Abstract:
This research explores the intersection of two subjects, KM practices and the condition of senior librarians working in the largest academic libraries in the United States and Canada. These libraries are members of the Association of Research Libraries (ARL). In order to learn the extent to which KM practices are being deployed in ARL libraries, how ARL demographics and library cultures may be changing, and whether KM practices are helping to support senior librarians, the author created a 42-item questionnaire that covered five topics: library demographics; knowledge management technologies/methods of collaboration; worker satisfaction and engagement; regular mentoring/reverse mentoring; and job restructuring, contract buyout, and exit interviews. The survey received an 18% response rate and its questions are listed at the end in an appendix.

Keywords: knowledge management, academic libraries, librarians, workplace, generations

Introduction
The rise of the internet, the increased role of social knowing in the workplace, new technologies, declining budgets, and changing demographics are compelling library managers to respond with changes in their libraries. Among the changes are leaner organizational structures, the addition of different specialties among library professionals, and better communication patterns and technologies for getting the job done. Knowledge management (KM) practices have become vital to these dynamic libraries but are still poorly understood. These practices utilize both physical schemes and technological aids to facilitate communication and conduct the business of the library. Among the benefits of purposefully cultivating KM practices in libraries are increased participation among all of the library’s participants and harnessed library worker know-how and institutional knowledge.
This research explores the intersection of two subjects, KM practices and the condition of senior librarians working in the largest academic libraries in the United States and Canada. These libraries are members of the Association of Research Libraries (ARL). In order to learn the extent to which KM practices are being deployed in ARL libraries, how ARL demographics and library cultures may be changing, and whether KM practices are helping to support senior librarians, the author created a 42-item questionnaire that covered five topics including library demographics; knowledge management technologies/methods of collaboration; worker satisfaction and engagement; regular mentoring/reverse mentoring; and job restructuring, contract buyout, and exit interviews (See survey questions in the Appendix).

**Methodology**
Because they are North America’s largest, most eminent, well-funded academic research libraries (there are 14 additional non-academic ARL libraries that were not contacted) and often bellwethers for future trends, the author chose to focus this research on evolving KM practices and procedures in ARL libraries. Even among the ARLs, there is substantial variation in resources between the well-funded libraries at the top of the ladder and those clinging to lower rungs. Differences become particularly apparent when picking through the structures on each library’s website to find an executive administrator tasked with KM implementation.

The author opted to email questionnaires personally to each library director in 114 ARL academic libraries as a SurveyMonkey attachment to fill out or forward to the appropriate knowledgeable colleague. About half are filled out by the library director and half by an associate. The survey received a low 18% return rate so the results cannot officially speak for academic ARLs as a whole. However, the respondents who completed the study regard KM and the situation of the senior professionals in the library as important and responded thoughtfully.

**Results: Library Demographics**
The graying of the academic library profession has occurred and baby boomers (born 1943-1964) are retiring, but the shortfall of professional librarians in ARL libraries that Wilder once predicted did not occur (Wilder, 1995, p. viii). Although changing demographics remain a factor in these academic libraries, most have managed to survive budgetary shortfalls and turn disadvantages into strategic opportunities.

After reviewing both the largest ARL library websites and the smallest, the author predicted that smaller ARLs would be more likely to fill out the survey because the directors would be more in touch with all aspects of their businesses if they were smaller in scale and closer in physical location (Question 2, size of library). This certainly was not the case. The question asks whether the respondent’s library falls into an ARL category of small, medium, or large. In the survey, large and medium libraries (with approximately equal numbers of respondents) responded at a higher rate with small ARLs lagging behind.

Regarding budgetary support over the last 10 years (Questions 3 and 4), nearly half of the respondents report that their budgets decreased over the last 10 years, yet slightly over half report that their budgets have increased or at least stayed the same. For those libraries whose budgets changed over the last 10 years, respondents were asked whether the changes were small (<5%), substantial (5-10%), or catastrophic (>10%). Only three libraries reported catastrophic change, with the remainder reporting small or substantial changes in equal
numbers. When asked how libraries responded to budgetary reductions (Question 5), the most frequent response (with one exception) was a reduction in personnel. Leaner operations came in second, a reduction in library collections third, and more creative use of available funding fourth.

Questions regarding staffing levels (Questions 7 and 8) paralleled the previous budget questions. An overwhelming number responded that staffing levels have decreased over the last 10 years, with nearly half reporting small changes (<5%), nearly half substantial changes (5-10%), and a scant few catastrophic changes (>10%). One of the author’s favorite questions, Question 9 asked about the ratio of senior librarians (20+ years’ experience) to junior librarians (>10 years’ experience) at 10 year intervals over 30 years. Because such data would be difficult to obtain without data crunching, many respondents skipped it. Those who responded generally commented that a substantial hiring of junior librarians follows their senior librarian retirements. One respondent reported that in 2017, junior librarians comprise a full 40% of that library’s professionals with a modest number of mid-career librarians with 6-10 years of experience and a handful of senior librarians.

Survey questions for organizational structure issues (Questions 11-14) asked about any organizational change in the last 10 years, the ratio of managers to line professional workers, and the adoption of group working structures in the library environment. Regarding whether the respondent’s library has experienced organizational change in the last 10 years (Question 11), respondents unanimously answered yes. In describing the types of changes (Question 12), a majority of respondents chose a flatter organization, followed by more stratified and diversified, then smaller, then larger. For respondents who chose flatter, they were asked to consider whether the ratio of managers to line workers has changed (Question 13) and a majority agreed that there are fewer managers and more line workers at present. One respondent who chose that the ratio remained constant, explained that although the ratio remains more or less constant, their portfolios and required skillsets have dramatically changed as more sophisticated methodologies are demanded of managers. When asked about group working structures (Question 14), nearly every respondent indicated the adoption of both units/departments AND team structures. Some respondents commented that complex organizations need both traditional departments and teams to target specific topics or to solve specific problems. Other respondents reported that their organizations are evolving away from traditional hierarchical structures but their evolution is as yet incomplete.

Survey questions that explore the types of new professional specialties needed in ARL libraries (Questions 16-18) focused on hiring practices for new professionals. When asked if the number of professional librarians changed in the last 10 years (Question 16), responses were widely varied. Nearly half of the respondents reported that the number of professional librarians roughly stayed the same and that new hires equaled retirements (Question 17). However, when asked if those hired to replace a retiree are of the same specialty (Question 18), respondents unanimously chose that they evaluated each retiring professional’s specialty to determine relevance. Additionally, most indicated that library professionals do not necessarily need to be trained librarians.

**Results: Knowledge Management Technologies/Methods of Collaboration**

This section covered KM technologies in place (blogs/wikis, shared servers, SharePoint/Basecamp/collaboration spaces, Google drive, MS OneNote, and other), physical schemes that might enhance KM (paper documents, oral history, presentations/workshops, teams/groups/Communities of Practice, continuing education), and training resources that
might be available (Questions 20-22). Respondents were queried about the presence or absence of these structures.

When asked whether senior professionals implement or adapt to evolving KM technologies as quickly as their younger colleagues (Question 23), a slight majority responded that senior professionals performed at a slower rate than their younger colleagues. However, many also noted that this response should not be considered as an absolute because individuals vary widely. Some seniors barely understand the technologies and others have written software programs. One respondent wrote that learning new technologies always should be considered an individual response rather than a senior response at all levels of experience.

Paper “procedures manuals” may contain outdated rules (e.g., local protocols for filing into the long-abandoned card catalog) or information about the jewels of the kingdom (e.g., obscure biographical information and lists of gift books from a library’s first donors). The fate of these print resources when an electronic technology takes over is very interesting from a KM standpoint. Did everyone adopt the new version and simply abandon the old? Were such transitions coordinated in ARL libraries? The last question asked respondents whether paper “procedures manuals” were converted to digital formats (Question 24). Respondents who answered “no” or “I don’t know” outnumbered respondents who answered yes, two to one.

**Results: Worker Satisfaction and Engagement**

Elements of library culture – how positive feedback is provided and worker engagement assessed – are covered in this section (Questions 25-28). When asked about methods to assess worker satisfaction (Question 25), most respondents chose annual review meetings, followed by casual inquiries and periodic questionnaires. When asked if in their opinion workers feel valued at work (Question 26), most chose to somewhat agree, agree, or strongly agree; a few chose to neither agree nor disagree and none of the respondents chose to disagree or strongly disagree. Regarding positive feedback (Question 27), casual oral comments were most preferred, followed by annual review ratings, written reviews, pizza breaks/coffees/lunches, and “employee of the month designations.” When asked about methods to assess worker engagement and working with those who are less engaged (Question 28), the top response was annual review documentation and ratings followed by working with HR, then by providing continuing education to address problems. The last question asked for three words to describe their library culture (Question 29). Responses varied widely. The three seen most often were “evolving,” “innovative,” and “flexible/adaptive.”

**Results: Regular Mentoring/Reverse Mentoring**

Questions 31-34 cover needs for mentoring either through a program or by individual case. Although nearly every library has a mentoring program for new employees (Question 31), only one has a mentoring program for underperforming or nonperforming employees (Question 32). The rest report that each case is handled individually.

When asked if the library has a reverse-mentoring program or if reverse-mentoring is provided to underperforming or nonperforming senior professional staff (Question 33), every respondent answered no, but these same respondents answered that they would be willing to consider a reverse-mentoring scenario (by answering maybe or yes) in the right situation (Question 34). One administrator reported having both an onboarding process for new employees and a structured group-mentoring program mandatory for senior librarians.
Results: Job Restructuring, Contract Buyouts, Exit Interviews

In the last section, options of job restructuring, contract buyouts, and exit interviews are considered for senior professional librarians in ARL libraries (Questions 36-41). Most respondents report that senior professionals have experienced job restructuring in their libraries (Question 36) and add (in all but three cases) that the job restructuring has been necessitated by a changing library environment rather than at the request of the employee (Question 37). Two respondents thought that both situations could contribute to job restructuring for a senior employee and another clarified that job restructuring can arise through employee strengths, employee requests, or changing environments. Contract buyouts are available in 40% of those ARL libraries polled (Question 38); however, when asked whether it was commonplace to have senior librarians take advantage of these offers (Question 39), respondents universally answered no. Regarding offering an opportunity for an employee exit interviews (Question 40), nearly all respondents reported affirmatively. However, when asked what percentage of retiring librarians actually participate in an exit interview (Question 41), respondents have varying answers. Although quite a few answered 90%, other answers were not as positive (10%, 20%, 30%, or 40%).

Summary, Discussion, and Future Plan

In order to explore the extent to which KM practices are being deployed in ARL libraries, how ARL demographics and library cultures may be changing, and whether KM practices are supporting the senior librarians in these libraries, the study’s broad 42-item questionnaire covered library demographics; knowledge management technologies/methods of collaboration; worker satisfaction and engagement; regular mentoring/reverse mentoring; and job restructuring, contract buyout, and exit interviews. The author included a general explanation of knowledge management as both the physical schemes and technological aids utilized to facilitate communication and conduct the business of the library to ensure that administrators unfamiliar with the concept would be able to make sense of the questions. As a definition of KM, the author prefers the definition by Sarrafzadeh, Martin, & Hazeri (2006) as reported by Daland (2016, p.33) “The creation and subsequent management of an environment which encourages knowledge to be created, shared, learnt, enhanced, and organized for the benefit of the organization and its customers.” The idea to promote positive knowledge management practices among senior staff through software and technological aids was proposed in a popular guide by Forrestal (2015, p. 4).

In these dynamic environments, changing demographics (budgetary support, staffing levels), changing needs (more diverse specialties, more sophisticated skillsets), and new ways of organizing (flatter, fewer managers, and group working structures) are helping to transform these organizations and shape a new look and feel. There is no doubt that KM practices are being deployed in ARL libraries to facilitate these changes, however strategic or purposeful this deployment may (or may not) be and that KM practices and technologies can support senior employees. Although it is beyond the scope of this study to ascertain whether KM practices effectively support senior professional employees, this study did reveal the existence of one group-mentoring program for senior staff, a rarity among the libraries polled. This group-mentoring program stands alone as the only organized KM practice for senior professional staff reported. Aside from this program, this study suggests that thoughtful administrators and a strong human resources (HR) department can serve senior professional staff equally well.
In this study, the 21 respondents might be described by three qualities—strategic (in their planning), committed (to their organizations), and considerate (to employees)—qualities that may be evidenced by their responses to four questions in the survey that each respondent answered unanimously. To question 11, “Has your organizational structure changed in the last 10 years?” respondents unanimously answered yes. To question 18, “Are you re-hiring the same professional specialties or have the specialties changed?” every respondent answered, “Evaluate each retirement to determine relevancy.” To question 33, “Does your library have a reverse-mentoring program or does reverse-mentoring occur for underperforming or nonperforming staff?” respondents unanimously answered no (although they might consider if it was the best response to a situation). Finally, to question 39 concerning contract buyouts, “If yes, is it commonplace to have senior librarians take advantage of these offers?” respondents universally answered no. In their answers, administrators advocate recognizing the humanity of every employee. One respondent reflected that there are no “senior” responses or experiences, all employee behaviors are considered “individual” instead.

Although this study is not definitive given a response rate of 18%, it generated considerable interest in KM among ARL library administrators. The author feels that the survey probes relevant issues that deserve further consideration and intends to propose another more general KM survey be circulated under the auspices of ARL in order to attract a wider audience. In anticipation of this future work, the author encourages reader comments that will improve the study.

Acknowledgement
The author thanks the administrators from the 21 ARL libraries that responded to this survey.

References

Appendix
1. Please list the job title of person filling out form: ________________________________
2. What is the size of your ARL library?
   ○ Small. ○ Medium. ○ Large.
3. Has your library’s budget changed in the last 10 years?
   ○ Increased. ○ Remained constant. ○ Decreased.
4. If it has increased or decreased, are the changes
   ○ Small (<5% overall). ○ Substantial (5-10% overall). ○ Catastrophic (>10% overall).
5. Did your library respond by doing any of the following?
   ○ Reduction in collections. ○ Increase in collections.
   ○ Reduction in personnel. ○ Increase in personnel.
   ○ More creative uses of the available funding.
6. Would you care to comment (comment box)?
7. How has your staffing level changed in the last 10 years?
   ○ Increased. ○ Remained constant. ○ Decreased.
8. If your staffing level has increased or decreased, are the changes
   ○ Small (<5% overall). ○ Substantial (5-10% overall). ○ Catastrophic (>10%
   overall).
9. Has the ratio of senior librarians (20+years in profession) to their junior colleagues
   (>10 years in profession) changed in the last 30 years (note percentages of senior
   librarians in '97, '07, '17)?
10. Care to comment further about staffing level changes (comment box)?
11. Has your organizational structure changed in the last 10 years?
    ○ Yes. ○ No.
12. If yes, how has your organization changed?
    ○ Smaller. ○ Flatter.
    ○ Larger. ○ Stratified, diversified.
    ○ Other.
13. If your library has become flatter and more streamlined, has the ratio of managers to
    line workers changed?
    ○ Yes, fewer managers and more line workers.
    ○ Yes, more managers supervising fewer employees.
    ○ No, numbers have remained constant.
    ○ Yes, but the ratio has changed in another way.
14. Has your library organization adopted any working group structures (e.g., working
    groups, teams, communities of practice)?
    ○ No, we have a traditional unit/departmental structure.
    ○ Yes, we have units/departments AND some team structures.
    ○ Yes, we are totally comprised of collaborative teams working together.
    ○ Other.
15. Would you care to comment about your organizational structure (comment box)?
16. Has the number of professional librarians in your organization changed in the last 10
    years?
    ○ Yes, we have increased the number of librarians on staff.
    ○ Yes, we have decreased the number of librarians on staff.
    ○ No, the number of librarians on staff has remained constant.
    ○ Other.
17. Has the number of new hires been roughly the same as your retirements in the last 10
    years?
    ○ Number of hires transcend retirements.
    ○ Number of hires roughly equals retirements.
    ○ Number of hires is less than retirements.
18. Are you re-hiring the same professional specialties or have the specialties changed?
    ○ Replace the specialty with the same specialty.
    ○ Evaluate each retirement to determine relevancy.
    ○ Replace with entry-level MLIS professional.
    ○ Don’t think professionals should be trained librarians.
    ○ Hire from a compiled wish list of professional to support technologies/services.
19. Would you care to comment about any of these personnel issues (comment box)?
20. Have any of the following technologies enhanced your library’s knowledge management capabilities or strategies?
  - Blogs/Wikis.
  - Shared servers.
  - SharePoint/Basecamp/Collaborative space.
  - Google drive.
  - MS OneNote.
  - Other.

21. Have any of the following physical schemes enhanced your library’s knowledge management capabilities or strategies?
  - Paper documents.
  - Oral history.
  - Presentations/Workshops.
  - Teams/Groups/Communities of Practice.
  - Continuing education.

22. What sorts of training resources do you have for these KM technologies?
  - Online help.
  - Knowledgeable colleague one-on-one help.
  - Smart colleagues hold workshops.
  - Continuing education outside the library.
  - Not much.
  - Other.

23. To what extent do your senior professionals (20+ years) implement or adapt to these KM technologies?
  - Same rate as junior colleagues.
  - Faster rate than junior colleagues.
  - Slower rate than junior colleagues.
  - I don’t know.

24. Have all the paper “procedures manuals” been converted to electronic formats in your library?
  - Yes.
  - No.
  - I don’t know.

25. Has your library a way to assess worker satisfaction?
  - Periodic employee satisfaction questionnaires.
  - Casual inquiries.
  - Annual review meetings.
  - None.
  - Suggestion boxes.
  - Other.

26. Would you agree that your employees feel valued at work?
  - Strongly agree.
  - Agree.
  - Somewhat agree.
  - Neither agree nor disagree.
  - Disagree.
  - Strongly Disagree

27. What kinds of positive feedback do your employees receive regularly about their work?
  - Periodic written reviews.
  - Pizza luncheons/coffee/lunches.
  - Annual review documentation and ratings.
  - None.
  - Casual aural comments (attaboys/attagirls).
  - Other.
  - “Employee of the month” designation.

28. Does your library have a way for assessing worker engagement and working with the less engaged?
  - Employee self-disclosure.
  - Work with HR.
  - Casual co-worker feedback.
  - Continuing education to address problems.
  - Missed deadlines or nonperformance.
  - Mentoring program with a manager.
  - Annual review documentation/meeting.
  - Mentoring program with a peer.
  - Other.

29. If you had to sum up your organizational culture in three words, they would be:

30. Would you care to comment about any of these questions (comment box)?

31. Does your library have a mentoring program for new employees?
  - Yes, a mandatory program for all new employees.
  - Yes, but program is voluntary and employees can opt out.
  - No, we introduce employees in other ways.
32. Does your library have a mentoring program for under-performing or nonperforming employees?
   ○ Yes, we have a mentoring program for these employees.
   ○ No, we have never had a need for such a program.
   ○ No, we handle each of these cases individually.
   ○ Other.

33. Does your library have a reverse-mentoring program or does reverse-mentoring occur for under-performing or nonperforming senior staff?
   ○ Yes. ○ No. ○ Other.

34. Would you consider a reverse mentoring scenario if a situation presented itself?
   ○ Yes. ○ Maybe. ○ No.

35. Would you care to comment regarding these mentoring or reverse-mentoring questions?

36. Have job restructurings for senior professionals been a factor at your library?
   ○ Yes. ○ No. ○ Other.

37. If yes, have they arisen at the request of the employee or necessitated by the library?
   ○ Arisen at employee request. ○ Necessitated by library. ○ Other.

38. Are contract buyouts available for the senior professionals at your library?
   ○ Yes. ○ No.

39. If yes, is it commonplace to have senior librarians take advantage of these offers?
   ○ Yes. ○ No.

40. Does your library offer the opportunity to do exit interviews?
   ○ Yes. ○ No. ○ Other.

41. What percentage of retiring librarians participates in an exit interview?

42. If you have any further comments or questions for me (comment box).