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Cover image: Isaiah Beard, "Pop Bumpers from a Vintage Pinball Machine," Silverball Museum, Asbury Park, NJ, February 14, 2012.

Editorial: The Big Picture

I am frequently asked by potential authors and incoming *LRTS* Editorial Board members about the timeframe for submitting a paper and the publication timeframe for accepted papers. My response is that it depends. A paper may require significant revision, which is not necessarily an indication of the paper's quality. Papers may need to undergo a second round of peer review. Some papers are published within six months of submission, and others might be published a year after submission. There are so many variables that a straightforward answer is not possible.

Additionally, I am often asked to provide an overview of the process of writing a research paper, submitting it, the review process, and acceptance (or rejection), as it applies to *LRTS*. The submission, review and publication process is a collaboration between the author, reviewers, and editor. Reviewers are assigned papers based on their knowledge and expertise. Their feedback is critical to authors. All authors, including those papers are rejected, are provided with feedback and a copy of their paper showing suggested revisions.

Papers are rejected for various reasons. One of the primary reasons is that they are out of scope for *LRTS*. Another reason is that they do not conform to the structure required for a research paper and lack critical components, such as a literature review, a problem statement, research methodology, or analysis of research results. Opinion or think pieces, while thought provoking and sometimes inspirational, are also out of scope.

The acceptance process is not necessarily quick or smooth. A paper may require significant revision. Authors may get additional information that changes a paper, and that also involves revision. When an author's paper is accepted, it is copyedited and proofs are sent to the author. The author has a short timeframe to review the proof and submit changes to me. I submit the revised proofs to ALA Production Services, and this can be for up to five papers, depending on how many are in a given issue. ALA Production Services typesets the papers, and another round of proofs are sent to the copyeditor and me to review and approve. The final version of each issue includes my editorial, papers, book reviews, selection of cover art, and advertisements.

My term as *LRTS* Editor ends in December 2020 and as I enter the final year of my term, I reflect back on the papers I have accepted, the authors with whom I have worked, and the people who have served on the *LRTS* Editorial Board. It has been a privilege to work with these authors and my board. I have been fortunate to work with Brooke Morris-Chott from the ALCTS Office and Tim Clifford from ALA Production Services. I have had two excellent Book Review Editors in Norm Medeiros and Elyssa Gould. Collectively, we have sought to bring ALCTS members and the profession at large timely and relevant research papers on critical and emerging issues.

As with each editorial, I close with a preview of the issue's contents, which I hope you enjoy reading:

- ALCTS President Kristin E. Martin's annual report providing a summary of the division's activities for the 2018–2019 year. Much of this year's activities focused on the discussions with LLAMA and LITA.

- In her paper "The Adoption of NISO's Shared Electronic Resource Understanding (SERU) at U.S. Academic Libraries," Sunshine Carter details the analysis of a 2017 survey that she conducted of licensing practices and SERU use at libraries. The survey analyzed 108 responses from US academic libraries signing at least one license in the twelve months preceding the survey.
- A.L. Carson and Carol Ou discuss the challenges faced when their institutional repository evolved from a means to host open-access journals to a repository for other researcher created materials in their paper "Metadata Revisited: Updating Metadata Profiles and Practices in a Vendor-Hosted Repository." This process sometimes lacked clear metadata and descriptive guidelines. Resolving the problem included a metadata review to reconcile the fields used and provide recommendations on vocabularies and standards for capturing metadata.
- An essential, but often lacking, tool for effective collection development and management is a written collection development policy, or CDP. In "Nimble Collection Development Policies: An Achievable Goal," Helen Levenson details the history of CDPs, including a discussion of the RLG and WLN Conspectuses, and provides guidance for drafting an effective and contemporary CDP.
- "Experts or Dummies?: Quality of e-Book Pool and User Selections in a Consortial Demand Driven Acquisition Program" by Matthew J. Jabaily and Rhonda Glazier details the University of Colorado Colorado Springs' experience in a consortial demand driven acquisitions program. The authors analyzed data from EBSCO's GOBI acquisitions platform to assess the quality of the pool and purchased titles from the Colorado Alliance of Research Libraries (CARL) publisher-based DDA program. Results showed that most available and selected titles were appropriate for academic libraries.
- Book reviews courtesy of *LRTS* Book Review Editor Elyssa Gould.

Annual Report, 2018–2019

Kristin E. Martin, ALCTS President, 2018–2019

This report represents a summary of the activities of the Association for Library Collections & Technical Services (ALCTS), a division of the American Library Association (ALA), during the 2018–2019 year. Working in libraries of all sizes and types, ALCTS represents a specialized community of functional experts and leaders in acquisitions, cataloging and metadata, collection management, electronic and continuing resources, and preservation. While our engaged members lead the way in developing standards and best practices for creating, identifying, selecting, acquiring, organizing, managing, and preserving recorded knowledge in all formats, we also recognize that both the profession and the American Library Association as a larger entity are changing, and that ALCTS needs to continue to grow and evolve. This annual report includes a summary of the association's activities for the 2018-2019 year and plans for the future.

A New Division: Discussions with LLAMA and LITA

Stemming from explorations that started in January 2018 at the ALA Annual Conference in June 2018, the boards of ALCTS, the Library and Information Technology Association (LITA), and the Library Leadership & Management Association (LLAMA) voted to "devote the necessary staff time and resources through Fall 2018 to continued development of a potential new ALA division" and that "a final decision on sending the question of the proposed division to a member vote in Spring 2019 will be made at the 2019 Midwinter Meeting." The decision made within ALCTS was carefully considered. The ALCTS Board supported this exploration, seeing it as an opportunity to reduce duplication of efforts between the divisions, allowing for member dues to go farther, and offering new options for networking, programming, and continuing education. Functional areas that may have fallen through the cracks of three divisions would be better supported by a single new division. Further, ALCTS leaders recognized that ALCTS's current trajectory demanded change. While ALA membership has rebounded in recent years, ALCTS membership has continued to drop, and the division now has a third fewer members than it did ten years ago. ALCTS's budget has remained stable due to strong revenue from continuing education, but the capacity to support new initiatives is limited. Leaders recognized the need to make the division more attractive to new and existing members. Combining with LITA and LLAMA to form a new division offered one path forward.

To support the boards' directives, the presidents, presidents-elect, and executive directors of the three divisions formed a Steering Committee that met nearly every week during the summer and fall. Over the summer, the Steering Committee, with Tyler Dzuba as facilitator, held a virtual retreat develop mission, vision, and values statements. Work during fall 2018 was divided up into different working groups, each addressing a different aspect of the new division plan:

Kristin E. Martin (kmartin@uchicago.edu) is Director of Technical Services at the University of Chicago.

- Activities Working Group, chaired by ALCTS President Kristin Martin, was charged with exploring and aligning the activities of the three divisions to create a new slate of member offerings;
- Budget and Finance Working Group, chaired by Charles Wilt, previously charged with performing a preliminary financial analysis of the feasibility of a new division, continued work on developing a financial plan and proposed dues structure for the new division;
- Communications Working Group, established in spring 2018 and chaired by LLAMA President Lynn Hoffman, charged with developing a communications plan and with providing mechanisms for members to provide feedback and share potential concerns; and
- Operations Working Group, chaired by LITA President Bohyun Kim, charged with developing the early organization structure and documents that will be necessary for a new division to exist.

The working groups shared their reports and recommendations with the Steering Committee, who, due to the hard work of Jenny Levine and Kerry Ward, executive directors of LITA and LLAMA respectively, developed a project plan that was shared with the boards of the three divisions. However, just before the Midwinter Meeting, the Steering Committee members recognized some serious flaws in proceeding forward and ultimately none of the divisions asked their boards to vote on whether to go forward. Instead, a project pause was put in place. There were basically three reasons for the pause: first, the divisions' leadership still had to work through key operational details; second, because of time needed by the working groups to explore their respective areas, communications with the membership were not as robust as needed and there was not sufficient time to involve the members in the discussion; and third, the divisions' leadership wanted to make sure the new division could provide far more robust service to members than what the three of divisions could provide separately.

In spring 2019, conversations with the current Steering Committee started up again, and all agreed to have the incoming presidents-elect, Christopher Cronin, ALCTS; Evviva Weinraub, LITA; and Tyler Dzuba, LLAMA, form the core of a new Steering Committee to address the remaining issues with the project plan and to move forward with considering a membership vote in spring 2020. The divisions' leadership believes this can also serve as a model for the work of the Steering Committee on Organizational Effectiveness (SCOE) and demonstrate the value of a functional division across library types. As presented at a joint board meeting of the three divisions, the previously determined mission, vision, and values will be carried forward, and the Steering Committee will finalize the project plan during the summer and fall. If membership votes in favor, the new division would then officially come into being on September 1, 2020, at the start of ALA's fiscal year. Recognizing that communication was one our shortcomings from this past year, we will revamp our communication efforts, to include a website. Due to the strong working relationship between the three divisions, new collaborations are planned for this upcoming year: a joint spring 2020 online conference, delivering education from each of the divisions; a joint President's Program at the 2020 Annual Conference; and a joint fall 2020 in-person conference to formally launch our new division.

Finances

The financial situation for ALCTS has been a bright spot for the past two years, reversing losses from FY12 to FY16. Although not as robust as FY17, ALCTS ended FY18 ahead of budget projections, with net revenue of $76,365. So far, FY19 is on track to have a net positive revenue as well. The success of this positive year has allowed us to build back up our reserves and to devote resources to new division conversations and to bystander training in support of equity, diversity, and inclusion (EDI). Sources of revenue mainly have been due to strong registration numbers for ALCTS continuing education events, particularly webinars and web courses, which continue to sell out. There was a dues increase in FY2018 that continues to generate more revenue, although decreased membership numbers, which are down by approximately five percent, are concerning. Revenue from publications continues to underperform, with both monograph revenue and *Library Resources & Technical Services* subscription revenue coming in under budget. ALCTS Interim Executive Director Kerry Ward and the division's Budget and Finance Committee continue to review and analyze revenues and expenditures.

Member donation and corporate sponsorships also support the ALCTS budget. Members continue to support ALCTS through donations, with over $45,000 in donations received so far in FY19. Corporate sponsorships are critical in a number of areas, including member recognition through awards, sponsorship of professional development opportunities, and support for Preservation Week, which allows preservation-related issues to reach a wide public audience. A special thanks goes to the ALCTS Fundraising Committee who coordinates all of this work.

Education and Professional Development

As mentioned above, continuing educational offerings remain extremely popular for ALCTS members and

beyond. So far, through fiscal year 2018-2019, there have been twenty-eight webinars offered, repeated sessions of the nearly sold-out seven Fundamentals courses, and monthly e-Forums on topics around collections and technical services. Most web course sessions continue to sell out, particularly the popular "Fundamentals of Cataloging" Special webinar series offered during the year included a five-part series on licensing electronic resources, a two-part introduction to data visualization, and a two-part series on serials standards. ALCTS remains dedicated to offering a wide array of online professional development and education, and the consistent popularity of these offerings demonstrates how we are able to meet the needs of a wide constituency, from webinars in specialized areas for seasoned professionals to the foundational basics in the Fundamentals web courses, three of which are approved by the Library Support Staff Certification program. These offerings would not be available without the dedicated work of the ALCTS Continuing Education Committee.

The Continuing Education Committee, along with the Program Committee, developed two virtual preconferences, "Advocating for Your Department and Library" and "Library Project Management 101," held prior to the ALA Annual Conference in Washington, D.C. in June 2018. In addition, ALCTS offered two popular in-person preconference workshops. "Change Management in Libraries and Technical Services" highlighted an area of intersection between ALCTS and LLAMA and offered participants skills on leading their institution through changes. Attendees indicated their desire for more programming along this same line. With support from the ALA International Relations Office and the Foundation of the American Institute for Conservation of Historic and Artistic Work (FAIC)/ National Heritage Responders (NHR), the ALCTS Preservation Administration and Reformatting Section (PARS) organized "Better Networking for Disasters: Improving Participation and Coordination for Disaster Response and Recovery of Cultural Heritage." Using the disaster response to Hurricane Maria in Puerto Rico as a case study, speakers from Puerto Rico came to educate participants on this topic.

Programmatic activities at the ALA Midwinter Meeting and the Annual Conference offer another venue for learning, conversation, and networking. With over forty ALCTS Interest Groups, conversations and presentations around topics of interest to ALCTS members occur regularly at these conferences. More recently, some interest groups have been expanding their reach through online meetings. Both the Chief Collection Development Officers of Large Research Libraries Interest Group and Technical Services Directors of Large Research Libraries Interest Group (Big Heads) held an online discussion meeting during January 2019, with a wide range of topics including changes in physical spaces in libraries and their effects on the collection, open access, building the next generation of technical services leaders, and building digital collections. Over fifty and eighty individuals attended the meetings, respectively. At the Annual Conference, ALCTS presented sixteen programs, with an emphasis on issues around digital collections, including topics on preservation issues for podcasts, resource sharing for streaming video, and using analytics to better assess and encourage use.

ALCTS was also excited to bring in Marcia Chatelain, Associate Professor of History and African American Studies at Georgetown University, as the featured speaker for the 2019 ALCTS President's Program. Professor Chatelain's talk shared her research for her upcoming book, *Franchise: The Golden Arches in Black America*, which "tells the story of black capitalists, civil rights leaders, and even radical nationalists who believed that their destiny rested with a set of golden arches. And it tells of an industry that blossomed at the very moment a freedom movement began to wither."

With support from ALCTS and PARS, the 2019 Preservation Week was held from April 21-27, with the theme of "Preserving Your Family History." Professional genealogist, entrepreneur, and attorney Kenyatta D. Berry served as honorary chair, and hosted one of two free webinars on the topic. The two webinars garnered between 400 and 500 registrations each, and close to 300 viewers tuned in live for each webinar. Another important annual PARS event held during the ALA Annual Conference is Preservation in Action (PiA). In this year's sold-out PiA event, participants took part in a day-long preservation project with the District of Columbia Public Library, providing preservation care and rehousing for the library's special collections.

Publications

Publications remain a key mechanism for ALCTS to support the professional development needs of its members and share scholarship coming from the profession. ALCTS publishes the highly regarded peer-reviewed journal *Library Resources & Technical Services*, publications in the popular series *Sudden Selector's Guide* series, as well as individual monographs on areas of interest to collections and technical services professionals. News and events continue to be shared through *ALCTS News*. A new series, the *Sudden Position Guide* series, began this year with the release of the first guide in the series, *Sudden Position Guide to Cataloging and Metadata*, debuting in this past spring. This new series will focus on acquisitions, technical services, collection assessment, cataloging and metadata, and collection management. Four new publications were released this year, with several more in preparation to be published in 2019–2020.

- *Digital Preservation in Libraries: Preparing for a Sustainable Future*, edited by Jeremy Myntti and Jessalyn Zoom (2018)
- *Guide to Streaming Video Acquisitions*, edited by Eric Hartnett (2018)
- *Sudden Position Guide to Cataloging and Metadata* (ALCTS Sudden Position Series 1), edited by Jeremy Myntti (2019)
- *Assessment Strategies in Technical Services*, edited by Kimberley A. Edwards and Michelle Leonard (2019)

Forthcoming individual monographs include *Cataloging Correctly for Kids* (6th edition), *Graphic Novels: Selecting, Acquiring, and Cataloging Nuts and Bolts for Libraries, Linked Data: A Gentle Guide for the Perplexed Librarian*, and *Institutional Repositories: Benefits and Challenges.*

ALCTS Standards Activities

ALCTS members continued to provide guidance, recommendations, and standards work across the profession. The Acquisitions Section updated the "Statement of Principles and Standards of Acquisitions Practice" in support of the "Core Competencies for Acquisitions Professionals," endorsed last year. Beth Shoemaker, CaMMS Member-at-Large is chairing the new Cataloging Ethics Steering Committee, to provide an environmental scan of specific topics around cataloging ethics and develop a cataloging code of ethics. The ALCTS Advocacy and Policy Committee reviewed and provided comments for eighteen Library Bill of Rights provisions during the course of the year.

Nationally and internationally, ALCTS continues to be a leader in standards development and review, particularly in the area of cataloging and metadata. In coordination with the ALCTS Standards Committee, the NISO representative, Jill Emery of Portland State University, received feedback from fifty-two individuals from ALA and ALCTS on various standard reviews and new proposals. At her recommendation, the ALCTS Board appointed an alternate representative to ensure that we always have coverage for this important position. Examples of standards reviewed include updates to KBART (Knowledge Bases and Related Tools), which is a critical standard for libraries to maintain and understand their electronic resources holdings, and the proposed authentication standard, RA21, still under review. The Standards Committee maintains a LibGuide (https://alcts.libguides.com/alcts_standards) of standards-related information, and the CRS Standards Committee has led an education effort to disseminate information about serials-related standards through forums and webinars. The ALCTS/LITA Metadata Standards Committee has spent the year working on a framework for metadata assessment.

ALCTS continues to support ALA involvement in the development and maintenance cataloging code, Resource Description and Access (RDA). After a year of operations, the North American RDA Committee (NARDAC) updated their Terms of Reference, which were adopted by the ALCTS Board. The Board appointed Stephen Hearn, University of Washington, to a three-year term as the ALA Representative to NARDAC, starting January 2019. He joins colleague Dominique Bourassa, Yale University, and replaces Kathy Glennan, University of Maryland, who began a four-year term as chair of the RDA Steering Committee. NARDAC participated in reviewing governance and structure for maintaining RDA, updates to the RDA Toolkit and the 3R project, and education to the professional about RDA and the IFLA Library Reference Model.

Former ALCTS Executive Director Keri Cascio, now at the Chicago Public Library, represents ALA as a copyright holder on the RDA Board.

Recruitment and Retention

Membership within ALCTS continues to fall at a steady pace. Membership in June 2019 was 3,107 total members, down from 3,242 in June 2018. The ALCTS leadership recognizes that declining membership continues to be a challenge, despite our events at providing relevant programming and activities to attract members. As noted above, changes in the profession are likely contributing to the decline in membership, which is a large reason why ALCTS is looking to create a new division with LITA and LLAMA. Given that the timeline for that change is taking longer than expected, ALCTS continues to look at what the division can do right now to make itself as attractive and relevant as possible.

During the 2018–2019 year, ALCTS continued to operate under the 2015–2018 strategic plan. Looking ahead to 2019–2020, the ALCTS Planning Committee developed a new one-year strategic plan to help keep ALCTS vibrant and active, while also anticipating major structural changes. The new strategic plan, approved by the ALCTS Board in June 2019, will provide emphasis on equity, diversity, and inclusion work as well as an internal and external review of organizational structures and activities. ALCTS already has many programs in place in support of EDI, including support of an ALA Spectrum Scholar, the Lois Mai Chan Professional Development Grant, which encourages professional development for librarians and paraprofessionals from traditionally underrepresented groups, and online course grants for library professionals from developing countries (www.ala.org/alcts/awards/grants/onlinegrant). Additionally this spring, ALCTS updated its Online Code of Conduct

(www.ala.org/alcts/alcts-statement-conduct) to provide better support for individuals from all backgrounds, and has been working with other divisions to develop options for bystander training.

Building on the success of the first year of the ALCTS mentoring program, the second year supported thirty-three mentor/mentee pairs, with a similar size for year three. While the program has been successful and is entering its third year now, the members of the ALCTS Leadership Development Mentoring Subcommittee also recognize great potential to expand the program under a newer and enlarged division.

Organizational Changes

Keri Cascio, ALCTS Executive Director, accepted a new position as assistant chief, Technology, Content and Innovation at the Chicago Public Library in September 2018. While this was a wonderful opportunity for Keri to return as a professional to the field, we were sad to see her leave. Fortunately, Kerry Ward, LLAMA Executive Director, agreed to be the ALCTS Interim Executive Director. In October 2018, we were very lucky have Julie Reese rejoin the ALCTS staff as the ALCTS Deputy Director. Julie took responsibility for managing the staff and daily operations of ALCTS, while Kerry manages Board responsibilities and ALCTS finances.

I am grateful for the support provided by everyone in the ALCTS Office and their marvelous skill in finding the answers to my questions. I am especially appreciative of the thoughtful guidance, comments, and opinions of my Executive Committee colleagues, ALCTS Interim Executive Director Kerry Ward, ALCTS Deputy Executive Director Julie Reese, President-Elect Jennifer Bowen, Past-President Mary Beth Thomson, and Division Councilor Erin Stalberg. I am also grateful for the opportunity to work with the amazing leadership of LLAMA and LITA, particularly LITA President Bohyun Kim, LITA President-Elect Emily Morton-Owens, LITA Past-President Andromeda Yelton, LITA Executive Director Jenny Levine, LLAMA President Lynn Hoffman, and LLAMA President-Elect Anne Moore. Members from all three divisions put in much time and effort into considering how a new joint division could be successful. Most importantly, I would like to thank all ALCTS members. I continue to be impressed by how much ALCTS is able to accomplish because of the time, expertise, and inventiveness of our dedicated members. I have been honored to lead ALCTS during the 2018–2019 year.

Adoption of NISO's Shared Electronic Resource Understanding (SERU) at US Academic Libraries

Sunshine Jacinda Carter

Following the emergence of electronic resources (e-resources), librarians developed licensing guidelines, standards, models, and understandings to educate, increase efficiencies, and retain rights afforded by copyright law. To reduce licensing burdens, the National Information Standards Organization (NISO) released the Shared E-Resource Understanding (SERU) in 2008, a set of "understandings" created and agreed upon by libraries and vendors. The author conducted a survey in 2017 of licensing practices and SERU use at libraries. The survey analyzed 108 responses from US academic libraries signing at least one license in the twelve months preceding the survey.

When electronic resources (e-resources) emerged four decades ago, unfamiliar licenses accompanied them, diverging from allowed uses under copyright. Licenses are commonplace now and an established part of the e-resource lifecycle, but they can still differ from expected library needs and require dedicated time and staff.

To make licensing faster and easier, librarians and publishers invested time, money, and energy into education and initiatives. Suggesting changes to wording and/or striking contract clauses, consulting with general counsel staff, and gleaning guidance from one of many model/standard licenses available are all considered best practices. These attempts to control the licensing process have helped librarians negotiate better terms for their institution and authorized users, articulate sought after license language to our vendors, and establish parity between negotiating parties. Despite these efforts, however, licenses for e-resources continue to take a long time to negotiate, a process repeated by all libraries. The literature addresses license language suggestions, but license workload and quantity are not well covered.

To reduce licensing burdens, the National Information Standards Organization (NISO) released a "non-agreement" in 2008 called the Shared E-Resource Understanding (SERU). SERU is a set of "understandings" created and agreed upon in advance by libraries and vendors. No recent published research has discussed overall license workload, adoption of SERU, or factors influencing SERU's adoption by academic libraries and publishers. The author conducted a survey in 2017 to understand current licensing practices and SERU adoption since SERU's creation. This paper reviews progress made to alleviate license

Sunshine Jacinda Carter (scarter@umn.edu) is Interim Collection Development Officer & Electronic Resources Librarian/ERM Unit Manager, University of Minnesota Libraries, Minneapolis.

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burdens on libraries, describes survey methods and tools used, presents survey results, and discusses their meaning.

Literature Review

Licenses accompanying precursors to e-resources resulted in additional work for library staff. Licensing librarians have developed guidelines, standards, models, and understandings to educate, increase efficiencies, and retain rights afforded by copyright law. This literature review focuses on the evolution of standardized licensing processes and reducing licensing burdens.

Beginnings of Licenses in Libraries

The emergence of e-resources in the late 1980s introduced the licensing contract. Before institutions and their authorized users can access e-resources, content providers usually require a signed contract. A departure from copyright law towards executed agreements was partly due to uncertainty content providers felt about their previously static and stationary content possibly destined for wider dissemination on the internet.[1]

Early library licensing began with CD-ROMs and computer software programs leaving "little doubt that whatever rights were guaranteed by federal, state, and local laws, signing the contract eliminated them."[2] Since contracts can eliminate rights allowed by copyright law, questions and discussions ensued regarding how to navigate contracts rather than copyright.[3] Nissley outlined four recommendations for writing licenses: simplification, standardization, including "fair use" guidelines along with other educational use rights, and "a broader understanding and a more open attitude on the part of the information provider about the use of information in the library context."[4]

Licensing Principles and Guidelines

With the growth of e-resources and their licenses, librarians shared advice and best practices on how to handle this new area of librarianship. Association of Research Libraries (ARL) member institutions created one of the first guidelines and provided glimpses of the acquisitions, collection development, use, and circulation policies of microcomputer software.[5] After attempting to develop a "common set of terms and conditions" for e-resources, the Coalition for Networked Information (CNI) recommended "no further efforts be directed toward such a goal" due to lack of consensus. Rather, they suggested a guideline or a checklist of "items, issues, positions and business logics."[6]

New licensing demands elicited a "strong sense of the risks of inexperience or failure, but without a correspondingly strong public sense of the needs of the different members of this group and how to arrive at mutually beneficial solutions and language."[7] In 1996, Okerson shared preferred library license terms with the International Association of Scientific, Technical and Medical Publishers (STM).[8] Six professional library organizations developed the *Principles for Licensing Electronic Resources* in 1997, a list of fifteen licensing principles and ten license terms to define in a contract.[9] The International Coalition of Library Consortia (ICOLC), starting in 1998, outlined academic consortia licensing and pricing preferences.[10] In the same year, licensing librarians from ARL member institutions presented a workshop to publishers on the contract needs of libraries.[11]

Model Licenses

Based on early licensing principles and discussions, librarians started to design model licenses to relieve licensing costs and efforts. Model licenses provide sample license language, supply structure for a license checklist, or provide the foundation for a locally created model license. Cox wrote that the "variety of licenses that both publishers and vendors offer contain much that is common in substance but different in expression."[12] Croft's ideal model license would give "both librarians and vendors a basis for evaluating and negotiating contracts that will be fair and profitable for all parties."[13]

With grant funding, Yale University Library developed an online resource in 1996 to "assist academic research libraries in negotiating electronic licensing agreements." The initial proposal stated that "few of the licenses we [Yale] are asked to sign are satisfactory to the Library and/or the University," and librarians "may not realize they have the power to change the terms of a license or they may not know how to go about doing so."[14] A year later, additional grant money allowed for the development of software to create customized licenses. These licensing resources, known as LIBLICENSE (hosted by the Center for Research Libraries) "support[s] librarians and educators in their licensing of electronic content."[15]

Publishers, libraries, and consortia created model licenses, based on the works of others, to address local needs.[16] Model licenses came from the Canadian National Site Licensing Project, Big Ten Academic Alliance (BTAA; formerly the Committee on Institutional Cooperation), Consortia Canada, the UK's National Electronic Site License Initiative, and California Digital Libraries.[17] Massachusetts Institute of Technology (MIT) Libraries created their own standard licenses and, after six months of use, "13 of 21 publishers (62 percent) accepted the MIT license with no changes or few changes."[18] The University Libraries at University of Tennessee (UT) Knoxville worked with their procurement office to create an institutional master agreement to streamline their processes.[19]

Challenges of Licensing Library Resources

Licenses are a burden and costly because it takes time to create, negotiate, and modify contracts to meet each party's legal and business needs. Carpenter would not be surprised "if the amount of time invested on both sides . . . were to run into the hundreds of thousands of hours."[20] A small publisher could spend over $10,000 to draft a license for an e-resource product.[21] Staff time from non-library employees, such as legal counsel or procurement staff, also increases expenses.[22]

The number of licenses and amendments a library signs annually depends on the number of e-resources the library acquires (corresponding with a library's acquisitions budget). Yale Library was "signing about two licenses per month [in 1996] for electronic information"; in 1999, they were "reviewing several licenses a week."[23] During six months of testing their model license, MIT Libraries negotiated licenses with twenty-one vendors, averaging 3.5 licenses per month.[24] The University of Minnesota Libraries negotiated fifty-nine licenses in 2017 (excluding amendments), averaging almost five per month. Include the seventy-one amendments processed during the same period, and the University of Minnesota Libraries reviewed and/or negotiated almost eleven contracts per month.[25]

License negotiation is important, and libraries will "not get any contract changes if it doesn't ask."[26] It is important to record every agreement made in writing; a verbal agreement is not binding, and "the moment you sign a license agreement to the contrary, what the salesperson said becomes totally irrelevant."[27] The consequences of not reviewing a license are significant and can include the loss of rights, burdensome obligations, or sudden termination due to inappropriate use.[28] Blosser suggested vendors (serial vendors most likely) act as licensing liaisons between libraries and publishers to alleviate the need for every library to develop licensing expertise.[29]

Shared E-Resource Understanding

Though model and standard licenses have somewhat simplified the negotiation process, it can still take a long time to reach agreement. Four organizations—ARL, the Association of Learned and Professional Society Publishers (ALPSP), the Society of Scholarly Publishing (SSP), and the Scholarly Publishing and Academic Resources Coalition (SPARC)—met in October 2006 to discuss licensing frustrations and a possible alternative. NISO subsequently formed the SERU Working Group to develop a recommended practice "to support a new mechanism for publishers to sell e-resources without licenses if they feel their perception of risk has been adequately addressed by current law and developing norms of behavior."[30]

NISO published *SERU: A Shared Electronic Resource Understanding* in 2008 to offer a mutually beneficial alternative to negotiating and executing a license agreement for libraries and publishers, focusing on libraries' and publishers' business needs, rather than their legal ones.[31] SERU "operate[s] within a framework of shared understanding and good faith."[32] The "common understandings" of SERU represent the business needs defined as subscription (acquisition), subscribing institutions, authorized users, use of materials, inappropriate use, confidentiality and privacy, online performance and service provisions, along with archiving and perpetual access rights. The e-resource order (or invoice) describes elements concerning cost, specific content, and terms and "SERU is not designed for high-risk transactions or products with unusual features or pricing models."[33]

SERU reduces licensing costs for both parties, simplifies e-resource processing, and benefits small publishers.[34] Lamoureux hoped that "in time it [SERU] will serve as a core document that large publishers would feel comfortable to reference in place of a license agreement," and libraries could eventually request subscription agents to provide immediate online access to orders using SERU.[35] SERU's revision in 2012 expanded its scope to include non-journal e-resources.[36] Modifications to the "common understandings" focused on acquiring content rather than subscribing to content, elaborated on particular uses such as interlibrary loan, and added specific uses such as linking to resources for a course.

Since its publication, SERU has been well promoted and referenced as a best practice.[37] A 2011 survey asked SERU registrants about SERU use.[38] Results "showed 45.7 percent of libraries had used SERU 1–5 times; 7.4 percent had used it 5–10 times, 2.5 percent used it 10–15 times, and 3.7 percent more than 15 times."[39] A total of 40.7 percent of institutions had never used SERU. No recent published research discusses current levels of SERU adoption by US academic libraries and publishers, SERU use in place of a fully negotiated license, or factors influencing SERU's adoption by academic libraries and publishers.

In summary, licensing librarians have addressed license issues since the introduction of e-resources. Identifying the main license concerns, licensing librarians then collaborated with publishers to articulate their licensing needs, devise guidelines and best practices, and create model license language to support and streamline acquisitions and licensing processes. SERU's release in 2008 (and revision in 2012) was a response to streamline the processes further and relieve some licensing burdens.

Method

To investigate licensing practices and SERU use, the author conducted a survey of librarians and publishers with licensing responsibilities. The survey was intended to answer the following questions:

- How many libraries use SERU?
- How often is SERU used in place of a negotiated, signed license?
- What proportion of e-resource acquisitions are covered by SERU?
- Do libraries advocate for SERU when speaking with publishers? If so, how often and in what way?
- What are the reasons why a library would not use SERU?
- How much do libraries suggest changes to vendor provided licenses?
- How much licensing/negotiation support do libraries have access to, whether that be licensing librarians or general counsel?
- Who does the negotiation for academic libraries?

The survey was delivered through Qualtrics, a survey software licensed by the University of Minnesota. Survey invitations and reminders were distributed through direct emails and posts to email discussion lists. The survey was open for twenty-three days between November 13, 2017 and December 5, 2017. To collect responses from SERU registrants, direct email invitations (n = 471) were sent to SERU Registry contacts via the Qualtrics distribution functionality.[40] To collect responses from non-SERU registrants, the survey was distributed through email discussion lists chosen for their topical relevance, including WEB4LIB, ERIL-L, LIBLICENSE-L, ALCTScentral, COLLDV, and SCHOLCOMM. Respondents received no incentive to complete the survey. Issues related to invitation distribution included bounced direct emails (n = 21), the library-heavy audience of chosen discussion lists, and the non-random distribution method of using email lists to gather responses from non-SERU-registered libraries and publishers. The author did not have an unbiased method for survey distribution to publishers beyond direct emails sent to SERU Registry contacts.

The survey consisted of forty-five questions, but respondents only needed to answer twenty-four or fewer questions, depending on their responses.[41] Most questions were mandatory to answer due to interdependencies of subsequent questions. The first question asked respondents to identify their organization type (library or publisher); the answer then provided respondents with a library- or publisher-focused survey. The publisher and library versions of the survey were essentially identical, with minor wording changes to reflect survey audience. The survey consisted of Likert scale, slider, and text-entry (open-ended) question types. Contact information was collected for validation purposes only and was used to determine whether a respondent's institution was registered with SERU or an ARL member.

There were 174 responses, with 5 being discarded due to duplicate or invalid responses, leaving 169 valid responses. Of the valid responses, 149 (88 percent) were from libraries and 20 (12 percent) were from publishers, primarily US based (134; 79 percent). Since SERU is a US-based standard, the primary data set used for analysis only included responses from US academic libraries that had signed at least one license agreement in the previous twelve months (N = 108). The author chose to focus the survey analysis solely on US academic libraries due to the small number of responses from publishers and non-academic libraries.

Results and Discussion

The recent literature has not discussed the level of SERU use at US academic libraries, SERU use in place of a fully negotiated license, nor factors influencing SERU use by academic libraries and publishers. This survey attempts to address these questions. Due to the large number of survey questions, the results and discussion are presented together. SERU registrants were invited to complete the survey, but not all non-registrants were sampled. Therefore, the findings cannot be broadly applied to all libraries.

There were 108 responses from US academic libraries that had signed at least one license in the year preceding the survey. Thirty-one respondents (29 percent) were from ARL libraries, and seventy-seven respondents (71 percent) were from non-ARL libraries. Seventy-five respondents (69 percent) were from SERU-registered institutions, and thirty-three respondents (31 percent) were from non-registered institutions. While individuals answered the survey, responses were in reference to practices at a respondent's library.

Licensing Practices

Table 1 shows the response rate for which position title best describes the role with primary responsibility for negotiating e-resource licenses and amendments with content providers. Library personnel with the title "Electronic Resources Librarian" more often had primary licensing responsibility, matching the literature findings.[42]

Table 2 shows the average number of licenses signed in the past twelve months and time needed for negotiations. On average, libraries signed 39.1 licenses in the last twelve

months, with negotiation processes taking twenty-four days. For 75 percent of libraries, it took an average of thirty days or less to negotiate a license or amendment. Some institutions signed upwards of two hundred licenses. ARL libraries, not surprisingly, negotiate more licenses per year than non-ARL libraries, and this is likely due to their larger collection budgets. Negotiation processes for ARL libraries took 2.3 more days than non-ARL libraries. This could be perhaps be due to license backlogs at ARL institutions.

The frequency of suggested changes (e.g. additions, deletions modifications, etc.) to licenses or amendments during negotiations is shown in figure 1. Fifty-eight percent of libraries suggested changes to licenses "always" or "most of the time" (n = 63). Changes were suggested "sometimes" or "never" 30 percent of the time (n = 32). This is surprising since the author has rarely found a license that does not require changes. For ARL libraries, 84 percent suggested changes "always" or "most of the time" (n = 26) and non-ARL libraries did so 48 percent of the time (n = 37). Since ARL libraries suggest changes frequently, this could also explain the longer negotiation time for ARL library licenses (in the author's experience, suggesting changes to a license can make negotiations lengthier).

Figure 2 shows the licensing support level (e.g. licensing experts, general counsel, contract tools, etc.) at libraries. Thirty-one percent of libraries have "a great deal of support" or "a lot of support" for licensing (n = 33). Exactly half (n = 54) of libraries had "a little support" or "no support at all." Of ARL libraries, 39 percent received "a great deal of support" or "a lot of support" (n = 12), while 27 percent of non-ARL libraries reported "a great deal of support" or "a lot of support" (n = 21). For ARL libraries presumably, a larger acquisition budget does not necessarily correspond with more support for licensing.

Figure 3 shows specific model/standardized licensing language used to facilitate negotiation. Seventy-seven percent of libraries used at least one model/standardized

Table 1. Title that best describes the role with primary responsibility for negotiating e-resource licenses and amendments with content providers

Title	No. of Responses	%
Electronic Resources Librarian	43	39.8%
Acquisitions Librarian	18	16.7%
Collection Development Librarian	15	13.9%
Asst. Director	12	11.1%
Technical Services Librarian	7	6.5%
None of the Above	6	5.6%
Director	4	3.7%
General Counsel Staff	2	1.9%
Scholarly Communications Librarian	1	0.9%
Total	108	100.0%

Note: 83% (n = 90) of respondents indicated they had the same title as the primary negotiator (i.e., the respondent was most likely the primary negotiator)

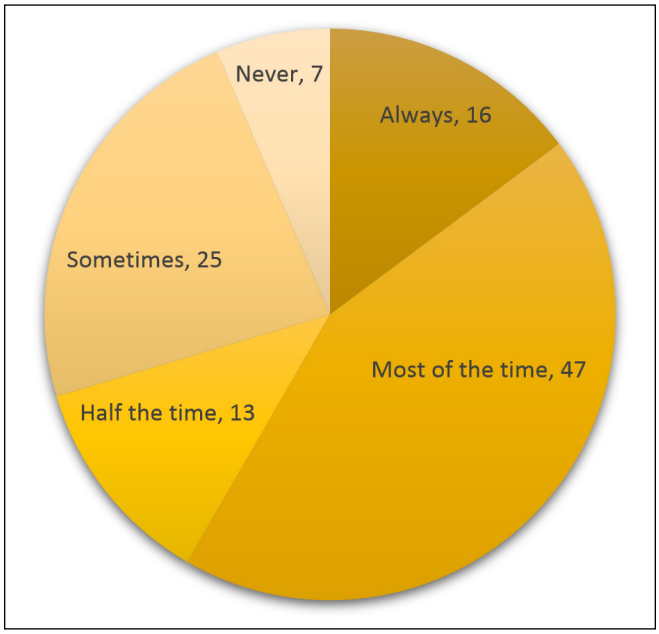

Figure 1. Frequency of suggesting changes to licenses or amendments. Note: Libraries had signed at least one license in the past twelve months (N = 108)

Table 2. Average number of licenses signed and days to successful negotiation[a]

	All Respondents	ARL Respondents	Non-ARL Respondents
No. of libraries	108	31	77
Average no. of licenses signed in past 12 mos.	39.1 *(m=25,r=1-221)*[b]	64.4 *(m=50,r=10-221)*	29 *(m=19,r=1-150)*
Average no. of days to successfully negotiate a license or amendment	24.4 *(m=18.5,r=1-90)*	26.1 *(m=21,r=4-75)*	23.8 *(m=14,r=1-90)*

a Libraries had signed at least one license in the past 12-months (N = 108)
b m = median, r = range

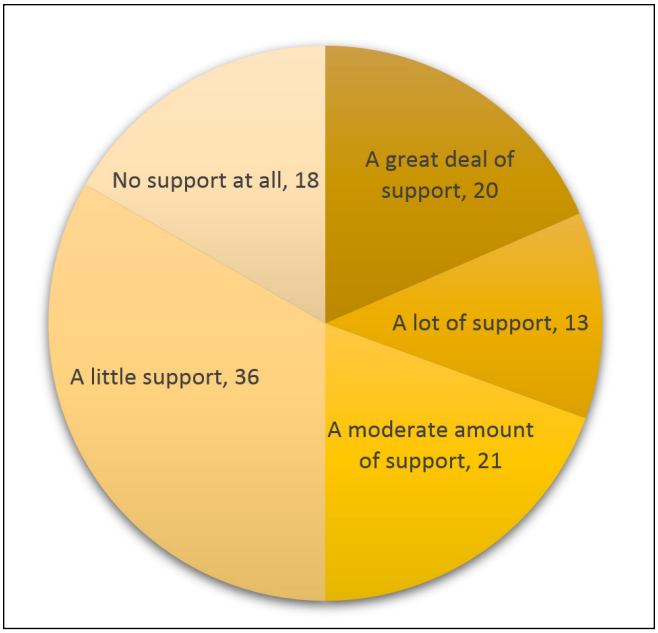

Figure 2. Amount of licensing/negotiation support. Note: Libraries had signed at least one license in the past twelve months (N = 108)

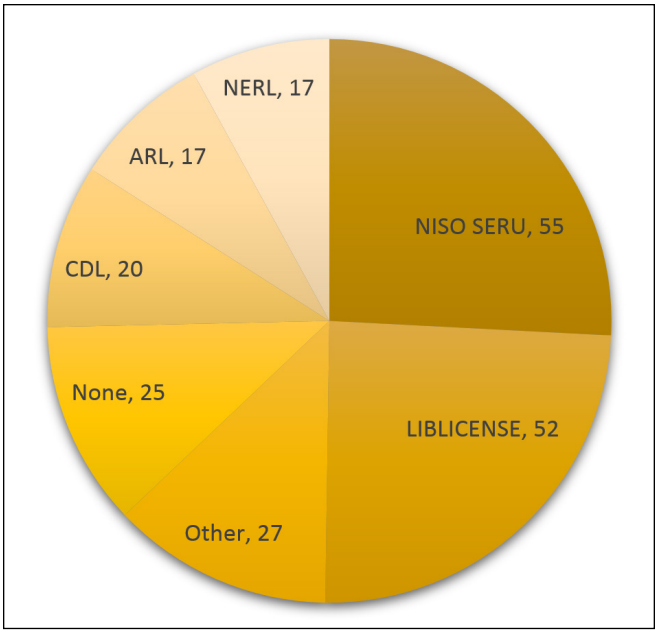

Figure 3. Model or standardized licensing languages used to facilitate license negotiation. Note: Respondents could select one or more response. Libraries had signed at least one license in the past twelve months (N = 108)

licenses and/or language to assist or guide them in negotiating licenses or amendments with content providers (many libraries used more than one). A total of 97 percent of ARL libraries and 69 percent of non-ARL used at least one model/standard license (n = 30; n = 53). Libraries selected SERU and LIBLICENSE most often. Since the survey was sent directly to SERU registered libraries, it makes sense that the model language selected most frequently by libraries was SERU. "Other" model/standardized languages cited (twenty-seven responses, 13 percent) included locally created language (nine responses) and BTAA (four responses). Twenty-five libraries use no model license at all.

SERU Use

On average, it took SERU using libraries 5.4 days to agree to SERU terms with content providers (n = 73, median = 2, range = 0-100). Table 3 shows SERU use by libraries during the past nine years and the most recent twelve months. SERU had been in use for nine years at the time of the survey and thus the nine-year use shows the average cumulative SERU use since its inception.

Seventy-three libraries (68 percent) used SERU in the past nine years and fifty libraries (46 percent) used SERU in the past twelve months. Recent SERU users averaged 58.8 licenses and 2.5 SERU. Over the past twelve months, ARL libraries averaged 71.9 license and 3 SERU uses, while non-ARL libraries averaged 46.7 license and 2.1 SERU uses. Regardless of library type, SERU use replaced 4 percent of licenses in the past twelve months.

Fourteen percent of libraries that used SERU over the past year were not SERU registrants, and not all SERU registered libraries have used SERU. It is possible that some libraries believe philosophically in the concept of SERU, but due to reasons beyond their control, they were unable to use SERU at their institution. Additionally, non-registered SERU users may not be aware their library should register with SERU, or perhaps believe they are registered.

Libraries (n = 48) provided explanations as to how they handled terms not covered by SERU (such as text and data mining). Responses indicated that terms not covered by SERU are added through a separate signed agreement—addendum or otherwise—(27 percent; ct = 13), confirmation of the addition via email (8 percent; ct = 4), or model license language is inserted elsewhere (8 percent; ct = 4). Fifty-eight percent (ct = 28) of libraries had not handled terms outside of SERU or used SERU so infrequently that they did not answer the question. It should be noted that SERU is not meant to be changed extensively.

Figure 4 shows how often libraries that had used SERU in the past nine years *or* were registered with SERU (henceforth referred to as "SERU user/registered libraries" or SURLs; N = 80) asked content providers to use SERU in place of a negotiated license or amendment when placing an e-resource order. Eight percent of SURLs asked vendors

Table 3. Nine-year and twelve-month SERU use.[a]

	All Libraries	ARL Libraries	Non-ARL Libraries
No. of libraries registered with SERU	75 (69%)	25 (81%)	50 (65%)
9-year use of SERU			
No. of libraries using SERU	73	28	45
No. of libraries registered with SERU	62	25	37
Avg. no. of SERU uses over nine yrs.	11.1 *(m=5,r=1-90)*[b]	15.8 *(m=10,r=1-90)*	8.2 *(m=3,r=1-47)*
12-month use of SERU			
No. of libraries using SERU	50	24	26
No. of libraries registered with SERU	43	22	21
Avg. no. of SERU uses over 12 mos.	2.5 *(m=2,r=1-10)*	3.0 *(m=2,r=1-10)*	2.1 *(m=1.5,r=1-6)*
Avg. no. of licenses signed	58.8 *(m=45,r=5-221)*	71.9 *(m=54,r=10-221)*	46.7 *(m=38.5,r=5-150)*
% SERU use[c]	4%	4%	4%

[a] Libraries had signed at least one license in the past 12-months (N = 108)
[b] m = median, r = range
[c] % SERU use is (Avg. no. of SERU use)/([Avg. no. of SERU use] + [Avg. no. of licenses signed])

to use SERU "half the time" or more often. Forty percent of SURLs responded that they "never" ask vendors to use SERU in place of a license. Of ARL SURLs, 18 percent "never" asked vendors to use SERU and 52 percent of non-ARL SURLs "never" asked vendors to use SERU.

Seven (out of eighty, or 9 percent) SURLs developed specific criteria for when their institution could or could not use SERU in place of a license. Criteria used to evaluate whether SERU can be used included cost (n = 6), post-cancellation access (n = 3), resource type (n = 3), other vendor requirements (n = 2), and interlibrary loan (m = 1). The specific dollar limits mentioned as a maximum cost where SERU could no longer be used included $500 (single journal), $5,000 (n = 2), $200,000, and $250,000.

The top reasons why SURLs (sixty-four respondents; ninety responses) were able to use SERU in place of a negotiated license included: the vendor was registered or offered to use SERU (n = 28), the vendor had no license to offer (n = 8), the library asked to use SERU (n = 7), there was an issue with the license (n = 6), the acquisition was below a specific dollar threshold (n = 6), or the library had no restrictions against using SERU (n = 5). The top reasons why SURLs (fifty-nine respondents; sixty-six responses) were *unable* to use SERU in place of a negotiated license included: vendors required terms in addition to SERU (n = 11), the vendor was unwilling or unable to use SERU (n = 10), the acquisition exceeded a specific dollar amount (n = 7), the vendor had a license (n = 7), the vendor was not registered with SERU (n = 7), or the library required additional terms to SERU (n = 4).

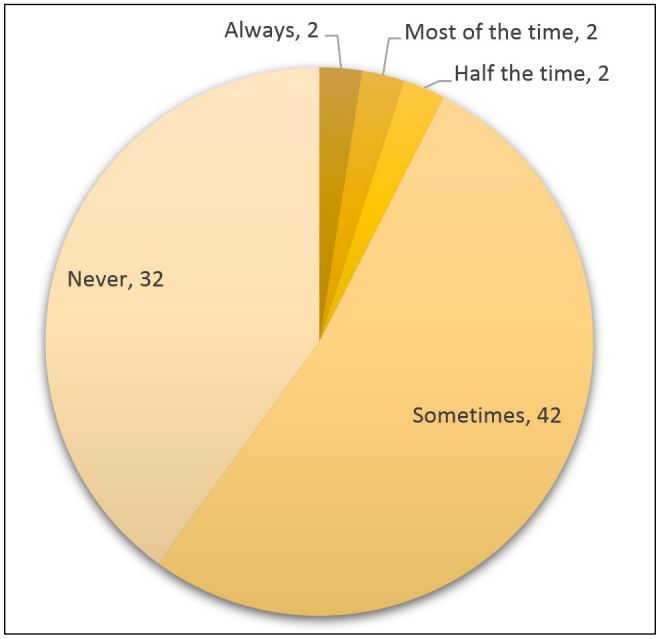

Figure 4. Frequency of asking vendors to use SERU instead of a license. Note: Libraries had signed at least one license in the last twelve months and had either used or were registered with SERU (N = 80)

SERU Satisfaction

Figure 5 shows how satisfied SURLs are with SERU. Fifty-four percent of SURLs are "extremely" to "somewhat" satisfied with SERU. Overall, 71 percent of ARL SURLs and

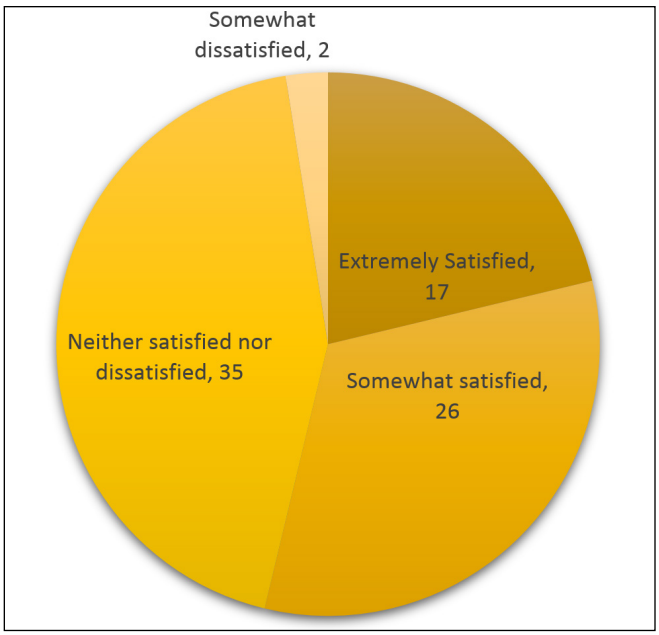

Figure 5. Satisfaction level with SERU. Note: No respondents selected "Extremely dissatisfied." Libraries had signed at least one license in the last twelve months and had either used or were registered with SERU (N = 80)

44 percent of non-ARL SURLs (n = 23) are "extremely" to "somewhat" satisfied with SERU. Forty-four percent of SURLs were neutral ("neither satisfied nor dissatisfied") towards SERU.

The top ten reasons SURLs liked SERU (fifty-six respondents provided ninety-six reasons) included: quick (twenty-six; 27 percent), easy (twenty-one; 22 percent), standardized language (seven; 7 percent), good terms (five; 5 percent), license alternative (five; 5 percent), no negotiation needed (five; 5 percent), efficient (four; 4 percent), no signatures needed (four; 4 percent), convenient (three; 3 percent), and unnecessary to shuffle paperwork between the library and vendor (three; 3 percent).

Most SURLs (53 percent) did not feel additions to SERU were needed. Forty-six SURLs made suggestions regarding how to improve SERU. Responses included adding specific terms commonly found in licenses to SERU (thirty-four; 45 percent); increasing the number of vendors using SERU (twelve; 16 percent); expanding the types of resources covered by SERU (eight; 11 percent); educating and promoting SERU more (four; 5 percent); updating SERU to stay current (three; 4 percent); improving documentation for librarians (one; 1 percent); encouraging vendors to use SERU to ask at the outset (one; 1 percent); and creating multiple variations of SERU to meet various needs (one; 1 percent). Twelve SURLs indicated no improvement was needed (two; 3 percent) or were unsure how to improve SERU (ten; 13 percent).

SERU does not cover all acquisitions, but it could accommodate a variety of resources with some modification. Regarding the terms suggested for inclusion in SERU (thirty-four; 45 percent), top responses included text mining (five), accessibility (five), data mining (five), and an expansion of ILL rights (four). Libraries also wanted SERU to be applicable to a wider range of e-resource formats and high-cost e-resource acquisitions. Eight responses suggested expanding the resource types SERU covers to include the following resources: databases, non-text resources, multi-year deals, e-books, streaming media, e-journal packages, high-cost purchase (all had one suggestion each, with the exception of databases, which had two). Text and data mining, along with accessibility clauses, are relatively new additions to licenses and were the top suggestions made by libraries. These clauses may be difficult to include in SERU because text and data mining often include technical nuances prescribed by the vendor. SERU could perhaps allow generically for text and/or data mining at no additional charge (except for storage devices). At an initial SERU Working Group meeting, the Working Group excluded ADA/Accessibility language because "anyone needing accessibility clauses would most likely need to sign an actual contract."[43] An accessibility clause would be a positive addition to SERU, but would need to be generic enough to accommodate a changing landscape in accessibility requirements at the national and institutional level. Perhaps an SERU accessibility addition could encourage vendors to provide accessible content whether through an accessible platform or by working with libraries to provide accessible content when requested.

Other suggestions included promoting, educating, and getting more vendors to use SERU. SERU's 2008 launch was promoted via conference presentations, professional journals, postcards, listservs, etc.[44] A similar promotion was used for the 2012 revision. The author notes the last paper that focused on promoting SERU was published in 2014.[45]

SERU Non-Users

Twenty-seven libraries were not registered with SERU and had not used SERU in the past nine years. Forty-nine percent of the twenty-seven libraries either were not aware of SERU (n = 8) or were unfamiliar with SERU and its benefits (n = 5). The fact that some libraries had never heard of SERU suggests that SERU could benefit from additional vendor and/or library promotions. Other top reasons given for why libraries had not registered or had not used SERU included evolving licensing processes/staffing at their library (19 percent; n = 5), no need to use SERU (11 percent; n = 3), or formal agreements were required at their institution (11 percent; n = 3). Five of the twenty-seven libraries that indicated they were not registered with SERU were in fact listed on SERU's Registry.

Conclusion

This study aimed to determine the adoption level and influencing factors of SERU use by US academic libraries. An analysis of 108 survey results collected by the author provided insight into SERU use in the context of other licensing practices. Libraries sign numerous licenses annually, and the survey results indicate that libraries suggest changes to vendor provided licenses "sometimes" or "never." Additionally, despite heavy promotion in the past, and being quick and easy to use, libraries do not often use SERU. The author's survey explores reasons why libraries do not use SERU or potential obstacles to using it.

License changes were suggested by libraries "sometimes" or "never" 30 percent of the time. It is strongly recommended to review and negotiate licenses to ensure the retention of appropriate and expected use rights under copyright law, reduce liability, and preserve access to content.[46] This is often the licensing librarian's role and responsibility in collaboration with general counsel. Our profession has a long history of articulating and sharing needs with vendors and pioneering licensing librarians have worked to ease the burden.

SERU can help relieve the burden, but it must be used. The author's survey findings showed that 40 percent of SURLs "never" ask vendors to use SERU in place of a license. Although SERU is not appropriate for all purchases, it is well worth asking to use it when the situation is appropriate. Vendors should be asked to use SERU at the beginning of an acquisition. If vendors are unfamiliar with SERU, the NISO SERU website provides explanatory information.

Additionally, it may be necessary to update SERU to add additional license-like terms to the understanding. Text and data mining, along with accessibility, were high on the list of desired additions provided by survey respondents. Regardless of whether SERU is updated, the author strongly suggests additional promotion of the standard to inform both librarians and vendors about SERU's benefits, to recruit potential new SERU registrants, and to raise awareness among newer librarians.

In summary, the author's survey findings suggest that libraries need to negotiate and suggest changes to licenses more frequently, ask vendors to use SERU in place of a negotiated license, and that NISO should entertain a third revision of SERU in addition to increased promotion of SERU.

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Notes on Operations Metadata Revisited

Updating Metadata Profiles and Practices in a Vendor-Hosted Repository

A.L. Carson and Carol Ou

Implemented as a way to host open-access journals, the University of Nevada Las Vegas (UNLV) Libraries institutional repository (IR) expanded into collecting other researcher-created materials, a process that did not always include clear metadata and descriptive guidelines. Series-specific settings, unclear field definitions, and other varying practices created an inconsistent bibliographic database, however, and the unclear field definitions and lack of thorough internal documentation pointed to issues that would need to be addressed if the Libraries wanted to reliably share its IR metadata with its discovery layer and external harvesters and aggregators. To resolve this problem, UNLV undertook a metadata review intended to reconcile the fields used and provide recommendations on vocabularies and standards for capturing metadata. Through a collaborative, iterative process, the Metadata Review Team suggested and implemented changes to the IR's metadata structures, in consultation with vendor support, resulting in improved descriptive policies for IR resources.

The University of Nevada Las Vegas (UNLV) Libraries implemented its institutional repository (IR), Digital Scholarship@UNLV, on the Digital Commons platform in 2009. By 2016, it had become clear that the IR's ad-hoc approach to metadata standards had created an inconsistent bibliographic database, the result of series-specific settings, unclear field definitions, and varying practices over time. This irregularity became evident in a variety of ways, including when the Libraries' Discovery Services and Scholarly Communication Initiatives departments attempted to correct the mapping of metadata harvested from the IR in the Libraries' former discovery layer. The unclear field definitions and lack of thorough internal documentation pointed to issues that would need to be addressed if the Libraries wanted to reliably share its IR metadata both with its own discovery layer and specified external harvesters and aggregators.

The Libraries initiated a Libraries Fellows program in 2016, intended to provide new and early career librarians with "transferable professional early work experience and career development opportunities in preparation for future roles in the field."[1] The inaugural Fellows started at the beginning of 2017, and were assigned work across three project areas: research data management; scholarly research impact; and metadata support. The metadata support projects were intended to further the Libraries' goals in increasing the discoverability of UNLV's digital research outputs, which made a project to reconcile and document the Libraries' metadata practices in the IR a fitting assignment.

The assignment, dubbed a Metadata Review of the IR, sought to improve

A.L. Carson (acarson@iastate.edu) is Assistant Processing Archivist, Special Collections and University Archives, Iowa State University. **Carol Ou** (carol.ou@unlv.edu) is Head of Discovery Services, University of Nevada Las Vegas.

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the reliability of metadata harvested from the IR by establishing clear field definitions, standardizing varying practices, reconciling those practices with the expectations of the Libraries' discovery layer and external harvesters and aggregators, and creating thorough documentation.

Literature Review

IRs present some specific complexities in relation to creating, managing, and sharing metadata. Chapman, Reynolds, and Shreeves's "Repository Metadata: Approaches and Challenges" describes the "mixed metadata environment" of IRs, featuring metadata from different sources and the resulting difficulty of "enforc[ing] consistent use of metadata and entry of metadata values."[2] This dynamic was clearly evident in Digital Scholarship@UNLV as it too had evolved over time with different series defining and using metadata fields differently in response to individual collection needs. Chapman, Reynolds, and Shreeves's paper also features case studies of three institutions that use the DSpace platform; the discussions repeatedly note DSpace's limitations and the workarounds each institution developed. Similarly, any changes to UNLV's IR would have to work within the structure of the Digital Commons platform.

The literature includes discussion of the utility of controlled subject vocabularies in IRs and their importance in supporting linked data. Hanrath and Radio's study of user search behavior supports the use of the FAST controlled subject vocabulary in the IR; they acknowledge the challenges of applying controlled subject vocabulary to IR content but also note that this work can be helpful in exposing repositories as linked data since FAST headings can be expressed as URIs.[3] Another paper by Radio and Hanrath discusses an actual effort to apply FAST headings to a subset of IR content followed by serializing the metadata into a linked data format. Using controlled subject terms was a fundamental part of their effort to expose a test set of records as linked data with the authors stating, "[linked data] records may also benefit from the consistency offered by use of a controlled vocabulary as necessitated by the use of unambiguous URI identifiers, particularly in contexts wherein such control had not previously been exercised."[4]

Sharing and repurposing metadata across contexts presents a significant opportunity and a not insignificant challenge for libraries. The Repository of Metadata Crosswalks offers solid context on the complications and mechanics of crosswalking, with a particular focus on crosswalking in an XML and web environment using applications of OAI.[5] Veve's "From Digital Commons to OCLC" specifically provides an example of harvesting and transforming metadata in the Digital Commons context, noting some of the particular challenges of Digital Commons' proprietary schema and differences in metadata exposed via OAI-PMH.[6]

When considering this work from the aggregator's perspective, the "Guidelines for Encoding Bibliographic Citation Information in Dublin Core Metadata" and Potvin and Thompson's analysis of metadata standards to describe electronic theses and dissertations (ETDs) offer useful expectations for how the enhanced metadata should display to aggregators.[7] Sandy and Freeland's case study of ingesting and aggregating metadata from a group of institutions into the Digital Public Library of America (DPLA) notes issues such as "mismatches in data feeds from participating institutions" and the need to normalize the aggregated records using a Metadata Application Profile (MAP).[8] They further note the "importance of... local decisions supporting wide-scale interoperability."[9] Similarly, at UNLV, the Metadata Review of the IR was aware of the impact of local decision-making in creating and maintaining the metadata that would be shared and would seek internal consistency via the use of a MAP.

Background

UNLV is a public research university with an enrollment of twenty-nine thousand students, including approximately twenty-five thousand undergraduate and four thousand graduate students. The Libraries consist of one main library and four satellite libraries, employing more than 120 faculty and staff. The Libraries began implementing its IR on the Bepress Digital Commons platform in 2009, initially to host open-access journals and later as a more fully-fledged repository. Digital Commons is a fully hosted and vendor-supported system; Libraries staff can create and edit metadata and create new series in the system, but other types of changes require assistance from vendor support.

While the journals hosted through Digital Commons are managed by the university departments that publish them (content is uploaded to the platform by department staff, not Libraries staff), the bulk of materials housed in the IR are acquired, managed, and uploaded by Scholarly Communication Initiatives (SCI) staff. This includes the twice-yearly ingest of ETDs with metadata files (as acquired from ProQuest), plus faculty and other researcher output. SCI has workflows for inquiring, acquiring, and uploading faculty pre- and post-prints using Digital Commons' batch upload utility and metadata spreadsheet. User submissions are the exception, not the rule: since metadata capture is handled almost exclusively by Libraries staff, UNLV had a significant opportunity to establish uniform expectations for metadata fields in support of technical implementations. Vendor support could create or suppress metadata fields and adjust their mapping in the output, but input decisions such as how to format dates and which vocabulary to use

to populate a field could not be constrained at the software level; these gaps had to be addressed with policy, which could be developed and maintained by Libraries staff.

The Metadata Review listed a number of tasks and deliverables, including several laying the groundwork for future sharing of IR metadata with external harvesters and aggregators. These specific tasks included: reviewing current metadata practices, templates, and generated OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting) outputs from the IR; reconciling them with the metadata requirements for an initial list of desired external harvesters and aggregators; and comparing them against available best practices for metadata creation in IRs. The rationale was that doing this work prior to sharing IR metadata with any additional systems would ease metadata mapping decisions that would need to be made and reduce the need for future revisions. The deliverables initially included a documented MAP, and if necessary, a Metadata Reconciliation Plan. During the course of the assignment, it became clear that compiling a list of recommended changes, and working with Digital Commons support staff on implementing those changes, would also be a significant task and deliverable.

The review was intended to reconcile the metadata fields in use and provide recommendations on vocabularies and standards for capturing metadata, aligning with best practices in description and interoperability. These recommendations were drawn from work at similar institutions and in the area of repositories more generally, and when possible, reflected the IR's existing practices, focusing on making metadata capture and use consistent within collections and series. Recognizing that staffing levels, nature of materials, and numerous other factors influence the IR's daily operations, however, the scope of the review did not extend to proscriptive guidelines about levels of description per item or publication type, collection development or management policies, or other IR policies.

To provide context for this paper, two Libraries departments were involved in the Metadata Review: SCI and Discovery Services (DS). SCI manages and operates the IR, while DS is responsible for cataloging and related work that enables the discovery of library materials through the library catalog and discovery layer. The Fellow assigned to lead the metadata review was located in DS and worked closely with SCI staff on this project. When the project began, DS included a department head, three librarians, two classified staff, and the Library Fellow; for DS, the Library Fellow was the one primarily engaged with this project under the supervision of the department head. SCI included a department head, one librarian, one classified staff member, and another Library Fellow—all members of SCI served as stakeholders for this project.

The Metadata Review would also be affected by other systems changes occurring in the Libraries. The Metadata Review began in early 2017, and almost simultaneously, the Libraries were engaged in a migration to a new library system and discovery layer with a go-live date in December 2017. Specifically, the Libraries were migrating from the III (Innovative Interfaces, Inc.) Millennium integrated library system and ProQuest's Summon discovery layer to the Ex Libris Alma library services platform and Primo discovery layer. The change in discovery layer would directly touch on the Metadata Review as both the existing discovery layer (Summon) and the forthcoming discovery layer (Primo) needed to harvest metadata from the IR.

Environmental Scan

With a clear grasp of the goals and scope of the review, the next step was to survey the field. This survey had three aims: to understand current IR practices and capabilities; to identify aggregators' technical requirements; and to identify similar work that had already been done. Approaching the first two, in practice, collapsed into a gap analysis: the current state of the IR practices versus those necessary to support reliable sharing of IR metadata. The third goal, finding case studies about similar work, expanded to include material resources and other information to assist in bridging the gap defined in the course of the survey.

While SCI staff had a good understanding of their workflows, in reviewing the internal IR-management practices and support materials, the Fellow found that UNLV-specific documentation was out of date, cursory, or difficult to access. Vendor documentation for the Digital Commons product was more detailed and easily available, but the Fellow had questions about specific functionality (for instance, manipulating drop-down lists and exporting metadata items in specified formats) that required direct communication with support staff to resolve. One early finding of the review was that updating the documentation, both to reflect the changes made as part of the review and to make SCI practices transparent and consistent, was a major priority.

Following this review, the Fellow next addressed best practices for IR management, particularly concerning ETDs, such as the Networked Digital Library of Theses and Dissertations Interoperability Standard.[10] Drawing from the project brief, the Fellow compiled a list of harvesters and their metadata requirements beginning with Ex Libris' Primo and continuing with potential aggregators such as the Mountain West Digital Library (MWDL), the Association of Research Libraries' (ARL) SHARE, and OCLC's Digital Collections Gateway.[11] These aggregators headed the list because UNLV already shared digital collections information with MWDL (from a separate ContentDM instance) and Digital Collections Gateway,

although the latter was underused in part because of the lack of consistent metadata that made sharing IR materials difficult. A comparison of aggregator metadata schemes, requirements, and recommendations revealed many points of alignment (as in date formats or the use of the Dublin Core (DC) schema); where harvesters did not align, the Fellow sought out crosswalks or other supplementary materials to clarify what changes, outside of the Digital Commons environment, might be necessary to interact with those entities. The initial brief anticipated a relationship between UNLV and CrossRef for DOI creation, with IR metadata being transformed into the CrossRef schema and used to register DOIs. Instead, UNLV established a relationship with DataCite, necessitating a reevaluation of the metadata requirements based on DataCite's protocols.[12]

Reviewing the OAI-PMH protocol for harvesting metadata provided useful context for this project. OAI-PMH is one of the most common methods used to harvest local library metadata into discovery products.[13] The protocol itself is documented on the Open Archives Initiative site, described as "a low-barrier mechanism for repository interoperability," it defines both harvesters and repositories: harvesters are "operated by a service provider as a means of collecting metadata from repositories," while a "repository is managed by a data provider to expose metadata to harvesters."[14] For this project, UNLV's IR functioned as a repository and all the previously described harvesters and aggregators functioned as harvesters. The Open Archives Initiative site also lists implementation guidelines. Among the minimum requirements for repositories is the ability to output its metadata in the unqualified DC metadata format.[15] The Bepress Digital Commons platform's OAI-PMH implementation also supports qualified DC; this slightly richer metadata format had been previously selected by the Libraries as the preferred metadata format for harvesting and was the focus for any mapping improvements.

Method

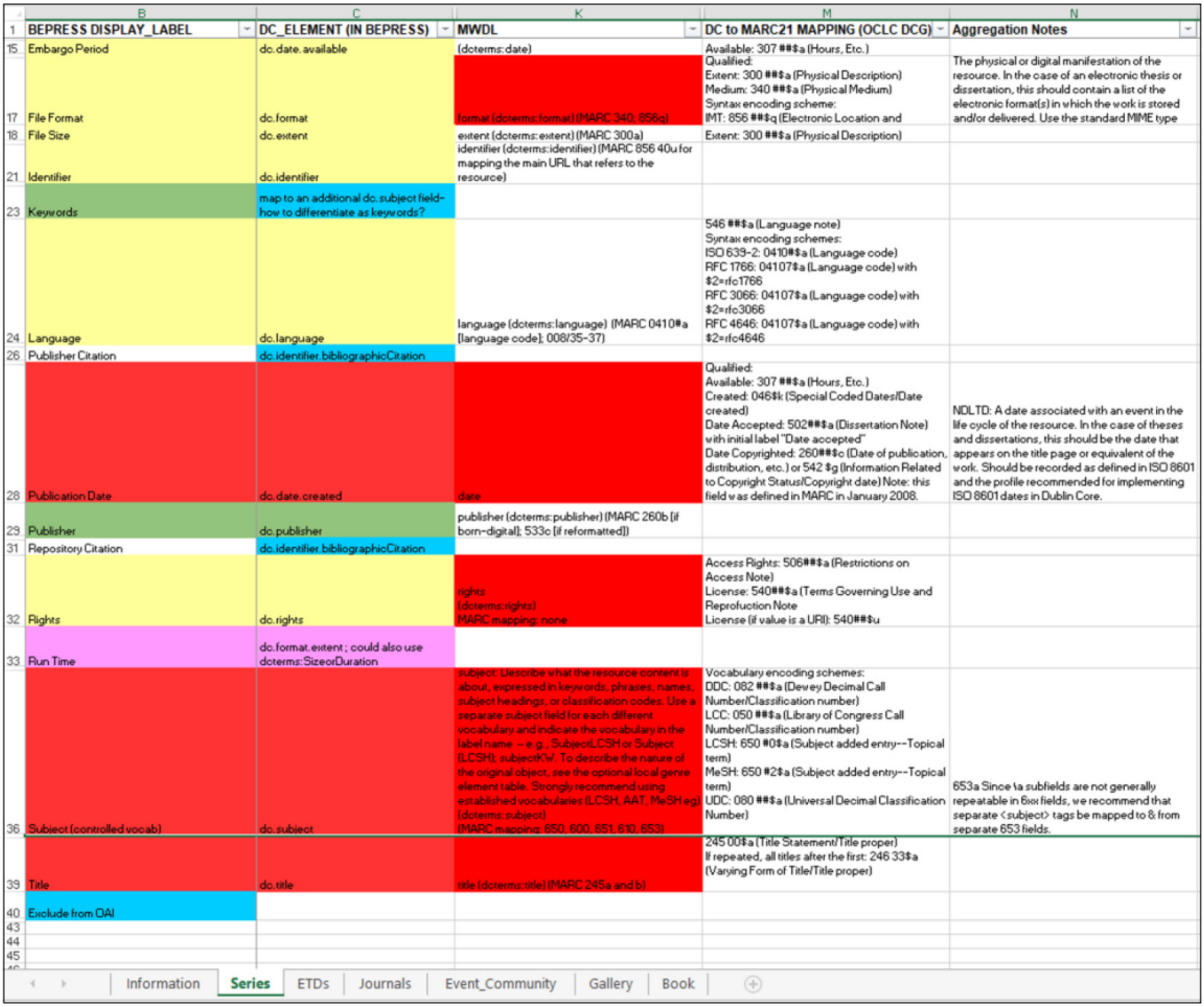
Since the Metadata Review was managed by DS but would affect daily work in SCI, it was important to have a clear, methodical approach to define responsibility and keep the review on track. The goals of the review divided roughly into near-term (normalize and create clear guidelines for metadata capture in the form of MAPs), mid-range (improve discovery in our own systems and interoperability with outside systems), and long-term (position IR materials for sharing through linked data). Each goal required a set of changes; these changes ranged from structural adjustments in the IR, to documenting the new metadata capture procedures, to specific areas requiring remediation, an interconnected but distinct set of tasks shared between DS and SCI.

Work began with a list, created to help project stakeholders understand the steps needed to normalize metadata practices across the IR, of tasks that the Fellow would undertake to assess and adjust those practices. The first was a needs assessment, determining which publication types to prioritize while optimizing discovery and interoperability. The needs assessment took a fairly simple form: first, a content inventory of items by publication type; then, a survey of hit counts and download statistics to determine the most used collections. Using this information, the decision was made to privilege unique or distinctive works (such as the ETDs) over materials replicated elsewhere.

There are six publication types supported in Digital Commons: Series, Journal, ETD, Image Gallery, Community or Event, and Book. Each has its own needs, but while Digital Scholarship@UNLV includes all six types, it was clear that they would not all require the same level of improvement. The bulk of the material in the IR fell into the Series, ETD, or Journal publication type. As Journals in Digital Scholarship@UNLV are self-administrated by the faculty or departments responsible for their creation, SCI staff were understandably hesitant to make changes that would affect the user experience for those administrators. Accordingly, the changes made to the Journal template chiefly addressed how metadata was outputted through OAI-PMH rather than how it was inputted through the self-deposit interface. Series and ETDs, however, are managed by SCI staff, granting the Fellow greater leeway when considering ways to improve the metadata capture practices in those high-use publication types.

Building on the material inventory and needs assessment, optimizing and adding fields was addressed next. Adding new fields and creating or strengthening usage guidelines supported the goal of making data consistent within and across publication types necessary for machine harvesting. For harvesting into the discovery layer, and potentially other systems, the IR relies on qualified DC records generated through internal mappings from Digital Commons metadata and exposed via OAI-PMH. Updated OAI-PMH mappings similarly required consistent and accurate use of the metadata fields; when reviewing the existing mappings revealed inconsistent or duplicative usage, those instances appeared in the list of recommended changes as points requiring clarification. The Fellow compiled suggestions for field and use changes into a recommendations list, which was then open for comment and discussion with DS and SCI stakeholders.

Suggested changes included adding a "Type" field to all publication types, mapping to "dc.type" in the OAI-PMH output, to clarify the nature or genre of the resource being cataloged. This change, which would enable better filtering in Bepress and those aggregators supporting it (including the library discovery layer), also served to capture



	B	C	K	M	N
1	BEPRESS DISPLAY_LABEL	DC_ELEMENT (IN BEPRESS)	MWDL	DC to MARC21 MAPPING (OCLC DCG)	Aggregation Notes
15	Embargo Period	dc.date.available	(dcterms:date)	Available: 307 ##$a (Hours, Etc.)	
17	File Format	dc.format	format (dcterms:format) (MARC 340; 856q)	Qualified: Extent: 300 ##$a (Physical Description) Medium: 340 ##$a (Physical Medium) Syntax encoding scheme: IMT: 856 ##$q (Electronic Location and	The physical or digital manifestation of the resource. In the case of an electronic thesis or dissertation, this should contain a list of the electronic format(s) in which the work is stored and/or delivered. Use the standard MIME type
18	File Size	dc.extent	extent (dcterms:extent) (MARC 300a)	Extent: 300 ##$a (Physical Description)	
21	Identifier	dc.identifier	identifier (dcterms:identifier) (MARC 856 40u for mapping the main URL that refers to the resource)		
23	Keywords	map to an additional dc.subject field- how to differentiate as keywords?			
24	Language	dc.language	language (dcterms:language) (MARC 0410#a [language code]; 008/35-37)	546 ##$a (Language note) Syntax encoding schemes: ISO 639-2: 0410#$a (Language code) RFC 1766: 04107$a (Language code) with $2=rfc1766 RFC 3066: 04107$a (Language code) with $2=rfc3066 RFC 4646: 04107$a (Language code) with $2=rfc4646	
26	Publisher Citation	dc.identifier.bibliographicCitation			
28	Publication Date	dc.date.created	date	Qualified: Available: 307 ##$a (Hours, Etc.) Created: 046$k (Special Coded Dates/Date created) Date Accepted: 502##$a (Dissertation Note) with initial label "Date accepted" Date Copyrighted: 260##$c (Date of publication, distribution, etc.) or 542 $g (Information Related to Copyright Status/Copyright date) Note: this field was defined in MARC in January 2008.	NDLTD: A date associated with an event in the life cycle of the resource. In the case of theses and dissertations, this should be the date that appears on the title page or equivalent of the work. Should be recorded as defined in ISO 8601 and the profile recommended for implementing ISO 8601 dates in Dublin Core.
29	Publisher	dc.publisher	publisher (dcterms:publisher) (MARC 260b [if born-digital]; 533c [if reformatted])		
31	Repository Citation	dc.identifier.bibliographicCitation			
32	Rights	dc.rights	rights (dcterms:rights) MARC mapping: none	Access Rights: 506##$a (Restrictions on Access Note) License: 540##$a (Terms Governing Use and Reproduction Note License (if value is a URI): 540##$u	
33	Run Time	dc.format.extent ; could also use dcterms:SizeorDuration			
36	Subject (controlled vocab)	dc.subject	subject: Describe what the resource content is about, expressed in keywords, phrases, names, subject headings, or classification codes. Use a separate subject field for each different vocabulary and indicate the vocabulary in the label name -- e.g., SubjectLCSH or Subject (LCSH); subjectKW. To describe the nature of the original object, see the optional local genre element table. Strongly recommend using established vocabularies (LCSH, AAT, MeSH eg) (dcterms:subject) (MARC mapping: 650, 600, 651, 610, 653)	Vocabulary encoding schemes: DDC: 082 ##$a (Dewey Decimal Call Number/Classification number) LCC: 050 ##$a (Library of Congress Call Number/Classification number) LCSH: 650 #0$a (Subject added entry--Topical term) MeSH: 650 #2$a (Subject added entry--Topical term) UDC: 080 ##$a (Universal Decimal Classification Number)	653a Since \a subfields are not generally repeatable in 6xx fields, we recommend that separate <subject> tags be mapped to & from separate 653 fields.
39	Title	dc.title	title (dcterms:title) (MARC 245a and b)	245 00$a (Title Statement/Title proper) If repeated, all titles after the first: 246 33$a (Varying Form of Title/Title proper)	
40	Exclude from OAI				
43					
44					
45					

Information | Series | ETDs | Journals | Event_Community | Gallery | Book

Figure 1. Portion of spreadsheet illustrating field and mapping changes and related harvester requirements.

preservation information for UNLV Libraries and satisfy metadata requirements for multiple potential aggregator partners. Proposed adjustments to how dates were captured and displayed focused on the ETD publication type, disambiguating between dates submitted for degree, degree awarded, and publication in the IR (which can vary due to embargoes), reflecting not only a need for greater clarity but also recommended best practices from the Networked Digital Library of Theses and Dissertations. Subject data capture was a high priority for the review, and the proposed changes to the subject fields are addressed in more depth below.

After an open comment period, the Fellow produced a Google Sheets workbook based on the batch update spreadsheets used by Digital Commons to update metadata and item records: this workbook contained seven sheets, one for each of the six publication types and one that provided information on how to read the spreadsheets. It presented a visual demonstration of how the suggested changes would look in the IR, what fields they would add, change, or remap, and how those fields could most logically be mapped or crosswalked to outside systems (see figure 1). With the changes laid out visually, it was easier to discuss in concrete terms what the changes would do and how they would affect the IR. Stakeholders, concerned about data loss, were anxious to establish that no existing fields would be removed as part of the changes: the recommendations called only for the addition of new ones and evaluation of current fields.

Combined with changed guidelines for values and usage, and updated OAI-PMH mapping, the recommendations were presented as lossless: metadata currently held in the IR would remain, awaiting remediation, but new records would be created according to the new guidelines.

The spreadsheet's layout helped everyone to see the proposed changes, how they would function, and how they would affect both local systems and external sharing. Changes to the metadata profiles took two forms: technical and procedural. The former dealt with changes in what fields would be included, how they would be named, how they would behave (in terms of allowed values and OAI-PMH mapping), and how they would appear in Digital Commons. The latter were changes that had to be made and implemented by SCI staff generating or capturing metadata as resources entered the repository: questions of usage, authorities, and often obligation (i.e., mandatory, recommended, optional) operate at the procedural level. While the first could be instantiated by contacting vendor support and requesting the changes, followed by testing the new profiles to validate their behavior, the second relied on discussion, documentation, and cooperation with SCI colleagues.

During the comment and discussion period, the issue of how to treat metadata-only records in the IR arose. The Digital Scholarship@UNLV Bibliography series collects citations for UNLV-affiliated work, showcasing and recording the output of UNLV scholars and researchers.[16] The resources in this series are typically record-only, linking to full-text versions outside the IR, which gave rise to an interesting question when discussing changes to the OAI-PMH mapping. Prior to the Metadata Review, these resources had been harvested to the discovery layer with the other IR content, appearing with other IR and library materials in the library catalog. The review prompted stakeholders to review this practice: the record-only resources did not represent items in the IR's collection, only links redirecting users elsewhere, so the question became whether it was appropriate to continue harvesting these resources to the Libraries' discovery system, and if not, what action to take. SCI and DS agreed that removing or suppressing the metadata-only items from the harvest made sense and that only items held or accessed through the Libraries should appear in the discovery layer. The Fellow consulted with Bepress support and proposed adding a field to the metadata structure, flagging whether OAI-PMH harvesting was enabled or disabled, accompanied by some guidance on how to use the field. This was a standard function available in Digital Commons that had not been previously used and proved to be a good solution to the problem of exposing metadata-only items to OAI-PMH harvesting.

Once the changes were presented in an actionable format, staff engaged in additional discussion about the effects these changes would have, both for DS and SCI. Some of the proposed changes, such as levels of obligation for given fields across publication types, were further revised following these discussions, resulting in a list of changes which, once enacted, would establish the new metadata structures for existing content and update the templates for future content. Rather than apply those changes to the entire IR at once, the departments agreed to test the new structures on a small sample of collections in each resource type, beginning with "Series," and working down the priority chain as determined by the appraisal. These test collections included both highly representative collections and edge cases (such as a collection of UNLV-produced podcasts about scholarly research on gambling), to test the fitness of the new profiles. The initial focus was on adding and testing the new fields: adjusting the OAI-PMH mapping was considered dependent on successful completion of the tests and the resolution of any issues arising from them.

The MAPs themselves took the form of a spreadsheet workbook, shared via Google Drive, with a page for each Publication Type plus a page explaining how to read the profiles. These were based on a small common set of mandatory elements (Title, Author, Date Published), with additional fields and obligation levels according to the needs of the materials and usefulness to users, both internal and external. In addition to specifying the fields in use for each Publication Type, the MAPs also specified (as much as possible) the format of the values to be entered. Since depositing into UNLV's IR is primarily done in batches by SCI staff rather than by researcher deposit through the user interface, it was possible to specify how metadata should be recorded even in those fields that Digital Commons could not feasibly restrict to a vocabulary or list. Instructions on how to record this information, which often bridged the gap between what Digital Commons could support on a software level and what aggregators required, were provided in the MAPs documentation, a Google Document accessible to everyone within the Libraries domain.

For an example of how the changes functioned and the specific problems the changes sought to address, it is useful to focus on the "dc.subject" field. In the IR's existing metadata profiles, subject information was contained in two fields: "keywords" and "disciplines." The latter refers to terms in the Bepress/Digital Commons' three tiered taxonomy of subject disciplines, while the former was used for both author-generated keywords and FAST headings (Faceted Application of Subject Terminology).[17] The practice of having controlled (FAST) and uncontrolled (author-generated) subject terms, undifferentiated, in a single subject field, complicated maintenance of FAST headings, making it difficult to distinguish controlled from uncontrolled terms in the DC output. This practice also presented a barrier for any future publication of IR metadata as linked data, as it

made it difficult to determine when and where URIs for FAST terms could be extracted. A "keyword" could be an intentionally assigned FAST heading, but could also be an uncontrolled keyword that happened to match a current FAST heading without actually containing the same meaning. To resolve the ambiguity, adding a controlled subject field to handle the FAST terms (already used in some collections) became a priority early in the review. Supporting this new field required changes to the OAI-PMH output, mapping it to dc.subject and removing the DC mapping for the uncontrolled subject field (testing the effect this would have on current records in the production setting is still ongoing).

In addition to the technical changes, DS recommended that FAST headings be applied whenever possible, recognizing that these would not always be relevant. The general recommendation for improving subject information was that one of the three subject fields (controlled, keyword, or disciplines) must contain a value: in this manner, "subject" is considered mandatory information in every record, but the type of subject information is not proscribed. This was believed to be the most balanced way to enrich description across all publication types without requiring information that might not exist. In the interest of making IR collections more discoverable in the broader Digital Commons Network (https://network.bepress.com/), DS recommended using the Bepress-controlled subject field (called "disciplines") whenever possible and at a minimum, for faculty publications and ETDs, where that information is readily available. The "disciplines" field is used within the Digital Commons Network to classify and make content discoverable across Digital Commons repositories; to raise the profile of Digital Scholarship@UNLV content in the Digital Commons Network it seemed to be in the interests of UNLV researchers and scholars, and the repository itself, to include this information.

The timing of these changes raised concerns about their effect on the production environment: at the time, the Libraries' discovery layer, Summon, harvested IR records weekly. Any alterations to the OAI-PMH mapping would necessitate corresponding adjustments to Summon, which would take two weeks to apply. Given that the Libraries were simultaneously navigating a migration to the Ex Libris Alma library services platform, with Primo serving as the future discovery layer, how much effort to expend on improving the mapping for an outgoing system was questioned. Additionally, Primo's harvesting and mapping configuration was entirely independent of the Summon configurations, meaning that any work done could not be repurposed for the new environment. Accordingly, the decision was made to focus on harvesting IR records and reconciling mapping changes in Primo.

In communication with Bepress support, collections for testing the field updates were identified in each of the publication types; while small (averaging twenty items each), these collections included both highly-representative materials and those considered more unusual, to ensure the fitness of the new fields for the broadest possible application. Once the collections were specified, Bepress support added the new fields, notifying the Libraries when the changes were complete. At that point, SCI dedicated time to populating the new fields using the Digital Commons batch update spreadsheet, adding metadata to the test collections and allowing DS to check the output. Ensuring that metadata was structured as expected in the Bepress environment, mapped to DC as specified via the OAI-PMH output, and harvested correctly into Primo, a back-end process, comprised an end-to-end series of tests that needed to be completed prior to any additional work to adjust the public display of these records in Primo.

Testing the changes, once that data was added, was a two-pronged process: first, the Fellow used in-browser OAI-PMH calls to expose the qualified DC records created by Digital Commons, checking to ensure that the new fields appeared in the exported record, were mapped to the desired qualified DC fields, and contained the expected information (see figure 2). Second, searching for the records in the test series in Primo, the Fellow used the "display source record" function to see the qualified DC record as it had imported into Primo (see figure 3). In this manner, DS ensured that the changes behaved in the expected fashion, and that metadata in the new fields was expressed correctly in the Primo environment. When fields failed to appear or did not map to qualified DC as specified, the Fellow contacted Bepress support for a correction: only once this was complete could DS adjust how OAI-PMH data was displayed in the public-facing discovery interface. No testing can be considered complete without failure: one of the update requests did indeed result in a significant error, making OAI-PMH calls unresolvable for large sections of the IR collection. Fortunately, communication with Brepress support quickly resolved the issue, but it was an important illustration of what failure could occur.

Following the successful implementation and population of the new fields in test collections, during which the Fellow collaborated with SCI staff to develop and communicate metadata capture practices for the new fields, the next step was to formalize the changes to the MAPs. Instantiating the technical changes was straightforward: the Fellow contacted Bepress support to implement the new profiles to all collections in the six publication types. Template updates made by Bepress support ensured that all new collections created and new items added to existing collections would use the new MAPs: aligning existing collections with the new MAPs required some further communication, but was eventually completed. Ensuring consistent ongoing use of the new MAPs and procedural

```
<?xml version="1.0" encoding="UTF-8"?>
<OAI-PMH
    xmlns="http://www.openarchives.org/OAI/2.0/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
        http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
    <responseDate>2018-10-11T20:26:39Z</responseDate>
    <request verb="GetRecord" identifier="oai:digitalscholarship.unlv.edu:brookings_pubs-1033"  metadataPrefix="qdc" >https://digitalscholarship.unlv.edu/do/oai/</request>

    <GetRecord>

<record>
    <header>
        <identifier>oai:digitalscholarship.unlv.edu:brookings_pubs-1033</identifier>
        <datestamp>2016-08-08T21:42:03Z</datestamp>
                <setSpec>publication:mtnwest_pubs</setSpec>
                <setSpec>publication:brookings_pubs</setSpec>
                <setSpec>publication:brookings_capstone_studentpapers</setSpec>
                <setSpec>publication:brookings_mtnwest</setSpec>
            </header>
    <metadata>
        <oai_dc:dc xmlns:oai_dc="http://www.openarchives.org/OAI/2.0/oai_dc/" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocati

            <dc:title>The End of the Road: The State of Urban Elevated Expressways in the United States</dc:title>
            <dc:creator>Waqar, Daniel</dc:creator>
            <dc:date.created>2016-05-01T07:00:00Z</dc:date.created>
            <dc:publisher>Brookings Mountain West</dc:publisher>
            <dc:description.abstract>&lt;p&gt;In a January 2016 meeting, the Clark County Commission heard a proposal from the County Public Works Department about a $200 million plan to build
            <dc:subject>Public Policy</dc:subject>
            <dc:subject>Transportation</dc:subject>
            <dc:subject>Urban Studies</dc:subject>
            <dc:language>English</dc:language>
            <dc:description>&lt;p&gt;This is a student research paper, patterned on a Brookings Policy Brief, written under the supervision of a Brookings Scholar.&lt;/p&gt;</dc:description>
            <dc:identifier>https://digitalscholarship.unlv.edu/brookings_pubs/32</dc:identifier>
            <dc:identifier>https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=1033&amp;amp;context=brookings_pubs</dc:identifier>
        </oai_dc:dc>
    </metadata>
</record>

            </GetRecord>
</OAI-PMH>
```


Figure 2. Example OAI-PMH record generated by Bepress.


```
<?xml version="1.0" encoding="UTF-8"?>
<oai_dc:dc xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:oai_dc="http://www.openarchives.org/OAI/2.0/oai_dc/" 
    <dc:title>The End of the Road: The State of Urban Elevated Expressways in the United States</dc:title>
    <dc:creator>Waqar, Daniel</dc:creator>
    <dc:type>Capstone Project</dc:type>
    <dc:date.created>2016-05-01T07:00:00Z</dc:date.created>
    <dc:publisher>Brookings Mountain West</dc:publisher>
    <dc:format.extent>1</dc:format.extent>
    <dc:format.extent>16</dc:format.extent>
    <dc:description.abstract>&lt;p&gt;In a January 2016 meeting, the Clark County Commission heard a proposal from
    <dc:subject>City planning</dc:subject>
    <dc:subject>Express highways</dc:subject>
    <dc:subject>Nevada--Las Vegas Metropolitan Area</dc:subject>
    <dc:subject>Urban transportation</dc:subject>
    <dc:subject>Public Policy</dc:subject>
    <dc:subject>Transportation</dc:subject>
    <dc:subject>Urban Studies</dc:subject>
    <dc:language>English</dc:language>
    <dc:description>&lt;p&gt;This is a student research paper, patterned on a Brookings Policy Brief, written unde
    <dc:identifier>http://digitalscholarship.unlv.edu/brookings_pubs/32</dc:identifier>
</oai_dc:dc>
```


Figure 3. OAI-PMH record imported into Primo.

changes (new expectations, metadata capture practices, and intended usages for the new fields, as well as revisions and clarifications of existing fields), however, would require user documentation.

Given the state of the pre-existing IR documentation and the broad nature of the changes, the Fellow determined that creating new documentation, with an outline of the project's intentions and decision logic to help guide future work, would be more informative and provide better context than attempting to update existing documentation. Accordingly, a document intended to cover the breadth of the review work was created: a narrative introduction to the project and its outcomes, a terms list defining IR-specific language used in the rest of the documentation, and a set of tables containing definitions, instructions, and examples for the new MAPs. The bulk of the documentation is in these tables, which describe the fields and their purpose, and provide expected values for each, any relevant authorities for those values, and an example. Rather than reproduce information by annotating each MAP independently, the Fellow created a table of all those fields that are consistently used across the six publication types, with links out to smaller tables containing the fields or usages specific to that publication type. This document had some overlap with an existing citation formatting guide written (for an audience primarily of student workers) for the Digital Scholarship@UNLV Bibliography project: again, rather than reproduce work (and risk drift between the two documents), this common information was recorded

in another document and links to it were inserted in both the MAPs and the Bibliography documentation. By creating an interrelated corpus of documentation for IR practices, the Fellow hoped to not only connect all relevant information so that a user could access that information regardless of starting place, but make it easier to keep IR policy information current as practices changed.

Conclusion

The initial Metadata Review of the IR has been largely completed, and some next steps remain. Remediation and reconciliation of existing metadata to meet the minimal requirements of the new MAPs will be conducted as staff resources permit, likely prioritizing ETDs and other materials where the IR provides the full text. The OAI-PMH output with its revised and newly mapped elements will need to be tested against anticipated aggregators; to date, records from the IR have been harvested into Primo, the Libraries' new discovery layer, and testing will soon begin on using the OAI-PMH output as the metadata source for minting DOIs via DataCite. Lastly, the IR, and library metadata practices in general, do operate within a changing landscape; collection policies and system needs have evolved throughout the history of Digital Scholarship@ UNLV and will continue to do so.

It is therefore essential that metadata review activities do not function as occasional large projects but instead as part of the routine work of managing an IR. Moving forward, the departments will seek to build agility into this process so that metadata practices in the IR can be more responsive to changing expectations from aggregators and new developments in IR management, and documentation can keep pace with those developments, assisting the Libraries in maintaining institutional knowledge.

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Notes on Operations
Nimble Collection Development Policies

An Achievable Goal

Helen N. Levenson

This paper identifies and reviews some of the currently relevant components of collection development that contribute to the need for having a written collection development policy (CDP). The requisite elements for a pertinent and usable CDP are identified, being mindful of the need to customize these policies for each library's unique needs. The literature review validates the long-standing purposes of CDPs, quantitative studies of existing CDPs, and some of the inherent drawbacks in the creation and application of these policies. The author presents a case study demonstrating the processes necessary to create a CDP for a medium-sized academic library. This includes more current and relevant considerations for a modern CDP. The paper also includes best practices identified throughout the policy creation process, which have the potential to be applied to other similarly situated libraries.

There has been a fair amount of debate regarding the need for and the analysis of the usefulness of collection development policies (CDP) in academic libraries. There is ample literature that espouses traditional, academic explanations for the need of CDPs. However, the professional literature on this topic also demonstrates a dichotomy on the necessity and effectiveness of these policies in various university library settings. Although having a CDP is intellectually recommended, they are ineffectual if they lack certain characteristics. Additionally, current budget constraints and collection development efforts such as shared print retention programs, collaborative collection development, ownership access versus subscription access to resources, and collection management of electronic and digital resources are continual challenges for academic library collection management. How these elements can be addressed in a CDP creates added challenges. A CDP can appropriately address the issues emanating from such collection complexities. However, these library activities often challenge the traditional constructs used to create CDPs. Conversely, these types of issues can contribute to an even greater need for efficacious CDPs. While these areas of collection selection and management are often more challenging to address in a CDP, they do require attention. Newer, more innovative approaches to creating a CDP should be investigated. There is a plethora of scholarly work espousing the advantages of and need for having CDPs. However, there is a paucity of literature regarding the efficacious processes of actually creating a CDP specifically for the medium-sized academic library setting.[1]

The steps to creating a CDP cannot be uniformly applied since each library is unique. Each institution can develop specific, valuable processes to best fit their needs to produce an effective CDP. While helpful information is available

Helen N. Levenson (hlevenson@oakland.edu) is Collection Development Librarian at Oakland University in Rochester, Michigan.

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in the library literature, the actual undertaking of creating an effective CDP will be individualized to have the greatest positive impact for each institutional library. This paper presents a case study of how a mid-sized public academic library collaboratively created a CDP to best fit its current state of collection development activities.

Literature Review

There is little dispute that from an intellectual standpoint that CDPs are valuable, perhaps even indispensable, tools for academic libraries. The library literature has long heralded the need for and usefulness of CDPs.[2] In her description of the need for CDPs for a specific subject collection, Robinson states that a specific policy furnishes "a framework for acquisitions as well as continued conversations about the scope and focus of" collections.[3] This principle applies to written CDPs, whether created for an entire collection or a specific subject collection. Cherepon and Sankowski note that CD policies should define "the principle collection objectives of the library"; identify its "purpose, direction, and philosophy; and is a pointer indicating which direction the collection is being developed."[4] The authors also stress that the purpose of a CD policy "is to provide guidance for library faculty in selecting, weeding, and preserving materials, as well as other collection development and management activities, in order to ensure continuity and balance in collection growth."[5] CDPs are an important tool "to give librarians the opportunity to map a course for the future while providing for consistent CD strategies."[6]

The research literature consistently states that the importance of the CDP is to supply librarian selectors with the goals and guidelines "that become the roadmap, the compass, and the force that guides and drives the decisions and activities of" selectors and enables them to "know what the thrust of the collection is or is not going to be."[7] The CDP is an articulation that helps ensure that "the library meets the information needs of its service population in a timely and economical manner."[8] All these statements remain as valid purposes for having a written CDP. Academic library CDPs should articulate the alignment of the collection goals with the libraries' and larger educational institutions' missions. There is an abundance of literature supporting this recommendation.[9] There is also no shortage of academic publications that offer convincing arguments for the value of having written CDPs, and many of these arguments remain convincing. However, elements of CDPs that have previously been described as essential often no longer fit that description. Due to newer collection formats, methods of acquisitions and delivery, and pricing and publishing models, the current state of what constitutes an effective and well-developed CDP has changed quite a bit.[10] It is interesting to review the recommendations both for and against the need for CDPs.

Earliest Proponents of Collection Development Policies

The classic collection development resources consistently advised having CDPs for all libraries. The American Library Association (ALA) Collection Development Committee issued *Guidelines for Collection Development* in 1979.[11] This was a concentrated effort to give librarians the proper tools to craft effective CDPs. A draft of these guidelines was initially published in *Library Resources & Technical Services* in 1977. These early endeavors by ALA were attempts to establish guidelines for the creation of useful and effective CDPs that would "be of use to libraries of all kinds and sizes in formulating statements of their collection development policies."[12] Subsequently, in 1989, ALA published an updated version of the 1979 publication titled *Guide for Written Collection Development Policy Statements*.[13] The 1989 publication was initiated under the purview of the ALA Subcommittee on Guidelines for Collection Development, which was created in 1984 with the understanding that an update to the 1979 guidelines was necessary. It is pertinent to note that within a mere five years, a multitude of changes had occurred within the availability of library resources and operations "as well as changes in attitudes toward the value of written collection policy statements."[14] Even at the time of the 1989 publication, the Subcommittee on Guidelines for Collection Development recognized that the use of what was then considered the new guide would "prompt further revision and refinement," and therefore the subcommittee requested that the Association for Library Collections & Technical Services (ALCTS) Collection Management and Development Committee appoint a new working group for a third edition.[15] This is an important recognition, having taken place approximately thirty years ago, that such guidelines can be in a constant state of flux and require continual revision due to constantly changing needs. This point is even more pertinent in current times. ALA's newer edition of the *Guide for Written Collection Policy Statements* was published in 1996, five years after the previous guide. The 1979 and 1989 guidelines were primarily geared to large academic research libraries. The 1996 guidelines expanded its audience to include smaller academic libraries and public, special, and school libraries. The implied understanding is the emphasis on the importance of all libraries, regardless of type or size, on having a formal CDP. After the publication of the *Guide for Written Collection Policy Statements* in 1996, ALA did not publish a subsequent collection development policy document as part of their Guide series. ALA continues to publish updated editions of monographs

concentrating on collection development in general.[16] These resources address fundamental elements and important recommendations for the modern day CDP, and take into account more current collection formats. As these formats, publishing models, and access methods evolve, ALA has also published current, specific guidelines regarding collection development considerations, policies, and management practices for items such as streaming video, open educational resources, electronic resources (e-resources) in general, e-books, and collaborative collection development and shared collections.[17] Reflective of newer methods of delivering information on how to construct a CDP, the Association of Library Collections & Technical Services (ALCTS) currently offers a regularly online course "Fundamentals of Collection Development and Management," which provides participants with instruction to create a CDP and current trends in collection development, among other components.[18] In addition to the ALCTS course, the Association of Research Libraries (ARL) published current resources to assist in the creation of CDPs that take into consideration the prevalence of e-resources.[19]

Role of the Research Libraries Group (RLG) Conspectus

An important aspect of the early CDP guidelines is that they initially advocated use of the Research Libraries Group (RLG) Conspectus or the Western Library Network (WLN) Conspectus to define a library's subject collection levels.[20] It was advised that either Conspectus should be used as the framework to evaluate library collections and on which to base collection development priorities. ALA's 1996 guide recognized that a one-size-fits-all model was not effective. It advocated use of either the RLG or WLN Conspectus to define subject classification collection levels or the development of a CDP as a narrative statement, or a combination of the two. Both the 1989 and 1996 ALA guidelines recognized that the "elements of the guide may not be equally applicable to every library."[21] ALA's 1996 guidelines state that the guide "identifies the essential elements of a written statement of policy for collection management and development . . . [and] validates the need for creation of a collection policy *to meet local needs*" (emphasis added by this author).[22] Furthermore, ALA's 1996 guidelines note that libraries adopting the narrative approach to creating a CDP "can use the principles and concepts inherent in the collection levels *to develop local adaptations*" (emphasis added by this author).[23] These principles remain applicable and are important to bear in mind as a library determines which tools are most appropriate to use to create a CDP. A number of academic points illustrated in ALA's documentation are still valid regarding the descriptions of the value that CDPs offer. However, current elements and activities of collection development have brought both complications and elucidations to the discussion of the need for and the process of creating useful CDPs. One of these elucidations is alternatives to the RLG Conspectus as a tool in evaluating library collections. One of these complications is data that finds many libraries either have woefully outdated CDPs or lack them altogether.

Absence of Academic Library Collection Development Policies

Interestingly, studies show that although support of CDPs is common within the scholarly literature, a number of academic libraries lack CDPs.[24] In 1977, the same year that the first ALA draft guide to CPDs was published, ARL conducted a survey of major academic libraries that showed that only 29 percent of respondents had written CDPs, and of those that did not, only 16.5 percent were in the process of creating one.[25] A similar pattern has continued to exist.

In one of the only surveys to address the existence of CDPs in medium-sized academic libraries, Bryant found that 25 percent of survey respondents had neither a CDP nor had conducted activities to prepare one.[26] On an encouraging note, Bryant found 42 percent were in various stages of the process of creating a CDP. However, of the libraries lacking any policy, almost 40 percent thought there was no need for one.[27] These respondents felt that the library selectors were well versed in selecting relevant and valuable materials, that there was no time to create a written policy, with one responder stating "that the experience [of producing a policy] is seldom worth the effort."[28] Craig also found the work needed to revise an approximately thirty-year-old CDP was not worth the considerable time and effort required of the endeavor.[29] In a 2003 review of all 124 ARL member libraries, Straw attempted to determine the number of ARL libraries that posted CDPs on their websites. His review of all ARL library websites revealed that 44 percent of respondents had no CDP statements on their web pages.[30] Of the libraries with web links to some kind of collection development information, He found that this "could be anything from a detailed comprehensive policy to a stand alone mission statement."[31] Straw noted that a full 27 percent of the library web pages "contained minimal information mostly consisting of very brief facts about the collection or simply departmental location or contact information."[32] He concluded that the lack of web-based CDPs was consistent with earlier studies showing that a large number of ARL libraries lacked written policies. Straw confirms that "some of the reasons that have been put forth [for not having written CDPs] are lack of resources, time, funding, and staffing."[33] Consistent with these earlier findings, in a more recent survey result published in 2010, Clement and Foy found that almost half of the survey participants

either had no CDP or had CDPs that were more than ten years old, and that only one-third of survey respondents' policies had been updated within the last three years.[34] In a survey of fifteen major research peer institutions, Pickett observed that almost half had no CDPs posted on their websites.[35] Another survey of ARL university or college member libraries published in 2013 found that the majority of the survey participants had CDPs but reviewed them about once every five years.[36]

Collection Development Policies Can Easily Become Outdated and Obsolete

Spohrer noted that the CDP at his institution, the University of California, Berkeley, was produced in 1980, and that "no systematic revision" of the policy "was ever carried out and it was never reissued in updated form."[37] There was over a twenty-year period in which the policy lay stagnant. He cited common reasons for this, such as the enormous labor needed to update the policy, deteriorating collection budgets that affected collaborative collection building, the increase in formats deemed worthy to collect (he cited datasets as an example), the explosion in electronic and digital resources, and inflationary increases in more standard resources such as serial titles. All these factors quickly made the original CDP outdated. Spohrer noted that the comprehensiveness of the original 1980 CDP could no longer be maintained. He summarized that the "great sweep of subject categories in the 1980 CDPS [collection development policy statement] was seen as an unaffordable luxury for a CD budget under siege, and with the passage of time, the 'level of existing collections' and 'collecting policy level' for each one began progressively to lend the whole document a strangely fictional quality in the light" of more current collecting practices.[38] Additionally, Spohrer noted that in the twenty years after Berkeley produced its initial CDP, there were a "number of factors on the national and local scenes which exploded the idealized paradigm underlying the Conspectus" making it a herculean task for large research institutions to revisit and replicate such an effort.[39] In a more current survey of twenty academic libraries in North America, Horava and Levine-Clark note that of the sixteen libraries that responded to the survey, "5 did not have CDPs at all, and 3 others have transitioned in the past 5 years from an overly detailed policy to one that outlines general principles about collections."[40] The authors elaborate further:

> One library moved from a lengthy and cumbersome policy to one that states simply that the library supports the university's mission with its collections and does not censor. A few respondents indicated that the policies they used to have in place actually hindered them by being too specific. This move away from subject-level policies or away from policies entirely allows these libraries to be more nimble in responding to changes in focus for the university (such as towards interdisciplinary programs), to new types of resources (such as e-books) or to new collection models (such as DDA).[41]

Horava and Levine-Clark's survey findings reflect a situation common to mid-sized academic libraries. Traditional parameters of a CDP can be limiting and rigid when applied to more current collecting influences and practices. In 1995, Hazen was one of the first to recognize the rigidity of CDPs as traditionally conceived. He described them as "static, reactive, and of little practical utility."[42] Often, some of the traditional principles behind collecting are still applicable, but CDPs must be articulated differently to consider the continually changing information resource landscape. Clement and Foy stated that collection development "in academic libraries is undergoing rapid change, and the guiding policies for collection development need to be dynamic, up-to-date documents that reflect these changes."[43] Some examples of these changes and newer developments, in addition to the prevalence of e-resources in general, include open access, born digital, and streaming audio and video resources, demand driven acquisitions, pay-per-view and print-on-demand options, large-scale digitization projects such as HathiTrust and Google Books, Digital Rights Management issues, shared print initiatives, and collaborative collection development.[44] The shift to numerous e-resources can generally be considered the major change that has taken place in academic library collections over the past several years. There is no sign of this shift abating. The literature is replete in demonstrating that large majorities of academic library budgets are now primarily devoted to e-format resources.[45]

To Have (or Not) a Collection Development Policy: The Reconciliation of Two Minds

The collective findings cited above are not particularly surprising given that common reasons cited for lacking written CDPs were the lack of personnel and time required to compile one and the drawbacks library staff have found in traditional CDPs. In general, there exists an overall consensus that the creation of carefully constructed and useful CDPs is an ambitious, time consuming, and difficult task. These characteristics can easily inhibit the effort to create and implement an effective CDP.[46] Vickery starkly states that "in practice most libraries either do not have

an up-to-date policy document, or do not make effective use of it when they do have one."[47] The reasons stated for why an academic library would not have a CDP are well-reflected in the literature, espousing the idea that CDPs are either unnecessary, not worth the effort and extensive work they require, or quickly become outdated, antiquated, ineffectual documents.[48] Snow opines that written CDPs in academic libraries are unnecessary, are often inflexible, unresponsive to changes that occur within the university curriculum, and at worst "resemble pointless exercises, a costly endeavor to build a world of fantasy."[49] Despite this pointed yet insightful criticism, the traditional philosophy and advocacy of the importance of having a written CDP has continued to be maintained. In the most current edition of her classic *Fundamentals of Collection Development and Management*, Johnson states that libraries "without collection development policies are like businesses without business plans."[50] This comparison is apt. The CDP provides the basic framework under which the library collection is defined and posits unbiased objectives for collection expenditures. Disher perceptively notes that "having a collection development policy is not the same as having a *useful* collection development policy."[51] Due to the "changing nature of resources on our collections, budgets, and services," Mangrum and Pozzebon emphasize that this state of affairs necessitates having a continually maintained CDP.[52] If a library has a policy that was written decades ago, or even more than five to ten years ago, it will be outdated and will not address newer material formats, current collection philosophies and priorities, and collection limitations. The alternative viewpoints on the necessity of libraries having CDPs led this author to evaluate how a medium-sized academic library can approach the process of creating a useful CDP within the confines of the resources that are available for this process. In the current library environment, flexibility and individualization are not just acceptable but required elements for the creation of a library CDP. Once one applies this principle, the dread, hesitancy, and drudgery in the creation process of a CDP to best fit your library's and institution's needs can be greatly ameliorated.

Best Practices Considered Before Creating the Collection Development Policy

As an academic library embarks on the challenge of creating a useful CDP, it is most valuable to assess why the resource selectors feel the need to have a written CDP. This can be a vibrant driving force in the production of a document that will be as relevant and helpful as possible. It is also necessary to review the existing priorities applied to the levels of collecting, support provided to the curriculum, and mechanisms previously and currently used in developing the collection. This allows for pertinent adjustments to be made and memorialized in the new written policy. If any previous collection decisions are no longer relevant to the institution's current instructional goals, the period in which a new CDP is created offers the chance to correct course. All these activities will assist in articulating current collection parameters and guidelines. Both experienced and novice selectors will benefit from a written CDP that was created as a result of careful review of these elements.

Evaluating the Current Status of Collecting and Need for a Policy

The absence of a CDP does not necessarily mean that the library collection is not carefully curated. Feng posits that many libraries "while not in possession of a written collection development policy statement, nevertheless do operate with certain goals, objectives, and guidelines when selecting the materials to be acquired" and collect materials "with broad outlines and general objectives" in place, and as a result, "good library collections have been developed."[53] This is important to bear in mind as libraries put forth the effort to produce customized CDPs to best suit their needs. Evans and Saporano note that "hundreds of libraries and information centers do not have a written policy and yet have sound collections."[54] The authors state that this is usually the result of librarians being aware of the collecting priorities and the patron base that the library serves but without a written CDP. As new librarians are hired, it is important to have a written policy as a basic training tool and to help them develop collecting expertise so they can implement similarly expert selection decisions.

A blunt truth in the advantages of having a written CDP, particularly for a mid-size academic library, is that the policy offers support in rejecting patron requests to add resources to the collection. Bryant's survey in the late 1970s found that "many medium-sized academic libraries' policies were designed almost exclusively to inform patrons of answers (usually negative) to recurrent questions posed by their requests for library additions."[55] Feng reflects a similar position when stating that many libraries "can recall with relief the occasions on which we could graciously refuse a gift or request for material of limited value on the grounds that the subject matter, or the format, or the language fell outside of the library's established collection development policy."[56]

These issues are still true. They played a major role in why the library faculty at Oakland University, the author's institution, wanted a written CDP. The library faculty had the extensive and requisite knowledge of the collection's collecting levels and priorities, yet needed a formalized document to substantiate what they knew and had been

practicing for years. All selectors were aware that a written CDP could effectively and graciously reinforce any communication when turning down a request. Communication to students and faculty of collecting levels and criteria could be much more enhanced and facilitated with a written CDP. An exploration of both traditional and more modern methods of creating an effective CDP follow.

Alternative Elements to Use in Collection Evaluation

The 1996 ALA guide defined collection development as the "process of planning, building, and maintaining a library's information resources in a cost-effective and user-relevant manner."[57] This remains true. However, a more current and modernized definition of collection development, stated by Uziel, is provided below:

> Collection development in academic libraries . . . involves the identification, selection, acquisition, and evaluation of library resources (e.g., print materials, audiovisual materials, and e-resources) for a community of users. Collection development is the means by which the library provides high-quality information resources of print and nonprint materials and provides access to e-resources that will meet institutional needs. [58]

Uziel notes that academic libraries are "classified via many institutional characteristics."[59] These characteristics include full-time equivalent (FTE) enrollment, public versus private ownership, level of study and degrees offered, and the institution's Carnegie classifications. Carnegie classifications address both the level of degrees an institution offers and the level of research conducted at the university. The level of degrees offered are generally classified as either less than four-year academic programs, the equivalent of four-year academic programs resulting in a bachelor's degree, and additional years of study resulting in either a master's or doctorate degree. Carnegie research classifications are benchmarks of research level activities associated with a university. Carnegie research classifications recently included three levels of doctorate degree research, identified from lowest to highest (R3 moderate research activity, R2 higher research activity, and R1 highest research activity). At the end of 2018, the three doctoral university classifications were changed to R1, doctoral universities with very high research activity; R2, doctoral universities with high research activity; and D/PU, for doctoral/professional universities. The D/PU category was created to classify professional degree granting universities with lower research activity requirements for those students enrolled in professional degree granting programs. This category had not previously been included in the Carnegie classifications.[60]

These characteristics of educational institutions are very relevant in providing guidance in the creation of a CDP. This is particularly true due to the current status of the RLG and WLN Conspectus. Although once held as the gold standard by which to assess library collections and the criteria by which to base a CDP's framework, this is no longer the case. Hazen bluntly states that "formulating a collection development policy requires librarians first to categorize the world" when developing the conspectus driven CDP.[61] He elaborates that the conspectus approach dictates that librarians ambitiously categorize their entire library holdings by many different values such as subject classification, format, language, user levels, etc., and thus has "collapsed of their own weight."[62] Both White and Craig state that using the conspectus as a collection evaluation tool was a laborious process and the finished evaluation of levels of collecting were ultimately subjectively applied.[63] In addition to Hazen, White described the RLG Conspectus as a project that was starting "to collapse under its own weight."[64] Henige further elaborates by noting that the conspectus approach to creating CDPs is "too laborious to ever repay the effort" and "provides no more than a largely undifferentiated, highly subjective, and abstract aggregations of selectors' opinions concerning the strengths of their libraries' holdings."[65] Henige concludes that the conspectus method is based on the false assumption that "all forms of knowledge can be identified, measured, and tested, and more importantly, that these procedures can be encoded and extrapolated from one part of the universe to all others."[66] Bullis and Smith also point to the "problematic subjectivity" that was recognized as part of the conspectus approach.[67] Vickery adds to the overall negative conspectus evaluation by stating that conspectus based CDPs "are inherently inflexible and resistant to change" and difficult to update.[68] He astutely concludes that conspectus based CDPs "cannot easily be adjusted to incorporate new research areas or interdisciplinary subjects, and a fluid, complex reality cannot be encapsulated in a formulaic policy document. Many senior librarians concede that conspectus, although internationally lauded at its inception, has failed to meet a real working need."[69]

In a survey of libraries that have applied the conspectus to collection evaluation, Munroe and Ver Steeg cited one survey respondent "who has been using conspectus methods to evaluate the same institution's collection for ten years and has not yet finished."[70] This is a testament to the complexity and laboriousness of using the conspectus approach to building a CDP and its inapplicability to the real, working world. This is particularly true for libraries with limited resources to undertake such a labor intensive and costly endeavor. Taken collectively, these constitute serious challenges to the applicability of the conspectus method.

A more current and very germane concern regarding the conspectus approach to CDPs is that the emphasis on quantitative data that the conspectus methods use to evaluate a collection does not consider shared print retention plans, which are being used more and more frequently in current collection development and management applications. Maddox Abbott states that "there has been an explosion in the past several years of shared print initiatives among academic libraries in the U.S. and around the world."[71] The emergence of these shared collections, either print or digital, has the potential to place libraries "on the cusp of one of the most far-reaching, national-scale collection management initiatives in modern history."[72] The importance and increasing prevalence of this current collection activity deserves attention in contemporary CDPs.

The conspectus is no longer widely used as a collection assessment tool.[73] It is also not updated as a collection descriptor and tool.[74] Although some libraries still apply the principles of the RLG or WLG Conspectus to library CDPs, it is not a required element to use to create a CDP. "Detailed descriptions of collection strengths are very time-consuming and difficult to compile" and take "a huge amount of effort over a prolonged period" of time.[75] However, one need not let this fact extinguish efforts to develop a useful CDP that reflects a component of collection assessment. This was one of the guiding principles that Oakland University adopted when creating its CDP.

Elements that Have Stood the Test of Time Versus New Developments

There are common elements that are consistently recommended over time and are still useful to address in a written CDP. These include the policy's statement of purpose, the library mission statement, collection levels, selection criteria, weeding considerations, gift policy, collaborative collection development, consortial activities and commitments, and intellectual freedom. What is most important, however, is to apply the framework to best suit each individual library's collection policy needs. "Each institution, including its community and other constituents, is unique; therefore, their policy statements will also be unique."[76] Futas emphasized this by simply stating, "What really matters most is using a structure that works best for your library's collection development document."[77] This is a very valuable guiding principle to adopt.

One of the most important elements of an effective CDP is to clearly state the policy's purpose. This enables those who use it to have realistic expectations in its application. It is advisable to connect the CDP's purpose to the library's overall mission and to have the stated purpose of the policy act as a brief introduction to what the CDP will include.

Although many libraries no longer use a conspectus based CDP, it is important to communicate the depth and scope of the library collections. Unless one is working in an extremely large research institution, these levels will vary considerably by each subject area, based on the university's curriculum, degree programs, and in conjunction with the library's overall mission. Articulating this clearly will be beneficial to both collectors and library users.

The challenges posed by tightening library budgets never cease. Therefore, the library's participation in consortial purchasing, resource sharing, collaborative acquisitions, and collective collections is apropos to include in its CDP. These programs and activities have a positive impact on collection budgets and can alleviate negative effects of stagnant or shrinking budgets. The CDP should also include shared print serial or monograph programs in which a library participates. These programs are related to responsible downsizing of collections while still maintaining access to important resources. The areas of shared print retention programs and the development of collaborative collective collections will become increasingly important as budget tightening continues and resource output steadily increases. These are components of the current library environment that will require attention in the written CDP, and are factors contributing to the increased need for and use of CDPs as relevant guiding documents.

Libraries' support of intellectual freedom and the development of collections that represent a diversity of perspectives have been traditional core library values. ALA and its divisions have staunchly supported these ideals. They offer support materials to assist in the understanding and incorporation of these principles and activities into library operations. It is fitting to honor these traditions within the library's written CDP. A written CDP addresses the minimization in the occurrence of personal bias in the selection of materials.[78] This is accomplished by setting individual selection decisions within the context of the broader aims and the collection parameters outlined in a CDP. A well-developed CDP "enables individual selection decisions to be justified on an objective basis," which will lead to "consistency and balance in the growth of the collection."[79] Although in the context of advocating balanced collections that represent a diversity of ideas and perspectives, the ALA Intellectual Freedom Principles for Academic Libraries statement also addresses the issue of avoidance of personal bias in the selection of materials by stating that the "development of library collections in support of an institution's instruction and research programs should transcend the personal values of the selector."[80] The idea that a CDP can act as a guard against personal bias in the resource selection process is generally understated in the scholarly library literature. With tightening budgets and runaway inflationary costs, guidelines that reduce selection tinged

with personal bias are a valuable contributing feature of a formally written CDP.

A major component of modern day collection development includes the access and management of a varied collection of electronic or digital resources. Because of these rapidly changing and frequently complex e-formats that libraries are increasingly collecting, a library's CDP needs to be flexible enough to accommodate this growing variety of formats and the changing means of access to them.[81] This requires addressing specifics within the CDP that older policies lacked since these specifics are often based on newer standards and requirements. The library CDP should address the accessibility of resources in all formats.[82] Currently, electronic and web-based resources should be in compliance with the United States government Section 508 for Electronic and Information Technology. Vendors in compliance with these standards should be able to supply their Voluntary Product Accessibility Template (VPAT) for consortia or individual institution subscriptions and purchases. This is an important criterion to include in the CDP regarding the selection of e-resources. This area will grow and evolve as accessibility issues gain increasing legal significance and will require regular updates within the CDP.

All of the above research findings were carefully reviewed and considered as the Oakland University Libraries embarked on the process of creating a modern, relevant, flexible, and therefore useful CDP. These research findings were studied closely in relation to the Oakland University Libraries' specific collection needs and goals. "Collection development policies, in order to avoid becoming irrelevant, need to be dynamic, and not static."[83] The author and her colleagues strongly supported this philosophy and incorporated this principle into all aspects of the creation of the library's CDP. In addition to these research findings, the author reviewed other academic library CDPs with her colleagues, and the process of creating their own CDP was ready to begin.

Oakland University: The Library's Experience in Creating a Collection Development Policy

Oakland University is a medium-sized public university with an overall student population of more than nineteen thousand and a FTE of approximately sixteen thousand. Until the recent Carnegie classification modifications for doctoral universities, the university had the Carnegie classification of a doctoral degree granting university at the R3, moderate research activity level. As a result of the recent Carnegie doctoral university classification alterations, the R3 classification was replaced with the D/PU category for doctoral/professional universities. Subsequently, the university's Carnegie classification was changed to the R2 category now identified as doctoral universities with high research activity. The university, however, is still primarily known as a teaching university serving an undergraduate population. From a headcount of over nineteen thousand students, the large majority of them (approximately sixteen thousand) are enrolled as undergraduates, and about thirty-five hundred are graduate students.[84] This is an important characteristic in both the library's history and current state of collection development. For many years, the emphasis in acquiring resources was to support a curriculum-based collection with the focus on undergraduate studies. Based on the enrollment characteristics of the university population, this continues to be true. Although areas of faculty research are supported as the budget allows, the driving force behind the bulk of the collection selections are the large undergraduate course offerings and to a lesser degree, the much smaller number of graduate level course offerings.

Oakland University Libraries had not maintained a current CDP. This is not an unusual situation among academic libraries.[85] A review of the library's annual reports from the mid-1980s and earlier referenced the overall collection primarily being based on support of the undergraduate curriculum. Some of the annual reports also stated the need for a CDP. If a specific CDP document had been created, a copy of it could not be located. Even had one been located, it would have been outdated since it would not have addressed pertinent considerations of twenty-first century collection characteristics and collection development and management activities. These include the complexity of digital resources, institutional repositories, shared resource initiatives, the diversity of formats collected, open access resources, and substantial increases in the acquisition of electronic-only resources. As these newer elements of collecting became more prevalent and ubiquitous, the library faculty strongly felt that the creation of a written CDP was necessary.

One of the most important characteristics of the needed policy was an articulation of criteria for selection. "One does not collect just for the sake of collecting."[86] Resource selectors should not view "collections as ends unto themselves."[87] Collecting is selective and should be based on the guidelines provided by a CDP. In the formation of a CDP that would be most helpful for our selectors, the author addressed the following questions: On what basis does the library faculty select resources for purchase? How are requests for resources by students or other faculty evaluated? What are the justifications for rejecting or accepting a resource request? These constituted the major questions that went unanswered due to the absence of a CPD. Resource selection requires the application of human judgment and a written CDP offers guidelines to assist in

the judgment process. A useful CDP "defines a framework and provides parameters" for the selection of resources.[88] The author's work was clearly defined as the process began to move forward.

Initial Process: Establishing a Team and Timeline

As the relatively new collection development librarian, the author took the concerns expressed and the feedback received regarding the absence of a library CPD and formed an investigative ad hoc library faculty committee to create a CDP to best suit their needs. A CDP "is most effective if it has aspects of democratic planning."[89] She invited all interested library faculty to participate. In addition to supporting this principle of democratic planning, the library faculty possessed specific expertise in various areas that would be valuable for the CDP to address. Having committee members to represent a variety of perspectives, functions, and subject disciplines was beneficial to the process.

The committee was formed at the end of the 2016-2017 academic year, with monthly meetings scheduled for the 2017-2018 academic year. The goal was to have a working draft of a CDP by the early part of the 2018-2019 academic year. Additional meetings were scheduled during the fall term of 2018 to address issues and make minor adjustments to the policy. The finished CDP was completed in early 2019 and posted to the library policy website. It can be accessed at https://library.oakland.edu/policies/collection_development.html.

Prior to the scheduled meetings, the author conducted extensive CDP research and culled and reviewed numerous academic library collection policies, particularly those of peer university libraries. The committee's early meetings were a review of what the author found to represent best practices for similarly situated medium-sized academic libraries plus other libraries with well formulated or current CDPs. The author, along with the committee, also reviewed the academic libraries CDPs that addressed specific format or access types (datasets, born-digital, and open access resources), the purpose of a CDP, and what appeared to be universal best practices. A review of these elements was coupled with discussions of which sections were pertinent for the author's library to include in its CDP. Committee members with specific expertise in format types or collection functions would draft sections related to their areas of experience and proficiency.

Making Progress: Drafting, Reviewing, and Compiling the Policy

An initial element of the policy that was addressed early on was that the CDP was to be a statement of policy, not procedure. It would address why the library collected what it collected, not how. The CDP's primary purpose was to provide guidelines for the development of a collection that supported the institution's curricular and research needs as the budget allowed, and established the goals for growing a collection that supported the library's mission and values. The author shared with the committee her findings that this general, overall purpose of an academic library CDP was well established in the professional literature and was reflected both in CDPs she had reviewed and that were reviewed together. The committee concluded that a similar blueprint would be applicable to their institution. As the committee continued to meet, members agreed that the following sections would constitute the necessary sections for the policy at this time:

- Statement of purpose
- Collecting intensity levels
- Collaboration and resource sharing
- Diversity statement
- ALA and Association of College & Research Libraries (ACRL) statements
- General selection criteria (applicable to all resource considerations)
- Journal selection criteria
- E-resources criteria
- Reference collection
- Digitized and born-digital collections
- Open access resources
- Datasets
- Special Collections & Archives
- Gifts
- Deselection
- Faculty publications

Throughout the 2017-2018 academic year, drafts of the CDP sections listed above were completed or in revision. There are other elements that are addressed in various CDPs, and Johnson includes a comprehensive list of them but notes that all the listed components "might be found in a single policy, [but] such comprehensiveness is neither common nor necessary."[90] This is important to consider when a library undertakes the potentially complicated endeavor of producing a CDP that is most useful and relevant for them. To keep the project manageable and applicable to one's needs and purposes, it is suggested that one judiciously select what would be the most valuable guidelines to include in the CDP. The author and her colleagues decided not to undertake a widespread, comprehensive collection assessment prior to producing a CDP. Although this was once noted as a requisite step in the process of creating an effective CDP, it is not necessarily applicable to all institutions. The author's library lacked the staffing or time to devote the

energies required for this endeavor. Additionally, as a result of the library's participation in a state-wide shared print monograph retention program, the author's institution had access to a comprehensive database that analyzed both the library's individual monograph holdings and usage, and the collective holdings and usage of eleven participating libraries throughout the state. This data provided an understanding of the scope of the print monograph collection within all the Library of Congress classifications. The library also had a firmly established print monograph approval plan that was adjusted through time to match most closely with the university's degree and curriculum offerings. This provided information on the scope and content of the library's monograph collection. These tools together yielded a basic collection assessment of the library's print monograph holdings. It was determined that the committee could proceed with the production of a useful CDP without engaging in a more detailed collection assessment process.

Oakland University has recently stated, as part of its strategic plan, a plan to increase its research activity. However, as previously described, the history of the library collection policy has consistently been curriculum based, primarily to support teaching and learning. Due to the current university profile and the large undergraduate student population numbers and undergraduate degree programs, the library will continue to have this priority incorporated into its CDP. More sophisticated research level materials are acquired for doctorate degree programs, and to a limited extent for master degree programs. The potential faculty user base and multidisciplinary application are considered for collecting resources to support faculty research. The university's budget limitations force subject selectors to constrict acquisitions of highly-specialized faculty research resources. This area will require continual review.

Collecting Intensity Levels: Based on Levels of Degrees Offered

Considerable thought and discussion were devoted to how the Collection Intensity Levels were described in the CDP. Due to inherent issues with conspectus based CDPs, it was decided that it was more pertinent to describe collecting levels based on the level of degrees offered. The CDP states that the collecting intensity levels within the subject areas for which degrees are offered are determined by the depth of materials needed to support the various degrees and level of the offered degrees. Therefore, the type of resources that are appropriate to acquire for either bachelor level degrees, master level degrees, and for doctoral level degrees are described. Specific collection statements for some formats such as video, newspaper, print, microform, or indexes, are not cited separately. Instead, a general statement notes that resources in all appropriate formats are considered in support of the three degree levels the university offered.

A major reason that the collecting intensity levels based on degrees granted was most useful for the author's CPD is that the library faculty selectors are skilled in selecting resources to support academic activities within the academic units and schools to which they are assigned as liaisons. Each librarian liaison is well versed in their respective department's course offerings. They are closely acquainted with their liaison academic programs, the relevant teaching and research resources to support these programs, and appropriate resources for each degree level. They sought more guidance from a CDP in the often convoluted, complex format idiosyncrasies and access issues related to resources. This is why the CDP outlined the criteria considerations that were necessary to review when collecting materials in general, then for specific format types such as journal acquisitions, e-resources, datasets, digitized and born-digital resources, reference materials, and open access resources.

Conclusion

This paper offers a perspective on how CDPs have been developed and used in conjunction with current needs and purposes for a CDP. As Oakland University Libraries continue to review the completed CDP, it will be done in consideration of any potential gaps that may need to be filled and clarifications that may be necessary for future revisions. There are not many current published works that address the actual process required to produce effective CDPs. Those that do exist contain some outdated information. More recent library literature addresses the current characteristics of the twenty-first century academic library collections but does not necessarily provide specific steps for creating a CDP relevant to these characteristics. The steps outlined here can act as a more contemporary blueprint for the creation of a written CDP, particularly for a medium-sized academic library. As Oakland University Libraries strive to maintain a flexible CDP, the author and her colleagues recognize that sections of their CDP may require further specificity or will be stated in more general terms. They also recognize that there are sections that they may need to add particularly as resource formats change and evolve. Any library that expends the effort to produce a CDP should understand that the document is "a living, breathing entity that is always thought of, always lived with, always tinkered with, and never quite finished."[91] This philosophy should not be viewed as a drawback. Instead, it is an opportunity to maintain a vibrant yet relevant and useful working tool that assists all library resource selectors.

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Notes on Operations
Experts or Dummies?

Quality of E-Book Pool and User Selections in a Consortial Demand Driven Acquisition Program

Matthew J. Jabaily and Rhonda Glazier

Academic libraries are increasingly purchasing electronic books (e-books) via demand driven acquisitions (DDA) programs. However, there is no guarantee about the quality of DDA titles. This is especially true for consortially managed DDA pools or when pools include all titles from selected publishers. This study analyzes data from EBSCO's GOBI acquisitions platform to assess the quality of the pool and purchased titles from the Colorado Alliance of Research Libraries (CARL) publisher-based DDA program. Results showed that most available and selected titles were appropriate for academic libraries. Popular and lower level academic titles made up a relatively small portion of the DDA pool but were selected at a proportionally higher rate than other titles. The DDA pool was weighted towards titles that had been previously purchased by few GOBI libraries, but users tended to select titles that had been purchased by more GOBI libraries. Implications of these results are discussed from the point of view of a consortium member library using the DDA program as a supplement to its broader collections of print and e-books.

As academic libraries increasingly use demand driven acquisition (DDA) or patron driven acquisition (PDA) electronic book (e-book) programs for monograph acquisitions, they cede control over what titles are added to their collection. Individual libraries that administer their own programs can exert a measure of control over selections by carefully tailoring the pool of available titles according to their institutions' needs and goals. Participants in consortial programs, however, do not necessarily have this control and instead rely on mutually agreed upon pools.

The lack of control in DDA programs may concern librarians accustomed to having title level control over their collections. One fear is that library users may lack the expertise to select high-quality titles, spending the library's limited budget on marginal or unsuitable titles. An example of this concern is related to the *Dummies* series of instructional books that some librarians feel is inappropriate for an academic collection. Authors of studies of PDA programs, such as Schroeder et al. and Goedeken and Lawson, have specifically excluded books from the *Dummies* series from their library's PDA/DDA programs.[1] Exclusion of *Dummies* books, however, is not universal. Dinkins listed *Dummies* books among the titles available as part of her library's PDA program and suggests that they may be valuable to users but unlikely to be chosen by librarians.[2]

To achieve a balance between allowing users to access the books they want and avoiding dedicating too many resources to non-scholarly materials, it is helpful to have a sense of the impact on the collection when libraries allow users to select titles from a pool that includes access to all types of titles. This type of

Matthew J. Jabaily (mjabaily@uccs.edu) is Electronic Resources and Serials Librarian at the University of Colorado Colorado Springs. **Rhonda Glazier** (rglazier@uccs.edu) is Director of Collections Management at the University of Colorado Colorado Springs

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analysis is difficult because it is often hard to discern the quality or content level of titles on a large scale, particularly when many non-academic titles lack obvious indicators like the word "dummies." This paper analyzes the user selections triggered for purchase as part of the Colorado Alliance for Research Libraries (CARL) DDA program. It uses data from GOBI Library Solutions from EBSCO (GOBI) to assess content level, quality, and prevalence in libraries to better understand user selections. Unlike other studies, it also examines the non-selected titles from the DDA pool, providing a context for selection and facilitating a better understanding of selection rates for different types of titles. Although GOBI's data lacks the richness and depth of expert knowledge provided by selective review sources like *Choice Reviews*, this study uses GOBI data because it is comprehensive enough to include information about a large majority of the titles included in the CARL DDA program.

Background

The CARL DDA Program

The Kraemer Family Library (KFL) at the University of Colorado Colorado Springs (UCCS) participates in several programs offered by CARL. In fiscal year (FY) 2012, CARL proposed a joint publisher-based DDA program for consortia members, and KFL chose to participate. The participating libraries initially chose twenty-four publishers for the program, and some publishers dropped out over time. The current DDA includes titles published by Wiley, Princeton University Press, University of California Press, Jossey-Bass, Bloomsbury, and several smaller publishers. Titles published before 2012 or that cost more than $250 are excluded from the program, and the pool is not otherwise restricted. ProQuest provides new discovery records, updates, and deletions monthly via a file transfer protocol (FTP) site, and participating libraries are responsible for downloading the records and entering them into their systems. After titles are triggered for purchase, a lead library provides updated bibliographic records to the other participating libraries, usually every two to six weeks. Although the full bibliographic records indicate which are discovery records and which are purchased titles, the catalog's public view does not distinguish between the two because this information is not relevant to users or for discovery.

In 2016, CARL began working with ProQuest to transition the DDA to an Access-to-Own (ATO) program. For detailed information on the program's logistics, see Denker's paper detailing the CARL DDA program from its inception to the switch to an ATO program.[3] A major change with the ATO program was the allocation of more funds to short-term loans instead of immediate purchases. With the new model, CARL staff asked ProQuest to approach the current DDA publishers with the new ATO proposal. After months of negotiation between ProQuest and the publishers, CARL members were given a list of publishers who agreed to the new access-to-own model. Several publishers, including Oxford University Press and Harvard University Press, stopped participating after the transition to ATO. It was not clear whether these publishers dropped out because they disliked the available terms of the ATO or if they had lost interest in participating in DDA for consortia.[4] All participating CARL libraries are asked annually whether they will continue with the program for the following year. Costs for the next year are calculated using a flat fee common to all libraries and adding an additional charge based upon the library's share of use. Costs for KFL have remained stable, with only one year where costs increased above the predicted amount.

GOBI Profiling of Titles

GOBI, currently owned by EBSCO and formerly known as Yankee Book Peddler (YBP), facilitates the acquisition of books, primarily for academic libraries. Among the services GOBI provides are approval plans, where newly published books are automatically sent to libraries if they meet the criteria in that library's profile. To facilitate this process, GOBI reviews newly published titles and applies several designations. Titles are assigned one of six Content Levels: General-Academic (GEN-AC), Advanced-Academic (ADV-AC), Professional (PROF), Basic Studies (BASIC), Popular (POP), or Juvenile (JUV). Titles are also profiled according to their quality and appropriateness for an academic library collection and assigned one of the following YBP Select ratings: Basic-Essential, Research-Essential, Basic-Recommended, Research-Recommended, Specialized, or Supplementary. While GOBI assigns all profiled titles a Content Level, only titles deemed to be of sufficient quality are given a YBP Select rating. Additionally, GOBI shares a Library Activity number for each title that indicates how many libraries have purchased that title from GOBI. Since this number does not include non-GOBI purchases, it provides only a relative indication of a title's prevalence in libraries. The data available from GOBI is limited to a few ratings and it is unclear how well these ratings correspond with other measures of book quality. Nonetheless, the authors elected to use GOBI's data because it was the only source available to them that was comprehensive enough for the scale of the study and because of their previous experience with the platform as selectors.

Literature Review

Early Perspectives on DDA

As PDA and DDA programs developed in the early 2010s, they were often viewed with enthusiasm or dread. Anderson predicted that the move to PDA programs as the standard method of collection was inevitable.[5] He wrote that library collections are "built on speculation" and despite expert knowledge and the ability to select good books, subject selectors are "unable to guess with real precision the exact needs of the library's specific patrons."[6] He predicted that to maintain relevance, libraries needed to adapt to the new information environment, in part by being able to fulfill immediate patron needs on demand. Walters, in contrast, argued that "many PDA programs fail to support the broader educational mission of the university" and are "likely to diminish collection quality." [7] He believed that library patrons, particularly undergraduates, often lack the knowledge and expertise needed to make selections that would improve the collection and meet their institutions' long-term needs. A few of the other potential problems with PDA programs that he described include the tendency to create shallow or poorly balanced collections, the ability to deplete funds too quickly, and limitations in the availability of titles in e-book format.

Studies of DDA programs suggest that libraries have taken a moderate course of action. DDA programs at academic libraries have expanded rapidly, but they have not become the dominant method of collection building. Authors of many studies of DDA programs believe that they have been generally successful but do not suggest that they are perfect or can replace other methods of selection. For example, Bennett notes that North Carolina State University is "very happy" with their DDA program, but their DDA pool remained relatively small, with only 64,000 titles in the pool compared with an overall e-book collection of 870,000.[8] He cites the unpredictability associated with DDA programs as the reason they maintain a relatively small pool of titles. Walker and Arthur found that the University of Alabama's DDA purchases provided a higher return on investment in terms of cost-per-use than traditionally purchased materials, but they were explicit that they do not suggest libraries abandon their traditional acquisitions methods.[9] Foremost among their reasons was the limited materials available via DDA programs, as the majority of high-quality research titles are not accessible through these programs.

Assessing the Quality of DDA Purchases

Costello's book *Evaluating Demand-Driven Acquisitions* provides a comprehensive overview of the various ways to measure DDA acquisitions.[10] She dedicates chapters to different criteria for measurement, including cost, diversity, and usage. Measurement of quality is addressed in the chapter titled "Assessing for Collection Standards." Costello provides an overview of the difficulties of assessing the quality or appropriateness of selections and defining what constitutes a "good" collection. She gives consideration to the tension between providing materials for immediate and long-term needs, the relationship between use and value, the question of to whom value is provided, and several other challenges.

Shen et al. assessed the quality of patrons' PDA selections by comparing them to librarians' hypothetical selections from the same pool of records.[11] The authors used data from the YBP acquisitions platform, specifically the YBP Select rating and Content Level designation, to compare patron and librarian selections. Of the 637 patron selected titles, only 116 were also chosen by librarians. Nonetheless, they found that "librarian and patron selections overall were remarkably similar in their content levels, with the exception that librarians selected significantly fewer popular titles."[12] With regard to YBP Select rating, patrons and librarians both selected the largest number of Research-Recommended titles, but patrons selected more supplementary titles than librarians.

Gilbertson et al. evaluated the quality of their patron selections based on how many other WorldCat libraries owned the title.[13] They found that 221 of the 225 selected titles were in more than fifty libraries. They admitted that it is questionable whether library ownership is an adequate measure of title quality, but they found the data useful when used in conjunction with other measurements of the program's success, including number of uses and cost.

Comparing DDA Pools and Purchases

A few studies have compared characteristics of the pool of available DDA titles to the titles that were eventually purchased. Shepherd and Langston reviewed a PDA pilot program for the California State University (CSU) Library Consortium that was undertaken to strengthen their shared collection of e-books.[14] Part of their study compared the Library of Congress (LC) classifications of titles in the PDA pool to the classifications of the purchased titles. They found, "In general, the number of books purchased in each subject was proportional to the number of books represented by that subject in the entire collection."[15] Egan et al. did a similar analysis when reviewing a PDA plan at the City University of New York (CUNY) system. They reviewed statistics from Ingram that included the LC classification and publisher for each title purchased. Their analysis found "no significant gaps between the representation of subjects in the collection and in the selection of those subjects by

Table 1. DDA pool and purchases by Content Level

Content Level	Number of Titles in Pool	Percent of Pool	Number of Purchases	Percent of Purchases
ADV-AC	12129	48.8%	1083	46.3%
GEN-AC	2919	11.8%	565	24.1%
PROF	3652	14.7%	407	17.4%
POP	1517	6.1%	240	10.3%
JUV	53	0.2%	1	0.0%
NONE	4571	18.4%	44	1.9%
Total	24841		2340	

patrons."[16] Their analysis of publishers showed that they "fared similarly," but they noted an exception where one publisher's books "represented 9.6% of records, but titles selected for purchase made up 12.9%."[17]

Method

For this study, lists of purchased and unpurchased DDA titles were generated using records from KFL's Sierra integrated library system. A local note in the records marks all titles that are part of the DDA program and indicates which titles have been purchased. In the CARL DDA program, discovery records are added and subtracted periodically. As a result, measuring the characteristics of a DDA pool is like aiming at a moving target. By contrast, records for books purchased as part of the DDA are continually added and never removed. To minimize the discrepancy between the purchased titles and discovery pool from which they are drawn, data was extracted in May 2018, immediately following the addition of the most recent group of purchased titles and right before the addition of new discovery records. This ensured that all the titles in the pool had at least some opportunity to be triggered for purchase, but the duration of this opportunity varied because some records had been in the system longer than others.

The GOBI platform was used to collect additional information about each title. An International Standard Book Number (ISBN) for each title was exported from Sierra and used to query the GOBI database. To expedite searches, the ISBNs were batched into groups of eighty, the largest number of results that GOBI can display on a single screen. GOBI allows the export of bibliographic data through its interface, but the process for downloading and compiling results was cumbersome given the number of results to be examined. As an alternative, the search result information was harvested using the Data Miner plug-in for the Google Chrome browser. Information from the "Full Item Display" was harvested and the following data was isolated and separated into columns: Title, Year, Content Level, YBP Select, Classification, Library Activity, and Language. After the initial information was recorded, titles were marked if the word "dummies" appeared anywhere in the full item display, typically in the title or series statement. Titles from the Dummies series were isolated for analysis because they are well-known, intended for a low-level audience, and plentiful in the DDA pool. An initial review of the data was done using Microsoft Excel, and additional analysis was done using RStudio, an integrated development environment for R, a statistical programming language.

Results

A total of 26,738 records from the CARL DDA program were in the KFL system at the time of the study. Of these, 24,841 (92.9 percent) had GOBI records. All the titles that had been triggered for purchase had GOBI records. Titles lacking GOBI records were excluded from the study and are not included in any subsequent percentages. A total of 2,340 titles were marked as purchased, representing 9.4 percent of the pool available in GOBI.

Language

CARL did not restrict the DDA pool by language, and non-English titles were included if publishers made them available. The DDA pool included 4,080 Non-English titles (16.4 percent of records). An overwhelming majority (95.2 percent) of non-English titles were in German, and most were published by De Gruyter or Wiley. Nearly all purchases were for English titles (99.8 percent). Only 4 of the 4,080 non-English titles in the DDA pool (0.1 percent) were purchased.

Dummies Titles

The DDA pool included 1,258 *Dummies* books, making up 5.1 percent of titles. *Dummies* titles were triggered for purchase 168 times, resulting in 7.2 percent of all purchases.

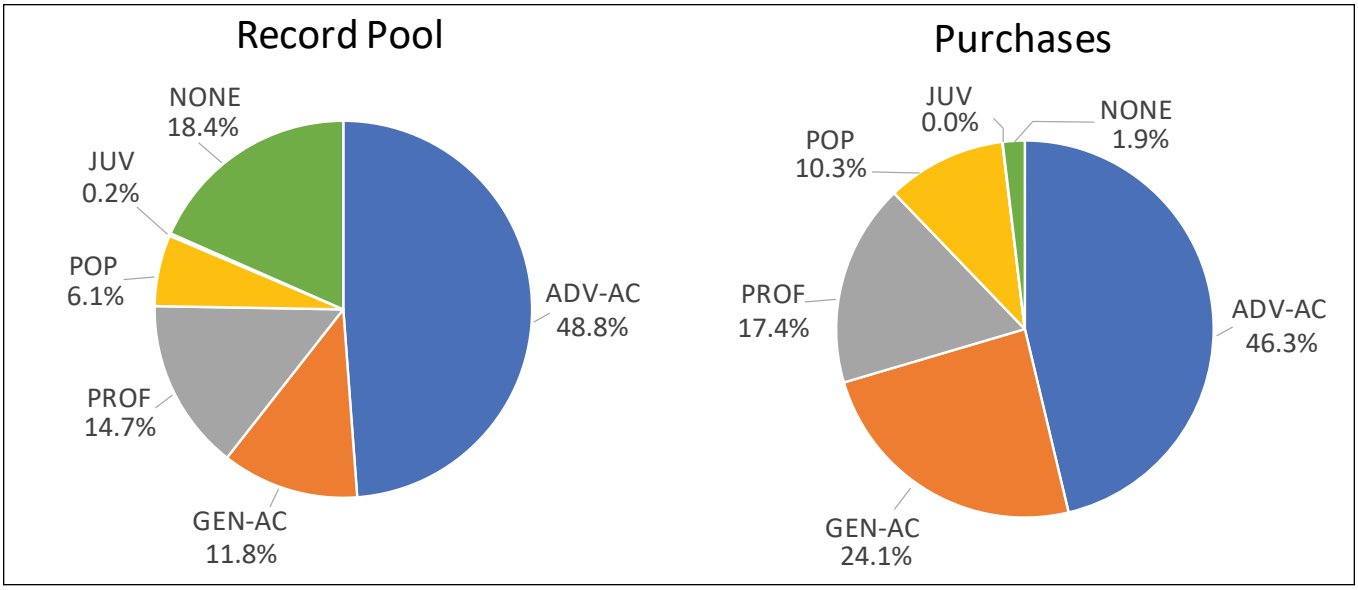

Figure 1. Composition of DDA record pool and purchases by Content Level.

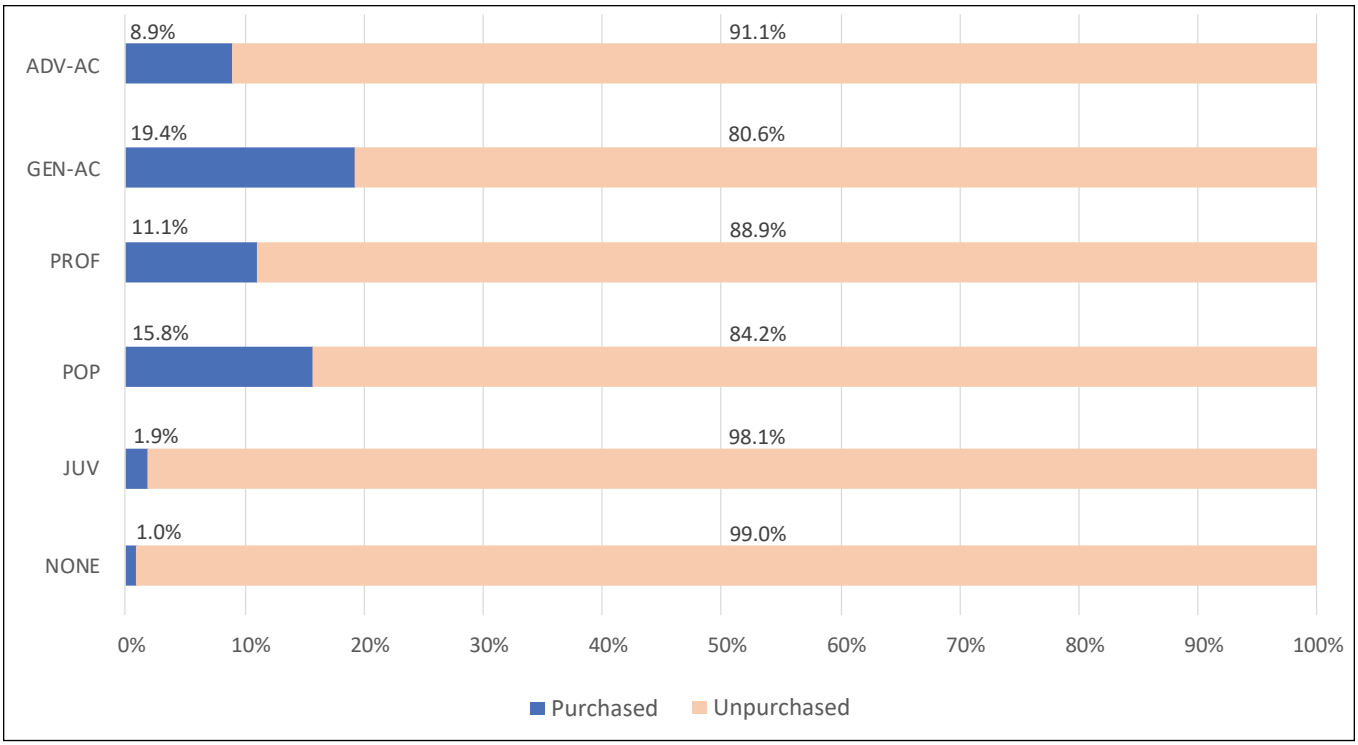

Figure 2. Purchased and unpurchased titles by Content Level.

A higher percentage of the *Dummies* titles pool were triggered for purchase (13.4 percent) than non-*Dummies* titles (9.2 percent).

Content Level

Table 1 displays the number of titles available in the pool and the number of purchases at each Content Level. Figure 1 illustrates the composition of the overall pool and purchased

Table 2. DDA pool and purchases by YBP Select Rating

YBP Select Rating	Number of Titles in Pool	Percent of Pool	Number of Purchases	Percent of Purchases
Research-Essential	160	0.6%	35	1.5%
Research-Recommended	7087	28.5%	677	28.9%
Basic-Essential	143	0.6%	41	1.8%
Basic-Recommended	1656	6.7%	311	13.3%
Specialized	811	3.3%	57	2.4%
Supplementary	6552	26.4%	709	30.3%
None	8432	33.9%	510	21.8%
Total	24841		2340	

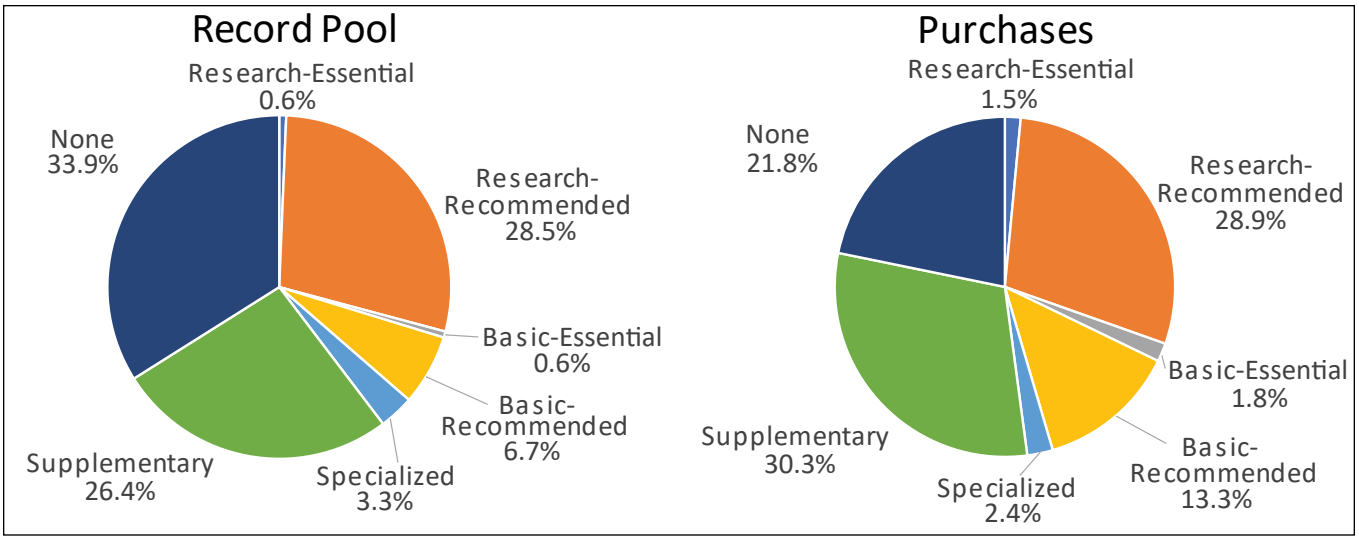

Figure 3. Composition of DDA record pool and purchases by YBP Select rating

titles in terms of Content Level. Figure 2 illustrates the percentage of titles purchased from the overall pool for each level.

Nearly half the titles in the pool (48.8 percent) were at the ADV-AC level. GEN-AC titles were less common (11.8 percent), as were PROF titles (14.7 percent). POP titles were even less common (6.1 percent), and there were very few JUV titles (.2 percent). There were no BASIC titles in the pool. Some titles lacked a Content Level (18.4 percent).

ADV-AC titles were the most purchased in terms of total number of e-books. The Content Level with the highest percentage of available titles selected was GEN-AC, and POP titles were selected at a similarly high rate. Titles with no assigned Content Level were rarely purchased.

YBP Select Rating

Table 2 shows the number of titles available in the pool and the number of purchases for each YBP Select rating. Figure 3 illustrates the composition of the overall pool and purchased titles in terms of YBP Select rating. Figure 4 illustrates the percentage of titles purchased from the overall pool for each rating.

The most common YBP Select ratings in the pool were Research-Recommended (28.5 percent) and Supplementary (26.4 percent). Basic-Recommended titles were less common (6.7 percent), as were Specialized titles (3.3 percent). Research-Essential and Basic-Essential titles were relatively rare (.6 percent each). About one third (33.9 percent) of titles lacked a YBP Select rating.

Results showed that titles with a YBP Select rating were selected for purchase at a higher rate than those without a rating. More Research-Recommended rated titles were selected than Basic-Recommended titles, but a greater percentage of available Basic titles were selected. Although Research-Essential and Basic-Essential titles made up a small portion of the overall purchased titles, a much greater percentage of the available Essential titles were purchased than Recommended titles.

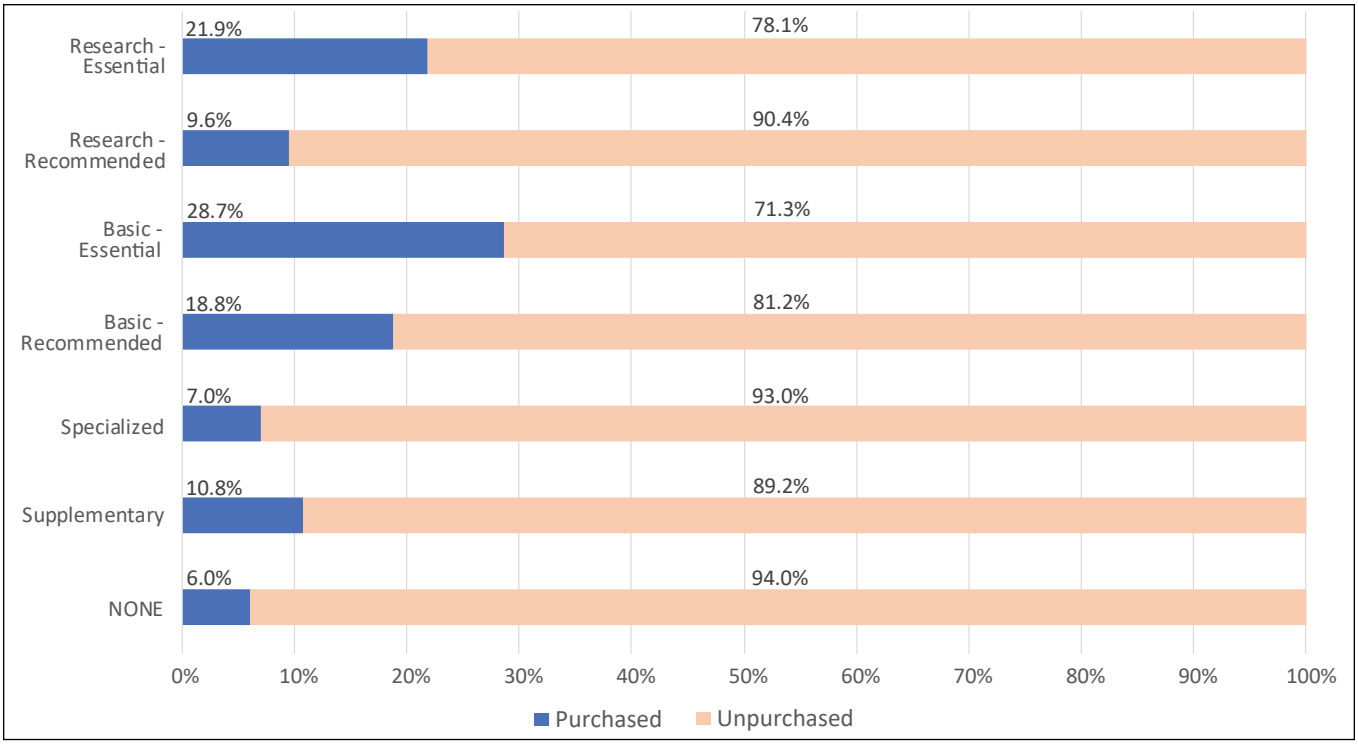

Figure 4. Purchased and unpurchased titles by YBP Select rating.

Table 3. Content Level and YBP Select Rating cross-tabulation table

Content Level\YBP Select Rating	Research-Essential	Research-Recommended	Basic-Essential	Basic-Recommended	Specialized	Supplementary	NONE
ADV-AC	157	7,012	2	8	137	3,170	1,643
GEN-AC	2	23	141	1,646	0	661	446
PROF	1	50	0	2	674	2,410	515
POP	0	0	0	0	0	311	1,206
JUV	0	0	0	0	0	0	53
NONE	0	2	0	0	0	0	4,569

Content Level and YBP Select Cross Tabulation

Table 3 provides a cross-tabulation of Content Levels and YBP Select ratings. Generally, titles with YBP Select ratings of Research-Essential or Research-Recommended were at the ADV-AC level, and titles with YBP Select ratings of Basic-Essential or Basic-Recommended were at the GEN-AC level. Specialized titles were mostly at the PROF level. Supplementary titles were most commonly assigned the ADV-AC Level, but many were assigned the PROF Content Level. Titles with a POP level, not typically the focus of academic collections, rarely had YBP Select ratings and were considered Supplementary when they did.

About one third (33.9 percent) of the titles lacked a YBP Select rating, and just short of one-fifth (18.4 percent) had no Content Level. Common reasons given as to why titles lacked Content Level or YBP Select rating were that they were low level or a recent reprint of another edition. A large portion of the titles with no Content Level were non-English titles. This may be because YBP was traditionally focused on servicing academic libraries in English-speaking countries.

Number of Purchasing Libraries

The pool of available records was heavily skewed towards titles with low Library Activity values, meaning that few

Table 4. Library Activity summary statistics

	Minimum	1st Quartile	Median	Mean	3rd Quartile	Maximum
DDA Pool	0	7	30	48.8	69	845
Purchased	0	37	72	96.7	131	845

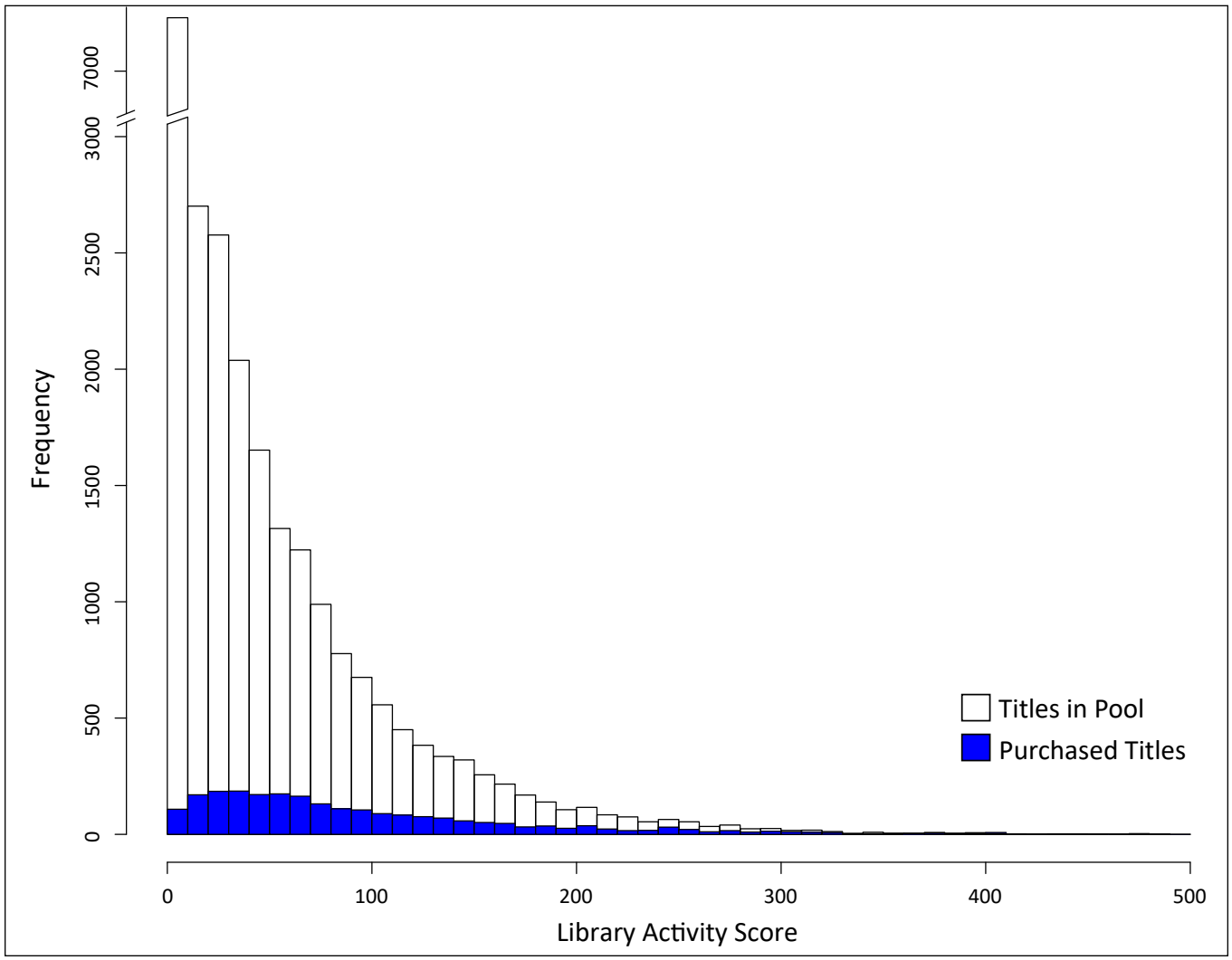

Figure 5. Histogram of Library Activity.

libraries had purchased them via GOBI. The median Library Activity value for the pool was thirty, and 3,232 titles (13.0 percent) had a Library Activity value of zero.

Titles selected for purchase tended to have much higher Library Activity values than those that were not selected. The median value for selected titles was seventy-two, and only fourteen titles (.6 percent of purchases) had a Library Activity value of zero. Sixteen of the twenty titles with the highest Library Activity (80.0 percent) were selected for purchase, as were sixty-two of the top hundred (62.0 percent). Titles with median or above Library Activity value were purchased at a rate of 15.3 percent. This is higher than the overall rate of purchase (9.4 percent), and much higher than the rate of purchase for titles with a below median Library Activity (3.6 percent).

Table 4 provides a summary of the distributions of Library Activity for the DDA pool and purchased titles. Figure 5 is a histogram that displays the number of titles available and number of titles purchased at various Library Activity values.

Discussion

The overall pool of titles in the CARL DDA was generally appropriate for academic libraries. A majority of the available titles were geared to academic audiences, and there was a reasonable number of specialized or supplementary titles that could be valuable to researchers. Initial concerns that an unregulated pool of titles would introduce an overwhelming quantity of low-quality titles into the collection proved largely unfounded.

Nonetheless, the CARL DDA pool includes a few classifications of titles, for example non-English titles and titles lacking a Content Level, which are very unlikely to trigger purchases. If the library had control over the pool of titles, it would likely exclude these titles. They do not appear to be in demand, and if they appear in search results, they could detract user attention from more relevant titles. In a previous study at KFL, Jabaily et al. found that the WebPAC heavily favored recently published items, likely pushing older, but more relevant, items lower in search results.[18] The study showed that the library's discovery search was better at ranking results and mitigating discovery problems associated with adding large collections of records. Although it is unclear whether the addition of large quantities of low value records harms discovery, the inclusion of the titles does not appear to be a source of financial risk, and as such does not lead to concerns that would discourage KFL's further participation in a consortial DDA program.

The percentages of user selections for the CARL DDA program were similar to the results found by Shen et al. in terms of YBP Select ratings and Content Levels.[19] The biggest differences were that the CARL DDA program purchased a smaller percentage of titles lacking a YBP Select rating (22 percent versus 43 percent) and Content Level (2 percent versus 7 percent). This difference is possibly due in part to changes in GOBI's profiling rather than solely to differences in user preferences. Given the high percentage of titles with no YBP Select rating, especially in Shen et al., comparisons are best made in Content Level classifications. Figure 6 illustrates the differences in the distributions of selections by Content Level. Compared to the program studied by Shen et al., the CARL DDA Program showed a higher percentage of GEN-AC (24 percent versus 16 percent) titles, and a lower percentage of ADV-AC (46 percent versus 53 percent) titles. It also showed a higher rate of PROF (17 percent versus 12 percent) titles. The two programs had a similar purchase rate for POP titles (10 percent versus 11 percent). While it is possible that some of the differences are a result of the lower percentage of unrated titles in the CARL DDA, this cannot account for all the differences. Not knowing the pool of available titles in Shen et al.'s study, it is difficult to ascertain whether differences are due to differences in user preferences or differences in the pool of available titles.

Whether these distributions represent an appropriate balance is subjective and depends on the library's mission and goals. In assessing their results, Shen et al. noted that patrons are more likely than librarians to select popular titles, but concluded that "students and faculty performed admirably in the selection of titles appropriate to or recommended for an academic setting."[20] In contrast, Walters interpreted Shen et al.'s data as evidence that "undergraduates often lack the knowledge and expertise needed to make good selection decisions."[21] He focused on the fact that "only 30 percent of patrons' selections were included in the librarians' lists of relevant e-books" and "patrons were more than twice as likely to select nonacademic titles."[22]

For now, the purchases triggered by CARL users have not led to concerns at KFL. The high percentages of research and academic titles indicate that most titles are aligned with the institution's research and teaching missions. Given the distribution of titles in the DDA pool, it makes sense that the highest number of purchased titles were at the ADV-AC Content Level. The higher rate of acquisition for GEN-AC titles is reasonable given the large undergraduate populations at UCCS and other CARL institutions.

The authors of this study consider the 10.3 percent of purchases for POP materials acceptable for KFL. Although POP titles were overrepresented in purchases based on their percentage of the overall pool, a large majority of POP titles (84.2 percent) were not purchased. Some libraries, like that at the University of Mississippi, have eliminated DDA access to popular materials and textbooks.[23] The authors of this study believe such an action is reasonable and that popular materials should not be the core of an academic library's collection. But KFL's DDA program is a supplement, rather than a replacement, for traditional collection strategies, and the library collects relatively few popular materials using traditional methods. As a result, there is more concern about the unintended consequences of limiting user choices too narrowly than about the purchase of supplemental or non-academic titles.

An anecdotal review of the POP titles selected by users showed that most were not the type of leisure or genre fiction titles that many would associate with a popular designation. Many of the selected e-books are focused on helping individuals teach themselves skills like computer programming, interpreting data, or grant writing. Other titles are intended to supplement learning in challenging academic classes such as calculus and organic chemistry. Limiting access to these titles may make it more difficult for users to pursue their own learning or to get the basic help they need. Some librarians may cringe at the idea of purchasing *Dummies* books, yet these books may be appealing to users. Several KFL librarians have expressed a desire to provide access to *Dummies* titles, or books from similar

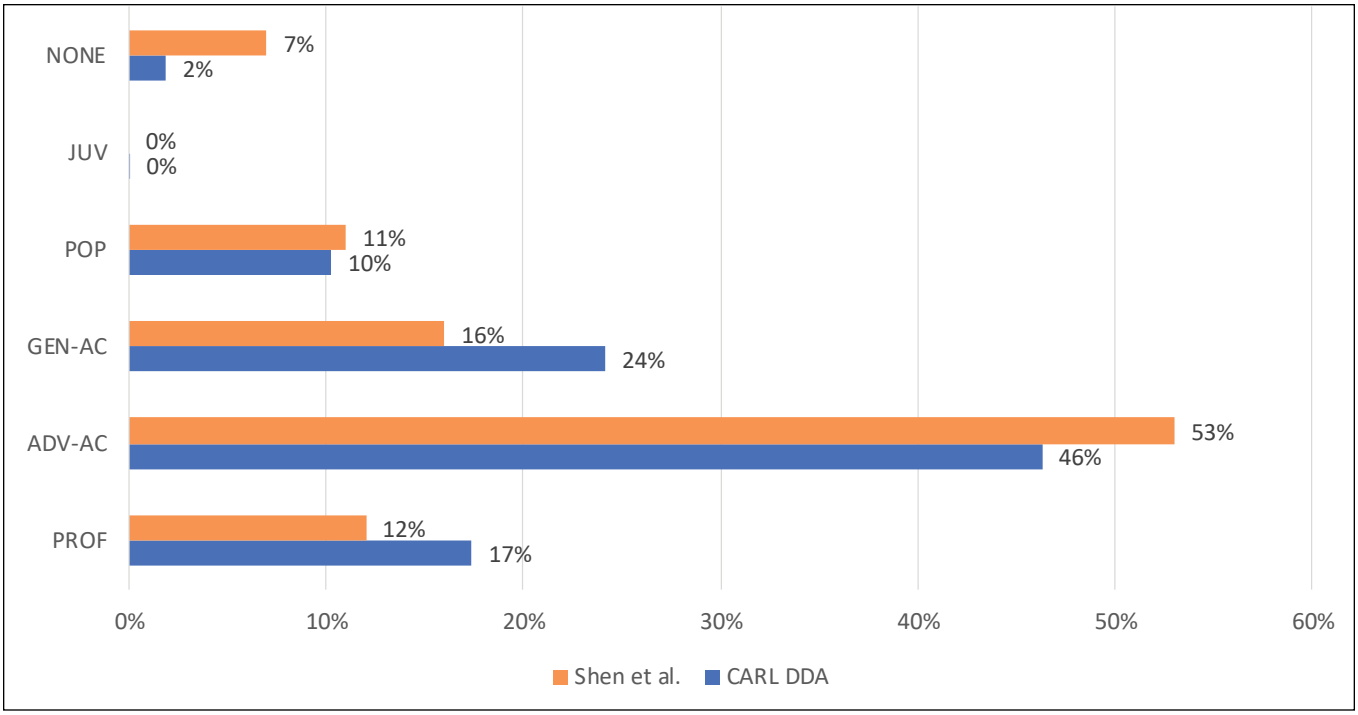

Figure 6. Comparison of user DDA selections by Content Level in Shen at al. and CARL DDA.

series, even when they hesitate to purchase them with their selector funds. Another consideration regarding these titles is the number of nontraditional students at UCCS and their potential need for refresher materials. Many of these students may be uncomfortable asking the library to purchase these materials, but their availability in a DDA program allows them to find and select titles on their own.

At the other end of the spectrum, there is a potential concern that purchased titles may be too specialized or professionally focused. These titles could be especially problematic in a consortial DDA program if one library's specialized programs lead to purchases that are too narrow to serve other participants' needs. An anecdotal review of the Specialized YBP Select rated titles showed that many of these titles are focused on engineering and nursing. This is good for users at UCCS, as these are areas where the university has a large number of graduate students and faculty. Other librarians in the consortium, however, may be less pleased if their institutions do not have programs in these areas. Nonetheless, "Specialized" titles were selected at the lowest rate of any of the titles with YBP Select ratings (only 7 percent of available specialized titles were purchased).

The relatively high median Library Activity value for the purchased titles can be interpreted in a few different ways. It may suggest that users avoided obscure books and did not select overly specialized titles that will have little value to others. It also indicates that users usually selected titles that were considered acceptable by some academic librarians. However, it may indicate that user selections could contribute to the conformity of collections. If the goal of a DDA program is to provide access to books that would not otherwise be purchased, the high median Library Activity value could indicate that it is falling short in this respect.

The skew of the DDA pool towards titles with low Library Activity values indicates that there are large numbers of available titles that are rarely selected by academic librarians. Librarians may not have the time or resources to sort through these titles, but triggered purchases for DDA titles with low Library Activity values indicate that at least some of these titles are of interest to users. There were 445 titles purchased from the portion of the DDA pool with a Library Activity count below the median of thirty (19.0 percent of purchases). These purchases included many lower level titles, including 181 from the POP Content Level (40.7 percent of below median purchases). *Dummies* titles alone accounted for 131 of the 445 titles purchased with below median Library Activity counts (29.4 percent). But there were also many high Content Level purchases with below median Library Activity counts, including 127 PROF Content Level titles (28.5 percent of below median purchases). An advantage of DDA programs is that they allow users to identify titles valuable to them, and a validating outcome of this study was the indication that niche or specialized

titles appeared to be selected in moderation. Of course, this study did not measure user satisfaction with their selections or their future use, so it is unclear how well the purchased materials met user needs.

The library's continued participation in the CARL DDA program is predicated on the view that it is a supplement rather than a replacement for traditional collection strategies. The FY 2018 contribution for participation in the CARL DDA program was less than 10 percent of the total book budget. If the DDA program occupied a larger share of the acquisition budget or was the library's primary method of acquisition, it would be necessary to be more critical of the DDA program's performance and a study focused on title-by-title assessment, not broad categorization, would be necessary. Another aspect that this study did not consider is the breakdown by subject across the DDA program and whether materials in all major areas of study on campus are represented. If DDA becomes a more central collection development tool for the library, a closer look at subject distribution of the pool and purchases will be necessary.

Conclusion

This first attempt to analyze the quality and level of a DDA pool and purchases has been revealing and reassuring but has also made it clear that further study is warranted. While the available titles and purchases for the CARL DDA program appear to be broadly appropriate for academic libraries, this study's limitations do not enable a clear determination of the role that these titles play in the library's collection. Future researchers might compare indicators of quality for DDA titles to those in e-book packages or print titles. They may also consider other important factors like subject area, publication date, or usage data. This study was limited to a single snapshot in time, but given the regular changes to DDA record pools, it may be more useful to monitor how a pool's quality changes over time. Finally, this study focused only on titles that reached the number of views required to trigger a purchase, and examining titles for which there was more limited user interest could be revealing.

As libraries continue to take advantage of new and evolving acquisition methods, it is becoming increasingly important to monitor the quality of collections on a large scale. The authors hope this study can be one example of how the composition of a DDA pool and the resulting purchases can look. They also hope the study's method of quality assessment will inspire other libraries to assess their large-scale e-book acquisitions to determine if they are in line with their library's collection needs. The authors have made the dataset available with permission from GOBI.[24]

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Book Reviews

Elyssa M. Gould

New Top Technologies Every Librarian Needs to Know. Ed. Kenneth J. Varnum. Chicago: ALA Neal-Schuman, 2019. 287 p. $64.99 softcover (ISBN 978-0-8389-1782-4).

New Top Technologies Every Librarian Needs to Know is a compilation of chapters by various authors from technical and digital public services backgrounds edited by Kenneth J. Varnum. A follow up to *Top Technologies Every Librarian Needs to Know*,[1] also edited by Varnum, the Library and Information Technology Association (LITA) has published this second volume to review the predictions from the first, and "take a gaze into 2018's near-term future with a new set" (xi). Recognizing most libraries have embedded some technologies previously discussed in the earlier volume fully, such as text mining, digital libraries, and cloud-based systems, while others such as virtual reality (VR) are still in the nascent stages, this volume explores how some technologies have changed, as well as investigating new ones being developed and implemented now.

This compact volume covers a variety of technology topics. Organized around four broad themes, "Data," "Services," "Repositories and Access," and "Interoperability," each chapter examines the current state of a technology, explores how libraries and archives use it, and draws conclusions on the state of its future. The chapters each contain a case study on a technological implementation and examine the short and longer-term pros and cons and the effects on library services and staffing.

Part 1 examines linked open data, the Internet of Things, and web archiving for both short and long-term preservation, including an in-depth discussion of link and reference rot. Across this theme is the recognition that new bibliographic frameworks will integrate library data within non-library search engines and interfaces. However, this will lead to challenges in maintaining standardization and preservation standards, requiring the need to communicate with outside technologies and organizations to maximize the ability of librarianship to connect users to the information they need.

Part 2 examines the ways libraries are adapting and enhancing services to meet the expectations of various user groups. Chapter 5 examines the role librarianship plays in privacy protection tools, and describes how librarians both individually and collectively, such as via the Library Freedom Project, play a pivotal role in advising users and adopting and advocating for these tools. Chapters on data and information visualizations and VR illustrate how libraries can create customized interfaces across multiple formats that meet the many ways users prefer to search for and consume content.

Part 3 explores how libraries support scholarship through digital repositories, exhibits, and publishing. While digital content has become commonplace in libraries, users need to be informed about how to find and use this content and use the services offered. These digital services allow libraries, academic institutions, museums, publishers, and other organizations to work together. Nontraditional digital services support researchers not only in doing research such as providing data for text mining and other projects, but also help the researchers produce and present their work. As a result, libraries can participate actively in the scholarly output of their users.

Part 4 explores interoperability. The most technical and forward looking of the themes, these chapters go into depth about technologies such as bots, machine learning, and mobile technologies that soon will be or are already are a part of daily life. The expansion of application programming interfaces (APIs) and cloud-based services will be crucial for libraries to be both developers and participants in these technologies. For example, chapter 13 discusses how the University of Toronto Libraries uses the International Image Interoperability Framework (IIF), a set of standardized APIs, to share digital objects from their digital special collections across multiple repositories at once.

Several themes emerge in almost every chapter of the book. Most notably is a focus on technology being user driven. User expectations are currently the driving force for developing content, tools, and processes. Library professionals need to acknowledge that these expectations have become more varied as technology becomes more prevalent in daily life. Being proactive and adaptable rather than reactive is essential as users expect personalization and the ability to access content anytime and from anywhere. Collaboration is also prevalent throughout each case study. Library professionals must collaborate with each other, publishers, outside organizations, users, and other stakeholders for libraries to be relevant and successful. As more institutions adopt technologies that follow international standards and allow for interoperability, discovery and access will improve. Finally, while receiving its own separate section of

the book, every chapter in some way touches on the idea of interoperability. From traditional bibliographic records now created with linked data, to digital repositories needing to be able to be integrated with other digital tools and standards, to all library technologies needing to work on mobile devices, findability of content is increasingly the focus of libraries. Without increasing interoperability in enhancing and adopting new technologies, it would not be possible for libraries to fulfill their central role of helping users find and connect to the information they need.

While not a practical guide for implementing the technologies discussed, this volume is an excellent primer on the main concepts of these newer and challenging technological developments. This volume would be useful for managers, students, and any library professional interested in technological trends. Because it is not a how-to guide, this book raises questions for library professionals who wish to explore and prepare for implementing technologies that will affect library services, planning, and resource requirements. The case studies provide practical experience, but largely the value in this volume is that it is a starting point in thinking about technological questions.—*Jocelyn Lewis (jlewis21@gmu.edu), George Mason University*

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Collection Development and Management for 21st Century Library Collections. By Vicki L. Gregory, Chicago: ALA Neal-Schuman, 2019. 2nd ed. 264 p. $79.99 softcover (ISBN 978-0-8389-1712-1).

Vicki L. Gregory is a well-known academic who has written seven other books describing librarianship and electronic and web resources. This review pertains to the second edition of her 2011 landmark textbook, *Collection Development and Management for 21st Century Library Collections,*[1] which had been in good company with Peggy Johnson's *Fundamentals of Collection Development and Management*[2] and Maggie Fieldhouse and Audrey Marshall's *Collection Development in the Digital Age*.[3] Providing a thorough introduction on the management and future of library collections, this text offers practical tools and invaluable advice. The content is geared toward students of information science who are new to collection maintenance and collection development. However, this book would also be beneficial for all levels of practitioners. Gregory clearly describes the useful collection development and maintenance processes that all librarians, whether in the collection manager role or not, would find invaluable.

The beginning chapters can be understood as a natural progression of steps through the unique stages of collection development, needs assessment, marketing, collection development policy writing, selecting, acquiring materials, and budgeting. Logically structured in regard to library processes, not by resource type, Gregory's text uses material format and type as examples rather than the driving force behind the book's organization. Chapter 1, "The Impact of New Technologies on Collection Development and Management," gives a quick overview of the variety of forces that drive the changes in library collections' constitution. Examples include open access serials, self-publishing, and social networking. The "long tail," which is "the pressure to provide more and different books, serials, and materials in electronic format" has been fostered by the glut of products made available through online shopping on the web (5). The scope of what libraries offer in their collections continues to change, but the processes to select, manage, and review those collections will persist even as the variety of materials continue to evolve.

One main point that Gregory conveys is the intentionality of using data, structured planning, and policy writing in collection development. Ensuring high-quality collections through intentional practices is a major theme of the text. The data from user population studies and collection evaluations significantly impact a library's decision making. With a disdain for ad hoc, case-by-case resource selections, Gregory reinforces how a data-driven collection development plan can be implemented through community analyses, collection evaluations, and selection criteria. Gregory's insistence on thoughtfulness bestows on the reader a perspective beyond the library stacks. The reader can see clearly that the collection is meant to serve users with excellent materials that they both want and need.

In addition to the evidence of statistics and numbers, consider also the larger historical context and purpose of libraries and their collections. Matching the depth of her working experience, Gregory commands a strong background in the history of libraries. In chapter 4, "Selection Sources and Processes," she describes the change in American libraries' missional emphasis from the nineteenth century model, which sought to gentrify the public through tasteful literature, to a shift in the mid-twentieth century to support the public's tastes for best sellers and popular magazines (51). A balance between an erudite mission to advance scholarship and a love of learning with the "give 'em what they want" attitude can be found in the variety of collection development policies and selection criteria that

are currently in use. This theme is repeated and expanded upon later in the concluding chapter. Gregory revisits the intersection of these two approaches with a call to arms as "librarians' growing roles as teachers who train users in information literacy and fluency." By "guiding users to the best-quality materials" the profession propels further into the 21st century (189).

The second half of the book involves collection management in terms of collection maintenance and guardianship. Aspects of collection management are framed through discussions on collection review and evaluation, cooperatives and resources sharing, legal issues, professional ethics, and preservation. Presenting the reader with enough breadth and depth to lay a foundation for these subjects, readers gain an understanding of the topics such as the correct handling of donations, weeding and deselection projects, and book display challenges. Electronic resources present problems involving copyright and preservation. Gregory provides helpful selected readings and references at the end of each chapter to further learning and research. The reader finds a more than adequate framework of support material in the text's figures and sidebars. Important historical milestones in the profession include excerpts from the Library Bill of Rights and the Marrakesh Treaty. The thoughtful touch of Gregory's working experiences can be found in the indispensable checklists that include "Tips for a Successful Licensing Agreement" and a vocabulary of "DRM Terms." Such items are well-suited to be embedded in the text rather than listed as appendices. Items earning a figure number are different: forms, pictures, and charts. Examples include "Figure 5.2 Representative pricing samples for electronic serials" and "Figure 3.7 Sample challenge form." The appendix is a twenty page "List of Library Vendors: Publishers, Wholesalers, and Vendors." It is made more usable by grouping the sellers by which type of library would use them.

The activities and discussion questions at the end of certain chapters offer concrete exercises for the reader. Readers are invited to put their newly understood concepts into action by giving them the opportunity to consider how this aspect of a librarian's work approached in a real-world example. One activity from the "Legal Issues in Collection Development" involves a valuable and desirable gift that the reader is asked to consider declining or accepting (154) that harkens back to the "Acquisitions" subchapter, "Beware of Gifts with Strings Attached" (86-87). Before the comprehensive index is an inspired bibliography organized, alphabetically, by the themes of the book. The themes are not direct chapter titles but certainly would become a reader's starting point to delve more deeply into ideas that are, in most cases, spread throughout the text. These resources will no doubt be helpful for students preparing for their career and for practicing librarians at many levels serving in a variety of roles.—*Emily Szitas (eszitas@iup.edu), Indiana University of Pennsylvania*

References

1. Vicki L. Gregory, *Collection Development and Management for 21st Century Library Collections: An Introduction* (New York: Neal-Schuman, 2011).
2. Peggy Johnson, *Fundamentals of Collection Development and Management* (Chicago: American Library Association, 2004).
3. Maggie Fieldhouse and Audrey Marshall, *Collection Development in the Digital Age* (London: Facet, 2011).

Ethical Questions in Name Authority Control. Edited by Jane Sandberg, Sacramento, CA: Library Juice Press, 2019. 410 p. $35.00 softcover (ISBN 978-1-63400-054-3).

Cataloging ethics have received significant attention in recent years, notably via a series of events and discussions held under the umbrella of the Association for Library Collections & Technical Services (ALCTS) Cataloging and Metadata Management Section (CaMMS) exploring the potential development of a code of cataloging ethics. At the same time, the "critlib" (critical librarianship) movement has grown, creating both virtual and physical spaces for exploring social justice principles in the context of library work.[1] Catalogers have initiated conversations about social justice in metadata work under the "critcat" banner.[2] The publication of *Ethical Questions in Name Authority Control* is timely in this environment, where both ethics and social justice are leading concerns for many catalogers and metadata professionals.

Editor Jane Sandberg sets the stage for the eighteen essays comprising the book by framing name authority work as storytelling in which catalogers have power over the people they describe. Catalogers "seek out these stories, decide which stories to include in an authority record" and "sometimes tell a story of their own within an authority record" (1–2). Sandberg's framing is apt; taken as a whole, the book's essays successfully make the case that cataloger choices in name authority control must be understood as ethical choices, requiring critical thought and careful consideration of both cultural context and impact on the people being described.

Several major themes recur throughout the book. One theme is the tension that exists between the needs of the information user (which catalogers have historically

strived to center in metadata creation, and which may be best served by providing the fullest possible descriptions of creators) and the needs of the people being described (who may have substantial privacy and safety concerns, especially if they are members of oppressed groups). Another major theme is the idea that authority record creation should be a process of collaboration and dialogue with creators, rather than a solitary exercise for the cataloger. This conception is closely tied to ideas of consent and self-determination in which creators have a substantial voice in how they are represented in library catalogs. Related is the idea that an individual's concept of self—manifested through name, gender, and relationship with dominant cultures and languages (among other characteristics—may change over time, meaning that data recorded in authority records cannot be considered fixed at the time of the authority record's creation.

The volume is thoughtfully arranged into five broad sections. The first section, "Self-Determination and Privacy," features four papers that illuminate the ethical concerns around authority control for individuals who may not wish to have their public identities and private identities explicitly related, whether they are zine creators, outsider artists, women, or people identifying as sexual or gender minorities. Fox and Swickard's opening essay, "'My Zine Life is my Private Life': Reframing Authority Control from Detective Work to an Ethics of Care," serves as an excellent entry point for the entire volume, effectively introducing many themes and concepts that will resurface throughout the book.

The second section of the book, "Impacts of Colonialism," comprises only two papers, but both offer provocative explorations of their respective topics: Native American name authorities and the representation of Kurdish people and Kurdistan in authority records. Elzi and Crowe, writing on issues with Native American name authorities, combine a concise explanation of framework and theory with a concrete case study, making their paper an accessible entry point in a volume where many contributions could be tougher going for readers not already versed in social justice and critical theory.

The entire first section's essays provide useful background for the book's third section, "Gender Variance and Transgender Identities," which delves deeper into the issues of self-determination and representation raised in earlier chapters. The five papers in this section engage with various aspects of the representation of gender in authority records, frequently focused on the Program for Cooperative Cataloging'S (PCC) guidance on that topic. Some of the authors in this section of the book, notably Adolpho and Polebaum-Freeman, take a confrontational, even polemical, tone as they describe how existing authority standards and guidelines may harm transgender, non-binary, and other gender-minority people, especially when applied by cisgender catalogers working in a culture where cisgender privilege is a constant. These critiques are uncomfortable but effective and deeply thought-provoking reading. Also in this section, essays by Shiraishi and Wagner complement each other well, offering useful reconsiderations of the concept of accuracy as it applies (or not) to personal identities, both current and historical. The remaining paper in this section, Cohen's "Free to Be . . . Only He or She: Overcoming Obstacles to Accurately Recording Gender Identity in a Highly-Gendered Language," describes issues surrounding gender markers in the Hebrew language, and offers a welcome and necessary non-Anglophone perspective.

"Challenges to the Digital Scholarly Record" is the title of the book's fourth section. The three essays here offer perhaps less thematic unity than some of the book's other sections, but each is a substantial exploration of a timely topic. Arastoopoor and Ahmadinasab's paper describes the difficulties of accurately representing the identities of Iranian scholars across library catalogs and indexing databases. Like Cohen's paper in the preceding section of the book, it is refreshing to have a non-North American focus. Panigabutra-Roberts offers an exhaustively researched summary of the advantages and disadvantages of several researcher identifier systems. While less obviously engaged with the overall theme of the book, Panigabutra-Roberts's chapter is indispensable for anyone seeking to understand the current researcher identifier landscape. Tillman's "Barriers to Ethical Name Modeling in Current Linked Data Encoding Practices" refutes the claim that linked data implementations will solve the problems of ethical representation inherent in current authority control models and practices. Tillman allows that linked data has potential to alleviate some concerns but emphasizes that this potential cannot be fulfilled without careful consideration of how to draw equivalencies across ontologies and solutions to address the scalability of linked data services. Tillman's chapter may be challenging reading for those who are less familiar with linked data concepts, but it is well worth the effort.

The book's final section, "Emancipatory Collaborations," offers three essays that describe projects in which catalogers and metadata creators attempted to address many of the issues raised in previous chapters. These case studies, describing a project to eliminate racist language in archives, a collaborative model of authority work that engages creators in dialogue, and a project to incorporate multiple languages and scripts for Inuit speakers in Nunavut, offer useful models that could inform similar projects that catalogers might undertake to meet the needs of their own communities.

Taken as a whole, *Ethical Questions in Name Authority Control* is an important and well-timed contribution to the literature. It offers both theoretical and abstract

explorations of the issues based in critical theory as well as practical suggestions and models for taking action. The book will be especially useful for catalogers, metadata creators, and systems librarians engaged in creating and managing authority data. But the book is recommended for anyone seeking to expand their understanding of ethical concerns and grapple with social justice issues in library metadata.—*Stacie Traill (trail001@umn.edu), University of Minnesota*

References

1. "Critlib: Critical Librarianship, In Real Life & on the Twitters," http://critlib.org. See also the #critlib hashtag on Twitter.
2. See the #critcat hashtag on Twitter.

ALCTS
Association for Library Collections & Technical Services
a division of the American Library Association
50 East Huron Street, Chicago, IL 60611 • 312-280-5038
Fax: 312-280-5033 • Toll Free: 1-800-545-2433 • http://www.ala.org/alcts