

Impact Project

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LIBS 668: Internship in Libraries and Information Workplaces

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Institution overview

Virginia Commonwealth University Libraries also known as (VCU Libraries) consists of mainly two major libraries, the James Cabell Branch Library (oftentimes referred to as Cabell or JBC) and the Health Sciences Library (HSL for short) which was formerly named Tompkins-McCaw Library. It is also worth noting the Health and Wellness Library (HWL for short), which is located within the VCU Medical Center in close proximity to the Medical College of Virginia campus (also known as MCV). The University and associated academic libraries are located within an urban metropolitan area with slightly over 1.2 million inhabitants within central Virginia. The municipality where these libraries are located, jurisdiction wise, is within the state capital city of Richmond with a total population estimate of “226,604” (Missouri Census Data Center, 2023).

VCU Libraries brief

For the Fall 2021 academic year the total student count reported by the Department of Education from the National Center for Education Statistics (2023) equaled 28,594. The total VCU Libraries faculty and staff number equates to around 120 employees across the two main libraries, including HWL. The library’s integrated library system (ILS) deploys a proprietary software from ExLibris (part of Clarivate), the front-facing patron user interface for paid resources discovery and user behavior analytics is Primo, and the backend collection management and user management/administration portion is Alma. As of fiscal year 2021 the VCU Libraries’ digital collection consists of “528 Databases; 29,504, Serials; 97,668 Media; and 1,357,099 Books”(National Center for Education Statistics, 2023) within the ILS, making it imperative to administer the correct roles per employee especially at the student worker level in order to adequately complete day to day tasks/workflow required to keep resources and their

associated records up-to-date and accessible within the library. As these collections increase in volume over time it will be necessary to properly manage the staff as well as potentially increase the staff to manage these resources as well, the databases offered by VCU Libraries have recently increased to “668”(Virginia Commonwealth University, 2023) as of 2023 which is an increase of digital resources by 25.6% from the 2021 statistics previously noted above.

Reducing administrative inefficiencies

The previous allocation of time per help desk ticket involving adding Alma roles within the ILS for new or existing employees (if lateral moves or promotions occurred) could take anywhere between 15 - 20 minutes per employee to resolve depending on several variables (correspondence time with supervisor, number of roles necessary to be added for the specific position, and if role privilege level required wasn't known off hand for certain tasks; time spend referencing Ex Libris's Alma roles documentation would additionally be required). With somewhat frequent departmental rearrangements (or supervisor turnover) with large university libraries such as at VCU, some positions and tasks may warrant restructuring more occasionally than preferred thus creating more work for information technology administrators. The methods for recording and adding these roles administratively were oftentimes a more manual process than an automated process. With the implementation of profiles the time to apply new roles could be significantly reduced, granting the ability of the system administrator to apply a preset/pre-configured number of roles within an applicable macro within the system. So long as roles across the department were consistent by supervisor. The role profile within this library enterprise system is “a collection of roles, grouped according to job function, that can be assigned to a user in a single action”(ExLibris Knowledge Center, 2023). Predefined default ExLibris profiles examples exist within the system as a template for illustrating the profiles

feature within the ILS, however it is usually up to the institution/library to create these profiles as they see fit for the various tasks in different positions for student workers.

Proposed Solution

After initial correspondence with more than nine supervisors about verification of the required roles per department which overall took roughly a span of two weeks worth of work hours (28 hours) to exchange emails and create a rough working document (a Google spreadsheet) which eventually culminated into the two matrix tables listed below (Figures 1 & 2). I was able, with the help of the enterprise librarian and network analyst, to narrow down several department's roles for their student workers. With the creation of an in-house report analysis using Alma analytics (Figure 3) counting the current user roles by department using their Primary Identifier and the following parameters (roles, scope) consequently establishing a set number of Alma roles for which commonalities were found (roles with the same counts equal to the total number of student workers within a department under a single supervisor) and unique roles could also be parsed out separately using the less than (<) operator; resulting with at least a starting point or base-level estimate of roles required to configure a profile per department for student workers under specific supervisors. After this work was performed matrix tables representing these proposed profiles were established and finalized with individual supervisors to get approval. Below is the BEFORE matrix table (Figure 1) representing the total number of roles by name per department/supervisor including the scope required, as well as an AFTER matrix table (Figure 2) showing a reduction in unnecessary roles (or redundancy for certain task privileges). Within the Alma portion of the ILS there are "86"(ExLibris Knowledge Center, 2023) total roles listed within the Alma documentation spreadsheet/table and to gain better visibility for figures (1 & 2) the roles not used for current student workers were removed.

Alma Role Types Matrix (Student Worker Roles per Department & Supervisor)										BEFORE	
Departments (9)	Access Services	Depar Electronic and Cont	Collection Analysis	Collection Analysis	Collection Analysis	Resource Acquisition	Electronic and Contin	Innovative Media	Special Collections		
Supervisor	Supervisor 1	Supervisor 2	Supervisor 3	Supervisor 4	Supervisor 5	Supervisor 6	Supervisor 7	Supervisor 8	Supervisor 9		
Cataloger		VCUL	VCUL	VCUL		VCUL	VCUL				
Cataloger Extended											
Circulation Desk Manager	JBC,HSL,ILL										
Circulation Desk Operator	JBC,HSL,ILL		JBC,HSL,HWL	JBC,HSL,HWL		JBC,HSL,VCUL		WS	JBC,HSL,VCUL		
Circulation Desk Operator Limited			JBC,HSL	JBC,HSL					JBC		
Design Analytics			VCUL	VCUL							
Digital Inventory Operator			VCUL	VCUL							
Digital Inventory Operator Extended			VCUL	VCUL							
Electronic Inventory Operator		VCUL	VCUL	VCUL		VCUL					
Electronic Inventory Operator Extended			VCUL	VCUL							
Fulfillment Services Manager	VCUL										
Fulfillment Services Operator	VCUL		VCUL	VCUL					VCUL		
Invoice Manager		VCUL					VCUL				
Invoice Operator							VCUL				
Invoice Operator Extended							VCUL				
License Manager		VCUL									
Physical Inventory Operator			VCUL	VCUL	VCUL	VCUL	VCUL		VCUL		
Physical Inventory Operator Extended			VCUL	VCUL	VCUL	VCUL	VCUL				
Purchasing Operator		VCUL									
Purchasing Operator Extended											
Receiving Operator		JBC	VCUL	JBC,HSL	JBC,HSL					WS	
Receiving Operator Limited			JBC	JBC	JBC	JBC,HSL	JBC,HSL				
Repository Manager			VCUL	VCUL	VCUL	VCUL	VCUL				
Requests Operator			JBC,HSL	JBC,HSL		JBC,HSL			JBC		
Selector		VCUL					VCUL				
Trial Manager											
Trial Operator		VCUL					VCUL		VCUL		
Vendor Manager											
Work Order Operator		JBC	HSL,HWL	HSL,HWL		VCUL	VCUL				
Alma Roles & Totals per Department	8	9	25	25	4	13	16	3	JBC,HSL	9	

Figure 1

Alma Role Types Matrix (Student Worker Roles per Department & Supervisor) AFTER									
Departments (9)	Access Services	Deepar Electronic and Contl Collection Analysis	Collection Analysis	Collection Analysis	Collection Analysis	Resource Acquisiti	Electronic and Continul	Innovative Media I	Special Collections
Supervisor	Supervisor 1	Supervisor 2	Supervisor 3	Supervisor 4	Supervisor 5	Supervisor 6	Supervisor 7	Supervisor 8	Supervisor 9
Cataloger		VCUL				VCUL	VCUL		
Circulation Desk Manager	JBC,HSL,ILL								
Circulation Desk Operator	JBC,HSL,ILL		JBC,HSL,HWL	JBC,HSL,HWL		JBC,HSL,VCUL		WS	JBC,HSL,VCUL
Design Analytics			VCUL	VCUL					
Electronic Inventory Operator		VCUL	VCUL	VCUL			VCUL		
Electronic Inventory Operator Extended			VCUL	VCUL					
Fulfillment Services Manager	VCUL								
Fulfillment Services Operator	VCUL		VCUL	VCUL					VCUL
Invoice Manager		VCUL					VCUL		
Invoice Operator							VCUL		
Invoice Operator Extended							VCUL		
License Manager		VCUL					VCUL		
Physical Inventory Operator			VCUL	VCUL	VCUL		VCUL		VCUL
Physical Inventory Operator Extended			VCUL	VCUL			VCUL		VCUL
Purchasing Operator		VCUL					VCUL		
Purchasing Operator Extended		JBC	JBC,HSL	JBC,HSL				WS	
Receiving Operator					JBC	JBC,HSL	JBC,HSL		
Receiving Operator Limited			VCUL	VCUL		VCUL	VCUL		
Repository Manager			JBC,HSL,HWL	JBC,HSL,HWL	JBC,HSL				JBC
Requists Operator		VCUL	VCUL	VCUL					
Vendor Manager		JBC	HSL,HWL	HSL,HWL					
Work Order Operator							VCUL		
Alma Roles & Totals per Department	8	8	18	18	4	9	14	3	8

Figure 2

Initial plan for gathering baseline role privilege data

The majority of work for this project additionally involved the creation of reports using Oracle Analytics Server (OAS) software that is integrated/interfaced into the ExLibris ILS (both for Primo and Alma) within the Design Analytics user interface. As previously noted certain parameters needed to be identified and a small structured query language (SQL) programming logic statement needed to be constructed to identify the data necessary to create the initial baseline shown in (Figure 1) from the system data.

After all of the student workers within a department under the same direction of a specific supervisor were identified, their Primary Identifiers (which is also their university wide identifier also referred to as an eID) were entered into the criteria section of OAS for the analysis results and then reports from this analysis could then be exported into excel spreadsheets or comma-separated values file formats. These excel spreadsheets were then uploaded/imported into a Google Sheet to be cleaned up and sorted by roles and kept for future documentation purposes should changes need to be made over time. Descriptions of each role were also placed in this rough working document as well to be used as a reference when unique roles were identified and consultation with supervisors resulted in said role either not being necessary for the tasks at hand for the position or were otherwise deemed necessary to be applied to all other student workers as well. Below (Figure 3), is an anonymized role analysis result (Primary Identifiers were redacted and replaced with student 1, student 2, etc..) from one of the departments within the library (the Innovative Media Department) which within this department they extensively use student workers (19 in total) to staff the Workshop (Makerspace) front service desk. Within the Innovative Media Department, the student workers primarily...

Role Report Analysis

Criteria **Results** Prompts **Advanced**

Home Catalog Favorites Dashboards Create Open

Editing from: "Compound Layout" Done Revert

Return to "My Dashboard"

Table

Subject Area: Users

- User Measures
- User Details
- Preferred Contact Informa...
- Address
- Phone Number
- Email
- Identifier
- Block
- Role
- Campus Details
- Note
- Proxy For
- Statistics
- Institution

Layout

Drag/drop measures, columns and hierarchies to determine table layout.

Table Prompts

Drop here for Table prompts

Sections

Drop here for a sectioned Table

Table

Columns and Measures

Primary Identifier	Role Type
Student 1	Circulation Desk Operator
Student 2	Circulation Desk Operator
Student 3	Circulation Desk Operator
Student 4	Circulation Desk Operator
Student 5	Circulation Desk Operator
Student 6	Circulation Desk Operator
Student 7	Circulation Desk Operator
Student 8	Circulation Desk Operator
Student 9	Circulation Desk Operator
Student 10	Circulation Desk Operator
Student 11	Circulation Desk Operator
Student 12	Circulation Desk Operator

Columns and Measures

User Details	Role	User Details	Role
COUNT(DISTINCT Primary Ide...	Role type II ' : Role Scope	Primary Identifier	Role Type

Excluded

Drop here to exclude from this Table only

Selection Steps

Figure 3

... check-in/check-out loanable equipment, give access to public student use computers with special media creation software and accelerated hardware installed (usually containing multiple central processing units or CPUs, graphics processing units or GPUs, and other types of external equipment for various types of media creation), and finally help patrons with questions regarding services or programming. Due to the nature of this department, they are the ideal representation of best practice when it comes to managing/administering student workers within the library and their ILS roles (in this case Alma roles). In total the criteria from this analysis report includes nineteen student workers with three common Alma roles. There were no unique roles found here and the scope is specifically narrowed down for all roles in relation to the main Cabell library within the Workshop area service desk. That being said not all departments had every student worker doing the exact same tasks (or cross-training), so to narrow down roles in order to create one specific profile took multiple correspondences with roughly nine department supervisors that require some form of Alma roles/privileges for their student workers.

Project implementation: Creation of profiles

As I found throughout my time working on this project there were several departments without this same uniformity as it relates to student worker roles within the ILS. Some roles were also identified as no longer necessary. Reductions within several departments also occurred in the following departments, Collection Analysis and Investment (16 role reductions), Electronic and Continuing Resources (3 role reductions), Resource Acquisitions and Metadata (4 role reductions), and Special Collections and Archives (1 reduction) were made to reduce/consolidate overall roles. After establishing the initial baseline and implementing the proposed update it was time to create profiles within the integrated library system itself, the figure below (Figure 4)

Alma Production Management
User Management

< Profile

Profile Roles
1 - 18 of 18

	<input type="checkbox"/>	Active	Role Name	Role Area	Scope	Parameters
1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Receiving Operator	Acquisitions	Cabell Library	JBCL Acquisition Department
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vendor Manager	Acquisitions	Virginia Commonwealth University	-
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Receiving Operator	Acquisitions	Health Sciences Library	HSL Acquisition Department
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Circulation Desk Operator	Fulfillment	Cabell Library	Default Circulation Desk JBCL
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Circulation Desk Operator	Fulfillment	Health Sciences Library	Default Circulation Desk HSL
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Circulation Desk Operator	Fulfillment	Health and Wellness Library	Default Circulation Desk CHEC
7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fulfillment Services Operator	Fulfillment	Virginia Commonwealth University	-
8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Requests Operator	Fulfillment	Cabell Library	Default Circulation Desk JBCL
9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Requests Operator	Fulfillment	Health Sciences Library	Default Circulation Desk HSL
10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Requests Operator	Fulfillment	Health and Wellness Library	Default Circulation Desk CHEC
11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Work Order Operator	Fulfillment	Health Sciences Library	Special Collections & Archives Reading Room
12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Work Order Operator	Fulfillment	Cabell Library	Default Circulation Desk JBCL, Default Circulation Desk JBCL, Special Collections & Archives Reading Room
13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Electronic Inventory Operator	Inventory	Virginia Commonwealth University	-
14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Electronic Inventory Operator Extended	Inventory	Virginia Commonwealth University	-
15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Physical Inventory Operator	Inventory	Virginia Commonwealth University	-
16	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Physical Inventory Operator Extended	Inventory	Virginia Commonwealth University	-
17	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Repository Manager	Inventory	Virginia Commonwealth University	-
18	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Designs Analytics	Miscellaneous	Virginia Commonwealth University	-

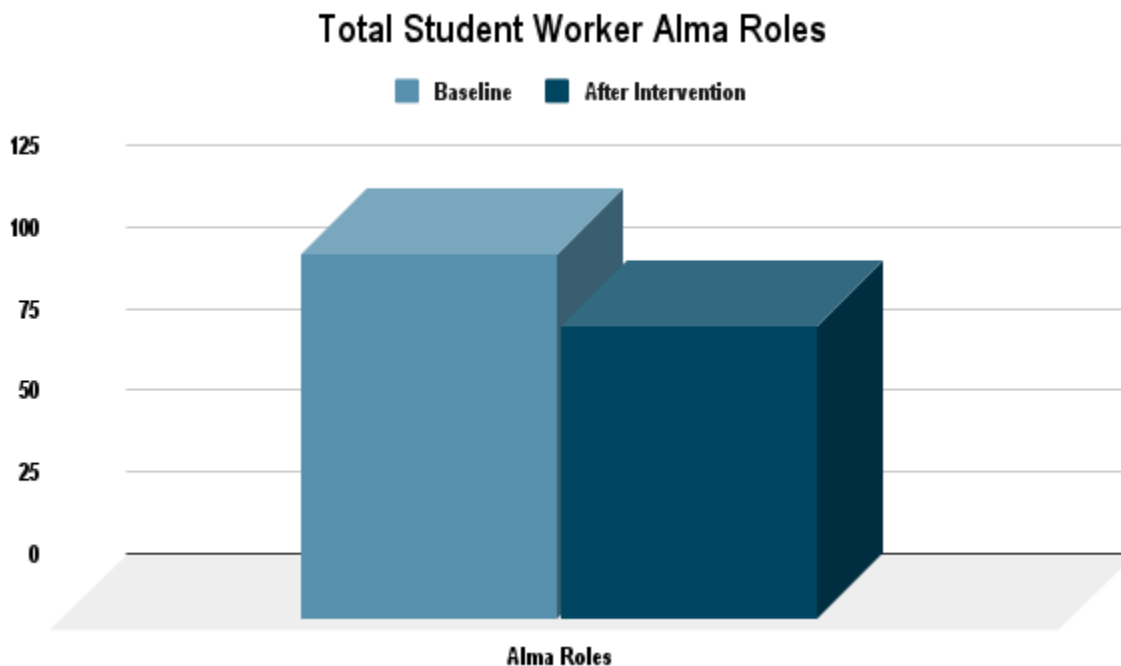
Figure 4

shows the Collection Analysis and Investment Department's student workers profile for supervisor number three within the ExLibris' Alma user management user interface under profile configuration. In this example the table represents a finalized profile with 18 active roles (a reduction from 25) with pre-configured role area, scope, and parameters that are applicable to anyone's account within the system at the click of a few buttons. The previous method for periodically (or sometime frequently depending on the circumstances) adding these roles consisted of adding each role individually one by one because each role needs to have the scope and parameters identified when they are applied. Thus creating quite a time consuming administrator task even if only for one individual needing a dozen or so system privileges.

Assessment

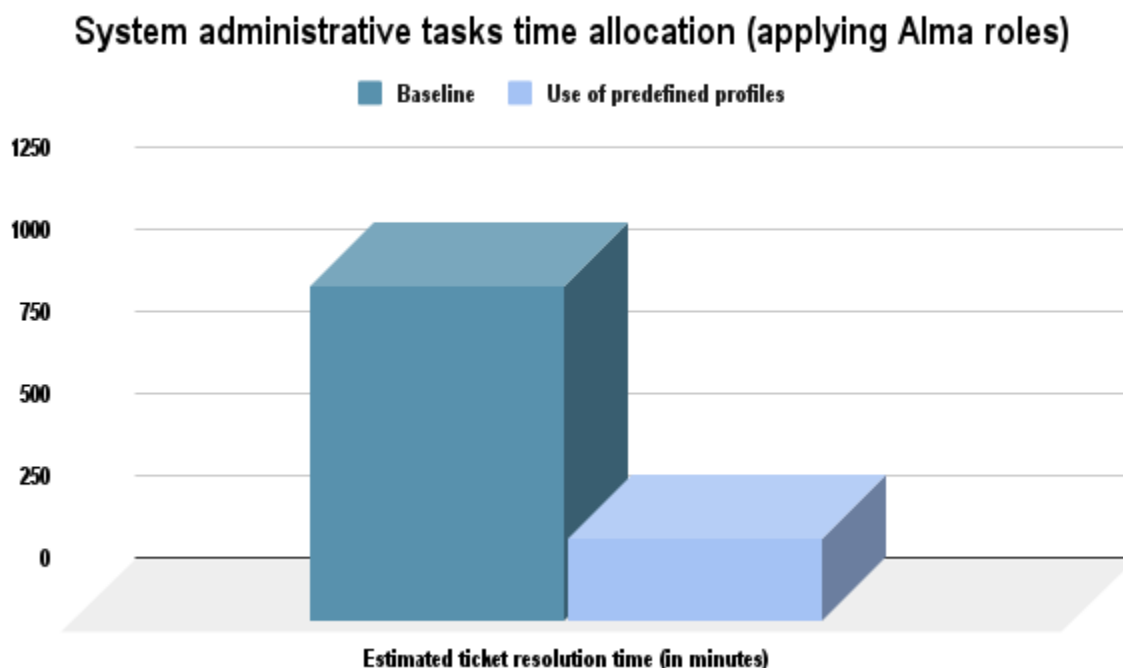
The matrix table above was a product of the impact project work done at VCU Libraries during the time period of my internship, this method was not the standard for record keeping and management for the Alma roles previously and utilizing profiles (or macro tools also known as mapping) within the system wasn't being done either. When updating or adding profiles to an employee the average time spent on said ticket/task was anywhere from 15 -20 minutes on average as previously noted. This was directly observed by myself and attested to by the current network analyst. There were 112 roles (represented by Figure 1) actively being applied when the initial assessment for baseline data was established versus 90 after a consolidation process (represented by Figure 2); I will also note the roles with different scopes are being counted because within the system you are required to create a duplicate role with a separately designated scope and service desk. Below (Figure 5), is a graphical representation of the reduction in roles.

Figure 5



In total there were 51 student active workers, to demonstrate the time saving capability for this new method utilizing the matrix tables (as well as the proprietary ILS's profiles), if there were hypothetically a situation where all student workers needed to have roles added individually using the old method without profiles the allocation of total time to completing these tasks given the worst case scenario which could be estimated around 1020 minutes if all student workers required 20 minutes (per student) to be granted Alma system privileges (this would include initial help desk ticket response time, any additional correspondence, referencing documentation, and most time consuming of all is applying each individual role within the system manually). Which was witnessed firsthand by myself when working alongside the network analyst. Alternatively, using the matrix table created (Figure 2) and verifying it is up-to-date on an annual basis could afford the system administrator a reduction in estimated time allocated per help desk ticket per year in regards to Alma access alone. Granted, the time I spent

within the internship doing a lot of the initial coordinating/organizational type of work took roughly 28 hours (or 1,680 minutes) to establish a baseline and implement a template for roles by department. The same time spent to deploy 51 student workers' roles would equal 255 minutes based on resolving the same number of tickets in 5 minutes or less in this hypothetical scenario. When I was tasked to remove all roles from active student workers and then apply the profiles, this took much less time than 5 minutes using the newly created profiles, on average less than a minute to search the ILS for a specific student identifier and simply add roles via profiles. This potentially results in a minimum estimated savings of 765 minutes (or 12.75hrs) of time (for a 51 student workload) due to the impact of work done during my internship. Below (Figure 6), is a graphical representation of the estimated difference in time allocated to administering ILS (Alma) roles (of 51 student workers) by the network analyst or enterprise systems librarian. This same method could also additionally be applied to most (if not all when planned and executed properly) full-time, part-time, and faculty employees as it relates to their required Alma roles.



Considering there are one hundred plus employees within this university library system, it can result in considerable time saved which can ultimately be applied elsewhere. Applying the profiles ultimately drastically reduces the time required for system administrative tasks not just on the information technology administrative back-end but also throughout the library as it relates to departments putting in tickets/corresponding with supervisors when turnover is higher than usual. Across 15 departments this can become a complex administrative task, however 6 departments didn't have any Alma roles required specifically for their student worker positions and one department was in the progress of being consolidated into the existing part-time/hourly workforce within the library's recently reorganized Access Service Department. These consistent changes within the library's internal organizational structure makes planning for the work done within my internship crucial to most effectively and efficiently manage employee roles.

Reflection

Throughout much of this work I found myself learning new aspects of technology incorporated into the library on a weekly basis, and the reality is I was still only touching the surface of what all is involved with managing an academic library of this scale especially in such a highly diverse, highly urban, and considered an institution with “very high level research activity”(Carnegie Classification of Institutions of Higher Education, 2023) by the American Council on Education through the Carnegie Classification. The sheer amount of data being collected and able to be analyzed was to say the least, more than overwhelming to look at. Many different parameters exist within the design analytics interface to fully take advantage of knowing what patrons/users are most utilizing. VCU Libraries is an extension of Virginia Commonwealth University and my affiliation with the school is both previously as a transfer

student and currently as an employee. I have never been in a more diverse environment and the ideas and experiences that come out of Richmond, Virginia are like no other. I was extremely fortunate to have had this opportunity and get the exposure I did and I hope that my impact not only benefits the library staff as a whole, but also indirectly benefits student workers as well as those using the library resources. I don't think I would have done this internship any other way, I learned so much about the inner workings of the technology being used for the library's Integrated Library System.

This internship was luckily afforded to me by the head of the Library Technology Operations and Design which had me directly shadowing the enterprise systems librarian for various projects, meetings, some conferences/information sessions, and gaining experience on other library enterprise systems as well. From my understanding of this position and similarly titled ones "systems' librarians major responsibility would be to shepherd the automation"(Jost, 2015) as it relates to technology within the library and enterprise systems (such as the integrated library system by ExLibris) that the library chooses to purchase and deploy. The work done here within my internship isn't entirely automated, but does improve the process for on-boarding new employees, specifically student workers. With these new methods, the process for yearly or bi-quarterly audits for employees with Alma roles can now also be done in a more automated fashion. Allowing the network analyst or systems librarian to remove all student workers roles when the academic year is at an end, this is a benefit because not all supervisors get around to putting in help desk tickets to revoke system privileges when a student graduates or leaves the position. And in some cases this could potentially be a security issue, so automated removal of all roles for student workers on an annual basis is best practice.

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