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2011 e-Science Symposium

Apr 6th, 12:00 AM - 2:00 PM

Data Curation and Management Competencies of New England Region Health Sciences and Science and Technology Librarians

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Repository Citation

Creamer, A., Morales, M. E., Crespo, J., Kafel, D., & Martin, E. R. (2011). Data Curation and Management Competencies of New England Region Health Sciences and Science and Technology Librarians.

University of Massachusetts and New England Area Librarian e-Science Symposium. <https://doi.org/10.13028/5ebj-8763>. Retrieved from https://escholarship.umassmed.edu/escience_symposium/2011/posters/8

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BACKGROUND

In 2010, the University of Massachusetts Medical School Lamar Soutter Library and the National Network of National Libraries of Medicine New England Region (NN/LM NER) and its e-science portal team began to gather data from New England health sciences and science and technology librarians in order to create a data management curriculum for the portal and develop professional development programming by evaluating the specific data curation management competencies and the skills currently possessed by these librarians and those that would be needed to perform these services effectively, as well as the nature and progress of data services being provided by these librarians and those being demanded by their patrons.

METHODS

The team developed the questions for the data management assessment instrument after performing a content analysis of data services and e-science librarian job postings over a five year period, selected library and information science schools' data management programs and curricula, and published case studies and best practices related to data services, curation, and management.

- The team posted the assessment on SurveyMonkey.
- A small group of medical librarians at the University of Massachusetts tested the survey and offered feedback to the team on ways to improve the survey.
- The team sent the survey to area health sciences and science and technology librarians.
- After three weeks, the team collected and analyzed the results.

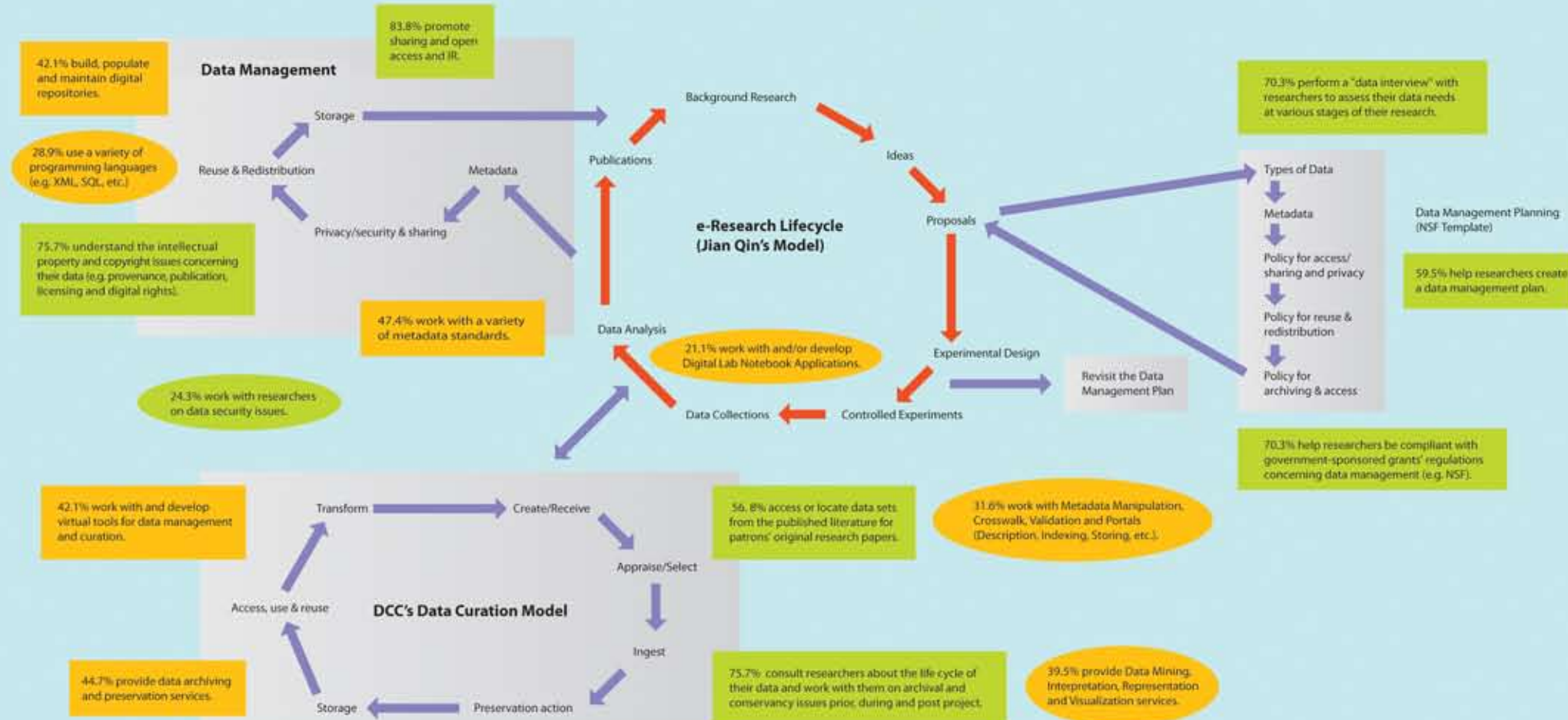
Library Roles in the Research Data Life Cycle: Technical and non-technical competencies in managing data

Green rectangles represent non-technical data services that more than 40% of respondents are currently or planning to provide to patrons.

Orange rectangles represent technical data services that more than 40% of respondents are currently or planning to provide to patrons.

Green ovals represent non-technical data services that less than 40% of respondents are currently or planning to provide to patrons.

Orange ovals represent technical data services that less than 40% of respondents are currently or planning to provide to patrons.



DISCUSSION

A quarter of respondents surveyed stated that they are already managing and curating data sets. This number has nearly doubled since the e-science portal team's 2009 assessment of New England health sciences and science and technology librarians engaged in e-science. Almost half of respondents stated they will be providing these services in the future; almost three quarters of respondents stated their library has or is in the process of creating a data management policy. Their responses to the competencies suggest that the portal curriculum focus on technical resources that would develop librarians' competencies in data literacy by teaching the technical skills necessary for managing and curating large data sets and database design. These skills would include knowledge about relevant scripting and programming languages and metadata and interoperability standards, as well as the skills necessary to create, manage and maintain an institutional data repository, such as data mining, interpretation, representation, visualization and retrieval services and data archiving and preservation services. These data also suggest that an effective curriculum provide resources that address the non-technical competencies and teach skills a librarian would need in order to develop a data management policy, understand intellectual property and scholarly communication issues related to data, and researcher workflows to help patrons engage with the library to create and execute a data management plan.

CONCLUSION

This research is helping the University of Massachusetts Medical School Lamar Soutter Library and National Network of National Libraries of Medicine New England Region (NN/LM NER) to develop its E-Science Portal data management curriculum and in-person professional development programming for its regional librarians engaged in e-science activities. In addition, this assessment illuminates the many challenges that health sciences libraries in New England are facing trying to engage in e-science. Thus, an area for future investigation is the strategies that libraries are using to deal with these challenges and overcome these obstacles.