Submit application via email to:

National Network of Libraries of Medicine,
Pacific Northwest Region (NNLM PNR)
Email: nnlm@uw.edu

Required Submissions (forms provided):
- Cover Sheet
- Project Information and Plan
- Budget (including detailed narrative budget justification)
- Direct Beneficiaries / Populations Targeted
- NNLM Goals

Word format (.doc or .docx) is preferred.

Attach or send separately:
- Curriculum vitae of key personnel
- Letters of support from applicant's institution
- Letters of commitment from partnering institution(s)/organization(s)-if proposed

Deadlines:
Applicants should inform NNLM PNR of their intent to apply by emailing nnlm@uw.edu no later than four weeks before submitting the application, per instructions on the funding page:
https://nnlm.gov/pnr/funding/

Applications will be accepted until the date specified on the funding page:
https://nnlm.gov/pnr/funding/

COVER SHEET: Research & Data Engagement Award Application

Primary Contact (PC) Name: Sara Mannheimer

PC Position title: Data Librarian

PC email: sara.mannheimer@montana.edu

PC phone: 406-994-3361

Institution Name: Montana State University

Library/dept name, if applicable:

Institution address: P.O. Box 173320, Montana State University, Bozeman, MT

Institution tax ID: 81-6010045

Is your institution a member of NNLM PNR? (Provide link to membership record from online directory - type pending if you have applied for but not yet received confirmation of membership): Yes: https://nnlm.gov/members/directory/11582

Has your institution received NNLM funding in the current grant cycle (2016-2021)? Yes

Amount requested: $19,000

Project Title: Dataset Search: A lightweight tool to promote discovery of health sciences research data

Partner Organization name(s), if applicable:

Partner Organization address(es), if applicable:

Will training be provided as part of this award? (Y/N): Yes

How did you learn about this award? NNLM-PNR listserv

Date of Submission: August 6, 2019

Project Title

Dataset Search: A lightweight tool to promote discovery of health sciences research data

Proposed start and end dates for project

October 30, 2019 - September 30, 2020

Project Summary

Building on a recent one-year National Leadership Grant from the Institute of Museum and Library Services,[1] Montana State University (MSU) Library proposes an open source *Dataset Search* that promotes discovery of research datasets by using data repository APIs to automatically harvest metadata for research datasets from third-party repositories, and using human curators to create metadata records for restricted or in-progress data that is stored locally at MSU. *Dataset Search* complements tools like Google Dataset Search, SHARE, DataMed, and the Data Catalog Collaboration Project, with the goal of promoting discovery and access for research datasets.

We currently have a working prototype that calls APIs and produces metadata records.[2] Figure 1 is a screenshot of the homepage of the prototype. Figure 2 shows a dataset item page.

[1] Mannheimer, S. (Principal Investigator). (2018-2019). *A prototype for an institutional research data index.* Institute of Museum & Library Services National Leadership Grants for Libraries. $25,000. https://www.imls.gov/grants/awarded/lg-89-18-0225-18

[2] For more information, please see the following publications and presentations from the project: Mannheimer, S., Clark, J. A., Espeland, J., & Hagerman, K. (2019). Building a Dataset Search for institutions: project update. Publications 7(2), 29. https://doi.org/10.3390/publications7020029; Mannheimer, S., Clark, J. A., Espeland, J., & Hagerman, K. (2019, February). Open discovery for open data: an open source search tool for institutional research data [Poster]. Code4Lib, San Jose, CA. https://doi.org/10.17605/OSF.IO/TUVXQ; Mannheimer, S., Clark, J. A., & Espeland, J. (2018, June). A prototype for an institutional research data index. Open Repositories, Bozeman, MT. https://saramannheimer.com/prototype-irdi; Mannheimer, S., Clark, J. A., & Espeland, J. (2019, July). Dataset Search overview and demo. Presented at the Data Catalog Collaboration Project monthly meeting. https://saramannheimer.com/dataset-search-overview-and-demo.
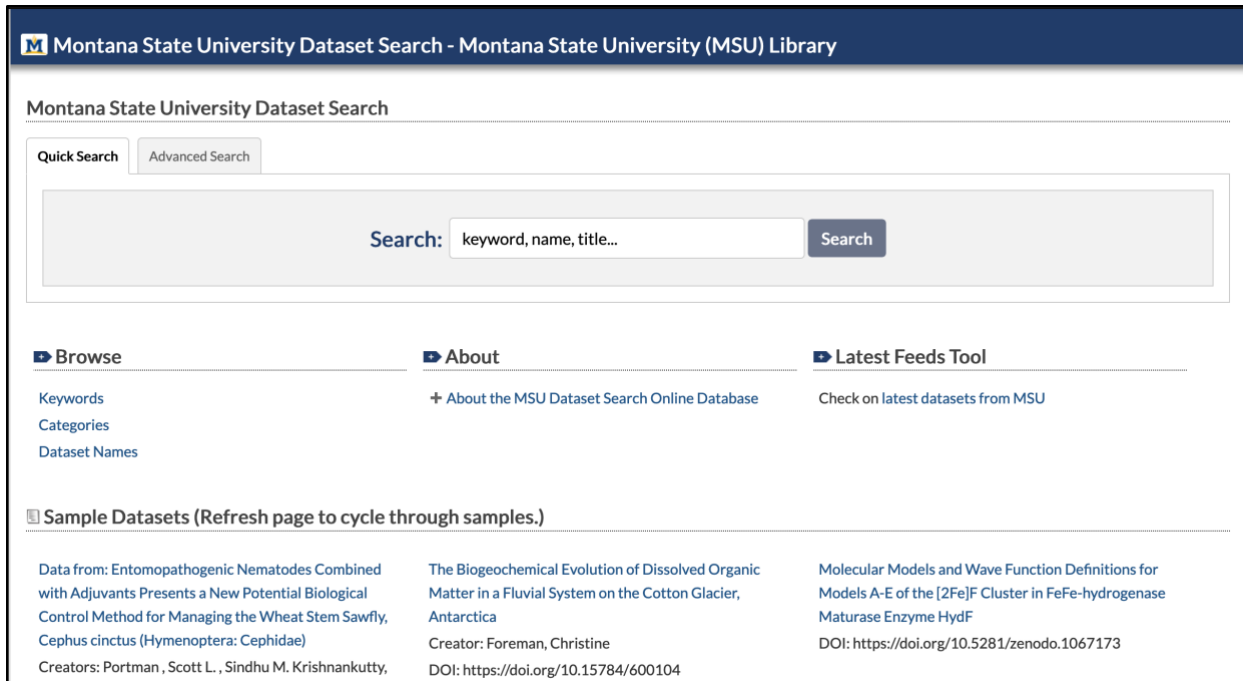
Figure 1. Screenshot of the *Dataset Search* prototype homepage

Figure 2. Figure 1. Screenshot of a *Dataset Search* item page

Funding from NNLM-PNR would allow us to extend our current prototype into a fully-implementable tool that is optimized for discovery by commercial search engines. NNLM-PNR funding would also allow us to produce three new features.

- First, taking a cue from the Data Catalog Collaboration Project, we will pursue a new goal of supporting discovery for datasets that are not publicly available due to access restrictions or in-progress status, partnering with the NIH-funded MSU [Center for American Indian and Rural Health Equity (CAIRHE)](#) as a pilot case.
- Second, the metadata collected by the *Dataset Search* system will be applied to create analytics dashboards that allow institutions to visualize research data as a scholarly product and a driver of institutional reputation; the first prototype dashboards will reflect data from CAIRHE and other health science departments and centers.
- Third, we will ensure that the *Dataset Search* tool can be used at any small or mid-sized institution by providing customizable features, a package installer, and training materials for implementing the system.

This proposal demonstrates the MSU Library's engagement in research data services through the sharing of our expertise and resources to build a lightweight data catalog tool that supports discovery of health sciences research data. As a lighter-weight tool, *Dataset Search* can be implemented and maintained by smaller technical teams at other small and mid-sized libraries in the NNLM community. *Dataset Search* will be a key contribution to community-driven, community-owned infrastructure to support findable, accessible, interoperable, and reusable[3] health sciences research data.

Describe the target audience and need for your project

In addition to promoting FAIR Data Principles by implementing a search engine-optimized catalog for research datasets, *Dataset Search* addresses challenges in two key target audiences: health sciences research communities (including research subjects who participate in community-based participatory research) and small and mid-sized institutions like Montana State University. These target audiences are expanded upon below.

Target audience 1. Health sciences research communities
Researchers have a variety of needs regarding data archiving, and health and biomedical sciences researchers have especially complex needs. As an example, MSU is an emerging leader in community-based participatory research, with several research centers on campus focusing in this area. MSU Library recently consulted with an administrator of the MSU [Center for American Indian and Rural Health Equity (CAIRHE)](#), an NIH-funded research center on campus that conducts community-based participatory research in Native American communities. Researchers affiliated with the center store data locally, using a university-administered sensitive data server and university-supported storage solutions such as Box and RedCap. The data stored by CAIRHE researchers present two key challenges. First, the data

---

[3] See the FAIR Principles, https://www.force11.org/group/fairgroup/fairprinciples

are often sensitive; they are created within small communities where anonymization might be impossible, and they may relate to sensitive topics in community health. In order to comply with NIH's data sharing guidelines, the center makes the data available upon request, but do not plan to publish the data in an open access data repository due to the sensitive nature of the data. In addition, in accordance with Native American data sovereignty principles,[4] the data belong to the Native American communities who participated in the research.[5] This means that even publishing in a repository that can provide restricted access to the data[6] is not an appropriate solution, since that puts the data in the hands of institutions with whom the communities do not have relationships. In addition, in-progress data needs to be available to communities. Most of the communities that CAIRHE works with do not have the capacity to store and preserve the data within the community. CAIRHE is trusted within their partner communities, and so storing data at MSU is the best solution in this particular case. However, appropriate members of these communities should be able to request and access data at will. *Dataset Search* will allow partner community members to search for, discover, and request appropriate data from CAIRHE.

Target audience 2. Small and mid-sized academic libraries
Many academic libraries currently support two institutional repository systems—one for publications, and one for research data—even when there are nearly a thousand data repositories in the United States. To do so, we either increase spending by purchasing data repository solutions from vendors, or replicate work by building, customizing, and managing individual instances of data repository software. In addition to buying or managing repository software, storing and providing long-term preservation for datasets is a challenge, since research data may be very large and have heterogeneous filetypes.[7] Especially for small and mid-sized libraries, these challenges can be overwhelming to our limited resources. *Dataset Search* will be easy to install and easy to maintain over time, in recognition of the smaller technical teams often present at smaller institutions.

---

[4] See Rainie, S.C., Rodriguez-Lonebear, D., & Martinez, A. (2017). *Policy Brief (Version 2): Data Governance for Native Nation Rebuilding*. Tucson: Native Nations Institute.; Rainie, S.C., Rodriguez-Lonebear, D., & Martinez, A. (2017). *Policy Brief: Indigenous Data Sovereignty in the United States.* Tucson: Native Nations Institute, University of Arizona. Retrieved from https://usindigenousdata.arizona.edu/policy-briefs. See also The First Nations Information Governance Centre (2014, May). *Ownership, Control, Access and Possession (OCAP®): The Path to First Nations Information Governance*. Retrieved from https://fnigc.ca/ocap

[5] The National Congress of American Indians. (2018, June 3-6). *Resolution #KAN-18-011: Support of US Indigenous Data Sovereignty and Inclusion of Tribes in the Development of Tribal Data Governance Principles.* Retrieved from http://www.ncai.org/resources/resolutions/support-of-us-indigenous-data-sovereignty-and-inclusion-of-tribes-in-the-development-of-tribal-data

[6] For example, ICPSR or Qualitative Data Repository

[7] Mannheimer, S., Yoon, A., Greenberg, J., Feinstein, E., & Scherle, R. (2014). A balancing act: the ideal and the realistic in Dryad's preservation policy development. *First Monday, 19*(8). https://doi.org/10.5210/fm.v19i8.5415

Identify the outcomes of the proposed project

Table 1. Logic model showing resources, activities, target communities reached, and outcomes

Inputs	Activities Column 1	Activities Column 2	Outcomes Column 1	Outcomes Column 2	Outcomes Column 3
What we invest	**What we do**	**Who we reach**	**Why we do it: Short-term results**	**Why we do it: Intermediate results**	**Why we do it: Long-Term results**
• Faculty Librarian hours • Developer mentorship • Developer hours (3-4 hours per week) • Student developer (10 hours per week) • NNLM funding • Advisory team support, including members of the Data Catalog Collaboration Project, DataMed, and SHARE	• Develop analytics dashboards for health sciences research teams • Conduct SEO benchmarking • Build a user community • Develop user manual and training materials for libraries implementing the system and health sciences researchers and community members using the system • Conduct targeted outreach to health sciences researchers at MSU	• Health sciences researchers at MSU and nationally • The public seeking health science-related data • Other small and mid-sized libraries • The data librarian community via conferences and publications	*Learning* • Discovery for restricted and in-progress datasets—to benefit community partners • Search engine optimization to support discovery of research data • Increased awareness of research data as an institutional asset and legitimate scholarly product	*Action* • Supporting community-driven data discovery resources • Supporting community collaboration between libraries • Support institutional reporting of data • Increased discovery and reuse of research data increases number of citations to related articles[8]	*Conditions* • Better access to health data and therefore better community understanding of health issues • More transparent sharing of restricted and/or in-progress data relating to local communities. • Increased discovery and reuse of research data helps advance science.

[8] Piwowar, H. A., & Vision, T. J. (2013). Data reuse and the open data citation advantage. PeerJ, 1, e175.https://doi.org/10.7717/peerj.175

	● Connect with advisory board				

Assumptions

Beliefs about the environment and community

- We assume that small and mid-sized libraries are interested in implementing data catalogs. The literature confirms that there is a trend in libraries toward implementing metadata catalogs instead of or in addition to data repositories.[9]
- We assume that community-based participatory research labs and centers and their partner communities will find the system helpful. We have confirmed with CAIRHE that this is of interest to them and their partner communities, and that they will serve as a pilot research center for our project.

Assumptions about availability of resources needed to implement the project

- We assume that an undergraduate student and library software developers will be available to conduct the software development required for the project. Our student from the IMLS grant has confirmed their availability to work on the project in 2019-2020, and the MSU Library will support 3-4 hours of software developer time on the project.
- We assume that the library will continue to support the *Dataset Search* as a core function of Library Data Services, and that CAIRHE will support its role as a pilot user of

[9] Parr, C. (2015). Ag Data Commons: Adding Value to Open Agricultural Research Data. *USDA Agricultural Research Service*. https://www.ars.usda.gov/research/publications/publication/?seqNo115=319702; Read, K., Surkis, A., Lamb, I., Athens, J., Chin, S., Xu, J., Rambo, N. (2015). Promoting data reuse and collaboration at an academic medical center. *IJDC 10*(1), 260-267. http://www.ijdc.net/index.php/ijdc/article/view/366; Chen, X., Gururaj, A. E., Ozyurt, B., Liu, R., Soysal, E., Cohen, T., ... & Rogith, D. (2018). DataMed–an open source discovery index for finding biomedical datasets. *Journal of the American Medical Informatics Association, 25*(3), 300-308. https://doi.org/10.1093/jamia/ocx121

the system. We include as attachments to this proposal letters of support from Kenning Arlitsch, Dean of the MSU Library and Alexandra Adams, M.D., Ph.D., Director and Principal Investigator of CAIRHE.
● We assume that we will connect with other members of the library community doing similar projects. We have already made connections with affiliates of DataMed, SHARE, and the Data Catalog Collaboration Project, and we include as an attachment to this proposal a letter of support from Kevin Read and Nicole Contaxis of NYU Health Sciences Library, who lead the Data Catalog Collaboration Project.

External Factors

Positive and negative influences
● Positive: Data catalogs are increasingly being used to promote discovery and access to research data, and to break down the silos that exist between data repositories. Our project contributes to this trend.
● Positive: The partnership with CAIRHE has the potential to lead to future, positive collaborations between the MSU Library and research centers at MSU.
● Positive: The relationship we are building with the Data Catalog Collaboration Project, SHARE, and DataMed will support community collaboration and community infrastructure.
● Negative: We, like many small and mid-sized libraries, have limited resources. Even though the *Dataset Search* aims to promote data discovery using fewer resources than a data repository, it still requires developer hours and server capacity.

Culture, economics, politics, demographics
● The culture is generally supportive to projects like ours. NIH's Biomedical Data Translator program is responding to similar challenges to those outlined in our proposal. Our *Dataset Search* prototype has received funding from IMLS and recognition from our colleagues (we have a track record of peer-reviewed publications and presentations[10]).

State the specific objectives to be achieved by the project

Outcomes-based objective 1. Support low-overhead discovery and access for research datasets (especially restricted and/or in-progress health sciences data) from small and mid-sized institutions.

Outcomes-based objective 2. Build strategic connections with health sciences research communities, beginning with a pilot partnership with CAIRHE.

---

[10] Mannheimer, S., Clark, J. A., Espeland, J., & Hagerman, K. (2019). Building a *Dataset Search* for institutions: project update. *Publications 7*(2), 29. https://doi.org/10.3390/publications7020029; Mannheimer, S., Clark, J. A., Espeland, J., & Hagerman, K. (2019, February). Open discovery for open data: an open source search tool for institutional research data [Poster]. Code4Lib, San Jose, CA. https://doi.org/10.17605/OSF.IO/TUVXQ; Mannheimer, S., Clark, J. A., & Espeland, J. (2018, June). A prototype for an institutional research data index. Open Repositories, Bozeman, MT. https://saramannheimer.com/prototype-irdi; Mannheimer, S., Clark, J. A., & Espeland, J. (2019, July). *Dataset Search* overview and demo. Presented at the Data Catalog Collaboration Project monthly meeting. https://saramannheimer.com/dataset-search-overview-and-demo.

Process-based objective 1. Expand from prototype to full implementation for the *Dataset Search*—a data catalog that provides discovery and access for research datasets, including restricted or in-progress health sciences research data.

Process-based objective 2. Encourage use of *Dataset Search* by our two target audiences— (1) health sciences research communities; and (2) small and mid-sized libraries.

Provide a detailed work plan and indicate a rationale for the plan

Process-based objective 1. Expand from prototype to full implementation for the *Dataset Search*—a data catalog that provides discovery and access for research datasets, including restricted or in-progress health sciences research data.

Strategies for achieving process-based objective 1
- Finalize harvesting protocols for institutional research data metadata from data repositories.
  - Personnel: Technical Lead and Software Development Research Assistant, with feedback and support from Senior Technical Lead and Technical Advisor.
- Test the "manage" interface for manual creation of metadata records for restricted datasets, using CAIRHE research data to pilot the strategy.
  - Personnel: Project Lead and Software Development Research Assistant
- Implement a search engine benchmarking routine for the *Dataset Search* prototype, studying the indexing of our datasets in commercial search engines based on MSU Library research into search engine optimization.
  - Personnel: Senior Technical Lead and Software Development Research Assistant
- Produce pilot analytics dashboards for CAIRHE research data and other health sciences research data, using *Dataset Search* metadata.
  - Technical Lead and Software Development Research Assistant

Process-based objective 2. Encourage use of *Dataset Search* by our two target audiences— (1) health sciences research communities; and (2) small and mid-sized libraries.

Strategies for achieving process-based objective 2
- Create a website for promotion, centralized information dissemination, and community feedback (including a link to code and a package installer in Github).
  - Personnel: Project Lead
- Conduct targeted outreach Target Audience 1: health science departments and research centers at MSU.
  - Personnel: Project Lead
- Create a *Dataset Search* Google Group to act as a user forum for small and mid-sized institutions who have installed (or are investigating) the *Dataset Search* tool in their local context. The Google Group will support stakeholder input, community building, troubleshooting, feedback, and other communication.

- ○ Personnel: Project Lead
- Conduct outreach to Target Audience 2: Small and mid-sized institutions via presentations, publications, and professional listservs.

Evaluation plan

Process-based objectives and assessment methods

Please see Table 2, below, for details of process-based objectives assessment methods.

Process-based objective 1. Expand from prototype to full implementation for the *Dataset Search*—a data catalog that provides discovery and access for research datasets, including restricted or in-progress health sciences research data.

Process-based objective 2. Encourage use of *Dataset Search* by our two target audiences— (1) health sciences research communities; and (2) small and mid-sized libraries.

Table 2. Details of process-based objectives assessment methods

Process Questions	Information to collect	Methods
To what extent were we able to implement your project as planned?	1. Extent to which process-based objectives (and related outcomes) were met	1. Complete a project evaluation phase during the last month of the grant, during which objectives will be reviewed
To what extent were we able to conduct specific activities as they were planned?	1. Completed tool has been released to the community 2. Pilot analytics dashboards are functional 3. Results of SEO benchmarking	1. Review whether project website and Github page are complete 2. Review whether dashboard code and implementation are complete 3. Measure discoverability to see if SEO improves after each benchmark measure

How much community interest and activity did our project generate?	1. Number of unique visitors to the project website and Github page 2. Responses to RDAP presentation	1. Google Analytics to track pageviews for project website 2. Rough count of RDAP conference presentation attendees and Google Analytics to track pageviews for website where slides are posted
To what extent did we reach your intended community?	1. Number of users registered on the Google Group 2. Number of small and mid-sized institutions in the Google Group 3. Metadata records for MSU health sciences research data	1. Count the number of users registered on the Google Group 2. Request institutional affiliation information from Google Group members 3. Count the number of metadata records for MSU health sciences research data
How effective were our recruitment strategies for attracting community members?	1. Google Group membership 2. Metadata records for health sciences research data	1. Count the number of new Google Group members after recruitment efforts 2. Count the number of new metadata records for health sciences research data after recruitment efforts
What situational factors in the environment, community, or organizations affected project implementation?	1. Challenges, successes, and changes of plans	1. Keep track of challenges and changes in the project plan in response to those challenges 2. Track how situational factors affected the challenges, successes, and changes to the project plan

Outcomes-based objectives and assessment methods

Please see Table 3, below, for details of outcomes-based assessment methods.

> **Outcomes-based objective 1.** Support low-overhead discovery and access for research datasets (especially restricted and/or in-progress health sciences data) from small and mid-sized institutions.

> **Outcomes-based objective 2.** Build strategic connections with health sciences research communities, beginning with a pilot partnership with CAIRHE.

Table 3. Details of outcomes-based objectives assessment methods

Evaluation question	Evaluation Method	Data Collection Timing
Was the *Dataset Search* tool implemented successfully?	1. Conduct a mid-grant progress evaluation 2. User research for the tool to measure usability 3. Measure whether applicable process-based objectives were met (see Table 1)	1. February 2020 2. June-July 2020 3. September-October 2020
Was the pilot partnership with CAIRHE successful?	1. Conduct a mid-grant progress evaluation 2. Request feedback from CAIRHE via a survey 3. Measure whether applicable process-based objectives were met (see Table 1)	1. February 2020 2. May 2020 3. September October 2020

Please provide a timeline for your project.

Please see Table 4, below, for project timeline.

Table 4. Project timeline

Tasks	Personnel/Resources	Timeframe
Hire Software Development Research Assistant and buy student computer	A student who worked with us on *Dataset Search* last year will continue to work on the project.	October 2019
Add metadata records for a pilot health sciences research center (CAIRHE)	Project Lead and Software Development Research Assistant, with input from CAIRHE administrators, researchers, and community	October 2019-February2020
Mid-project evaluation and report	Conduct mid-project evaluation to gauge progress of process-based objectives. Submit mid-project report to NNLM-PNR and request no-cost extension.	February 2020
Create pilot analytics dashboards for CAIRHE and health science departments (Health & Human Development, Nursing)	Senior Technical Lead, Technical Lead, Software Development Research Assistant	December 2019-March 2020
Present progress at Research Data Access and Preservation (RDAP) 2020	Project Lead, Senior Technical Lead	March 2020
Request and respond to feedback from CAIRHE	Project Lead, Technical Lead, Software Development Research Assistant	May 2020
Conduct user research for the *Dataset Search* tool to measure usability	Project Lead, MSU Library UX and Assessment team	June-July 2020
Create project website and user forums	Project Lead	July 2020

Adjust tool according to user feedback	UX and Assessment team, Technical Lead, Software Development Research Assistant	August-September 2020
Hire web designer to design the look and feel of the tool	Project Lead	July-September 2020
Promote *Dataset Search* locally (MSU outreach), and nationally (presentations, journal article, professional listservs)	Project Lead	September-October 2020

Identify all project personnel and their role in the project

Key Personnel

Name: Sara Mannheimer, Data Librarian, Montana State University
Role: Project Lead
Duties: Provide leadership, project management, and visioning for the project as a whole, including setting goals for the technical side of the project, conducting outreach and training, and communicating with partners and collaborators, including CAIRHE and advisory team members.

Name: Jason Clark, Head of Special Collections and Archival Informatics, Montana State University
Role: Senior Technical Lead
Duties: Provide leadership for *Dataset Search* software development, including providing guidance and support for Technical Lead and Software Development Research Assistant and working with the Technical Mentor to provide vision for the technical side of the project.

Other Personnel

Name: James Espeland, Senior Software Developer, Montana State University
Role: Technical Advisor
Duties: Provide mentorship and vision for the technical side of the project

Name: Jakob Schultz, Software Developer, Montana State University
Role: Technical Lead
Duties: Act as the main software developer for the project

Name: Kyle Hagerman, undergraduate in the School of Computing, Montana State University
Role: Software Development Research Assistant
Duties: Assist Technical Lead in software development, analytics dashboard development, and metadata record creation.

Name: Scott Young and David Swedman, Montana State University
Role: UX and Assessment team
Duties: Assist Project Lead in user research and project assessment

Web Design consultant
- Name of Consultant: MSU Creative Services
- Description of Work: Web design for *Dataset Search* user interface and analytics dashboards
- Hourly Rate: $75/hr
- Total Amount/Not to Exceed Amount: 18 hours
- Period of Performance July-September 2020

Advisory team members
- Kevin Read and Nicole Contaxis, NYU Langhor Health [confirmed]
- Jeffrey Grethe, University of California, San Diego, DataMed [request sent]
- Cynthia Hudson-Vitale, Pennsylvania State University Library [request sent]

Sustainability

The *Dataset Search* is designed to be a lightweight tool that can be implemented without the need for extensive maintenance. In addition, by releasing the tool as open source software in Github and creating user forums, we provide a mechanism to support community development and maintenance of *Dataset Search*.

The MSU Library's partnership withe CAIRHE will be a first step in building similar partnerships with other health science departments and research centers on campus. The data catalog records and dashboards that we create for CAIRHE will serve as proofs-of-concept and can be used to promote the *Dataset Search* tool elsewhere on campus.

PROJECT INFORMATION AND PLAN

BUDGET FORM

Budget Item	Description	Costs
a. Personnel	Technical Lead salary support Average of 3.25 hrs/wk at $19.37/hr	$3,274
	Software Development Research Assistant Average of 8 hrs/wk for 21 wks at $15/hr (+ 9.5% benefits)	$1,524
	Technical Advisor salary support 1 hr/wk in advisory role at $24.71/hr	$2,520
b. Consultant costs	MSU Creative Services web design $75/hr, maximum of 18 hours	$1350
	Advisory team honorarium, $100 each for four team members	$400
c. Equipment	Macbook Pro	$1800
d. Supplies		
e. Travel	RDAP 2020 - March 11-13, Santa Fe, NM Project Lead and Senior Technical Lead. Each = Hotel * 2 nights: $500. Flight: $800. Conference registration: $300. Per diem: $160. Airport transit: 100.	$3,720
f. Other Costs		
Total Direct Costs (A+B+C+D+E+F)		$14,588
Modified TDC (TDC minus Equipment)		$12,788
Indirect Costs (MTDC*x%)	34.50%	$4,412
Total Costs (TDC+IDC)		$19,000

Budget Narrative

The $19,000 requested from NNLM-PNR will provide salary support for three employees of Montana State University: the Technical Lead on the project, who will dedicate an average of 3.25 hours per week on developing *Dataset Search*, the Software Development Research Assistant, an undergraduate student who will spend 8 hours per week supporting software development, and the Technical Advisor, who will provide 1 hour per week of mentorship and guidance. We also propose a Macbook Pro for use by the Software Development Research Assistant. MSU Creative Services will provide web design services to create an appealing and usable interface for the *Dataset Search*. We propose $100 honoraria for our advisory team. Finally, the Project Lead and the Senior Technical Lead will present the *Dataset Search* tool to the data librarian community at Research Data Access and Preservation in Santa Fe, New Mexico, in March 2020. MSU requires 34.5% indirect costs for research projects. The total requested amount is $19,000.

Additional Forms to be Included with Proposal

The following two forms must be included with your proposal. Please fill out the forms and submit them with your proposal.

- Populations and Participant Roles

- Goal Identification

Populations and Participant Roles

Complete and attach as part of your NNLM PNR funding application.

Populations

Identify population(s**) specifically named and/or targeted in the project. Do not include** members of populations who **may** benefit from the project.

Demographics

X Adults

☐ Children

☐ Men

☐ Seniors

☐ Teens

☐ Women

Geographic Type

☐ International

X Medically Underserved Areas/Populations

X Rural

☐ Suburban

☐ Urban

Issues and Interests

☐ Behavioral/Social Determinants of Health

☐ HIV/AIDS

☐ LGBTQ

☐ Maternal Health

☐ Opioids

Race and Ethnicity

☐ African Americans or Black

☐ Alaska Natives

X American Indian

☐ Asian

☐ Latino or Hispanic

☐ Native Hawaiians

☐ Pacific Islanders

Participant Roles

Identify roles of target population(s) **specifically named and/or targeted in the project. Do
not include** participants who **may** benefit from the project.

X Data resource or tool developer
☐ Data scientist
☐ Educator
☐ Emergency preparedness and response
☐ General public
☐ Health care provider
☐ Historian
☐ Journalist
X Library or information professional
X Public health professional
☐ Publisher
X Researcher
☐ Student, college & post-grad
☐ Student, K-12

Goal Identification: Please check the NNLM goals that apply:

Goal ID	Applies	Description
1.		Increase awareness and use of NLM services.
2	X	Serve as a primary source for reliable and authenticated content.
3		Further training in the use of medical information resources.
4	X	Strengthen communications and connectivity for health, i.e. infrastructure.
5		Conduct and support basic and applied research to identify the need for access to, evaluation of, and use of health information resources and systems.
6	X	Reduce and eliminate health disparities among minority and other underserved populations.
7		Conduct assessments to learn what improvements in service or new support is needed and to evaluate effectiveness of current programs.
8		Enhance training in the development and use of methods and tools necessary for biomedical Big Data science.
9	X	Establish strategic partnerships to support access to biomedical and research tools.
10		Support community and academic partners' outreach to students and encouragement of careers in science, technology, engineering, and mathematics (STEM).
11		Connect unaffiliated health professionals and researchers to library services and document delivery options.
12		Develop a network of libraries and community organizations to support the goals of the NNLM partnership with the NIH All of Us Research Program.