# Creating Digital Preservation Capacity Through Human Resource Development at Canadian Academic Libraries

MAY 10, 2022

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# Introduction

*The preservation of digital material is a continuous process that begins before data or documents or records are created and the purpose of which is to transmit trustworthy (that is reliable, accurate and authentic) digital entities through time and across space. Luciana Duranti*[1]

As digitization of a wide variety of materials in analogue form continues apace, and as more and more of society's documentary heritage transitions to born-digital, research libraries in Canada are making investments to increase their digital preservation capacity. However, even as organizations build out capacity and increase organizational commitments, staffing levels remain low. According to a 2019 survey, full-time positions dedicated to digital preservation represented less than 1% of total FTEs of recently surveyed Canadian memory institutions: "memory organizations, many of which have mission or vision statements related to preservation and long-term access, have not yet prioritized digital preservation within their operations and do not direct significant resources towards these activities."[2] Given the continuous effort required to preserve this digital material over time, without adequate staffing, research libraries' ability to care for the materials entrusted to them is in question.

In order to help other organizations build staffing capacity, this short paper considers a sample of Canadian academic libraries' full-time digital preservation positions. We look specifically at job postings to determine what kinds of skills, education, and experience are being sought. We hope this will not only help those organizations looking to increase staffing commitments for digital preservation, but also increase awareness of the importance of effective staffing. Without dedicated people to do the work, all the tools and policies and strategies in the world will fall short of meeting this urgent need.

# Method

In order to identify postings for digital preservation positions, we searched online sources, solicited documents via CARL listservs, and reached out to individual institutions known to have dedicated digital preservation positions. We identified eleven job postings from nine Canadian academic libraries posted between 2012 and

[1] Luciana Duranti, "The Long-Term Preservation of Accurate and Authentic Digital Data: The Interpares Project," *Data Science Journal* 4 (2006): 106-118, https://doi.org/10.2481/dsj.4.106.
[2] Grant Hurley and Kathleen Shearer, "Final Report of the Survey on Digital Preservation Capacity and Needs at Canadian Memory Institutions, 2017-18," *Canadian Association of Research Libraries*, 2019, http://www.carl-abrc.ca/wp-content/uploads/2019/11/Digital_preservation_capacity_finalreport_EN-1.pdf.

2020. These documents were then coded using Taguette, a free, open source tool for qualitative research,[3] to reveal trends in four key areas:

1. Information about the organization;
2. General competencies that tend to be sought across most professions, such as communication skills, ability to work effectively in teams, experience in project management, etc.;
3. Specific competencies related to digital preservation at academic libraries, including what kind of knowledge and experience the organization was expecting from candidates in terms of specific tools, services, systems, etc.; and
4. Job responsibilities included what the successful candidate would be doing once they were on the job.

# Results

## Organizational Profiles

We identified eleven job postings from nine academic libraries in Canada, posted between 2012 and 2020. All but one of these institutions are CARL members; one posting was from an academic library consortium.

- An MLIS or equivalent was required for all positions.
- Most positions were full-time (10/11) and permanent (10/11).
- Half of these full-time permanent positions had faculty status (5/10).[4]
- For those positions at academic libraries (10/11), more than half were situated within an Archives and/or Special Collections unit (6/10), with the remainder within Library Systems, Digital Scholarship, or an equivalent unit (4/10). Most reported directly to an Associate University Librarian, University Archivist, or equivalent (7/10); none reported directly to a senior administrator.

## General Competencies

General competencies found across the position descriptions align with a number of those identified in the report of the CARL Competencies Working Group (2020), in particular, collaboration; consultation & communication; vision & innovation; and leadership & facilitation.[5]

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[3] Taguette, accessed May 10, 2022, https://www.taguette.org/.
[4] It is possible that more than five positions had faculty status but we were unable to determine this from the posting.
[5] Kathleen DeLong, Dean Giustini, Julie Hannaford, Vivian Lewis, Bill Sgrazzutti, Phil Taber, Carole Urbain et al., "Competencies for Librarians in Canadian Research Libraries," Canadian

**TABLE 1. Description and Frequency of general competencies**

| | General competencies | Short description | Number of tags assigned |
|---|---|---|---|
| 1 | Develop and nurture partnerships and collaborations | Ability to work well with others, and to reach out to new partners | 15 |
| 2 | Communication skills | Clear and thoughtful communication, both verbal and written | 12 |
| 3 | Project management skills | The ability to employ PM methodologies to complete projects | 10 |
| 4 | Leadership skills | Ability to influence, motivate, and enable others to contribute | 8 |
| 5 | Teamwork | The collaborative effort of a group to achieve a common goal | 8 |
| 6 | Management skills | Achieve organizational goals through implementing processes | 5 |
| 7 | Assessment | Being able to articulate value in a formalized way | 3 |
| 8 | Risk management skills | Minimize the adverse effects of risk on an organization | 3 |
| | | Total | 64 |

## Specific Competencies Related to Digital Preservation

While the above-mentioned general competencies are important, technical expertise in the various facets of digital preservation required to operationalize the work were

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Association of Research Libraries, 2020, https://www.carl-abrc.ca/wp-content/uploads/2020/09/Competencies-Final-EN-1-2.pdf.

identified and organized into the areas below. Notably, knowledge of archival theory and practice supports the requirement to understand the nature of archival materials, their function, use, and organization, and as a part of digital preservation programs that include digital records.

**TABLE 2. Description and Frequency of digital preservation competencies**

| | Digital preservation competencies | Short description | Number of tags assigned |
|---|---|---|---|
| 1 | Knowledge of systems, standards, and best practices | Standards like OAIS and systems like Archivematica | 33 |
| 2 | Archival theory and practice | Especially related to appraisal, accession, and description | 19 |
| 3 | Metadata | Includes preservation-specific schema such as PREMIS and MODS | 16 |
| 4 | International and national projects and initiatives | Within Canada in particular, but also organizations like LOCKSS | 10 |
| 5 | Repository expertise | Experience with DSpace, Samvera, etc., is often encouraged | 6 |
| 6 | Records management | Knowledge of workflows and retention schedules | 5 |
| 7 | Collection development | Many positions have subject liaison responsibilities | 4 |
| 8 | Emulation | Of obsolete software, hardware, and operating systems | 4 |
| 9 | Instruction | Many positions are expected to teach classes or provide training | 4 |
| 10 | Markup languages | Including XML, XSLT, CSS, and others | 3 |

| | | | |
|---|---|---|---|
| 11 | Obsolescent media | Working with old media and tools like the KryoFlux | 3 |
| 12 | Certification | Examples include Trustworthy Digital Repository, CoreTrustSeal | 2 |
| 13 | Legislative and regulatory environment | Specifically related to copyright and FOIPPA | 2 |
| 14 | Cataloguing | Traditional activities using MARC, AACR2, etc. | 1 |
| 15 | Research Data Management | Knowledge of RDM and data preservation issues | 1 |
| 16 | Scholarly communications | Knowledge of the research lifecycle and open access | 1 |
| | | Total | 114 |

## Position Responsibilities

Top position responsibilities reflected the current establishing phase of digital preservation programs, with development, oversight, operationalization of procedures and services, and leading collaboration most frequently cited.

TABLE 3. Description of position responsibilities and frequency of tags

| | Responsible for... | Short description | Number of tags assigned |
|---|---|---|---|
| 1 | Developing procedures, workflows, and documentation | Creating and documenting complex procedures and system integrations | 40 |
| 2 | Coordinating, developing, and delivering programs or services | Building and running services for preservation of a range of digital assets | 25 |
| 3 | Overseeing technical infrastructure | Responsible for digital preservation systems and storage | 25 |

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|---|---|---|---|
| 4 | Developing partnerships and collaborations | Working within and across a unit or organization, and externally | 19 |
| 5 | Teaching and instruction | Formal teaching and instruction responsibilities, giving classes, etc. | 15 |
| 6 | Policy development | Creating policies and action plans to guide complex activities | 14 |
| 7 | Strategic planning | Ensuring that preservation activities are moving forward in a planned way | 13 |
| 8 | Research and development | Mostly related to scholarly responsibilities as faculty members | 12 |
| 9 | Training staff | Creating training materials and training staff on systems use and workflows | 10 |
| 10 | Supervision | Have staff reporting to them | 5 |
| 11 | Web archiving | Often the technical lead for platforms like Archive-It | 5 |
| 12 | Collection development | Usually as part of subject liaison responsibilities | 4 |
| 13 | Research data management | Specifically, in relation to data preservation workflows, etc. | 4 |
| 14 | Reference services | Usually as part of subject liaison responsibilities | 4 |
| 15 | Digitization | Some positions include responsibilities for upstream digitization work | 2 |
| 16 | Records management | Ensuring preservation of appropriate materials identified in schedules | 2 |
| 17 | Repositories | Responsibilities for DSpace, Samvera, Dataverse, etc. | 2 |

| | | | |
|---|---|---|---|
| 18 | Budgets | Oversees a unit budget | 1 |
| 19 | Grant applications | Expected to look for external project and research funding | 1 |
| | | Total | 203 |

# Recommendations

## Recognizing The Importance of Technical Skill, But Emphasizing Creativity

Like all professions, digital preservationists require competencies that are, to a significant degree, consistent across industries:

> Specifically, employers are eager to hire people with general professional skills, such as problem-solving. They are also looking for such qualities as good work ethic alongside "soft" skills such as teamwork and interpersonal skills.[6]

We consistently see positions that require exceptional analytical and problem-solving skills, proficiency at juggling multiple priorities in a complex work environment, the ability to collaborate across units, disciples, and organizations, and a willingness to undertake cutting-edge research to stay as current as possible.

While there is a consistent call for technical skills for all positions, we feel that digital preservation work has affinity with creative industries. Like digital preservation work, "the creative industries frequently require a combination of highly specialized knowledge combined with transferable, generic skills."[7] Digital preservation positions demand a level of imagination, lateral thinking and curiosity that is often not emphasized enough.

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[6] McKinsey Centre for Government's Education and Employment 2014, "Getting Europe's Youth to Work," quoted in Paul Collard, "Skills for the Creative Industries," *UNESCO-UNEVOC*, 2014, https://unevoc.unesco.org/fileadmin/up/BackgroundNote_VC-CreativeIndustries-Collard.pdf.

[7] Collard, "Skills for the Creative Industries."

When creating job postings, we encourage organizations to promote skills and qualities seen as essential in the creative industries, such as:

- Inventive, passionate, and resilient;
- Ability to communicate, cooperate, and work on a team;
- Adaptable and proactive;
- Can work to deadlines, manage time, and see projects through; and
- Focus on clients, customers, audiences and participants.

### Matching Autonomy with Authority

The management of professionals in these positions requires a great amount of trust and confidence in the creative and technical abilities of the employee. Upper management does not always possess the technical know-how to fully understand the intricacies of a digital preservation workflow and, as stated previously, the experimentation needed to find what works in the complexity of each organization can come at a high cost. When hiring, the ability to judge the capacity of the candidate to document, collaborate, inform and instruct are essential for building and reinforcing a dynamic of confidence. In return, it is important for management to listen to and value the expertise of these professionals.

The technical savvy of a digital preservation expert on a library/archive team is also necessary as a liaison with information technology (IT) departments that are more or less accessible. A certain amount of authority must be transferred to digital preservation professionals in order to negotiate technological needs, procedures and workflow with the IT department.

The autonomy and means given to these professionals to create partnerships across the GLAM sector will likewise improve results in digital preservation by benefiting from a larger community of practice, as well as from potential collaborative initiatives.

## Conclusion

More human resources in digital preservation are a necessary investment to prevent a digital dark age. The potential added benefits of appropriately resourced positions for research and knowledge production align well with the mission of academic libraries.