

Re-Envisioning the MLS: Findings, Issues, and Considerations



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August 1, 2015

Acknowledgements

We would like to extend a special thank you to the University of Maryland [iSchool](#) for its leadership and support of the *Re-Envisioning the MLS* initiative – and for its willingness to let the MLS program explore a Re-Envisioned MLS.

We also thank the Information Policy & Access Center ([iPAC](#)) for its sponsorship of the *Re-Envisioning the MLS* initiative, in particular its support for the engagement events and speakers series. In addition, we are grateful to the many people and organizations that made this report and the first year of the Re-Envisioning process possible including: the MLS Advisory Board members; iSchool faculty and staff; all of our speakers, session leaders, and focus group participants; the DC Public Library; the Maryland Association of Public Library Administrators; the Maryland Library Association; the Maryland State Department of Education; Maryland State Library Resource Center, Maryland Regional Libraries, and the American Library Association. We'd also like to thank the following individuals for their help in this process: Sari Feldman, John Venditta, Mary Baykan, Sharan Marshall, Wesley Wilson, Irene Padilla, Miguel Figueroa, Larra Clark, Mega Subramaniam, Paul Jaeger, Anne Ledford, Erin Zerhusen and Tyler Vachon.

Finally, thank those who offered feedback and input throughout our first year of engagement and look forward to your comments as we move forward.

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Table of Contents

Acknowledgements.....	i
About the Authors.....	ii
Executive Summary.....	iv
Introduction.....	1
Our Approach.....	2
Key Findings.....	2
<i>The Shift in Focus to People and Communities</i>	3
<i>Core Values Remain Essential</i>	3
<i>Competencies for Future Information Professionals</i>	4
<i>The Elephant in the Room: Is an MLS Still Relevant or Necessary?</i>	5
<i>Opportunity for All, Access for All, or Something Else?</i>	6
<i>Social Innovation and Change</i>	7
<i>Working with Data and Engaging in Assessment</i>	8
<i>Knowing and Leveraging the Community</i>	9
<i>Learning, Learning Sciences, Education, and Youth</i>	9
<i>Digital Assets and Archival Thinking</i>	10
Implications and Discussion.....	11
<i>Attributes of Successful Information Professionals</i>	11
<i>Ensure a Balance of Competencies and Abilities</i>	12
<i>Leverage Location, But Diversity</i>	14
<i>Re-Thinking the MLS Begins with Recruitment</i>	14
<i>Be Disruptive, Savvy, and Fearless</i>	14
Next Steps.....	15
A Call to Action.....	15
Appendix A: Mission of the iSchool Advisory Board and 2014-2017 MLS Advisory Board Members.....	18
Appendix B: Re-Envisioning the MLS Speaker Series Information.....	21
Appendix C: Re-Envisioning the MLS Engagement Sessions.....	27
Appendix D: Stakeholder/Community Discussions.....	31
Appendix E: Articles and Blog Posts.....	33
Appendix F: Research and Environmental Scanning.....	36
Appendix G: Re-Envisioning the MLS White Paper.....	38

Executive Summary

The last several years have been marked by a number of societal challenges and changes that include the evolving nature of our economy; the workforce skills needed to succeed in a shifting job market; advances in technology; the changing nature of information; transformations in education and learning approaches; and rapid demographic shifts occurring in our communities (ALA, 2014). As we consider the future of our information organizations such as libraries, archives, and museums, we need to simultaneously focus on the future of the Master of Library Science (MLS) degree (and its variants) and how we prepare information professionals for their careers.

The opportunity to rethink MLS education led the University of Maryland's [iSchool](#) and Information Policy & Access Center ([iPAC](#)) to launch the *Re-Envisioning the MLS* initiative in August 2014 to seek answers to the following questions:

- What is the value of an MLS degree?
- What does the future MLS degree look like?
- What should the future MLS degree look like?
- What are the competencies, attitudes, and abilities that future library and information professionals need?
- What distinguishes the Maryland iSchool's MLS program from other MLS programs?
- What distinguishes the Maryland iSchool's MLS program graduates from other MLS program graduates?

The *Re-Envisioning the MLS* initiative involved multiple activities that included the creation of the MLS Program's inaugural Advisory Board; a speaker's series; engagement sessions; stakeholder/community discussions; blog entries to document findings and promote further discussion; the development of a white paper for discussion purposes; and environmental scanning and research.

Key Findings

The below summarizes selected key findings based on the activities described above.

- **The Shift in Focus to People and Communities.** A significant shift that has occurred in information organizations. The shift de-emphasizes the physical collections (to include digital content) to focus more on individuals and the communities that they serve, in particular how institutions can facilitate community and individual change and transformation through learning, making, content creation, and other forms of active and interactive engagement.
- **Core Values Remain Essential.** Participants articulated a core set of values that are fundamental to the MLS degree and information professionals that included ensuring access, equity, intellectual freedom, privacy, inclusion human rights, learning, social justice, preservation and heritage, open government, and civic engagement.
- **Competencies for Future Information Professionals.** Information professionals need to have a set of core competencies that include (among others) the ability to lead

and manage projects and people; to facilitate learning and education either through direct instruction or other interactions; to work with, and train others to use, a variety of technologies. Additionally, information professionals need marketing and advocacy skills; strong public speaking and written communication skills; a strong desire to work with the public; problem-solving and the ability to think and adapt instantaneously; knowledge of the principles and applications of fundraising, budgeting, and policymaking; and relationship building among staff, patrons, community partners, and funders.

- **The MLS May Not Be Relevant/Necessary in All Cases.** There is an increasing acknowledgement that those with other degrees (e.g., Instructional Design/Education; Design; Social Work; Public Health; Analytics; IT/IS; Human Resources Management) and skills might meet various needs better and that our information organizations should be open to those with a range of degrees other than the MLS.
- **Access for All.** The tension between the growing societal gaps (income and other), a shrinking public sphere and social safety net, wanting to help those with acute needs, not having the resources or skills to, and questioning whether this is an appropriate role for information organizations and professionals was a recurring theme throughout the *Re-Envisioning the MLS* process.
- **Social Innovation and Change.** By forming partnerships, information organizations are essential catalysts for creative solutions to community challenges in a wide range of areas such as health, education and learning, economic development, poverty and hunger, civic engagement, preservation and cultural heritage, and research innovation.
- **Working with Data and Engaging in Assessment.** The data role for information professionals is at least three-fold: 1) helping the communities that they serve engage in a range of data-based activities; 2) helping communities leverage data to better understand their communities, community needs, and develop solutions to community challenges; and 3) using data to demonstrate the contributions of their libraries, archives, etc., to the community(ies) that they serve.
- **Knowing and Leveraging the Community.** There is a need for information professionals who can fully identify the different populations and needs of the communities that they serve, their challenges, and underlying opportunities. Additionally, our communities can serve as an extension of an information organization's services and resources. By leveraging the community's human resources, we can further enhance learning, education, expertise, and innovation.
- **Learning/Learning Sciences, Education, and Youth.** Information organizations have a particular opportunity to foster learning by attending to an individual's particular interests, needs, and educational goals. An opportunity exists in focusing on youth learning – including pre-k and “readiness to read”, working with youth in schools, enhancing the understanding of primary data/information sources including archival materials, facilitating learning in libraries through making, STEAM (Science, Technology, Engineering, Arts, and Math), coding, and a range of other activities.
- **Digital Assets and Archival Thinking.** The emergence of “smart communities” that are reliant on Big Data from sensors, open data, and other data sources; the wealth of individual data/information generated by Internet-enabled devices, social media, and continual content creation by individuals and communities has created massive amounts of digital content that requires individuals, organizations, communities, and institutions to curate and manage their digital assets and digital identities. Information professionals

and organizations will play an increased role helping these constituents understand, manage, and preserve the digital assets/information they are creating.

These findings have a number of implications for MLS education, selectively summarized below:

- **Attributes of Successful Information Professionals.** The findings indicate that successful information professionals are not those who wish to seek a quiet refuge out of the public's view. They need to be collaborative, problem solvers, creative, socially innovative, flexible and adaptable, and have a strong desire to work with the public.
- **Ensure a Balance of Competencies and Abilities.** The debate between MLS programs needing to produce graduates with a "toolkit" of competencies versus providing graduates with a conceptual foundation that will enable them to grow and adapt over time evidenced itself throughout the *Re-Envisioning the MLS* process. Further interjected into this debate was the notion of "aptitude" (specific skills) versus "attitude" ("can do," "change agent," "public service"). Any MLS curriculum needs to balance aptitude with attitude.
- **Re-Thinking the MLS Begins with Recruitment.** Neither a love of books or libraries is enough for the next generation of information professionals. Instead they must thrive on change, embrace public service, and seek challenges that require creative solutions. MLS programs must seek and recruit students who reflect these attributes.
- **Be Disruptive, Savvy, and Fearless.** Through creativity, collaboration, and entrepreneurship, information professionals have the opportunity to disrupt current approaches and practices to existing social challenges. The future belongs to those who are able to apply critical thinking skills and creativity to better understanding the communities they serve today and will serve 5-10 years down the road – and those who are bold, fearless, willing to take risks, go "big," and go against convention.

Though these implications focus on MLS programs and curriculum, the *Re-Envisioning the MLS* initiative also identified that employers need to change their hiring practices, culture, and operations. Those organizations seeking change agents and innovators cannot exclude recent graduates through competency and experience requirements that disqualify recent MLS program graduates – nor can they incorporate "game changers" into organizations with an archaic "we've always done it that way" culture and set of practices. Change in information organizations and MLS curriculum go hand in hand and needs to occur simultaneously.

A Call to Action

While the University of Maryland's iSchool set out to *Re-Envision* its MLS program, the findings from the initiative have implications for the larger MLS education, professional, and research communities. Working with a number of key constituencies and stakeholders, there is a need to hold a national summit on Library and Information Science education. The changing information, technology, policy, higher education, and professional contexts in which these programs operate – and the evolving nature of the organizations and communities that they serve – has provided a unique opportunity to consider the vision and purpose(s) of not just the University of Maryland's MLS program, but MLS programs in general. We need and intend to seize on this opportunity.

Introduction

The last several years have been marked by a number of societal challenges and changes that include, but are not limited to, the evolving nature of our economy; the workforce skills needed to succeed in a shifting job market; advances in technology; the changing nature of information; transformations in education and learning approaches; and rapid demographic shifts occurring in our communities (ALA, 2014). Any one of these challenges can have a significant impact on individuals, communities, and institutions. Collectively, however, the shifts are seismic and impact how we learn, engage, work, and succeed moving forward.

Higher education and information organizations such as libraries, archives, and museums, are not immune to our changing social, economic, technology, demography, community, and information landscapes. There is much discussion, for example, regarding the future of libraries (Worstell, 2014; Smith, 2012; Garmer, 2014), as well as the future of higher education (Setser & Morris, 2015; Ebersole, 2014). As we consider the future of our information organizations and institutions of higher learning, we need to simultaneously focus on our instructional programs in general and the Master of Library Science (MLS) degree (and its variants) program in particular. If we are concerned about the future of our information organizations and higher education institutions, then surely we should be concerned about the future of information professionals – librarians, archivists, and others – and how we prepare them for their careers.

In August 2014, the University of Maryland's [iSchool](#) and Information Policy & Access Center ([iPAC](#)) launched the *Re-Envisioning the MLS* initiative to seek answers to the following questions:

- What is the value of an MLS degree?
- What does the future MLS degree look like?
- What should the future MLS degree look like?
- What are the competencies, attitudes, and abilities that future library and information professionals need?
- What distinguishes the Maryland iSchool's MLS program from other MLS programs?
- What distinguishes the Maryland iSchool's MLS program graduates from other MLS program graduates?

As designed, the *Re-Envisioning the MLS* initiative is a three-year undertaking that involves:

- **Year 1:** community and stakeholder engagement, discussion, and thought-leader presentations;
- **Year 2:** review of findings, implication, curriculum design, and community and stakeholder engagement;
- **Year 3:** operationalization and implementation of a re-envisioned MLS.

In short, the effort is looking four years out – and beyond.

Our Approach

The *Re-Envisioning the MLS* initiative involved multiple activities that included:

- The creation of and active engagement with the MLS Program’s inaugural Advisory Board (see Appendix A for the Advisory Board’s mission and members).
- A speaker’s series, which brought in influential members of the information community who provided thought-provoking views on trends, current and future issues, and challenges and opportunities in our field (see Appendix B for speaker bios, presentation abstracts, and link information to presentation archives).
- Engagement sessions, which were dialogues between students, staff, faculty, and the broader public about selected topics for consideration in relationship to MLS programs (see Appendix C for session leader bios, session descriptions, and link information to session archives).
- Stakeholder/community discussions, which included numerous regional visits throughout Maryland, discussion sessions with the Maryland Association of Public Library Administrators (MAPLA), attendees of the 2015 Maryland Library Association conference, the Division of Library Development and Services (Maryland’s state library agency), the State Library Resource Center (Maryland’s State Library), the Library for the Blind and Physically Handicapped (LBPH), and regional libraries throughout the state to engage information professionals from around the state in this dialogue (see Appendix D for a description of the discussions).
- Blog entries, which documented progress, summarized presentations, and offered insights based on what we had learned along the way (see Appendix E for a listing of the blog entries and links to them).
- Environmental scanning and research, which included reviewing key studies, analysis, data, and reports – particularly those focused on the future of information professions and information organizations such as libraries, archives, and museums (see Appendix F for a summary of those activities and documents).
- The development of a white paper, which identified key issues, trends, and developments and their potential impact on information organizations and professionals (See Appendix G for a full copy of the initial white paper).

The following section offers a selective set of findings based on these activities. They offer insights into short- and long-term trends that can have an impact on the future development of MLS curriculum design and implementation.

Key Findings

The below findings, based on the activities described above, are presented thematically using an integrative approach to better identify essential issues, challenges, and future directions. Although any one type of information organization (e.g., public library, academic library, archive, etc.) might be impacted differently by the below findings, the findings are presented in the aggregate for discussion purposes.

The Shift in Focus to People and Communities

In recent years, a great amount of discussion, writing, and articulation of the “big shift” in libraries, archives, museums and other information organizations has been dominated by digital technologies and content – mobile; broadband; public access technologies; digital resources such as ebooks and licensed resources; building national digital platforms; streaming content; content creation; and more. One cannot deny the impact of digital technologies and content on information organizations. But another significant shift that has occurred over the past decade is a shift in focus for libraries, archives, and other information organizations from their holdings to the individuals and communities that they serve.

While the Library and Information Science academic discipline has included a user-centered design approach for information resource and service development as part of the curriculum for decades, it has often occurred within the confines of library-defined roles, services, organizational schemes, and approaches – or what we might consider library-centric user design based on a set of pre-determined standards, services, and operations. The shift articulated as part of the *Re-Envisioning the MLS* initiative is more fundamental, and involves actively meeting user needs at the point of need (just-in-time) to enable the meaningful transformation of the individual rather than through passive interactions with existing holdings (just-in-case) that focus on the provision of information without determining if the individual can actually use the information to meet his/her needs.

An example might be an individual who comes into a library with a life issue such as a need to access to food, social services, and/or health insurance. A passive approach with existing material (transactional) might include providing information on local sources of food, health information through various licensed resources, or providing contact information for social services. A proactive approach would be, perhaps through established partnerships, having on-premise social services, public health specialists, interactive STEAM-based (Science, Technology, Engineering, Arts, and Math)¹ makerspaces, and other more interactive and immersive services that facilitate the transformation (learning, skills, meeting the life need) of the individual.

This does not mean that the holdings of any institution are not significant and/or valuable resources. Rather, the shift de-emphasizes collections to focus more on how institutions can facilitate community and individual change and transformation through learning, education, making, content creation, and other forms of active and interactive engagement with an organization’s communities and individuals.

Core Values Remain Essential

Participants articulated a set of values that are fundamental to the MLS degree and information professionals. These included (order is not a reflection of importance):

- **Access** - ability to access information freely and in a manner suited to an individual’s needs and abilities.

¹ Note that some now include Reading – STREAM – in this paradigm

- **Equity** - access to information and resources regardless of the information professional or user's beliefs, race, ethnicity, gender-identity, sexual orientation, socio-economic status, or abilities.
- **Intellectual Freedom** - free and open access to information without censorship or restrictions.
- **Privacy** - ensuring the confidentiality of user and staff personal information as well as the information and resources they seek, use, transfer, etc.
- **Community** - seeking to understand and serve the needs of the specific community being served while maintaining the values of access, equity, intellectual freedom, and privacy.
- **Inclusion** - providing information services at all ability levels and regardless of those factors outlined in the value equity.
- **Human Rights** - supporting and promoting human rights directly and indirectly by equipping community members with the skills and resources necessary to pursue greater equality in a variety of arenas.
- **Social Justice** - providing free equitable access to information that promotes the user's ability to gain equal economic, political, and social rights.
- **Learning and Education** - providing instruction and educational resources that promote education and meaningful learning in an inclusive and equitable manner.
- **Preservation and Heritage** - providing current and future access to records, both analog and digital. Embedded in this is the need to safeguard against inequitable or privileged selection or destruction of materials based on prejudiced, privilege, or inequitable biases or assumptions.
- **Open Government** - ensuring transparency, public access to, and participation in the creation of government information.
- **Civic Engagement** - providing access and meaningful learning opportunities that foster participation in issues or processes affecting the community served.

Participants indicated that the infusing and imparting of these values is unique to the MLS and should not be lost as the MLS degree evolves.

Competencies for Future Information Professionals

Participants indicated that MLS programs must, at a minimum, provide its graduates with the following competencies through coursework, application, and practice. The competencies identified are highlighted by selected quotes from participants during the data gathering process:

- Ability to lead and manage projects and people, even if graduates do not intend to become a supervisor, director, or manager.
 - *“If I could tell someone going into librarianship one thing it would be: expect to be a manager; you’re going to end up managing whether you want to or not.” -Librarian*
- Ability to facilitate learning and education either through direct instruction or other interactions.
 - *“I want my staff to be facilitators.” -Public Library Director*
- Ability to work with, and train others to use, a variety of technologies.

- “Staff need to be both up on the latest technologies and be able to help individuals use those technologies” -Academic Library Director
- Marketing and advocacy skills.
 - “...marketing ‘writ-large’ not just to other librarians or the users we have...”-Librarian
- Strong public speaking and written communication skills.
 - “No more people who only want to hide in the stacks.” -Public Librarian
- Strong desire to work with the public in general and a wide range of service populations in particular.
 - “We have to be dynamic ‘people-persons,” and be comfortable with a BROAD spectrum of people.” -Library Staff
- Problem-solving and the ability to think and adapt instantaneously.
 - “I want a risk-taker. It doesn’t have to be perfect to get started.” -Library Manager
- Knowledge of crisis management techniques and social services training.
 - “You never know what you’re going to encounter, and you need to train your students to ‘expect the unexpected’ and be prepared for it.” - Director
- Knowledge of the principles and applications of fundraising, budgeting, and policymaking skills.
 - “As a director I had to go back to school to learn finance, budgeting, fundraising, the policymaking process, etc...” -Director
- Relationship building among staff, patrons, community partners, and funders.
 - “We don’t have to, nor can we, do everything. What we can do is partner with others who can help us achieve our goals and the goals of the community.” -Librarian
- Documentation and assessment of programs.
 - “Just like schools we have to be able to show funders their return on investments.” -Youth Librarian

These competencies, further detailed in *Discussion and Implications* section of the report, emphasize three underlying aspects of MLS education: people, technology, and information – but expand to include knowledge of organizations, management, leadership, policy, collaboration, communication, communities, and data. Simply put, graduates need to understand – and be comfortable with – the broader ecosystem in which they provide information services and resources.

The Elephant in the Room: Is an MLS Still Relevant or Necessary?

With the changing nature of libraries, archives, and other information organizations – and their roles in the communities that they serve – the inevitable question of whether an MLS is still relevant or necessary arose throughout the entire *Re-Envisioning the MLS* process. Discussions of this topic were both passionate and conflicted. The following summary attempts to capture the various expressions on both sides of the debate:

- There was a sense that an MLS is not required – nor perhaps desirable – for all aspects of library work. For example, having human resources, business managers, communications staff, information technology staff, Web designers, and other operations staffed by those with expertise and relevant degrees was preferable.

- Most participants indicated the need for MLS-holding individuals for leadership positions in libraries. An MLS imparted not just skills and an understanding of librarianship and the information professions, but also core values such as intellectual freedom, privacy, access, equity/social justice, open government/civic participation, and learning.
- Some indicated that an MLS wasn't sufficient, and perhaps was best pursued in addition to other advanced degrees such as public policy, public administration, business administration, analytics, education, social work, and other fields.
- Some indicated that the field needs to look more broadly than an MLS and seek those with:
 - Education and/or instructional design degrees for digital readiness, literacy and instructional activities;
 - Design degrees for "making" and creative activities;
 - Social work for increasingly social service-related services;
 - Public health for a range of health information-related initiatives;
 - Analytics for "smart community," hacking, coding, and other data-related initiatives.
- Some insisted that the MLS was essential, and that the degree was not just about skills, foundations, and principles, but also signified the importance of the library and information professions and individuals with the degree as professionals.
- Others indicated that what makes successful information professionals was less about aptitude (which could be taught) and more about attitude, particularly those who wanted to engage the public, were outgoing, innovative, creative, and adaptable.
- Those in rural and small public libraries indicated that MLS-holding professional librarians, due to pay scales and other constraints, would never be a majority of their workforce and thus they actively engage in a range of paraprofessional recruitment and training.

The varied views were not a surprise. What was a surprise, however, was the open and candid debate around the need for an MLS "no matter what." There is an increasing acknowledgement that those with other degrees and skills might meet various needs better and that our information organizations should be open to those with a range of degrees other than the MLS. Thus the key question that emerged was: what makes the future MLS *valuable* and *valued*?

Opportunity for All, Access for All, or Something Else?

Though our information organizations have long stood for, and information professionals value, social justice and equity of access, the growing "gaps" (income, education, literacy, employment/employability), combined with the erosion of a public sphere that provides robust social and other services to assist those in need is impacting and challenging the ability of information organizations to respond in ways that meet the needs of a range of underserved populations. This creates numerous tensions, articulated in part below:

- Information professionals want to serve those in need, but feel ill-equipped to deal with the numerous challenges that individuals often face – including mental health, physical health, law enforcement, language, family challenges, and other challenges that may require addressing before information professionals can offer assistance.

- Information professionals often still focus on the information transaction and need as they were trained to do, while the individuals seek a more immersive and transformative experience (e.g., successfully attaining health insurance, pursuing educational goals, successfully attaining access to food and shelter, getting a job, etc.). The ability of information professionals to meet these often time consuming life needs, while also trying to serve others, is a large challenge.
- The demands of the increasing number of those in substantial need – or lacking in skills and abilities for success in the 21st Century – is constraining resources and services to the broader community. Some indicated their concern that service to the un- and underserved, though a core value to the information professions and organizations, is impacting who uses – or is willing to use – the available services, resources, and facilities.
- The growing disparities in income, opportunities, and education manifest early (e.g., pre-k, in schools), can continue into adulthood, and are witnessed in a range of ways in information organizations – for example, literacies (basic, information, civic), digital readiness, workforce skills. The cycle is exceedingly difficult to break, and is a constant presence in the provision of information services and resources as information professionals seek to “meet users where they are.”

The tension between the growing gaps, wanting to help those with acute needs, not having the resources or skills to, and questioning whether this is an appropriate role for information organizations and professionals was a recurring theme. Further, an emergent topic, rather ironically, was whether in the name of inclusion, focusing efforts substantially on challenged populations has lead other populations who were once frequent library users (e.g., families with young children, children/young adults who might otherwise use a library after school) to stop coming to or at least limiting their use of the physical library space. Even with these tensions, the prevailing sentiment from information professionals was “If not the library, then who?”

Social Innovation and Change

A common theme that emerged through the *Re-Envisioning the MLS* initiative was a vision of information professionals and organizations as community change agents that can roughly be expressed as:

Strong [insert your preferred information organization here] empower their communities and enable individual change, growth, and transformation.

Though expressed in a variety of ways, participants offered a number of terms as part of this vision: innovators, entrepreneurs, disrupters, change agents, facilitators, partners, and leaders, to name some. After some discussion and expansion, participants described a vision for cultural institutions and information professionals as critical leaders of social innovation in their communities (Phills, Deiglmeier, & Miller, 2008):

A novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals.

By forming partnerships, for example, with health care providers, government agencies, workforce development agencies, food service agencies, faculty, research centers, telecommunications carriers, utility companies, schools, local businesses, and more, information organizations are essential catalysts for creative solutions to community challenges in a wide range of areas such as health, education and learning, economic development, poverty and hunger, civic engagement, preservation and cultural heritage, and research innovation. By leveraging trust, expertise, infrastructure, information resources, space, community centrality, cultural awareness, an appreciation of and for diversity, and other assets, information organizations and professionals are the “lubricant” in their communities for innovation, entrepreneurship, and creativity. Engaging in social innovation activities also enables our organizations to provide opportunity for all in ways that they (nor any other entity) could not do on their own.

Working with Data and Engaging in Assessment

The emergence of the “data librarian,” “assessment librarian,” or other forms of information professionals who are facile with data was noted throughout the initiative. Not unlike non-profits, government agencies, or other entities that work in the public sphere, information organizations are required to demonstrate their value to the communities that they serve, return on investment, contributions to social and community challenges, and/or contributions to the mission of their larger organization such as learning and research innovation/funding on a campus.

This value demonstration coincides with the shift discussed above – “people, not stuff” – and marks a substantial change from counting items (collection size) and use (circulation) to impact, benefit, and change on the individuals and communities that cultural institutions serve. This shift requires information professionals who can:

- Work with a wide range of institutional (vendor statistics, ILL data, Web logs, researcher-generated data) and/or open datasets (Census, Health, Environmental, Labor, etc.).
- Engage in multiple data analysis techniques (parametric, non-parametric, qualitative).
- Create data visualizations.
- Code, program, “clean up,” mashup, and otherwise prepare datasets for analysis and visualization purposes.
- Manage data assets and understand digital curation techniques to ensure availability, access, and use of datasets in the communities that they serve.
- Design, implement, and manage assessment activities within their organizations.
- Analyze and present data that are impact- and value-focused.
- Use data from a range of sources to address community needs.

Thus the data role for information professionals is at least three-fold: 1) helping the communities that they serve engage in a range of data-based activities; 2) helping communities leverage data to better understand their communities, community needs, and develop solutions

to community challenges; and 3) using data to demonstrate the contributions of their libraries, archives, etc., to the community(ies) that they serve.

Knowing and Leveraging the Community

An oft-used phrase by information professionals is “knowing the community that we serve,” which defines the user-based approach to information service and resource design. However, participants acknowledged that all too often information professionals define their community as those who use their institution’s services and resources – and not necessarily the full community that they might serve. There is a need for information professionals who can fully identify the different populations within and needs of the communities that they serve, their challenges, and underlying opportunities.

Additionally, our communities can serve as an extension of an information organization’s services and resources. Members of the community may be expert in coding, hacking, history, writing, entrepreneurship, technology, and more. By leveraging the community’s human resources, we can further enhance learning, expertise, and innovation.

Learning, Learning Sciences, Education, and Youth

Our understanding of learning, the distinction between formal and informal learning, how learning spaces facilitate different types of learning, and the formats and approaches through which learning can occur continue to evolve and have a substantial impact on the ways in which information professionals and organizations can enable and enhance learning and education. Looking to the learning sciences, we see that learning is a multi-dimensional activity that includes:

- **Conceptual understanding:** an understanding of the topic or concept.
- **Interest:** an interest and desire to learn about the topic or concept.
- **Social interactions:** cultivating social relationships during the learning process.
- **Personal connections:** connecting the concept or topic to the individual learner’s experience.

Moreover, research and practice show that effective learning and education need to take place beyond the classroom, and that libraries in particular are key to education in their communities (Gross, 2013; Werquin, 2010). Out-of-school-spaces (sometimes referred to as “third spaces”) – such as libraries, archives, and museums – have a tremendous opportunity to help individuals develop a broader ecosystem of learning and education, and to help students “practice and develop” as well as “identify and explore.”

Libraries, for example, are ideal learning and education spaces because they:

- Are open and inclusive spaces that encourage exploration;
- Already focused on connecting people and communities to resources they want and need;
- Have existing tools, resources, and skilled staff; and

- Provide interest-based learning opportunities.

Libraries have a particular opportunity to foster learning by attending to an individual's particular interests, needs, and educational goals – by connecting individuals to appropriate resources, connecting their interests and values to formal learning opportunities, and developing social connections to peers with similar interests, which can promote further exploration.

Participants specifically mentioned the opportunities of focusing on youth learning and education – including pre-k and “readiness to read” opportunities, working with youth in schools, enhancing the understanding of primary data/information sources including archival materials, facilitating learning in libraries through making, STEAM (STREAM), coding, and a range of other activities. This not only promotes information organizations as essential to learning and education, but also enhances youth learning and creates value that will be reaped through building next generation information organization users. Increased participation in, or the increased promotion of, what is already being done in youth learning and education creates value for the learner and the community that can be measured and used to demonstrate value.

As part of the broader conversation around youth learning and education, however, some participants also noted the challenges in the school libraries context. Participants expressed concern regarding the upheaval in the hiring/eliminating/restructuring of school librarian positions that has occurred over the last several years (see for example: <http://www.ala.org/news/mediapresscenter/americaslibraries/soal2012/school-libraries>; Santos, 2011; ALA, 2014; Cadinsky, 2015). Though some indicated that this likely is a cyclical trend, others indicated that this may be the “new normal” in the schools context. Regardless, this situation has impacted negatively enrollments in the iSchool's school libraries program, and discussions with other iSchool MLS program directors seem to indicate a similar trend in their programs. Despite evidence that suggests the importance of school libraries in terms of student achievement or the inclusion of language in the current Elementary and Secondary Education Act (ESEA) that allows ESEA to be used to support school libraries, participants indicated the need to look more broadly and systematically at the school libraries environment, market, and the larger youth learning – particularly digital – context.

Digital Assets and Archival Thinking

The emergence of “smart communities” that are reliant on Big Data from sensors, open data, and other data sources; the wealth of individual data/information generated by Internet-enabled devices, social media, and continual content creation by individuals and communities has created - and will continue to create - massive amounts of digital content that requires individuals, organizations, communities, and institutions to curate and manage their digital assets and digital identities.

Information professionals and organizations will play an increased role helping individuals, their organizations, and the communities they serve understand the digital assets/information they are creating (and that is created about them), and they will help communities manage, curate, preserve, and access these assets.

Implications and Discussion

The *Re-Envisioning the MLS* process identified numerous implications for the University of Maryland's iSchool to consider regarding the future of its MLS program, and perhaps MLS education more broadly. This section is not exhaustive, but rather intended to highlight key issues that the Maryland iSchool might consider in the design and implementation of its MLS curriculum.

Attributes of Successful Information Professionals

The findings show that the information professions are complex, dynamic, and continually evolving. Moreover, the findings indicate that successful information professionals are not those who wish to seek a quiet refuge out of the public's view, but rather possess minimally the following attributes (in no specific order):

- **Collaborative** – willing to work with others and build partnerships.
- **Inclusive** – exhibit cultural awareness, the ability/interest to work with diverse populations, and ensure opportunity for all.
- **Flexible/adaptable** – willing and eager to continually learn and adapt to who is using information, how s/he uses information, and the kinds of services s/he needs.
- **Creative** – willing to question conventional wisdom; go beyond standard approaches to programs, services, and resources; think outside the box; see connections across disciplines; and seek best practices and trends from a broad cross-section of fields.
- **Take Risks**– willing to try new techniques, programs, and services; take risks; fail; and learn from failure while building on successes.
- **Socially Innovative** – willing to seek, design, and implement creative solutions to social challenges that benefit individuals, communities, and society in ways that no one institution could otherwise do so.
- **Problem Solvers** – show an ability to acknowledge problems and challenges while at the same time working towards their resolution, and realize/accept that the “perfect solution” is most likely not possible.
- **Service-Oriented** – focus on the community that they serve, individual needs, and ensure that services – whether they be programming, literacy instruction, data analysis, or record management – are designed and implemented based on the actual needs of their users and communities and not based on arcane information practices of our professional past.
- **Public-facing** – show a strong public service and customer focus, desire to work with diverse populations, and embrace engagement and interaction.
- **Leaders** – show a strong ability to communicate and adapt their leadership style to their environment, as well as effectively navigate the changing needs of organizations. They are self-reflective enough to know when to be constructively aggressive and when to provide others with the opportunity to lead. They are strategic thinkers who understand that what is important to an organization changes, sometimes rapidly.
- **Tech-Savvy** – comfortable with technology and have a desire to continually adapt and update their skills. They should be eager to learn how to use new devices, be comfortable with social media platforms, apps, analyzing data, and developing coding

skills – and should approach technology through the lens of usability, accessibility, and inclusiveness.

- **Marketer** – need to know how to advocate on the behalf of their organizations and communities. They also need to anticipate and know how to articulate a vision for access, inclusion, services, technologies, and other key community needs. This requires a willingness to speak up and speak out when necessary.
- **Positive** – see the possibilities rather than just the obstacles.
- **Entrepreneurs** – systematic and strategic thinkers who can be intellectually nimble enough to see the big picture and work in the weeds.
- **Community Transformers** – facilitate learning and making in the community to connect information, people, and services.
- **Integrative** – realize that collections are not limited to the holdings of any one entity given the networked context and development of national/international resource sharing and infrastructure development initiatives.

In short, future information professionals are those who want to change the worlds of the individuals and communities that they serve in both big and small ways.

Ensure A Balance of Competencies and Abilities

The debate between MLS programs needing to produce graduates with a “toolkit” of competencies (e.g., technology, information resources) versus providing graduates with a conceptual foundation that will enable them to grow and adapt over time surfaced throughout the *Re-Envisioning the MLS* process. Further interjected into this debate was the notion of “aptitude” (specific skills) versus “attitude” (“can do,” “change agent,” “public service”). Though many indicated a preference for “attitude” in making hiring decisions (the rationale being that skills could be taught on the job), the reality is that skills are often what get MLS graduates the initial interview. In short, skills get graduates in the door, but attitude seals the deal. Thus any MLS curriculum needs to balance aptitude with attitude.

Table I summarizes the key topical areas that the future MLS curriculum should consider (as identified through the *Re-Envisioning the MLS* process), along with corresponding skills and application. The table is not exhaustive, but rather intended to provide input into any curriculum redesign efforts.

Due to economic and other factors, the last several years have created a “buyer’s market” in which employers ask for a range of skills and experience (often multiple years even for entry level positions) that recent graduates – even those with multiple internships and fellowships – simply cannot meet. The effect is one of locking out some of the “best and brightest” and potential change agents from the job market. That said, even those not locked out of the market have indicated that they have or will soon choose to leave the profession because of their organization’s unwillingness to allow for new approaches or perspectives. There is a clear divide within the profession between those that seek new challenges and solutions and those that remain tied to an historical view of the information profession that may not reflect current user or community needs. If continued, these approaches will limit the ability of information professionals and organizations to serve as critical agents of change in their communities.

Content Area	Skills	Application
Technology (current, emerging, and concepts)	<ul style="list-style-type: none"> • Hardware • Software • Mobile platforms • Website development • Digital content creation • Social technologies • Usability/accessibility 	<ul style="list-style-type: none"> • Public access technologies • Interoperability • Service/resource provision • Digital content design and presentation • Serving diverse populations • Marketing and outreach efforts
Digital Asset Management (ability to create, store, and access digital assets)	<ul style="list-style-type: none"> • Metadata • Information organization • Data storage • Access/retrieval systems 	<ul style="list-style-type: none"> • Resource locators • Records management • Preservation
Data (Big, local, and personal)	<ul style="list-style-type: none"> • Coding • Analytics/analysis • Visualization • Organization • Open data • Geospatial tools 	<ul style="list-style-type: none"> • Hackathons • Local data hub • Data repository • Community needs assessment • Community impact • Transparency/openness
Assessment and Evaluation (planning, analysis, impact)	<ul style="list-style-type: none"> • Planning and designing evaluation programs • Research methodology • Statistical/data analysis 	<ul style="list-style-type: none"> • Advocacy • Impact/value demonstration • Management • Continual improvement
Policy	<ul style="list-style-type: none"> • Understanding federal, state, and local information policies • Policy analysis • Impact of information policies on the information professions and organizations 	<ul style="list-style-type: none"> • Advocacy • Policy influence • Working with policymakers • Forming partnerships and alliances
Cultural Competence	<ul style="list-style-type: none"> • Understanding and respecting diverse populations • Understanding demographic trends • Understanding the relationship between socioeconomic and opportunity 	<ul style="list-style-type: none"> • Program design • Information service and resource design • Community needs assessment • Inclusive design • Innovation and social change
Information Needs	<ul style="list-style-type: none"> • Information needs assessment • Eliciting information needs from a wide range of users • Understanding information behavior 	<ul style="list-style-type: none"> • Program design • Information service and resource design • Community needs assessment • Inclusive design • Customer Service
Making	<ul style="list-style-type: none"> • Design thinking • STEM/STEAM/STREAM • Building/making 	<ul style="list-style-type: none"> • Maker spaces • Prototyping • 3D printing • Innovation/entrepreneurship
Change	<ul style="list-style-type: none"> • Change management • Social innovation • Leadership 	<ul style="list-style-type: none"> • Community change • Challenge resolution • Disruption • Innovation

Leverage Location, But Diversify

Clearly the iSchool benefits from its proximity to Washington, DC. The iSchool is surrounded by prominent information organizations such as the National Archives and Records Administration, the Library of Congress, the Smithsonian Institution, the National Library of Medicine, the National Library of Agriculture, the Government Publishing Office, and much, much more. Students have the opportunity to work with and gain skills from many prominent agencies and organizations that have vast responsibilities regarding the Nation's information assets. The iSchool continues to value its federal partners – and expand its network of partners.

In addition, many graduates express a strong desire to work within the federal government. It is important to note, however, that reliance on the federal government as an employer of a majority of our graduates would be unwise under current economic and political conditions. Indeed, the number of federal employees has decreased each year since 2010 (<https://www.opm.gov/policy-data-oversight/data-analysis-documentation/federal-employment-reports/historical-tables/total-government-employment-since-1962/>). Moreover, sequestration and continual resolutions funding the federal government have directly resulted in decreased revenues and budget cuts in Maryland – and these have affected the University of Maryland through decreased funding, faculty and staff pay cuts, and increases in tuition and fees. Thus we need to leverage, but not rely on, our proximity to the federal government and government organizations.

Re-Thinking the MLS Begins with Recruitment

Neither a love of books nor a love of libraries is enough for the next generation of information professionals. As expressed strongly throughout the *Re-Envisioning the MLS* process, future information professionals need to thrive on change, embrace public service, seek challenges that require creative solutions, and be change agents. Not all of these are learnable traits, and thus it is imperative that a future MLS program seek and recruit potential students who want each day of their careers to be a new and different opportunity to facilitate and enable the change and transformation that individuals and leaders in their communities seek. We must also seek students who reflect the entirety of communities that they will serve and promote diversity in all its forms within the profession.

Be Disruptive, Savvy, and Fearless

Disruptive innovation refers to a technology innovation that a new market or value network (Christensen, 1997). Extending this concept to the information space, a disruptive innovation can be thought of one that creates new value through innovative solutions to seemingly intractable problems such as poverty, hunger, health, educational achievement and opportunity gaps, and the environment, to name a few. Through creativity, collaboration, and entrepreneurship, information professionals have the opportunity to disrupt current approaches and practices to existing social challenges – and thereby help create new value that benefits individuals, communities, and society.

The future belongs to those who are able to apply critical thinking skills and creativity to better understanding the communities they serve today and will serve 5-10 years down the road and a range of trends – in information, technology, workforce needs, etc. As communities, technologies, information, and other spaces evolve, libraries and information organizations will need to continually adapt in key areas such as staff competencies, services, resources, programs, partnerships, and more. It will mean embracing the new and letting go of the old.

Society and its challenges grow in complexity each day – and yet opportunities abound. The future is in the hands of the bold and the fearless – those willing to take risks; go “big;” break down disciplinary, social, and professional barriers; and go against convention. The *fearless* information professional is undaunted, unequivocal, and unabashed.

Next Steps

The preceding report reflects the broad spectrum of ideas, concerns, context, issues, and other insights that we encountered throughout the extensive *Re-Envisioning the MLS* process. Presented thematically, the findings provide the University of Maryland iSchool MLS Program with critical information to consider as it designs a next generation MLS Program.

More specifically, over the next year the MLS Program will:

- Develop an overarching vision and mission for its MLS program that serves as a guideline for any curriculum design activities.
- Assess the strengths and potential of the iSchool and how to leverage those strengths to seize the opportunities of a revamped, reinvigorated, and re-envisioned MLS program.
- Review its current MLS curriculum in light of the findings of the *Re-Envisioning* process.
- Consider changes to the MLS program design.
- Review its recruitment processes.
- Work extensively with its Advisory Board as it considers changes to curriculum, program design, and recruitment.
- Engage its constituencies and stakeholders as part of an iterative curriculum and program design process.

These efforts will lead to a redesigned curriculum that reflects the future of the information professionals and organizations and the communities that they serve.

A Call to Action

While the University of Maryland’s iSchool set out to *Re-Envision* its MLS program, the findings from the initiative have implications for the larger MLS education, professional, and research communities. Working with a number of key constituencies and stakeholders (e.g., the American Library Association, the Public Library Association, the Society of American Archivists, Association of Research Libraries, the Chief Officers of State Library Agencies, state library associations, Urban Libraries Council, iSchools, accredited MLS programs, City/County managers, policymakers, practitioners, and others, there is a need to hold a national summit on Library and Information Science education. The changing information, technology, policy, higher

education, and professional contexts in which these programs operate – and the evolving nature of the organizations and communities that they serve – has provided a unique opportunity to consider the vision and purpose(s) of MLS programs, as well as its instructional components. We need and intend to seize on this opportunity.

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**Appendix A: Mission of the iSchool Advisory Board and 2014-2017 MLS
Advisory Board Members**

During the Spring and Summer of 2014, the iSchool and MLS Program formed its first Advisory Board comprised of leading information professionals who represent a wide range of views and professional spaces. The mission of the Board is to:

- Provide insights on how the MLS program can enhance the impact of its services on various stakeholder groups;
- Provide advice and counsel on strategy, issues, and trends affecting the future of the MLS Program;
- Strengthen relations with libraries, archives, industry, and other key information community partners;
- Provide input for assessing the progress of the MLS Program and charting future courses;
- Provide a vital link to the community of practice for faculty and students to provide access for research purposes, inform teaching, and further develop public service skills;
- Engage in, assist, and support the fundraising efforts to support the MLS Program; and
- Determine and continuously update the necessary entry-level skills, attitudes and knowledge competencies as well as performance levels for target occupations.

The Board has been, and will continue to be, instrumental in providing significant input, advice, and guidance throughout the *Re-Envisioning the MLS* initiative.

2014-2017 Advisory Board Members include:

Tahirah Akbar-Williams	Education and Information Studies Librarian McKeldin Library, University of Maryland
Brenda Anderson	Elementary Integrated Curriculum Specialist Montgomery County Public Schools
R. Joseph Anderson	Director, Niels Bohr Library and Archives American Institute of Physics
Jay Bansbach	Program Specialist, School Libraries Instructional Technology and School Libraries Division of Curriculum, Assessment and Accountability Maryland State Department of Education
Sue Baughman	Deputy Executive Director Association of Research Libraries
Valerie Gross	President and CEO Howard County Public Library
Lucy Holman	Director, Langsdale Library University of Baltimore

Naomi House	Founder I Need a Library Job (INALJ)
Alan Inouye	Director Office for Information Technology Policy (OITP) American Library Association
Erica Karmes Jelsonis	Chief Librarian for Information Management Cecil County Public Library
Irene Padilla	Assistant State Superintendent for Library Development and Services Maryland State Department of Education
Katherine Simpson	Director of Strategy and Communication American University Library
Lissa Snyders	MLS Candidate University of Maryland iSchool
Pat Steele	Dean of Libraries (until June 30, 2015) University of Maryland
Maureen Sullivan	Past President American Library Association
Joe Thompson	Senior Administrator, Public Services Harford County Public Library
Paul Wester	Chief Records Officer for the Federal Government National Archives and Records Administration

Appendix B: Re-Envisioning the MLS Speaker Series Information

Co-sponsored by the Information Policy & Access Center, the Speaker Series portion of the *Re-Envisioning the MLS* initiative brought in influential members of the information community who provided thought-provoking views on trends, current and future issues, and challenges and opportunities in our field. More specifically, the goals of these presentations were to:

- Offer insights into MLS education past, present, and future;
- Detail best practices by libraries, archives, and other cultural institutions and the implications of these practices for MLS education and professional practice;
- Assess the evolving community, information, technology, and other relevant landscapes and how these changing contexts affect the types of information professionals needed – and the requisite skill sets;
- Offer insights into broader trends in technologies, information, communities, libraries, archives, and the information professions;
- Engage the iSchool community (students, alumni, faculty, others) in a broader discussion of trends, issues, and the implications for future information professionals;
- Challenge the prevailing notions of what an MLS graduate does; and
- Inform the MLS management team about future MLS program needs, particularly in the areas of curriculum and recruitment.

Although this effort began as an internal iSchool initiative, interest in the *Re-Envisioning the MLS* activities grew within the iSchool and MLS program communities, and we expanded access to the sessions to include those outside the University of Maryland community.

The Speaker Series for fall 2014 included:

- **Burn the Libraries and Free the Librarians** with *Dr. R. David Lankes*
 - Program description: The days when there was a single model for a library, if they ever existed, are gone. The idea that the library is a storehouse of books and materials is gone. The notion that a library can serve off to the side of the mission of a community is gone. What's left: the centrality of librarians in meeting the needs and aspirations of the community. This presentation presents a librarianship unencumbered by buildings or a fealty to traditions. It talks about librarians as facilitators of knowledge creation in libraries, and offices, and schools, and classrooms, and the wide reaches of the Internet.
 - An archive of the presentation is available at: <http://ter.ps/LankesMLS>. See Appendix B for a speaker biography.

- **YX: Youth Learning in a Digital Context: Implications for Library, Information, and Education Professionals** with *Dr. Mike Eisenberg*
 - Program description: Today, we live simultaneously in physical and digital environments. This is particularly true for children and youth. This presentation discusses on digital youth, learning, and how to rethink the MLS in a context of physical and digital living. The presentation focuses on how digital technologies are reshaping learning, services, and programs — and the significance of librarians, archivists, curators, and information professionals as critical contributors to learning and human flourishing.
 - An archive of the session is available at: <http://ter.ps/eisenbergMLS>.

The Spring 2015 Speaker Series featured:

- **A Unifying Vision: Reclaiming Our Purpose for the 21st Century** with *Valerie Gross*
 - Program description: A lively interactive seminar to experience a vision that is ushering in a new era for public libraries everywhere. Through a focus on education and learning, libraries find that their inherent value is no longer questioned. They no longer need to constantly explain why they are important. No one looks at them anymore with a puzzled expression, asking, “Tell me again what you do?” Instead, the library enjoys heightened respect in their communities and optimal funding. Adopting the “Libraries = Education” vision repositions libraries as a key component of the education enterprise, alongside schools, colleges, and universities.
 - An archive of the session is available at: <http://ter.ps/MLSGross>.
- **The Future Information Professional** with Sari Feldman (ALA President-Elect; Executive Director of Cuyhoga Public Library) and panelists Stacey Aldrich (State Librarian, Hawaii), Priscille Dando (Coordinator, Library Information Services, Fairfax County Public Schools), Rachel Frick (Director of Business Development, Digital Public Library of America), Lucy Holman (Director, Langsdale Library, University of Baltimore), and Richard Reyes-Gavilan (Executive Director, DC Public Library).
 - Program description: We’ve been hearing a lot about how financial stress, community challenges, the changing nature of information, rapidly evolving and emerging technologies, our changing demography, the need to demonstrate value, the changing learning and education landscape, and a host of other factors are contributing to discussion, debate, and forecasting the Future of Libraries. But the Future of Libraries necessitates a deeper discussion regarding the Future of *Librarians* — and how we prepare future librarians and information professionals to transform the communities that they serve.
 - An archive of the session is available at: <http://go.umd.edu/FeldmanMLS>.

Speaker Series Bios

Stacey Aldrich has more than 20 years of library experience, and was most recently named the State Librarian of Hawaii in April 2015. Prior to Hawaii, she served as the Deputy Secretary for the Office of Commonwealth Libraries in Pennsylvania and State Librarian of California, after serving as the Deputy State Librarian of California for almost two years. Stacey has also worked in public and academic libraries. She was named one of *Library Journal's* Movers & Shakers in 2003, and is an impassioned futurist, who has worked as a Senior Associate at the futuring think tank of Coates & Jarratt, Inc. She also served on the Board of Directors of the Association of Professional Futurists. Stacey earned both her Bachelor of Arts in Russian Language and Literature degree and MLS from the University of Pittsburgh.

Priscille Dando is Coordinator of Library Information Services for Fairfax County Public Schools, the 10th largest school division in the nation. Her 25-year career as a teacher and librarian has focused on best practices for instruction and advocacy for teens and libraries. She is a National Board Certified Teacher in Library Media and was named Teacher of the Year at Robert E. Lee High school in 2003. Dando earned her master's degree in library science at Catholic University and has served as a member of the Young Adult Library Services Association (YALSA) Board of Directors. She serves on several advisory boards including *School Library Journal* and the National Forum on Teens and Libraries. She currently represents the school system on the Fairfax County Public Library Board of Trustees. Her most recent publication, *Say It with Data: A Concise Guide to Making Your Case and Getting Results* is available through ALA Editions.

Mike Eisenberg is the founding dean of the Information School at the University of Washington, serving from 1998 to 2006. Known as an innovator and entrepreneur, Mike approached the iSchool as a startup—transforming the school into a broad-based information school. Mike's work has focused on information & technology literacy, virtual worlds, and library information and technology programs, K-20. Mike is co-author of the “Big6 approach to information problem-solving” – the most widely used information literacy program in the world.

Sari Feldman is Executive Director of Cuyahoga County Public Library (CCPL), a position she has held since 2003. Under her leadership, CCPL has become one of the nation's best and busiest public library systems, earning the *Library Journal* 5-Star recognition for five consecutive years (2010-2014). Prior to joining CCPL, Sari was Deputy Director of Cleveland Public Library, the nation's third largest public research library. She received a Bachelor of Arts degree in English from State University of New York at Binghamton and a Master's in Library Science degree from the University of Wisconsin, Madison. She previously served as an adjunct faculty member at the School of Information Studies at Syracuse University, teaching graduate courses in library management, reference services, policy and grant writing for more than 20 years. She was honored in 1995 with the Vice President's Award for Teacher of the Year. In May 2014, Sari was elected president of the American Library Association for the 2015-2016 term. She is a past president of the Public Library Association (2009-2010).

Rachel Frick is the Director of Business Development for the Digital Public Library of America. In this position, she is responsible for building out DPLA's sustainability plan and forging extensive new relationships in order to build DPLA's visibility, impact, and financial resources. Previous to DPLA, she served as the director of the Digital Library Federation program at the Council on Library and Information Resources during a transformative four years. In her capacity as DLF Director, she was instrumental in building a large and diverse community of practitioners who advance research, teaching and learning through the application of digital library research, technology and services. Frick held senior positions at the Institute of Museum and Library Services and the University of Richmond, among other roles. She is widely known in the library, archive, and museum world for her vision, organizational know-how and commitment to open culture. She is a graduate of the School of Information and Library Science at the University of North Carolina - Chapel Hill.

Richard Reyes-Gavilan is the Executive Director of the DC Public Library. He came to the DC Public Library system with almost 19 years of public library experience. Before joining the Library, Reyes-Gavilan worked at the Brooklyn Public Library (BPL), the nation's fifth-largest public library system as measured by population served. Prior to joining Brooklyn Public Library, Rich worked for more than 12 years at the New York Public Library (NYPL). Reyes-Gavilan earned a Master of Library and Information Science from the University of Texas at Austin and an undergraduate degree in literature from the State University of New York at Albany. He is also a graduate of Coro Leadership New York, an intensive nine-month program focused on public policy and leadership. He was born in Jamaica, Queens, to Cuban immigrants.

Valerie J. Gross has served as President & CEO of Howard County Library System (HCLS) since 2001. An educator and attorney for 30 years, Gross holds a Master of Music from the San Francisco Conservatory of Music, a Master of Library Science from San Jose State University, and a law degree from Golden Gate University School of Law. She is a member of the ALA, PLA, MLA, and the California Bar Association. Developing a new vision for libraries, Gross worked with the HCLS Board, staff, funders, elected officials, and the community to implement the "Libraries = Education" approach. She led the transformation of HCLS to its current prominence as a renowned educational institution, alongside the region's schools, colleges, and universities. As the philosophy evolved, HCLS became well known in the U.S. and overseas, and most recently, she authored [*Transforming Our Image, Building Our Brand: The Education Advantage*](#) published by ABC-CLIO. For living this game-changing vision, HCLS was recognized in 2013 as Library of the Year by Gale and *Library Journal*.

Lucy Holman

Lucy Holman is currently the Director of Langsdale Library and an associate professor in the Division of Science, Information Arts and Technologies in the Yale Gordon College of Arts and Sciences at the University of Baltimore. She received her MSLS from the University of North Carolina at Chapel Hill, with a focus on academic librarianship and user education/information literacy, and her Doctorate in Communications Design in Interaction Design and Information Architecture from the University of Baltimore in December 2009. Her doctoral work focused on information retrieval. Lucy has been active in the library community, serving in leadership positions at the state and national level. She is currently on the American Library Association Council as the Maryland Chapter Councilor and chairs the Council of

Library Directors for the University System of Maryland and Affiliate Institutions (USMAI) Library Consortium. She is a past president of the Maryland Library Association (2011-2012) and has chaired numerous MLA committees, serving on the Executive Board/Advisory Council since 2003. She also a past president of the Maryland Chapter of the Association of College and Research Libraries (2003-2005) and of the Maryland Congress of Academic Library Directors (CALD) (2009-2010).

R. David Lankes is a professor and Dean's Scholar for the New Librarianship at Syracuse University's School of Information Studies and director of the Information Institute of Syracuse. Lankes is a passionate advocate for libraries and their essential role in today's society. He also seeks to understand how information approaches and technologies can be used to transform industries. In this capacity he has served on advisory boards and study teams in the fields of libraries, telecommunications, education, and transportation including at the National Academies. He has been a visiting fellow at the National Library of Canada, the Harvard School of Education, and the first fellow of ALA's Office for Information Technology Policy. His book, *The Atlas of New Librarianship* won the 2012 ABC-CLIO/Greenwood Award for the Best Book in Library Literature.

Appendix C: Re-Envisioning the MLS Engagement Sessions

The engagement sessions were dialogues between students, staff, faculty, and the broader public about selected topics for consideration in relationship to MLS programs.

The engagement sessions for Fall 2014 included:

- **Defining the MLS: History, Origins, and Foundations** with Drs. John Bertot and Paul Jaeger
 - Program description: The foundations of the MLS, its purposes, and roots in the iSchool. The session further explored how MLS degree programs got their start, why MLS programs exist, the American Library Association accreditation context, and how MLS programs and accreditation are changing.
 - An archive of the session is available here: <http://ter.ps/DefineMLS>.

- **Libraries and Archives are Information Technologies** with Drs. Brian Butler and Doug Oard
 - Program description: Wikipedia tells us that “technology is the collection of tools, including machinery, modifications, arrangements, and procedures used by humans.” If we accept this definition, then both Library and Information Science and the study of Archives and Records Management are, and have always been, the study of technologies. As the first word in this abstract makes clear, we now live in an era with a vastly greater number and range of technologies to be harnessed in service of those who seek to keep, find and use information and evidence. Harnessing that potential is, and always has been, the mission of what we today call an iSchool. Where, then, does our Master of Library Science degree fit in this brave new world? How should we respond to new challenges and opportunities that emerging and evolving technologies provide? These questions are not just about how our profession will evolve, but also how we here at the University of Maryland will lead in that evolution.
 - An archive of the session is available here: <http://ter.ps/InfoTechMLS>.

Spring 2015 engagement sessions included:

- **Why Libraries are Critical for Revolutionizing Learning: Insights from the Learning Sciences** with Drs. June Ahn and Tammy Clegg
 - Program description: While almost everyone has an opinion about what “learning” is and how it’s done (after all, we all went to school right?), a new vision of learning is emerging from the learning sciences. Research in this area is showing how learning is not just about transferring information and content, but is instead embedded in everything we do, experience, and engage with. Learning is connected to our ecosystems of places, spaces, and social networks. Learning is also a “process” of exchange, dialogue, friendship, mentorship, failures, successes, and personal growth. We don’t just learn what things are (e.g. facts and information), but how to do, think, and “be” who we are. These are all complex processes that suggest a radical new way to structure our institutions of learning. Libraries are critical to this vision, but how?
 - An archive of the session is available here: <http://ter.ps/AhnCleggMLS>.

- **Digital Curation: The Future of Archives?** with Drs. Ricky Punzalan and Richard Marciano
 - Program description: Networked and digital technologies are challenging information professionals to reimagine and reassess traditional ways of providing persistent access to information. Among these changes are the expanding notions of records and archives as well as the necessary skills and responsibilities in managing cultural heritage collections. Part of the recent efforts to re-envision the LIS curriculum, the iSchool's newly combined specialization in archives and digital curation is an intervention to bring the field of information preservation and access towards a more responsive and relevant future. In this presentation, Ricky Punzalan and Richard Marciano traced the evolution of archival education and will analyze this trajectory to question the relationships between archives and digital curation. They will also provided an overview of some of the significant, related changes in the iSchool's curriculum and other recent efforts that contributes to the newly formed archival and digital curation pathways.
 - An archive of the session is available here: <http://go.umd.edu/PunzMarcMLS>.

In all, the iSchool and iPAC hosted four speaker/panel events and four engagement events that provoked thought, offered “out of the box” insights, assessed current and likely future realities, and yielded robust discussion.

Engagement Session Leader Bios

Dr. June Ahn is an Assistant Professor in the College of Information Studies with a joint appointment in the College of Education, at the University of Maryland, College Park. His core research interest is understanding how technology and information can enhance the way we learn and deliver education, approached through (1) through design-based research to understand how technology and new media can be used to enhance how young people learn and develop pathways in STEM, and (2) through studies that try to understand the socio-technical configurations that arise from the combination of technology, education settings (formal and informal), and people – and how these socio-technical systems could lead to improved social/educational outcomes.

Dr. John Bertot is professor and co-director of the [Information Policy & Access Center](#) in the iSchool. He also served as the MLS Program Director (2012-2015) and assistant director for the eGovernment and Community Analytics & Policy specializations within the MLS Program.

Dr. Brian Butler is professor and director of the Master of Information Management program in the iSchool. He also serves as director of the [Center for the Advanced Study of Communities and Information](#). His research combines theories and methods from organizational theory, information systems, and information studies to better understand how emerging technologies affect teams, communities, and organizations.

Dr. Tamara "Tammy" Clegg is an assistant professor in the Department of Teaching and Learning, Policy and Leadership at the University of Maryland's College of Education. She also

has a joint appointment in the College of Information Studies. Tamara Clegg's research focuses on developing life-relevant learning environments and supporting technologies for enabling children to engage in science in the context of achieving goals relevant to their lives.

Dr. Paul Jaeger is professor and co-director of the [Information Policy & Access Center](#) in the iSchool. He also serves as the assistant director for the Information and Diverse Populations (IDP) specialization within the MLS Program, and the iSchool's Diversity Officer. Beginning Summer 2015, Dr. Jaeger will become the iSchool's MLS Program Director.

Dr. Richard Marciano is a professor in the College of Information Studies at the University of Maryland and director of the newly formed Digital Curation Innovation Center (DCIC). He comes from the School of Information and Library Science (SILS) at the University of North Carolina Chapel Hill, where he served as professor and director of the Sustainable Archives and Leveraging Technologies (SALT) lab. Prior to that, he conducted research at the San Diego Supercomputer Center (SDSC) at the University of California San Diego for over a decade with an affiliation in the Division of Social Sciences in the Urban Studies and Planning program. His research interests center on digital preservation, sustainable archives, cyberinfrastructure, and big data.

Dr. Douglas Oard is a Professor at the University of Maryland, College Park, with joint appointments in the College of Information Studies and the Institute for Advanced Computer Studies. Dr. Oard earned his Ph.D. in Electrical Engineering from the University of Maryland. His research interests center around the use of emerging technologies to support information seeking by end users. Additional information is available at <http://terpconnect.umd.edu/~oard/>.

Dr. Ricardo Punzalan is an assistant professor of archival studies in the College of Information Studies at the University of Maryland. His research contributes to the growing area of research on the impact of digitization and online access to both archival institutions and the users they serve. He also works to establish the next generation of archival training and to create ways to bring the archival imperative to serve diverse audiences and communities. Dr. Punzalan addresses these topics through three major areas: 1) the intersections between Archives and Digital Access; 2) connections between Archives and Social Memory; and 3) building an infrastructure for Archival Education and Scholarship.

Appendix D: Stakeholder/Community Discussions

John Bertot (then MLS-Program Director) and Lindsay Sarin (MLS Program Manager) conducted numerous regional visits throughout Maryland to engage information professionals from around the state in this dialogue. In addition, Bertot and Sarin conducted discussions with the Maryland Association of Public Library Administrators (MAPLA), attendees of the 2015 Maryland Library Association conference, the Division of Library Development and Services (Maryland's state library agency), the State Library Resource Center (Maryland's State Library), the Library for the Blind and Physically Handicapped (LBPH), and regional libraries throughout the state. Given that the University of Maryland is a land grant university with a mission to address the needs of the state, discussions were held throughout Maryland in order to gain a broader perspective of the variety of community needs. In all, the discussions included perspectives from over 100 public, school, and academic librarians; regional library directors; archivists; industry leaders; and others. The discussions focused on the:

- Service context of the participant institutions, to include mission, service population(s), and communities.
- Current and emergent (3-5 years) challenges and opportunities.
- Staffing needs, competencies, abilities, and characteristics.
- The extent to which an MLS, and under what circumstances, an MLS - was a necessary degree for employees to hold.
- What would make participants want to hire our MLS program graduates (e.g., traits, competencies, knowledge, characteristics).

Comments from participants informed the initiative along key dimensions that included service context; skills, abilities, and traits that employers sought – and matched the envisioned service context; and the continued relevance of the MLS degree.

Appendix E: Articles and Blog Posts

Re-Envisioning the MLS by John Carlo Bertot

blogMLS, September 16, 2014

<http://mls.umd.edu/2014/09/re-envisioning-mls/>

Re-Envisioning the MLS: The Next Generation MLS Student by John Carlo Bertot

blogMLS, September 30, 2014

<http://mls.umd.edu/2014/09/re-envisioning-mls-next-generation-mls-student/>

Re-Envisioning the MLS: New Specialization Focused on Local Big Data by John Carlo Bertot

blogMLS, October 2, 2014

<http://mls.umd.edu/2014/10/re-envisioning-mls-local-big-data/>

Re-Envisioning the MLS: New Specialization Combining Archives and Digital Curation by Erin Zerhusen

blogMLS, October 9, 2014

<http://mls.umd.edu/2014/10/re-envisioning-mls-new-specialization-combining-archives-digital-curation/>

Launched! Re-Envisioning the MLS by John Carlo Bertot

blogMLS, October 23, 2014

<http://mls.umd.edu/2014/10/re-envisioning-mls-new-specialization-combining-archives-digital-curation/>

Re-Envisioning the MLS: Free the Librarians by John Carlo Bertot

blogMLS, November 12, 2014

<http://mls.umd.edu/2014/11/re-envisioning-mls-free-librarians/>

Re-Envisioning the MLS White Paper: Trends and Context by John Carlo Bertot

blogMLS, December 3, 2014

<http://mls.umd.edu/2014/12/re-envisioning-mls-white-paper-trends-context/>

Re-Envisioning the MLS: YX-Youth Learning in a Digital Context by John Carlo Bertot

blogMLS, December 10, 2014

<http://mls.umd.edu/2014/12/re-envisioning-mls-yx-youth-learning-digital-context/>

Re-Envisioning the MLS: What We've Learned So Far by John Carlo Bertot

blogMLS, February 9, 2015

<http://mls.umd.edu/2015/02/re-envisioning-mls-weve-learned-far/>

Re-Envisioning the MLS: Reclaiming Our Purpose by John Carlo Bertot

blogMLS, March 12, 2015

<http://mls.umd.edu/2015/03/re-envisioning-the-mls-reclaiming-our-purpose/>

The Future of MLS: Rethinking Librarian Education By John Carlo Bertot and Lindsay Sarin
American Libraries, February 26, 2015

<http://americanlibrariesmagazine.org/2015/02/26/the-future-of-mls/>

Re-Envisioning the MLS Initiative Video Archives

HackMLS, April 2, 2015

<http://hackmls.umd.edu/?p=49>

Re-Envisioning the MLS: Libraries and the Learning Sciences by Lindsay Sarin

blogMLS, April 2, 2015

<http://mls.umd.edu/2015/04/re-envisioning-the-mls-libraries-and-the-learning-sciences/>

Re-Envisioning the MLS: The Future of Information Professionals by John Carlo Bertot

blogMLS, May 13, 2015

<http://mls.umd.edu/2015/04/re-envisioning-the-mls-libraries-and-the-learning-sciences/>

Appendix F: Research and Environmental Scanning

As part of the Re-Envisioning the MLS initiative, the iSchool's MLS team also conducted its own research and environmental scanning. These efforts included:

- Analyzing various data, including national, regional, state, and local Census data; education data; economic and workforce data; and technology trend data.
- Reviewing trends in higher education, technology, information markets, and other spaces.
- Reviewing various trend data within the LIS space including data from the: [American Library Association \(ALA\)](#), [Association for Library and Information Science Education \(ALISE\)](#), [American Association of School Librarians \(AASL\)](#), [Institute of Museum and Library Services \(IMLS\)](#), and [Public Libraries Survey \(PLS\)](#), etc.
- Reviewing “trend” reports provided by [International Federation of Library Associations and Institutions \(IFLA\)](#) and [Office for Information Technology Policy \(OITP\)](#).
- Reviewing a range of reports, articles, blog postings, and other resources that discussed the future of libraries and the information professions such as:
 - [Rising to the Challenge: Re-Envisioning Public Libraries](#) - The Aspen Institute
 - [Pew Internet and American Life Project](#) - Pew Research Center

These materials provided key insights into the *Re-Envisioning the MLS* initiative.

Appendix G: Re-Envisioning the MLS White Paper

Re-Envisioning the MLS: Issues, Considerations, and Framing



Presented to:
MLS Advisory Board
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September 30, 2014

The iSchool's MLS Program In Context

In order to ensure that the University of Maryland's MLS program continues to prepare information professionals who are equipped to navigate the modern information climate, it is imperative to consider relevant trends. This report has been prepared to highlight top trends in the field and provide an overview of the existing structure of the MLS program. The intent of the document is to inform the Board's discussion throughout the Re-Envisioning the MLS process. For information about how the MLS program currently operates, please see the Program Structure paper.

This report is informed in large part by our own analysis, but also the newly released report by the American Library Association's Office of Information Technology and Policy: [Trends Report: Snapshots of a Turbulent World](#). Our report seeks to provide an initial analysis of key trends and identify potential implications for the iSchool's MLS program. Our hope is that this analysis can serve as a starting point for our discussion as we look to "Re-Envision the MLS." We welcome your input and insights, and leadership as we move forward with our efforts.

Our focus on information in an information economy is our competitive advantage. But what does the future MLS degree look like? What should it look like? What trends can we identify that impact the careers of librarians, archivists, and other information professionals – and how we prepare them for what will surely be dynamic and constantly evolving careers?

Changes in the Field and Cultural Climate

Along with many other sectors, the information field is undergoing a period of rapid change. In effect, we have three prevailing contexts that affect the MLS Program at the University of Maryland:

- Changes in the larger social, political, technology, learning, and information contexts that impact the larger information professions in general, and cultural institutions such as libraries, archives, and museums in particular.
- Changes in our immediate area (e.g., demographics, economic, congestion, and other) that impact the goals of our program, the intended employment agencies, and career paths for our students.
- Changes in the perception that librarianship is a viable career. Now almost annually, *Forbes* magazine publishes an article about how librarianship and libraries are "dead."¹ Hacklibraryschool.com has had a variety of threads on the employability of graduates and the value of MLS programs and degrees. To be sure there are stories published in *Forbes* and elsewhere about the value of libraries, but the sense that the viability of careers in libraries, and libraries themselves, is in peril persists.

More specifically:

¹ <http://www.forbes.com/sites/timworstall/2014/07/18/close-the-libraries-and-buy-everyone-an-amazon-kindle-unlimited-subscription/>; <http://www.forbes.com/pictures/efkk45ifij/no-1-worst-masters-degree-for-jobs-library-and-information-science/>.

- **Federal Challenges.** We've experienced sequestration, a shutdown, and years of continuing resolutions to fund the federal government. As noted in a recent report,² the number of new federal employees has declined by 37.5% since 2009, and many of those positions were hires for existing positions rather than newly created jobs. This situation has also created a renewed budget deficit in the states of Maryland and Virginia.³
- **State/Local Challenges.** State and local government workforces have faced significant reductions since 2009. In 2011 alone, state and local governments cut nearly 250,000 jobs. Though there has been some hiring in recent months, the state and local workforce reductions have been significant, and likely will not grow to pre-recession levels.⁴
- **Job Opportunities.** Securing a job can be challenging –
 - The Bureau of Labor Statistics data puts library job growth at 7%, which is defined as slower than average.⁵ Archives fair better, with a projected 11% (as fast as average) anticipated growth rate.⁶
 - Libraries have faced budget cuts and hiring slowdowns. The MLS fits into a larger library narrative of budgetary constraints, hiring freezes, and the shift to part-time and/or non-professional positions. For example, between 2007 and 2012, the percentage of public library staff without a master's degree from an ALA-accredited program increased from 32.5% to 34.1%.⁷ In short, hiring in at least public libraries is shifting to non-MLS degreed employees with a range of skills (education, public health, technology, Web design, and other areas of necessary skills).
 - State Library Agencies have witnessed stagnant and or budget reductions as well.⁸
- **Information Providers.** There are many market entrants who provide information and information services. Yes, Google is often mentioned, but it's not just Google. Individuals have many viable options to meet their information needs, and a library or librarian might (or might not) be a preferred source.
- **Nature of Information.** The nature of information is changing, and so too is what it means to be information literate. With the Internet of Things, Big Data, Smart Cities/Government, Open Data, and more, we are awash in all types of data and information. Having data and emerging information literacy skills (analytics, visualization, curation) will be critical to success in education, employment, and serving our communities.

² <http://ourpublicservice.org/OPS/publications/download.php?id=230>

³ See (http://www.washingtonpost.com/local/md-politics/maryland-panel-sees-238-million-revenue-shortfall-in-current-fiscal-year-and-next/2014/03/06/d23ed3ac-a57a-11e3-84d4-e59b1709222c_story.html and http://www.washingtonpost.com/local/virginia-politics/virginia-ends-fiscal-year-with-439-million-less-in-revenue-than-expected/2014/07/10/cb6ddd5e-0879-11e4-a0dd-f2b22a257353_story.html).

⁴ See <http://www.governing.com/gov-data/public-workforce-salaries/monthly-government-employment-changes-totals.html>.

⁵ (<http://www.bls.gov/ooh/Education-Training-and-Library/Librarians.htm>).

⁶ (<http://www.bls.gov/ooh/education-training-and-library/curators-museum-technicians-and-conservators.htm>).

⁷ U.S. Institute of Museum and Library Services. (2009). *Public Libraries in the United States Survey: Public Library Data Files, FY 2007*. Available at: http://www.ims.gov/research/pls_data_files.aspx; U.S. Institute of Museum and Library Services. (2014). *Public Libraries in the United States Survey: Public Library Data Files, FY 2012*. Available at: http://www.ims.gov/research/pls_data_files.aspx.

⁸ U.S. Institute of Museum and Library Services. (2014). *The State Library Administrative Agencies Survey, FY 2003–2010, 2012*. Available at: <http://www.ims.gov/assets/1/AssetManager/2012%20SLAA%20Report.pdf>.

- **Community Changes.** We're growing older and more diverse in terms of race, ethnicity, income, ability, and many other factors. Meeting the information and technology needs of increasingly diverse populations is essential for future information professionals. While the nation is projected to become a majority minority country by 2050, the projection is that Maryland will transition to a majority minority state by the 2020 Census.

These changes are bringing about new opportunities for cultural institutions. The needs of our communities – to ensure access to information, to ensure equity, to ensure that we preserve our cultural record, to ensure an open and transparent government, to ensure that all students are ready to read and ready to learn – are great, if not greater, than they have ever been, and the information space is wide open and full of opportunities to innovate.

Key Trends

The trends discussed in this paper are grouped into the following categories:

- **Technology:** The continuing implications of rapid advances in how we use technology to engage with, access, and share information are currently unknown. However, libraries and cultural institutions must prepare for these changes to adequately serve community needs.
- **Data and Analytics:** Open data, open government, and community challenges in areas of health, education, workforce, environment, and various other key issue areas increasingly rely on data in a variety of formats. Moreover, they rely on a range of analytics skills, from data curation, manipulation, analysis, and visualizations. The role of libraries in local data infrastructures will take on increased significance.
- **Learning:** Learning strategies are changing as evidenced by the move of a majority of states to the Common Core. So too are the types of knowledge and skills that our learners require so that we have life-long learning and skills development opportunities. Increasingly this means more STEM, digital technologies, digital literacy, data, visualization, coding, hacking, etc. At the core is the need to build inclusive opportunities for continual learning.
- **Demographics:** The US is undergoing significant demographic shifts that will influence the configuration of the communities we serve. Population growth, an aging public, and increased diversity will all contribute to changing demands for information services, content, and engagement.
- **Policy:** Current policy decisions being made at the international, national, state, and local levels will have significant impacts on the future of technology, education, equity, and many other aspects of society. These decisions hold great potential to dramatically affect the role of cultural institutions in the community and challenge long-standing library values.
- **Resources:** Libraries exist in an environment of increasingly limited resources; tight budgets, environmental shifts, and increasing strain from growing population will necessitate operational changes in the coming years.

The implications of these trends are not mutually exclusive, nor do they operate in isolation. Often policies are a reflection of our society and can shape the availability of resources;

resources impact the technologies to which various populations have access and use, as well as educational opportunities; and the economy is dependent on have a work-ready workforce.

The following table attempts to identify specific trends and implications/questions for MLS education. They are not exhaustive, and indeed you may think that we haven't gotten them "roughly right" as of yet – or have missed some critical trends that we need to consider and factor into the discussion.

The iSchool celebrates its 50th year in 2015. During that time, it has provided a high quality and innovative MLS program that has grown to include the Shady Grove campus and online instruction. This discussion is about the next 50 years. Given the context in which our MLS program resides – and will reside in the coming years – we seek to reinvent our program to ensure a vibrant and high quality MLS program that prepares our future leaders. We welcome all input as we work towards this goal.

Selected Trends & Implications

Technology

As information technology continues to advance, libraries must find ways to integrate these technologies into their operations. These rapid developments have the potential to destabilize and disrupt traditional ways of viewing the economy and cultural institutions. There are broad implications of these emerging trends, including:

Trend	Explanation	Questions
<i>Ubiquitous Computing</i>	Technology is becoming increasingly integrated into our everyday lives through cloud computing, the Internet of Things, and the constantly evolving capabilities of mobile devices. Augmented reality and wearable tech inventions such as Google Glass are on the horizon. These advancements will change the way people interact with technology and user expectations.	<ul style="list-style-type: none"> • How will libraries respond to hyper-connectivity? • How will increased remote access impact the library as a physical space? • How do library services fit into the “Internet of Things” with interconnectivity across a broad spectrum of devices, technologies, and sources of data/information?
<i>Future of the Internet</i>	Many groundbreaking projects are being encouraged and funded by major players in the field, like developing new network architecture and ultra-high speed internet. Restructuring the internet will open the door for innovations and applications that will revolutionize yet again the way we interact with the internet.	<ul style="list-style-type: none"> • How will libraries continue to adopt new structures? • Will librarians be able to maintain relevant skills as the Internet – and its increasingly advanced applications – evolves?
<i>Privacy and Security</i>	As more services migrate online there are more opportunities for users’ privacy to be compromised. Government agencies and companies have increased their surveillance, tracking, and data collection activities. Emerging technologies, changes in internet governance, and an increased awareness of the vulnerability of the internet will continue to influence how people choose to interact with technology.	<ul style="list-style-type: none"> • Will libraries be equipped to serve users’ needs and provide access to emerging technologies while maintaining adequate security and ensuring privacy of information? • How will libraries weigh the benefits of using data collection to improve their services against the risks to user privacy?

Data & Analytics

Open data, open government, and community challenges in areas of health, education, workforce, environment, and various other key issue areas increasingly rely on data in a variety of formats. But moreover, they rely on a range of analytics skills, from data curation to manipulation to analysis to visualizations. The role of libraries in local data infrastructures will take on increased significance.

There are broad implications of these emerging trends, including:

Trend	Explanation	Questions
<i>Data Management/ Curation</i>	Libraries are increasingly inundated with data as more library procedures are managed digitally. Decisions must be made about the curation of digital assets, data management practices, and digital collections practices.	<ul style="list-style-type: none"> • In light of big data, increased mobility, and digital overload, what is the role of libraries in curating and managing data for users? • How will libraries manage their own digital records? • Can libraries take advantage of crowdsourcing and citizen science efforts? • What is the libraries' role in the preservation of digital media?
<i>Building local data infrastructures</i>	The creation of community data repositories to inform decision making, civic engagement, open government, hacking, and other support structures requires a range of data infrastructures. While large cities may have this infrastructure, smaller communities do not, and the library can have a key role to play in this space.	<ul style="list-style-type: none"> • What is the role of libraries in building, maintaining, and sustaining local data infrastructures? • What types of data analytics skills do librarians need? • How can community analytics feed into engagement, open government, and other community building and transparency efforts? • How can libraries help fill in the gaps left behind by the lack of local investigative journalists – by perhaps helping build local citizen journalism capacity?

Learning

Learning strategies are changing, for example, with the move of a majority of states to the Common Core. But so too are the types of knowledge and skills that our learners require so that we have cradle to grave learning and skills development opportunities. Increasingly this means more STEM, digital technologies, digital literacy, data, visualization, coding, hacking, and other skills. At the core is the need to build inclusive opportunities for continual learning. There are broad implications of these emerging trends, including:

Trend	Explanation	Questions
<i>Librarian Training</i>	The advancements in information technology are changing the nature of work in most sectors. But so too is the content that users need to succeed in learning and the workforce. Libraries play an important role in supporting learners and workers by offering tools and training to help them build future-ready skills. In this climate of rapidly evolving technology, librarians are increasingly required to maintain a complex set of skills and knowledge base.	<ul style="list-style-type: none"> • Will librarians have adequate training to address the needs of users in an environment of ever-changing technology? • How will librarians develop the necessary STEM skills? • Are libraries equipped to provide ongoing training to ensure that staff skills remain relevant? • Do MLS programs need to provide curriculum development, lesson plan development, instructional design, and other pedagogical tools?
<i>User Instruction</i>	The needs of individuals – from ready to read to STEM to digital content creation (and more) requires a range of math, science, engineering, programming, and other skills.	<ul style="list-style-type: none"> • How do libraries support/continue to support STEM (STEAM) learning in their communities (schools, public, academic, other)? • What types of candidates do MLS programs need given this context?
<i>Learning</i>	Learning content and techniques are changing. A significant shift to the Common Core is occurring now, which has an impact on all learning subjects – and how learning is facilitated.	<ul style="list-style-type: none"> • How do libraries support/continue to support national, state, and local education efforts? • What types of skills do librarians need to lead learning activities? • What type of expertise and skills do librarians need to meet the needs of children/youth to ensure libraries offer ‘connected learning’ experiences?

Demographics

Changing demographics in the US will lead to changing user needs. The implications of the following population shifts will vary depending upon the type and location of the library. However, all libraries will be affected by these changes. The major demographic trends include:

Trends	Explanation	Questions
<i>Population Growth</i>	A rapidly growing population has many implications for communities. The trend of people moving into cities and suburbs, as well as concentrated growth in the South and West continues. Growth from a higher birth rate, a lower death rate, and immigration will put a strain on the economy, the environment, and other resources relevant to library services.	<ul style="list-style-type: none"> • Are libraries prepared to provide services to a growing population? • How will libraries respond to larger communities without increased funding?
<i>Aging Populations</i>	As the population grows, there will also be a significant increase in adults above the age of 65. This change will require libraries to adjust their services and address conflicting interests between generations.	<ul style="list-style-type: none"> • Will considerations like pension payouts affect the funding pool shared by libraries? • What library services will older adults expect or need to meet their information needs?
<i>Persons with Disabilities</i>	As the population ages, so too does the number of persons with a range of motor, visual, and/or other disabilities.	<ul style="list-style-type: none"> • What skills do librarians need to better meet the information needs of persons with disabilities? • How do librarians take leadership roles in the building of inclusive communities?
<i>Youth Populations</i>	The number of individuals younger than 18 continues to grow overall, requiring continued and rethought engagement with future readers and learners. Moreover, the careers into which these future generations will enter are changing.	<ul style="list-style-type: none"> • What skills do librarians need to better meet the information needs of new learners? • How do librarians ensure that the next generations value libraries? • What learning strategies, programs, and skills do librarians need to promote and support learning in children?

Trends	Explanation	Questions
<i>Increased Diversity</i>	As minority populations continue to grow, libraries (and individual librarians) must be prepared to address the complex needs of increasingly diverse user groups. The US is on track to become majority-minority by 2050. Maryland will reach that status by the 2020 Census. Shifting demographics will change the types of services the library is expected to offer. For example, minority populations are disproportionately affected by low literacy, numeracy, and digital skills and are therefore are more likely to benefit from instructional courses.	<ul style="list-style-type: none"> • Are libraries prepared to adjust services to meet the changing needs of their community? • How do we prepare future librarians to serve diverse communities?
<i>Increased Inequality</i>	The persistence and increase of wealth and income gaps in the US are exacerbated by disparities in access to education, technology, and economic opportunities. Libraries have long been addressing the digital divide by providing free access to technology.	<ul style="list-style-type: none"> • What is the role of libraries for those “left behind” as technology continually moves forward? • Will libraries continue to play a part in bridging gaps as users increasingly move to mobile computing?

Policy

Four particularly relevant and contentious topics are being discussed by policy makers, which have implications for every facet of information services. They are as follows:

Trend	Explanation	Questions
<i>Net Neutrality</i>	Decisions being made at the national level about open access versus the interests of large corporations and internet service providers will have an impact on the internet practices of library users.	<ul style="list-style-type: none">• How will recent net neutrality rulings affect libraries' ability to offer access to users?
<i>Privacy and Security</i>	Privacy and security concerns will continue to be affected by policy decisions at all levels, as well as by the advancement of technology. Global conflicts and disparate national priorities will impact how well the infrastructure of the internet is regulated worldwide.	<ul style="list-style-type: none">• What impact will current conflicts over privacy and the fear of cyber attacks have on open Internet collaboration in a global context?• Will the Internet continue to be a trusted worldwide medium for communication?
<i>Rights Management</i>	The shift to digitization and digital publishing of books, music, television, and other materials has given rise to a complicated new idea of ownership. Sharing and replication is easy and common, which confuses copyright and digital rights management.	<ul style="list-style-type: none">• How will digital piracy affect collection and lending policies in libraries?• What other implications will emerge as digitization increases?
<i>Accessibility and Usability</i>	Though not often at the forefront of policy debates, usability and accessibility are greatly impacted by policy decisions. These decisions will affect the usability of future innovations.	<ul style="list-style-type: none">• As libraries strive to provide equal access to all populations, how will they be affected by policy decisions and enforcement?
<i>Equity/Social Justice</i>	As inequality grows, there will be debates on how best to ensure opportunity for all.	<ul style="list-style-type: none">• What policy skills do MLS students need to advocate on behalf of their libraries, their profession, and their communities?

Resources

The value society places on resources is shifting rapidly. These changes will affect how libraries allocate resources in the coming years. The following trends will impact how libraries navigate this new environment:

Trend	Explanation	Questions
<i>Shifting Revenue Models</i>	Many businesses in the information field are taking innovative approaches to stay relevant. For-profit businesses are focusing on delivering social good in financially sustainable ways. The sharing economy is also a rapidly growing part of the current economy. Libraries are already beginning to participate through collaborations like HathiTrust, the Digital Public Library of America, and innovate lending programs such as tool libraries.	<ul style="list-style-type: none"> • How will libraries be affected if a financially self-sufficient model of cultural institutions becomes viable? • Will libraries continue to be competitive in the field?
<i>Decentralization of Information</i>	Mobile technology and increased access have served to disconnect information from time and place. We live in an on-demand culture where access is not dependent upon location.	<ul style="list-style-type: none"> • Can libraries attract users who want and expect immediate, convenient access? • What do they have to offer as a physical space that solely online entities do not?
<i>Information Deluge</i>	More information than ever is available to users, and much of it is free. While this increased access has many benefits, there are downsides as well. Information providers must help users navigate this flood of information and data.	<ul style="list-style-type: none"> • Does this make libraries less relevant? • What do libraries offer that differentiate them from other information providers? • How can libraries help users combat digital overload?
<i>Content</i>	Libraries work more and more with data and digital materials rather than traditional materials. The changing nature of the content we create and make available to users has an impact on how libraries serve user needs.	<ul style="list-style-type: none"> • How does this shift change collection strategies? • What impact does this have on how library space is allocated?