## Learning from Others: The Risks of Deprofessionalization as Seen in Museums Sarah Vela University of Waterloo

In the growing field of Museum Informatics, the skills of librarians are applied to work in museums and art galleries in order to improve their services. For this presentation, however, I would like to reverse the concept and examine what we can learn from our fellow GLAM\* institutions. This is an area with which I am very familiar since. though I was trained as a librarian, my area of research has been primarily the recordkeeping and user groups of museums. Through my work I have seen first-hand the contrast that exists between museums and libraries in their education, hiring practices, and sense of community, and have studied the systemic issues that museums are facing as a result of their model. Today, I would like to discuss these issues with you in order to extol the potential risks that libraries face at the hands of deprofessionalization.

In particular, I am going to address the type of deprofessionalization threatened by McMaster's former Chief Librarian Jeff Trzeciak in 2011 during a presentation to Penn State.<sup>2</sup> I am sure many of you are familiar with the infamous slide shown in Figure 1, but for those who may not be, essentially he reduced McMaster's academic librarian staff by a third, mostly through retirement, and suggested that the new hires who would replace them would not be professional or paraprofessional librarians, but rather scholars with computer science backgrounds or PhD's in their fields. There was naturally an instant uproar from the librarian community, and, in a perhaps unrelated move, the next year Jeff Trzeciak took a position as Head Librarian at an American university.<sup>3</sup> Regardless of how this particular case turned out, however, the threat of university

<sup>&</sup>lt;sup>1</sup> Paul F. Marty, "An Introduction to Museum Informatics", in *Museum Informatics: People*, Information, and Technology in Museums, ed. Paul F. Marty and Katherine Burton Jones (New York: Routledge, 2008), 3-5; Paul F. Marty and W. Boyd Rayward, "Museum Informatics", Annual Review of Information Science and Technology 37, no. 1 (2003): 259-294, EBSCO (accessed November 10, 2013).

<sup>\*</sup> Galleries, Libraries, Archives and Museums

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<sup>&</sup>lt;sup>2</sup> Jeff Trzeciak, *Transforming Traditional Organizations*, Presentation at Pennsylvania State University (April 8, 2011), quoted in "This is Not the Future of Librarianship", Attempting Elegance, http://www.attemptingelegance.com/?p=1031 (accessed June 14, 2015).

<sup>&</sup>lt;sup>3</sup> A timeline of events is available at John Dupuis, "McMastergate in Chronological Order, or, Do Libraries Need Librarians?", Confessions of a Science Librarian, http://scienceblogs.com/confessions/ 2011/05/17/mcmastergate-in-chronological/ (accessed June 14, 2015).

administrators de-valuing MLIS degrees in favor of specialist knowledge remains, and this is an area where we can learn a lot from museums.



Figure 1 - Slide from Jeff Trzeciak's Presentation to Penn State

In order to explain what cautionary tales museums have to offer us, this presentation will cover three topics. The first is an abbreviated history lesson on how museums got where they are today. Following this, I will examine some of the issues museums are facing and how they are caused by poor professionalization. In the final sections I will then highlight a few key lessons that librarians can take away from museums, which can either provide arguments for a fight against deprofessionalization or serve as warnings of things to watch for if your institution begins to deprofessionalize.

## A Brief History of Museums

We begin at the turn of the twentieth century, a period of big changes in both libraries and museums. Prior to this era, the two were often the same institution -- collections of books and objects were housed in the same building and the head librarian

and curator were generally the same person.<sup>4</sup> In the late 1800s, however, this began to change quite rapidly, and the two became the separate entities we know today. This occurred for many reasons, but two influences are particularly noteworthy. One is the philanthropy of Andrew Carnegie, who was supporting the creation of both libraries and museums but was treating them as different institutions, housing them in separate buildings and attaching different caveats to the donations -- namely that cities had to guarantee annual funding for libraries in future years, but were not required to do so for museums.<sup>5</sup> The other is that the ALA, which had formed in 1876, was beginning to ingrain in librarians a set of professional principles and a scope to what librarianship entailed. As a result, within fifty years the narrative of libraries changed from 'having libraries and museums "...in the same building and under the same trustees, increases the utility of and the interest in both..." to 'museums and art galleries are inappropriate additions that "...have been gradually grafted onto library work".<sup>6</sup>

Regardless of the reasons, however, by the early twentieth century libraries and museums were separate institutions on divergent paths, and one of the key differences between the two was the way they regarded education of their members. In 1905 the ALA began regulating the training of librarians, recommending that "...two to three years of college be a pre-requisite to library education". By 1923 this concept had evolved into a formal accreditation process, and within two years fourteen training programs across America had been approved. In contrast, although the American Association of Museums (AAM) acknowledged the problems with training of museum staff as early as 1917, they did not attempt to address the issue in any meaningful way. A smattering of undergraduate courses and one-year supplementary programs appeared

<sup>&</sup>lt;sup>4</sup> Arthur MacGregor, *Curiosity and Enlightenment: Collectors and Collections from the Sixteenth to the Nineteenth Century* (New Have and London: Yale University Press, 2007).

<sup>&</sup>lt;sup>5</sup> William Frew, quoted in Carnegie Institute, "Presentation of the Carnegie Library to the People of Pittsburgh with a Description of the Dedicatory Exercises, November 5, 1895", printed by Order of the Corporation and the City of Pittsburgh, quoted in Robert J. Gangewere, ed., *Palace of Culture: Andrew Carnegie's Museums and Library in Pittsburgh*, Pittsburgh: University of Pittsburgh Press, 2011.

<sup>&</sup>lt;sup>6</sup> H.A. Homes, "Libraries with Museums", *The Library Journal* 6, no. 4 (1881): 97-104, http://libsysdigi.library.illinois.edu/oca/Books2007-07/proceedings/proceedings81amer/proceedings81 amer.pdf (accessed December 9, 2013), 81; Judson T. Jennings, "Presidents Address: Sticking to our Last", *Bulletin of the American Library Association* 18 (1924): 150-156, JSTOR (accessed December 15, 2013), 151.

<sup>&</sup>lt;sup>7</sup> American Library Association, "Details of ALA History" (2015), *About ALA*, http://www.ala.org/aboutala/history/details-ala-history (accessed June 14, 2015).

across America through the 1920s, but their founders "...expected the [AAM] to establish the standards for museum workers which their programs would then meet..." and these standards never came. This dearth of formal training lasted until the 1970s when a sudden uptake in the number of graduate degrees followed the release of an AAM report in 1969 stating that "most museums operate with too few trained people, and many, perhaps thousands of museums are run by people who have no preparation at all". Still, neither the AAM nor any other museum association attempted to regulate the programs, and there is still no consistency between universities on topics covered or even the number of credits required.

As a result of this poor regulation of museum studies programs, museums as employers do not value the credential. Job postings for technicians are as likely to request a degree in history, fine arts or science as they are one in museology, while curator positions often require a doctorate in a discipline related to the collection. Indeed the AAM themselves have questioned on the importance of formal education, with three different subcommittees stating that "museum training programs are not and should not be considered the only or necessarily the best routes into the museum profession". Essentially, for the past hundred years museums have been trapped in an endless loop where because there are no set requirements for training, the 'professionals' that make up the AAM come from a variety of backgrounds, and because AAM membership is so diverse, there no support behind accrediting museum studies programs (see Figure 2). Presumably at this point there would be heavy resistance from universities to any effort to standardize curriculums because these processes have a significant cost and there is no

<sup>&</sup>lt;sup>8</sup> John E. Simmons, "Museum Studies Programs in North America", *Museum Studies: Perspectives and Innovations*, eds. Stephen L. Williams and Catharine A. Hawks (Washington, DC: Society for the Preservation of Natural History Collections, 2007), 115.

<sup>&</sup>lt;sup>9</sup> American Association of Museums, *America's Museums: The Belmont Report. A Report to the Federal Council on the Arts and the Humanities by a Special Committee of the AAM*. (Washington, D.C.: American Association of Museums, 1969), quoted in John E. Simmons, "Museum Studies Programs in North America", *Museum Studies: Perspectives and Innovations*, eds. Stephen L. Williams and Catharine A. Hawks (Washington, DC: Society for the Preservation of Natural History Collections, 2007), 115.

<sup>&</sup>lt;sup>10</sup> United States Department of Labor: Bureau of Labor and Statistics, "Curators, Museum Technicians, and Conservators", *Occupational Outlook Handbook*, http://www.bls.gov/ooh/Education-Training-and-Library/Curators-and-museum-technicians.htm#tab-4 (accessed November 13, 2013).

<sup>&</sup>lt;sup>11</sup> American Association of Museums, Museum Studies Committee, "Museum Studies", *Museum News* 57, no. 2 (1978): 19-26, quoted in John E. Simmons, "Museum Studies Programs in North America", *Museum Studies: Perspectives and Innovations*, eds. Stephen L. Williams and Catharine A. Hawks (Washington, DC: Society for the Preservation of Natural History Collections, 2007), 118.

evidence that museums would change their hiring practices to favor degrees from accredited programs. Any attempt to unify the museum profession now would therefore face a difficult uphill battle.

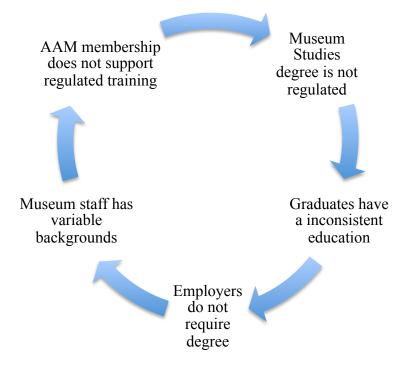


Figure 2 - The Cycle of Non-Professionalization in Museums

#### **Issues with Museum Non-Professionalization**

But is the current state of museums actually an issue? The AAM doesn't seem to think so, and there are numerous parties inside and outside libraries that would suggest our education requirements are antiquated, Jeff Trzeciak included. So should we perhaps be looking to them as a model instead? In this section I will examine some of the issues that museums are facing as a result of their hiring practices, to explain why this is a problematic idea.

In the 1990s, parallel to the development of the World Wide Web, there was a growing expectation among the public that galleries and cultural heritage institutions should provide "high quality services" and "access to information". <sup>12</sup> Before this point, museums had been overwhelmingly collection-centric, maintaining a "…belief that

<sup>&</sup>lt;sup>12</sup> Andrew Roberts, "The Changing Role of Information Professionals in Museums", *MDA Information* 5, no. 3 (2001): 15-17, quoted in *Museums in a Digital Age*, ed. Ross Parry (New York: Routledge, 2010), 25-27.

artifactual collections are the raison d'etre of museums, rather than a tool through which we learn, and teach, about heritage". Though twenty-five years have passed since the push towards user-centricity began, there is still no agreement on what the user groups of a museum are, let alone an understanding of their needs. Academic users in particular are under-served, often being lumped in with museum staff or deemed too small a group to be considered. This questionable understanding of their visitors affects everything from collections development to educational programming, as it is difficult to determine how effective these efforts are without criteria for evaluation.

A more tangible example, and the one with which I am most familiar, is the record-keeping practices of museums. Libraries developed consistent methods of describing their collections very early on, partly because the key identifiers of books are fairly consistent, but also because library communities have put effort into developing and agreeing on standards for metadata. Since training in these standards could then be incorporated them into the curriculums of MLIS degrees, new librarians can be trusted to understand why standardization is important and to have at least a basic knowledge of what metadata records should contain. The poor professionalization in museums, conversely, meant that their records traditionally "...tended to reflect the idiosyncratic interests of curators and were often abandoned after their retirement...". <sup>16</sup> This became clear in the 1970s and 80s when museums attempted to digitize their records, only to find that they were incomplete, incorrect or non-existent, and that "no common approaches to recording information about objects or specimens [had] been established by the American

<sup>13</sup> George F. MacDonald and Stephen Alsford, "The Museum as Information Utility", *Museum Management and Curatorship* 10 (1991): 305-311, EBSCO (accessed November 9, 2013), 305.

<sup>14</sup> Examples of proposed classes can be seen in John Reeve, "Prioritizing Audience Groups", in *The Responsive Museum: Working with Audiences in the Twenty-First Century*, eds. Caroline Lang, John Reeve, and Vicky Woollard (Aldershot, England; Burlington, VT: 2006), 48-53; and Fiona Cameron, "Digital Futures I: Museum Collections, Digital Technologies and the Cultural Construction of Knowledge", *Curator* 46, no. 3 (2003): 325-340. EBSCO (accessed November 13, 2013), "The Next Generation", para. 2.

<sup>&</sup>lt;sup>15</sup> Morten Hertzum, "A Review of Museum Web Sites: In Search of User-Centred Design", Archives and Museum Informatics 12 (1998): 127-138, EBSCO (accessed November 10, 2013); Paul F. Marty, "Information Representation", in *Museum Informatics: People, Information, and Technology in Museums*, eds. Paul F. Marty and Katherine Burton Jones (New York: Routledge, 2008), 31.

<sup>&</sup>lt;sup>16</sup> David Bearman, "Representing Museum Knowledge", in *Museum Informatics: People, Information, and Technology in Museums*, eds. Paul F. Marty and Katherine Burton Jones (New York: Routledge, 2008), 41.

museum community, and few cataloguing guidelines or principles [had] been published".17

Since then, there have been several efforts to establish metadata standards for art and cultural heritage institutions. These include the Art and Architecture Thesaurus and Categories for the Description of Works of Art, both established by the Getty Institute, the Cataloguing Cultural Objects guidelines supported by the Visual Resource Administration, and the Conceptual Reference Model produced by an International Council of Museums committee. 18 A 2004 study, however, showed that less than 1% of museums in America had implemented any metadata standard, and their records continue to suffer as a result. 19 The reasons that standards have not been adopted are numerous. but ultimately come down to education practices and sense of community. As Rinehart and White note, the groups behind these standards are "...often led by the largest cultural institutions or [by] umbrella organizations that are not themselves responsible for implementing the standards". <sup>20</sup> As a result, the guidelines produced are felt to be overly complex and not representative of what the average museum can adopt. They are not representative, however, because few museums are interested in contributing to the initiatives, and seem complex because in many cases no staff members have been trained in how to understand and apply the documentation. Essentially, the efforts to establish standards are proving fruitless without established means to disseminate the guidelines to a receptive audience.

Due to the ongoing problems museums are having creating thorough and consistent records, their attempts to produce digital resources have met with mixed

<sup>&</sup>lt;sup>17</sup> Lenore Sarasan, "A System for Analysing Museum Documentation", in *Museum* Documentation Systems: Developments and Applications, ed. Robert B. Light, D. Andrew Roberts, and Jennifer D. Stewart (London: Butterworths and Company, 1986), 89.

<sup>&</sup>lt;sup>18</sup> Getty Research Institute, Art and Architecture Thesaurus Online (2000), http://www.getty.edu/ research/tools/vocabularies/aat/ (accessed December 9, 2013); Getty Research Institute, Categories for the Description of Works of Art (2014), eds. Murtha Baca and Patricia Harpring, https://www.getty.edu/ research/publications/electronic publications/cdwa/ (accessed March 26, 2014); Murtha Baca and the Visual Resources Association, Cataloging Cultural Objects: A Guide to Describing Cultural Works and Their Images (Chicago: American Library Association, 2006), EBSCO (accessed December 9, 2013); International Council of Museums, Definition of the CIDOC Conceptual Reference Model, version 5.1.2, eds. Patrick Le Boeuf, Martin Doerr, Christian Emil Ore, and Stephen Stead, http://www.cidoccrm.org/docs/cidoc crm version 5.1.2.pdf (accessed July 27, 2014).

<sup>&</sup>lt;sup>19</sup> Richard Rinehart and Lanya White, "Challenges to Museum Collaboration: The MOAC Case Study", in Museum Informatics: People, Information, and Technology in Museums, ed. Paul F. Marty and Katherine Burton Jones (New York: Routledge, 2008), 246.

20 Rinehart and White, 246.

success. Table 1 presents the 'evolutionary scale' of Web presence proposed by Caroline Dunmore. 21 While libraries have generally mastered the access and interpretation steps and are now pressing on to added-value experiences, museum websites range across the spectrum of progress. In addition to the numerous institutions that have no website at all, many more continue to provide "...nothing more than short informational flyers" that might list current exhibits but provide no access to the actual artifacts.<sup>22</sup> These include some fairly major examples, such as the Royal Ontario Museum and numerous academic collections including those at the University of Ottawa and University of Alberta.<sup>23</sup> Other museums do provide online collections, but their incomplete metadata means that information retrieval systems are often rudimentary, sometimes having no more than a keyword search, and that the records themselves can look like those shown in Figure 3. Attempts to offer an enriched online experience, finally, are even more rare, and are the purview of the largest and best-staffed institutions. The Metropolitan Museum of Art website, for instance, has the Timeline of Art (Figure 4) that provides a contextual view of their collection, though notably even this institution still has a worrying number of records that are missing key metadata.

<sup>21</sup> Caroline Dunmore, "Museums and the Web", in *The Responsive Museum: Working with Audiences in the Twenty-First Century*, eds. Caroline Lang, John Reeve, and Vicky Woollard (Aldershot, England; Burlington, VT: 2006), 103.

<sup>&</sup>lt;sup>22</sup> Katherine Burton Jones, "The Transformation of the Digital Museum", in *Museum Informatics: People, Information, and Technology in Museums*, eds. Paul F. Marty and Katherine Burton Jones (New York: Routledge, 2008), 21; see also Richard Sabin, "Museums and Their Websites: An Examination and Assessment of How Museums are Coping with the Challenge of the World Wide Web", Journal of Conservation and Museum Studies 2 (1997): 6-10, DOI: http://dx.doi.org/10.5334/jcms.2972 (accessed November 10, 2013).

<sup>&</sup>lt;sup>23</sup> Royal Ontario Museum, Toronto ON, http://www.rom.on.ca/en (accessed June 14, 2015); Museum of Classical Antiquities, University of Ottawa, Ottawa ON, https://arts.uottawa.ca/clasrs/en/museum (accessed June 14, 2015); WG Hardy Collection of Ancient Near Eastern and Classical Antiquities, University of Alberta, Edmonton AB, http://www.historyandclassics.museums.ualberta.ca/WGHardyCollectionOfAncientNearEasternAndClassicalAntiquities.aspx (accessed June 14, 2015).

Table 1 - Caroline Dunmore's Evolutionary Scale of Web Presence

Stage	Trait
0	No web presence
1	Marketing website - visitor services information, etc.
2	Access to collections - online catalogues, digital images, etc.
3	Interpretation of collections - resources for formal and informal learning, etc.
4	Increasing exploitation of Web technology - interactivity, audiences
5	Contributing to the content
6	Website constituting additional museum site



# Pin

Medium: Bronze

Dimensions: 7/8 in. (2.2 cm)

Collections: Egyptian, Classical, Ancient Near Eastern Art

Museum Location:X This item is not on view

Accession Number: 08.480.185

b) Brooklyn Museum

#### Untitled landscape

Date: 1953

Related People:

Artist: SMITH, Henry Walter

Canadian, born 1917

**Dimensions:** Overall: 50 x 70.2 cm (19 11/16 x 27 5/8 in.)

Medium: Watercolour on paper

a) Museum of Fine Arts Boston

c) McMaster Museum of Art

Figure 3 - Examples of Minimal Records from the Museum of Fine Arts Boston, Brooklyn Museum, and McMaster Museum of Art



Figure 4 - The Timeline of Art from the Metropolitan Museum of Art

In sum, by not professionalizing, museums have been late to address issues that are key to a publically funded institution, and are now struggling to catch up. While the problems were not immediately evident, the passage of time, the advancement of technology, and changes in societal expectations have caused them to compound until they became significant difficulties. Without the central authority or connected community of libraries, solving these problems has been largely an individual struggle for each institution, leaving some museums lagging far behind others. The interinstitutional efforts that have been established, meanwhile, such as developing metadata standards, have thus far proved ineffective because the diverse backgrounds of museum staff and administrators make garnering widespread support challenging. Although the connection between these ongoing struggles and the poor professionalization in museums has yet to be formally acknowledged, there is growing awareness among researchers and staff that current practices cannot continue.

#### What Libraries Can Learn from Museums

Having outlined why museums are not professionalized and the problems that exist as a result, the question becomes how can librarians use this information? The

direction of library staffing proposed by Trzeciak has many parallels to the system currently employed by fine art, cultural heritage and natural science institutions, and these organizations can thus provide forewarning of the effects diluting our professional community may have, and ideas of how to avoid them. The following are six lessons I have learned from studying museums about how to counteract deprofessionalization.

### Lesson 1 - Defend our Ethics and Principles

The ethics and principles laid out by the ALA, CLA and other associations are vital to librarianship; they define our identity and give us a common purpose. If a significant portion of the staff in a library neither know nor believe in these principles, however -- for instance because they hold doctorates in English or Chemistry rather than an MLIS degree -- then the purpose of libraries may decay or diverge as personal interests supplant professional mandates. At the very least, therefore, if PhD holders are to be the hiring wave of the future, then instruction in the foundational tenants of librarianship must be incorporated into the training process for new staff.

### Lesson 2 - Retain a User-Centric Focus

Perhaps the aspect of library culture that is most vulnerable if scholarly 'experts' replace librarians is the focus on understanding and serving users. Those who pursue advanced degrees generally do so because they are passionate about their field, but this does not necessarily translate to a passion for helping others do research in that field. Countless activities that are vital to understanding and serving patrons involve little or no work with collections, and are not research in the academic sense. Just as has occurred in museums, doctorate-holders are likely to pursue projects for the sake of their own interests, not because they will benefit patrons, and this shift in priorities would be a significant change to what libraries represent.

## Lesson 3 - Keep Advancing and Enforcing Standards

Unlike museums, which have yet to develop many of the traits of good documentation, libraries are widely known for the standardization and interoperability of our records. Indeed, the widespread outsourcing of cataloguing to central organizations

makes it seem unlikely that issues could arise at this point. Without an ongoing effort towards further developing standards, however, they risk becoming obsolete when technology inevitably changes and requires that adjustments be made. The recent switch to RDA is a pertinent example of this. Upholding the level of excellence we have established for record keeping requires a deep commitment to its importance, and this commitment is threatened by deprofessionalization.

#### Lesson 4 - Contribute to Association Efforts

An active community with respected leadership is a core trait of a cohesive profession. Committees established by the ALA, CLA and countless other library associations provide guidance on fronts from standards, to inclusiveness, to privacy and security, advancing library practices. If changing hiring practices bring the relevance and authority of these groups into question, though, then the involvement of librarians in them may decline. Much as in museums, this could in turn mean that these initiatives either disappear or lose touch with the realities of libraries and become superfluous. Continuing to follow and participate in the library community, despite what might be occurring in and around it, is perhaps the best defense to slow the process of deprofessionalization.

### Lesson 5 - Be Vigilant in these Efforts

In regard to all of these matters, it is key to note that the problems at hand will not appear overnight, but will instead emerge slowly, over years or decades. If you wait that long to address them, however, then the problems will become infinitely more difficult to reverse. Ideally, of course, this would mean preventing deprofessionalization in the first place, and that fight is ongoing, but if it proves unavoidable then working to mediate its effects will require an enduring awareness and commitment to preserving our occupation.

## Lesson 6 - Deprofessionalization is Easy; Professionalization is Hard

Arguably the most important lesson we can learn from museums is how difficult it is to create a cohesive and respected professional group. The determination and forethought shown by the foundational members of modern librarianship gave us a

massive advantage in establishing what libraries are and why they matter. The significance of an MLIS degree can be tossed aside with a few changes to job ads, by considering alternatives to be equivalent or preferred, but as I hope this presentation has shown, there will be repercussions to doing this on any significant scale, and trying to go back will prove far more difficult.

To briefly conclude, when attempting to warn against deprofessionalization or prevent negative effects therefrom, museums provide a convenient and relevant case study of the unintended side effects that may occur over time. The history and current efforts of these institutions stand in sharp contrast to our own, but offer a mirror onto what we may become. I hope that this presentation will inspire further research into this area, and that as our GLAM brethren continue to look to us for guidance we might learn from them as well.

#### References

- American Association of Museums. America's Museums: The Belmont Report. A Report to the Federal Council on the Arts and the Humanities by a Special Committee of the AAM. Washington, D.C.: American Association of Museums, 1969. Quoted in John E. Simmons. "Museum Studies Programs in North America". Museum Studies: Perspectives and Innovations. Edited by Stephen L. Williams and Catharine A. Hawks. Washington, DC: Society for the Preservation of Natural History Collections, 2007.
- American Association of Museums, Museum Studies Committee. "Museum Studies". *Museum News* 57, no. 2 (1978): 19-26. Quoted in John E. Simmons. "Museum Studies Programs in North America". *Museum Studies: Perspectives and Innovations*. Edited by Stephen L. Williams and Catharine A. Hawks. Washington, DC: Society for the Preservation of Natural History Collections, 2007.
- American Library Association. "Details of ALA History" (2015). *About ALA*. http://www.ala.org/aboutala/history/details-ala-history (accessed June 14, 2015).
- Baca, Murtha and the Visual Resources Association. *Cataloging Cultural Objects: A Guide to Describing Cultural Works and Their Images*. Chicago: American Library Association, 2006. EBSCO (accessed December 9, 2013).
- Bearman, David. "Representing Museum Knowledge". In *Museum Informatics: People, Information, and Technology in Museums*. Edited by Paul F. Marty and Katherine Burton Jones. New York: Routledge, 2008.
- Brooklyn Museum. Brooklyn NY. www.brooklynmuseum.org/ (accessed June 14, 2015).

- Burton Jones, Katherine. "The Transformation of the Digital Museum". In *Museum Informatics: People, Information, and Technology in Museums*. Edited by Paul F. Marty and Katherine Burton Jones. New York: Routledge, 2008.
- Cameron, Fiona. "Digital Futures I: Museum Collections, Digital Technologies and the Cultural Construction of Knowledge". *Curator* 46, no. 3 (2003): 325-340. EBSCO (accessed November 13, 2013).
- Dunmore, Caroline. "Museums and the Web". In *The Responsive Museum: Working with Audiences in the Twenty-First Century*. Edited by Caroline Lang, John Reeve, and Vicky Woollard. Aldershot, England; Burlington, VT: Ashgate, 2006.
- Dupuis, John. "McMastergate in Chronological Order, or, Do Libraries Need Librarians?". *Confessions of a Science Librarian*, http://scienceblogs.com/confessions/2011/05/17/mcmastergate-in-chronological/(accessed June 14, 2015).
- Frew, William. Quoted in Carnegie Institute. "Presentation of the Carnegie Library to the People of Pittsburgh with a Description of the Dedicatory Exercises, November 5, 1895". Printed by Order of the Corporation and the City of Pittsburgh. Quoted in Robert J. Gangewere, ed. *Palace of Culture: Andrew Carnegie's Museums and Library in Pittsburgh*. Pittsburgh: University of Pittsburgh Press, 2011.
- Getty Research Institute. *Art and Architecture Thesaurus Online* (2000). http://www.getty.edu/research/tools/vocabularies/aat/ (accessed December 9, 2013).
- ---. Categories for the Description of Works of Art (2014). Edited by Murtha Baca and Patricia Harpring. https://www.getty.edu/research/publications/electronic\_publications/cdwa/ (accessed March 26, 2014).
- Hertzum, Morten. "A Review of Museum Web Sites: In Search of User-Centred Design". *Archives and Museum Informatics* 12 (1998): 127-138. EBSCO (accessed November 10, 2013).
- Homes, H.A. "Libraries with Museums". *The Library Journal* 6, no. 4 (1881): 97-104. http://libsysdigi.library.illinois.edu/oca/Books2007-07/proceedings/proceedings81amer/proceedings81amer.pdf (accessed December 9, 2013).
- International Council of Museums. *Definition of the CIDOC Conceptual Reference Model*, version 5.1.2 (2013). Edited by Patrick Le Boeuf, Martin Doerr, Christian Emil Ore, and Stephen Stead, http://www.cidoc-crm.org/docs/cidoc\_crm\_version\_5.1.2.pdf (accessed July 27, 2014).
- Jennings, Judson T. "Presidents Address: Sticking to our Last". *Bulletin of the American Library Association* 18 (1924): 150-156. JSTOR (accessed December 15, 2013).
- MacDonald, George F. and Stephen Alsford. "The Museum as Information Utility". *Museum Management and Curatorship* 10 (1991): 305-311. EBSCO (accessed November 10, 2013).

- MacGregor, Arthur. Curiosity and Enlightenment: Collections and Collections from the Sixteenth to the Nineteenth Century. New Haven and London: Yale University Press, 2007.
- Marty, Paul F. "Information Representation". In *Museum Informatics: People, Information, and Technology in Museums*. Edited by Paul F. Marty and Katherine Burton Jones. New York: Routledge, 2008.
- ---. "An Introduction to Museum Informatics". In *Museum Informatics: People, Information, and Technology in Museums*. Edited by Paul F. Marty and Katherine Burton Jones. New York: Routledge, 2008.
- Marty, Paul F. and W. Boyd Rayward. "Museum Informatics". *Annual Review of Information Science and Technology* 37, no. 1 (2003): 259-294. EBSCO (accessed November 10, 2013).
- McMaster Museum of Art. Hamilton ON. museum.mcmaster.ca/ (accessed June 14, 2015).
- Metropolitan Museum of Art. New York NY. www.metmuseum.org/ (accessed June 14, 2015).
- Museum of Classical Antiquities. University of Ottawa, Ottawa ON. https://arts.uottawa.ca/cla-srs/en/museum (accessed June 14, 2015).
- Museum of Fine Arts, Boston. Boston MA. www.mfa.org/ (accessed June 14, 2015).
- Reeve, John. "Prioritizing Audience Groups". In *The Responsive Museum: Working with Audiences in the Twenty-First Century*. Edited by Caroline Lang, John Reeve, and Vicky Woollard. Aldershot, England; Burlington, VT: Ashgate, 2006.
- Rinehart, Richard and Lanya White. "Challenges to Museum Collaboration: The MOAC Case Study". In *Museum Informatics: People, Information, and Technology in Museums*. Edited by Paul F. Marty and Katherine Burton Jones. New York: Routledge, 2008.
- Roberts, Andrew. "The Changing Role of Information Professionals in Museums". *MDA Information* 5, no. 3 (2001): 15-17. Quoted in *Museums in a Digital Age*. Edited by Ross Parry. New York: Routledge, 2010.
- Royal Ontario Museum. Toronto ON. http://www.rom.on.ca/en (accessed June 14, 2015).
- Sabin, Richard. "Museums and Their Websites: An Examination and Assessment of How Museums are Coping with the Challenge of the World Wide Web". *Journal of Conservation and Museum Studies* 2 (1997): 6-10. DOI: http://dx.doi.org/10.5334/jcms.2972 (accessed November 10, 2013).
- Sarasan, Lenore. "A System for Analysing Museum Documentation". In *Museum Documentation Systems: Developments and Applications*. Edited by Richard B. Light, D. Andrew Roberts, and Jennifer D. Stewart London: Butterworth and Company, 1986.
- Simmons, John E. "Museum Studies Programs in North America". Museum Studies: Perspectives and Innovations. Edited by Stephen L. Williams and Catharine A.

- Hawks. Washington, DC: Society for the Preservation of Natural History Collections, 2007.
- Trzeciak, Jeff. *Transforming Traditional Organizations*. Presentation at Pennsylvania State University (April 8, 2011). Quoted in "This is Not the Future of Librarianship". *Attempting Elegance*. http://www.attemptingelegance.com/?p=1031 (accessed June 14, 2015).
- United States Department of Labor: Bureau of Labor and Statistics. "Curators, Museum Technicians, and Conservators". *Occupational Outlook Handbook*. http://www.bls.gov/ooh/Education-Training- and-Library/Curators-and-museum-technicians.htm#tab-4 (accessed November 13, 2013).
- WG Hardy Collection of Ancient Near Eastern and Classical Antiquities. University of Alberta, Edmonton AB. http://www.historyandclassics.museums.ualberta.ca/WGHardyCollectionOfAncientNearEasternAndClassicalAntiquities.aspx (accessed June 14, 2015).