycle: all
- Best Practice: all (note FY22 new emphasis on DEI)
- Affiliation: adjacent library partner, school/college (graduate studies)
- Audience: graduate students
- Partnership Cycle: sustaining

Endnotes

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