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A Research Project of Developing a Research Data Management Service (RDS) Program at CWU: Needs Assessment and Recommendations

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Abstract

The project is to analyze the needs of Central Washington University (CWU) researchers for research data management services (RDS) through an assessment and evaluation process, discuss the possibility of developing an RDS program at CWU Libraries. A survey was designed to assess and evaluate CWU researchers' needs for RDS and to explore the feasibility of launching an RDS at CWU Libraries. Through analyzing the survey results, this study found that the researchers' needs in a regional comprehensive university such as CWU could be quite different from those of researchers in a research-intensive university. Thus, with limited budget and resources, a regional comprehensive university library should make an in-depth assessment and evaluation to have a better understanding of its researchers' needs before launching an RDS program. Also, a regional comprehensive university library should consolidate its current resources and focus on the services derived from the assessment and evaluation process.

Keywords: *Research Data Management Service, Needs Assessment, Recommendations*

1. Project Background

This project was kicked off in May 2021 when the Dean of the Libraries decided to launch a data service program in the libraries. The Science & Data Management Librarian was assigned to conduct preliminary research and create a white paper. Then an RDS task force was created to make a further investigation. A survey was designed by the task force to have a better understanding of CWU researchers' needs for RDS. Inspired by the Dean of the Libraries, the project team proposed a phased implementation plan.

2. Methods

This project designed a Qualtrics survey, refer to appendix I: CWU Research Data Services (RDS) Needs Assessment Survey Questionnaire, to collect data from CWU faculty, research staff, and graduate students to understand CWU researchers'

interests and needs for research data management services. Before designing the survey, the Science & Data Management Librarian conducted preliminary research for assessing and evaluating current resources and research support services state at CWU Libraries. The Science & Data Management Librarian wrote a white paper and presented the white paper to the Provost and the Dean of the Libraries to seek feedback from the administrators. A set of questionnaires were initially adopted from the preliminary research and re-designed by an RDS task force led by the Science & Data Management Librarian. Other task force members included the Social Science Librarian, the Scholarly Communication Librarian, and the Archivist involved in a digital humanities project collaborated with the College of Arts and Humanities. The RDS task force designed eighteen questions to help the libraries to understand the following questions: What are the needs of researchers at a regional comprehensive university such as CWU? Are the needs of researchers in a regional comprehensive university such as CWU the same as those of researchers in a research-intensive university? Is it necessary or worthy for a regional comprehensive university library to develop an RDS program? If necessary and/or worthy, how will the library implement the RDS program with limited budget and resources?

The task force presented the questionnaires at a library faculty meeting and collected inputs from other library faculty, library faculty chair, and dean of libraries. The Provost office sent out the survey to faculty, research staff, and graduate students via the university email system in February 2021. The task force set a one-month timeframe to collect the survey data. The tasks force received 69 valid responses by March 15, 2021: 15 from Arts & Humanities; 19 from Social Sciences; 18 from Sciences & Engineering; 3 from Business; 8 from Education & Professional Studies, which represented the current four colleges at CWU; 4 from Library Services and other academic units. Among 69 responses, 67 were from faculty members accounting for 10.45% of a total of 641 faculty members including both full-time and part-time status at CWU in AY20-21. The response rate was realistic and acceptable, considering this was an external survey to the libraries. In reality, many CWU faculty members just ignored such emails. However, only two graduate students and one research staff responded to the survey, not enough to represent the graduate students and research staff.

3. Results

Here are the highlights of the survey results:

Among 69 responses, eighteen respondents (26.09%) confirmed that their research funds were from grants. Only twelve (17.39%) researchers confirmed that their

funding agencies required researchers to provide a Research Data Management Plan (DMP) when they submitted their funding applications.

Thirty-nine (56.52%) researchers confirmed that they did receive assistance on campus for research and data management; however, only seven researchers (10.15%) reported they received help from the libraries.

About fifty researchers (72.46%) admitted no concerns for their data privacy; however, nineteen researchers (27.54%) expressed data privacy concerns such as being anonymous, people's identities, approval from the data vendor to share if they purchased from a data vendor.

About twenty-five researchers (36.23%) responded that they would like the university libraries to provide RDS. However, forty-two researchers (60.87%) confirmed that they would use it if the libraries offered RDS.

Regarding what areas that researchers would like to have assistance from the libraries, among 146 answers, the top 5 priorities were: finding resources to inform and enhance their research projects (21.23%); finding existing datasets (13.01%); assistance in conducting quantitative data analysis (9.59%); assistance in helping data visualization (9.59%); and, finding an appropriate repository for data archives (9.59%).

Regarding data format, top 6 formats were Tabular or spreadsheet (25.81%); textual data (17.42%); Images (14.84%); Audios (11.61%); Videos (9.68%); and Geospatial data (9.03%).

For more detailed information about this survey please refer to a separate document titled "CWU RDS Survey Results" in the ScholarWorks (https://digitalcommons.cwu.edu/libraryfac/117/).

4. Findings
Finding 1: Only 9.59% of responses were concerned about finding an appropriate repository for data archives that indicated data deposit service is not a high priority at CWU.

Finding 2: A majority of CWU research funding (73.91%) is not from grants. Only 12 responses confirmed that they must provide a data management plan (DMP) when they submitted their grant proposals.

Finding 3: CWU researchers received more help from other university units rather than from the libraries. Helping find resources is the most needed service at CWU and helping find datasets is the second most-needed service.

Finding 4: A majority of CWU researchers (60.87) would like the Libraries to provide RDS services and they confirmed they would use them.

Finding 5: About one-fourth (27.54%) of researchers expressed concerns about data privacy.

5. Discussions

The survey results addressed the research questions of this project, gave the libraries a clear picture of CWU researchers' RDS needs, helped the Libraries decide what services should be on a priority list, and plan, design, and implement RDS.

The survey results showed that data deposit service is not a high priority service at CWU while Yoon's study (2017) listed data deposit as the top services that libraries (60%) provided and Murray et al. (2019) found that offering research data instruction was the most offered service and data repositories service was the second most offered service. Also, the need for supporting data management plan (DMP) is not a high priority service at CWU although Yoon's study (2017) found that DMP support was the second most offered service at libraries (41.1%). The survey results also helped the Libraries understand the needs of CWU researchers so that the Libraries can consolidate its current resources, explore other resources and tools, develop a list of most needed services, and promote them to the CWU research community. Prospectively, the survey results indicated that providing RDS at the libraries was welcome by the CWU researchers so the libraries was in the right direction and should move forward. Importantly, data privacy is an issue that the Libraries must be aware of when providing RDS services; however, the librarians and supporting staff should develop the knowledge and skills in this area (Muellenbach, 2021).

The limitation of the project is that the project just examined an individual case at a specific regional comprehensive university so that the findings could not represent a pattern for all other regional comprehensive universities; however, the developing methods, survey questionnaire, and the phased implementation plan could be adopted by other regional comprehensive universities planning to develop an RDS program at their home institutions.

6. **Conclusions and Recommendations:**

This project analyzed the needs of Central Washington University (CWU) researchers for research data management services (RDS) through an assessment and evaluation process, discussed the possibility of developing an RDS at CWU Libraries, and then proposed a phased RDS implementation plan for CWU Libraries. A survey was designed to assess and evaluate CWU researchers' needs for RDS and to explore the possibility of launching an RDS at CWU Libraries. Through analyzing the survey results, this project found that the researchers' needs in a regional comprehensive university such as CWU could be quite different from those in a research-intensive university so that the RDS implementing method in a regional comprehensive university could be different than in a research-intensive university too (Wittenberg and Elings, 2017). With limited budget and resources, a regional comprehensive university library should make an in-depth assessment and evaluation to have a better understanding of its researchers' needs before launching an RDS program. Also, a regional comprehensive university library should consolidate its current resources and focus on the services derived from the assessment and evaluation process. Additionally, this project suggested a phased implementation plan for implementing RDS in a regional comprehensive university. After maturing the RDS model, the library can scale up to the entire university community.

Inspired by the dean of the CWU Libraries, this project proposed a three-year phased implementation plan for the Libraries. Because the Libraries has a limited budget and resources, this project suggested the Libraries should submit a business case to the university Enterprise Information Systems Committee to seek funding from the university. Cost estimates included salary and benefit for creating a new research librarian position focusing on data services, purchasing storage for data preservation for the long run, purchasing research data management tools including data management planning tools, GIS & geospatial services tools, data visualization tools, and presentation and graphics tools. For year one, the Libraries should form a working group, create an RDS model prototype, create a web portal to bring current resources such as institutional repository, open-data resources, research guides, and current data services we already provided together so we can provide a centralized information platform for researchers and students, create a library faculty position on data services, create a consultation model to provide basic data services, select one or two academic departments such as Geological Sciences and Biological Sciences as data service partners, build a partner relationship with Graduate Studies, university IS, and academic colleges, establish a collaborative relationship with other units on campus such as academic departments, Grant Office, university IS,

and Graduate Studies. For year two, the Libraries should consider maturing the RDS model based on the prototype we create in year one, fill the new research librarian position, extend the RDS services to the College of the Sciences, concentrate on providing help finding resources and datasets for researchers, create more research guides on Research Data Management, Data Management Plan and funder requirements, develop some classes and drop-in workshops on data services, and consider collaborating with other university units such as university IT, College of Sciences to apply for a grant in enhancing the RDS model. For year three, the Libraries will scale up the RDS model to all researchers on campus to provide a full range of services on RDS.

Thus, this project concluded that CWU students and faculty would benefit if the library was able to offer managed data services. Providing research data services would benefit the University and give students experience with data they may not get otherwise. Also, the authors of this paper will feel rewarded if this project can give those peer institutions libraries some insights and helpful information when planning to launch a new research data service at their home institutions.

7. Acknowledgments

8. References:

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