AC 2011-577: DARK, DIM AND DARING

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Dim, Dark and Daring:
Our process for rapidly reducing our collection

In the spring of 2010, Wendt Commons Library embarked on a project to repurpose our 4th floor from book stacks and study space into a Teaching and Learning Center. To create this flexible and technology-enhanced "learning emporium", the 4th floor collection consisting of over 90,000 volumes needed to be removed along with the stacks. Other space in the library was not available, the shelving facilities were full, funding was not offered, and the timetable was 1 year. By creating Dim and Dark temporary storage, enlisting a student workforce, and benefiting from an ISyE student study of our workflows, we daringly set out to accomplish our goals. The purpose of this paper is to share our process so that other libraries facing similar circumstances may benefit.

FEASIBILITY

As soon as the project was announced, we did a feasibility study to establish a broad brush project plan. Our student organizations had made it very clear that they did not want collection materials to take up any more study space within the library. Our challenge was: *How could we reduce our current collection to fit within the existing shelving available on other floors in the library.*

Wendt Collection Volumes and Linear Feet

Floor	Type	Volumes	Linear Feet	Linear Feet Available
4th Floor	Serials	28218	2700	
	Oversized	505	189	
	Cutter	13138	957	
	LC	41795	3381	
	TOTAL	83,656	7227	9690
	Storage 440	8546	678	719
3rd Floor				
	Special Collections	Did not measure		
	MicroFiche/Film	Did not measure		
	TRC		3976	4931
	Miles		8	11
2nd Floor				
	LC	54567	4377	6314
	Standards		182	221
	Reference		223	262
1st Floor				
	Journals	72285	9198	11340
	Indexes	1610	211	378

To determine if and how this could be done, we collected data about the collection, located current weeding policies, discussed downsizing options without a shelving facility, brainstormed other shelving options, and identified information that would help in targeting materials for removal.

With reports and physical measurements, we estimated the number of volumes by collection on each floor of the library.

The easy target areas were the storage room 440, the cutter collection, and the oversized materials. The storage room 440 consisted of monographs and serials that were originally

targeted for existing shelving facilities, but were not moved because the facility had reached full capacity. The cutter collection is a very old collection with low use and most of the materials are digitized. Everything in room 440 and the cutter collection could feasibly be moved out of the library if an alternate location became available. Because the oversized materials were a relatively small collection, we decided these could just be moved to the third floor of the library.

The third floor collections were not targeted for weeding because they are more complicated; our special collections are in a locked room, all microfiche/film is stored in cabinets, and there are relatively small selective collections, such as the Miles Value collection. In addition, our library is a government depository library so we are obligated to retain certain materials and must follow strict procedures if we chose to move materials to another library. And, many of the materials shelved in the Technical Reports Center (TRC) are not cataloged. A few digitized materials on the third floor were targeted for weeding, but in general this area remained unchanged.

In the remaining collections, it was our goal to weed enough of the materials so that the remaining items could be moved to shelving on other floors of the library. For the journals and serials, our strategy was to weed these collections to a point where these materials fit into the existing space on the 1st floor. For the monographs, our approach was to weed the collection so that we could fit all remaining monographs into the existing space on the 2nd floor.

At the campus level, written weeding or withdrawal policies did not exist at the beginning of the project. As the project progressed, policies were developed. When we proposed withdrawing the last copy of journals that had reliable backfiles, a campus last copy policy was quickly developed which clearly stated that this could not be done unless a retention agreement was established with other Committee on Institutional Cooperation (CIC) schools. This campus policy is in line with the Ithaka S+R recommendations: "What to Withdraw? Print Collections Management in the Wake of Digitization.[4]" For our project, however, this policy meant that print materials we would have considered withdrawing must be maintained somewhere on campus.

In our library, the only weeding criteria located consisted of general guidelines on what to send to the now full storage facilities. Because weeding policies did not exist, we developed initial guidelines that we continued to modify as the project progressed and new reports became available. From the beginning, our guiding principles were to keep materials on the shelves that are "USED and USEFUL". Even though we are deeply concerned about preservation of historical engineering materials, we decided upfront that our engineering library should not be an archival location.

We also were especially conscious of usage by Wisconsin TechSearch (WTS), a campus business that utilizes our extensive collections to provide fast and reliable document delivery and research services. Even though they pay copyright on everything, they tend to rely on print because of incomplete or poor electronic licenses.

Access to materials for WTS and our patrons was our ultimate goal. Unfortunately, without a shelving facility, we were faced with very difficult collection weeding decisions. We were informed that a new shelving facility would not be available for at least one year after the project needed to be completed. And with current budget limitations, it could be much longer.

The feasibility study helped us establish goals and strategies for weeding each of the collections. It was clear that what was needed to accomplish this goal in the one year timeframe was to purchase backfiles, de-duplicate materials with other campus libraries, apply clear weeding criteria, and design efficient workflows.

STORAGE AND RELOCATION

Because we could not send materials to a shelving facility, we considered withdrawing materials and also looked into weeding our two existing storage facilities to make space for the materials. A preliminary analysis revealed that thousands of shelving facility monographs and serials were also found duplicated on shelves throughout the campus. We investigated using the process defined by Purdue University in the article, "The Dark Side of Collection Management: Deselecting Serials from a Research Library's Storage Facility Using WorldCat Collection Analysis.[6]", but the cost of the software and the timing of the project eliminated the option to weed our storage facilities to create space for our materials.

Both our Library Director and the management in the College of Engineering (COE) and General Library System (GLS) realized the project constraints were unrealistic so they provided support with funding and temporary storage options. Matching funds were made available from the COE and the GLS to provide a total of $160,000 for backfile purchases. As the project progressed, additional funding was also provided for labor, boxes, and movers.

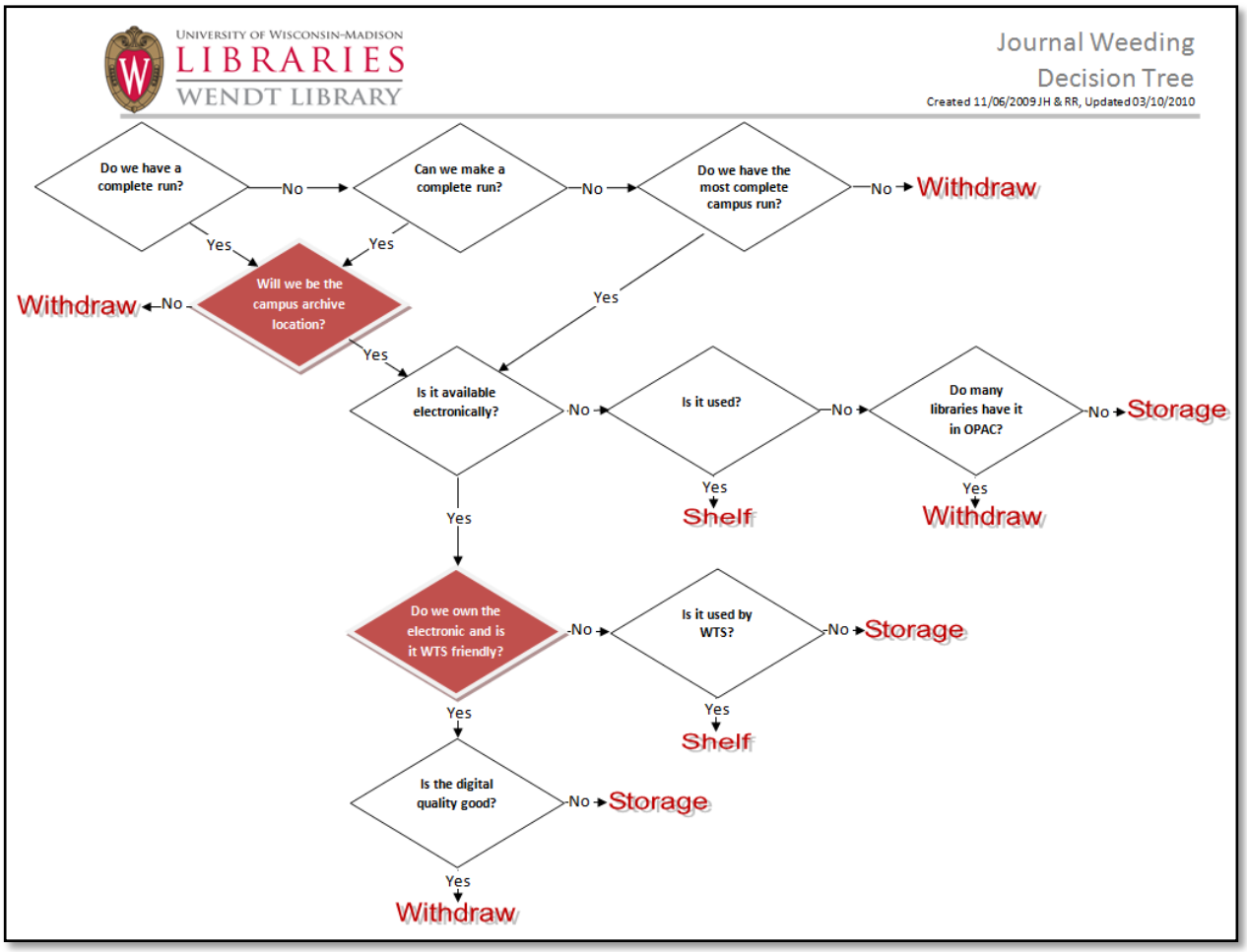
The GLS also created temporary storage in another library to store boxes until the new shelving facility was built. Temporary location codes were setup for Wendt Dim and Wendt Dark:

> **Wendt Dark** – materials sent to dark storage are items that we would have withdrawn because we own the electronic copy or backfile and have a good license for perpetual access and document delivery.
>
> **Wendt Dim**- materials sent to dim storage are items that we would have put into a shelving facility if it were available. For items with electronic access, the license may not provide perpetual access OR document delivery. For items not electronic, only campus unique items are sent.

Because the Wendt Dark and Wendt Dim materials are not accessible, the items are suppressed from viewing in our library catalog. They do, however, still show up in OCLC (WorldCat).

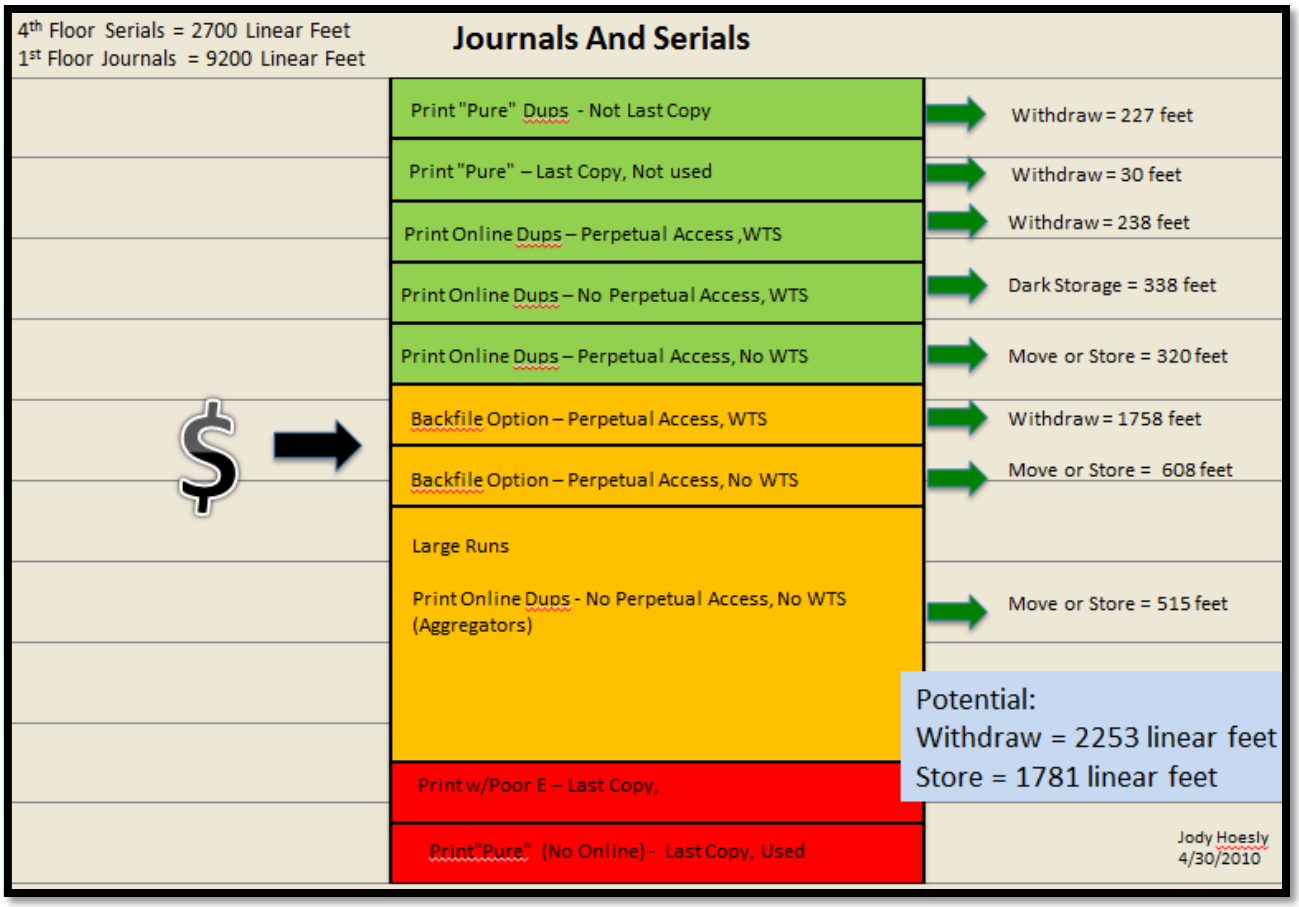
ANALYSIS - JOURNALS

Initially, we considered journals to be one of the easier parts of the collection to weed or convert to online only access. In the Ithaka S+R Faculty Survey, electronic versions of journals are: "clearly the medium of choice for most faculty members.[3]" In Engineering, we have transitioned our journal subscriptions to online only as quickly as they become available in that format. Our journal weeding analysis focused on identifying journals with reliable online access, reviewing electronic licenses, summarizing backfile options, withdrawing campus duplicates, and selecting low usage journal runs that could be sent to storage or other libraries.



To help communicate the logic used in our analysis, we created a weeding decision tree. By following the flow, it could be assessed whether journals could be withdrawn, sent to storage, or kept on the shelf. Using this logic, we reviewed our journal collection. Our initial analysis confirmed that we could reduce the journal collection enough to make room for the 4th floor serials. To summarize this, we created a functional graph that shows the overall complexity and funding needed to reduce the journal collection. The color coding includes:

GREEN – easy to withdraw, ORANGE – warning may be harder to withdraw, and RED – may be more effort to withdraw.



To meet our goal of reducing our journal collection by approximately 4000 linear feet, additional backfiles were needed. A backfile wish list was created that identified backfiles that could replace approximately 3000 linear feet of materials. Unfortunately the price tag was over $1.25 million dollars so we prioritized the packages by cost per linear inch and license quality. Digitization quality and backfile completeness was also considered. Using the funding available, we selected backfiles that provided the best value.

To assist the analysis, a breakthrough report was created that included both online and print holdings information. This report proved to be very valuable because it:

- Showed campus duplication
- Listed all online access including aggregators.
- Included ISSN, call number, holdings number and other key information

Students measured the linear inches for each journal title. These measurements along with backfile availability and other notes were added to the online-print report. Subsets of this report were also used to help in creating work orders for processing the materials.

Here is an example of one of the 350 pages in the report.

WENDT Online and Print Duplicates										
ISSN	Title	SFX Target		Bib		Location	Call Number	Holdings	Wendt Linear Inches Start	Notes
1525-2531	EContent.			4734132	5885943	Business Periodicals		1.1 22 4-6 1999 Aug./Sept.-Dec. 1.2 23-30 2000-2007		SLIS or Business last copy, withdraw. 0 historical browses.
1525-2531	EContent.			4734132	5905490	SLIS Periodicals	P	1.1 22 4-6 1999 (Aug/Sep-Dec) 1.2 23-30 2000-2007		
1525-2531	EContent.			4734132	5861031	Stee Periodicals	Shelved by title	1.1 22 4-6 1999 1.2 23-27 2000-2004		
1525-2531	EContent.			4734132	5898829	Wendt Jrnl 1st Fl NC	S EC69	1.1 22 4-6 1999 08/09-12 2.1 23 1-6 2000 02/03-12 3.1 24 1-10 2001 02/03-12 4.1 25-28 1-12 2002-2005 01-12 5.1 29 1-10 2006 01/02-12 UNBOUND	10.5	
1525-2531	EContent	ABI/INFORM	from 1988							
1525-2531	EContent	Applied Science Full Text	from 1999 to 2003							
1525-2531	EContent	Business Full Text	from 1999 to 2003							
1525-2531	EContent	EBSCOhost Academic Search Premier	from 1999							
1525-2531	EContent	EBSCOhost Business Source Premier	from 1999							
1525-2531	EContent	Factiva	from 1989							
1525-2531	EContent	Gale Cengage Business & Industry	from 1997 to 1998							
1525-2531	EContent	Health Reference Center Academic	from 1999							

The information about campus duplicates was used to identify titles we could potentially withdraw. This required coordination with the other libraries to determine last copy location and then transfer volume to create the best and most complete copy. Because other campus libraries knew about our space reduction project, they were very responsive and often took the lead in journal de-duplication.

Pareto analysis was also used for the journal analysis. The shelf measurements by call number were sorted from largest to smallest and the journals that comprised 80% of the overall shelf space were reviewed for online access, usage, and historical value.

Journals with online access or low usage were targeted for storage. Large run trade journals, sometimes going back to the 1800's, were separated out for further review. Although they have low usage, they have value to history of science researchers because the online versions do not include details such as advertisements.

Railroad journals, such as Railway Age, were another large group of journals that required further evaluation. These journals are actively used by hobbyists but not engineering students and staff so they were targeted to be moved to another library that has preservation support.

The results from the journal analysis included lists of journal titles that could be sent to temporary storage, other libraries, or to the Friend's book sale.

ANALYSIS – SERIALS

Our 4th floor serials were more complicated to process than journals because the majority of them are not online and campus duplicates tend to be at the volume level but not the entire series. Many of our series are also interwoven throughout the LC stacks. Our analysis of serials was more selective than the journals, but still looked at online access, internal and external duplication, and weeding criteria. In most cases, serials were sent to storage only if all of the volumes in the series met the weeding criteria

IEEE and ACM series are one of the series located in both our serial and LC collections. For these, we manually checked online availability. Even though we do not have perpetual access to IEEE and ACM backfiles, the online can be used by WTS for document delivery so we chose to send the print to storage if it was available online. Our current subscriptions are e-only and these are highly used core collections that we do not foresee cancelling. Obtaining lists of these series, verifying online access, and creating pull lists was very time consuming, but our efforts allowed us to identify over 5000 volumes that could be sent to storage because online access is available.

Other online serials such as ASTM standards were also targeted for storage although we did choose to keep the indexes for reference. Campus duplicates and especially older editions of series, such as NFPA codes and standards, were also reviewed. The identifying of low use series was done manually so that the entire series was looked at as a unit. Occasionally, series were split so that only the used volumes remained on our shelves.

Initially, we tried to de-duplicate as many of the series as possible. This took a lot of coordinating and time to: identify what series are duplicated, determine who should be the last copy, assess best copies, fill in any missing or poor conditioned volumes, split holdings, transfer some volumes, withdraw other volumes, etc. With over 24,000 items to analyze, we needed to find another way to speed up the analysis of the serials.

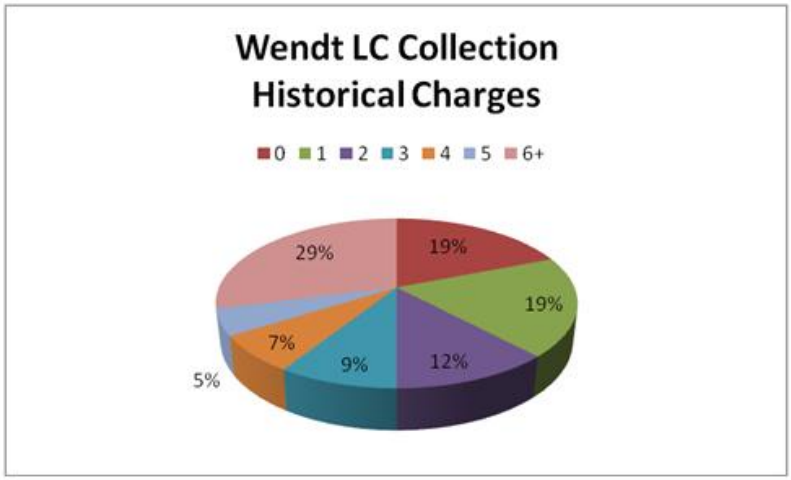
One of our School of Library and Information (SLIS) students was able to create an SQL query that filtered out serials unique to our library. This allowed us to focus on just applying our weeding criteria to create pull lists more quickly. The analysis was still a manual review process because all of the volumes in a series needed to be looked at together, but it allowed us to identify over 9000 unique serials to send to Dim Storage. Occasionally series were split based on usage or online access, but in general they stayed together as a unit.

In total, over half of the series volumes were identified for temporary storage, other libraries, or the Friend's book sale.

ANALYSIS - MONOGRAPHS

Monograph analysis of 93,000 volumes was one of the biggest project challenges. Our initial goal was to reduce the LC collection to approximately 61,000 volumes, allowing all LC volumes to be kept on the second floor in browseable stacks at approximately 80% capacity. Although our vision for this project is not to become a "bookless library" as in the Stanford cases, [5] we would still need to withdraw or store over 32,000 volumes.

Our preliminary analysis showed that there are thousands of campus duplicates and that almost half of the collection had 2 or less uses. This graph shows historical charges since 1999.



Because we did not want to fill up our limited storage space with campus monograph duplicates, our initial strategy was to focus our energy on withdrawing duplicates. Before we withdrew our copy, however, we needed to check the shelves at other libraries to guarantee that the duplicate copy was available and in good condition. For monographs duplicated with 3 or more libraries, campus management approved withdrawing our copy without checking the shelf at another library.

To assist us with our analysis, the library technology group developed a weeding report that not only showed other library duplicates, but also included valuable usage information including:

- Use in the past 5 years
- Use in the past 6-10 years
- Total Historical Charges
- Total Historical Browses

Here is a sample weeding report layout:

BIB_ID	ITEM_ID	DISPLAY_CALL_NO	COPY_NUMBER	ITEM_ENUM	CHRON	TITLE_BRIEF	LOCATION_NAME	UsesTo10	UsesLast5	TOTAL_USE	STORICAL_CHARGES	STORICAL_BROWSES	BEGIN_PUB_DATE	CREATE_DATE	ITEM_STATUS_DESC	ITEM_BARCODE	LastTransactionDate
742	2410	N70 A75	2			Visual thinking / Rudolf Arnheim	Art Regular Size Shelv	2	3	17	12	5	1969		Not Charged	89055522866	01-Feb-08
742	2404	N70 A693	1			Visual thinking / Rudolf Arnheim	MERIT Professional	3	1	28	13	15	1969		Not Charged	89031019318	25-Feb-08
742	2406	N70 A75	2			Visual thinking / Rudolf Arnheim	Social Work Stacks		1	5	1	4	1969		Not Charged	89003403128	01-Jun-10
742	2407	N70 A75	2			Visual thinking / Rudolf Arnheim	Wendt LC A-S 4th, T-Z 2nd		2	9	4	5	1969		Not Charged	89042755488	05-Aug-10
1184	3725	HN17.5 T64	8			Future shock.	College 1191 Stacks	5		25	15	10	1970		Not Charged	89000240820	23-Dec-03
1184	3728	HN17.5 T64	1			Future shock.	Mem Stacks (LC)	4	1	13	10	3	1970		Not Charged	89000845859	15-May-06
1184	3729	HN17.5 T64	2			Future shock.	Mem Stacks (LC)	4	2	28	23	5	1970		Renewed	89005105275	22-Dec-08
1184	3733	HN17.5 T64	201			Future shock.	Mem Stacks (LC)			5	3	2	1970		Not Charged	89002774701	04-Jun-00
1184	3726	HN17.5 T64	6			Future shock.	Wendt LC A-S 4th, T-Z	0	0	10	8	2	1970		Not Charged	89033929001	
1637	5144	P365 S6	2	1		World guide to abbreviations. In	Chemistry Reference	0	0	0	0	0	1970		Not Charged	89030385942	
1637	5145	P365 S6	2	2		World guide to abbreviations. In	Chemistry Reference	0	0	1	0	1	1970		Not Charged	89030385652	
1637	5146	P365 S6	2	3		World guide to abbreviations. In	Chemistry Reference	0	0	1	0	1	1970		Not Charged	89030385660	
1637	5150	P365 S6	4	v.1		World guide to abbreviations. In	Wendt LC A-S 4th, T-Z	0	0	0	0	0	1970		Not Charged	89033936501	
1637	5151	P365 S6	4	v.2		World guide to abbreviations. In	Wendt LC A-S 4th, T-Z	0	0	0	0	0	1970		Not Charged	89048451777	
1637	5152	P365 S6	4	v.3		World guide to abbreviations. In	Wendt LC A-S 4th, T-Z	0	0	0	0	0	1970		Not Charged	89048451793	
1718	5386	PE1475 J6 1971	2			Writing scientific papers and rep	Stee Stacks	0	0	16	4	12	1971		Not Charged	89031171895	
1718	5387	PE1475 J6 1971	1			Writing scientific papers and rep	Wendt LC A-S 4th, T-Z	1	2	7	4	3	1971		Not Charged	89048451967	02-Jun-09

After reviewing the data, it was clear that there were many cases where multiple campus copies were needed. We developed preliminary weeding criteria for external duplicates that included publication date, when purchased, if it was a reserve item, and combined usage at multiple locations. Unfortunately, these criteria had to be applied manually or additional reports would need to be developed to include combined usage data. We later revised this criteria (took a more conservative approach) to simplify the process.

Once we identified external duplicates that we would consider withdrawing, we needed to create library checklists to verify that the duplicate copy was available in good condition. This turned out to be very complicated because monographs can be at multiple campus libraries, but only one copy needed to be verified so additional processing needed to be done to select the libraries to check. Because the weeding reports are run by our call number range, there ended up being multiple checklists for each library. For example, we have one Physics monograph checklist for our A-P call number range and another for our Q-QC call number range.

After duplicate copies were verified, there also needed to be coordination with the other libraries regarding items missing or found in poor condition. Sometimes the other libraries took our copies to replace their missing or poor condition volumes, sometimes they only wanted selective volumes, and sometimes they were not interested in any replacement copies.

Even though the other libraries were very appreciative of our de-duplication efforts, we quickly realized that the analysis time, checking time, and coordination time would not get us the withdrawal numbers we need in time to meet the project deadline.

A breakthrough in the analysis came when one of School of Library and Information Studies (SLIS) students figured out how to split our monograph weeding reports into two sections:

- Monographs unique to our library
- Monographs (and Serials in LC) duplicated on campus.

The ability to separate out unique materials allowed us to test and refine weeding criteria. We considered publication date, whether it was a reserve item, when the item was added to the collection, and usage statistics. Here is a summary of the weeding criteria for unique materials:

Not used at all in last 5 years and used less than 3 times 6-10 years ago, and not published or purchased since 2005

UsesLast5 = blank or 0
AND
Uses6to10 = blank, 0, 1, 2, or 3
AND
Item Status = Not Charged
AND
Begin Pub Date <2006
AND

After applying the weeding criteria, student pull lists were created. Students were asked to verify the barcode and to check the volumes for problems such as personalized book plates and imbedded serials. Here is the format of the pull lists:

Not on Shelf	Problem Cart	Pulled	DISPLAY_CALL_NO	ITEM_BARCODE	TITLE_BRIEF
			TE1 N44 no.496	89065635930	Future aviation activities : 11th international workshop.
			TE145 .A76	89038155016	Highway engineering.
			TE145 .S46	89038154787	Principles and practice of highway engineering
			TE145 H59 1963	89038154688	Highway engineering,
			TE145 R6913	89034045070	Low cost roads: design, construction and maintenance;
			TE145 U62	89034045088	Principles and practices of grading, drainage, and road alignment : an ecologic approach /
			TE145 W74 1987	89060665239	Highway engineering /
			TE147 I5	89042695924	Introduction to highway transportation engineering /
			TE151 .B24	89035058833	Handbook of highway engineering /
			TE153 .A496	89042695932	Policy on safety rest areas for the national system of interstate and defense highways. Adopted /
			TE153 A497 1960 pt.1	89042695973	Road user benefit analysis for highway improvements : part I, passenger cars in rural areas : a rep
			TE153 A497 pt.1	89042695957	Road user benefit analysis for highway improvements : part I, passenger cars in rural areas /
			TE153 I8 1952	89038152559	Highway curves: highway surveying, location, geometric design, and earthwork.
			TE153 L32	89034045112	Road and bridge construction handbook /

The monograph unique pull lists identified over 33,000 potential items to be pulled. Because some of them may be problems, the final number will be less.

STUDENT HELP

At first student help was limited to our current student staff that work at the circulation/services desk. Early on it became clear that we needed some more advanced help that the current circulation students could not provide. We hired a number of SLIS (School of Library and Information Science) graduate students to do some more detail oriented work, like generating reports and pull lists based on our weeding criteria. It also became clear that the circulation student workers did not have the time to devote solely to the project, due to other duties at the desk, and we needed to increase the pace of our removal.

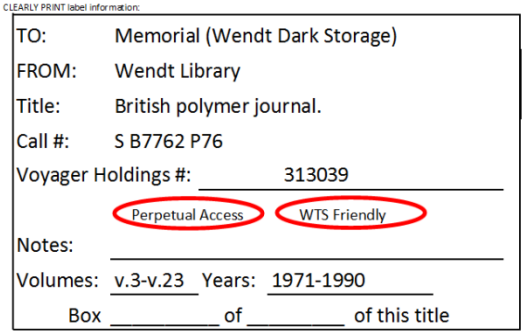
Starting in January we received funding to hire up to 10 temporary positions. Temporary project students were hired exclusively to pull items from the provided lists and box and label them. The project students were asked to work a minimum of 12 hours a week. Students set their own schedules and could come and work during any of our open hours.

We were also cleared to hire 2 LTE supervisor positions. Between the 2 supervisors and the librarians involved with the project, there was a staff person here between 7:30 am and 10 pm every day, as well as 5-6 hours each Saturday and Sunday. When using just the circulation students, we were outputting around 60 boxes of materials a week; with the increased staff and supervision we increased our productivity to around 800 boxes a week.

PROCESSING

Instructions for each collection process were created, tested, and then filled out by librarians. These "tracking forms" included a list of supplies, how to update catalog locations when needed, and any special package and labeling information. If students could not complete a tracking form during their shift (some were over 100 pages long), they indicated where they left off so the next student knew where to continue working. Completed work orders were put in a done basket for verification.

The work orders included box labels which the students copied as needed. The labels were specific to a collection and designated location. Here is an example of a label for a journal sent to dark storage.

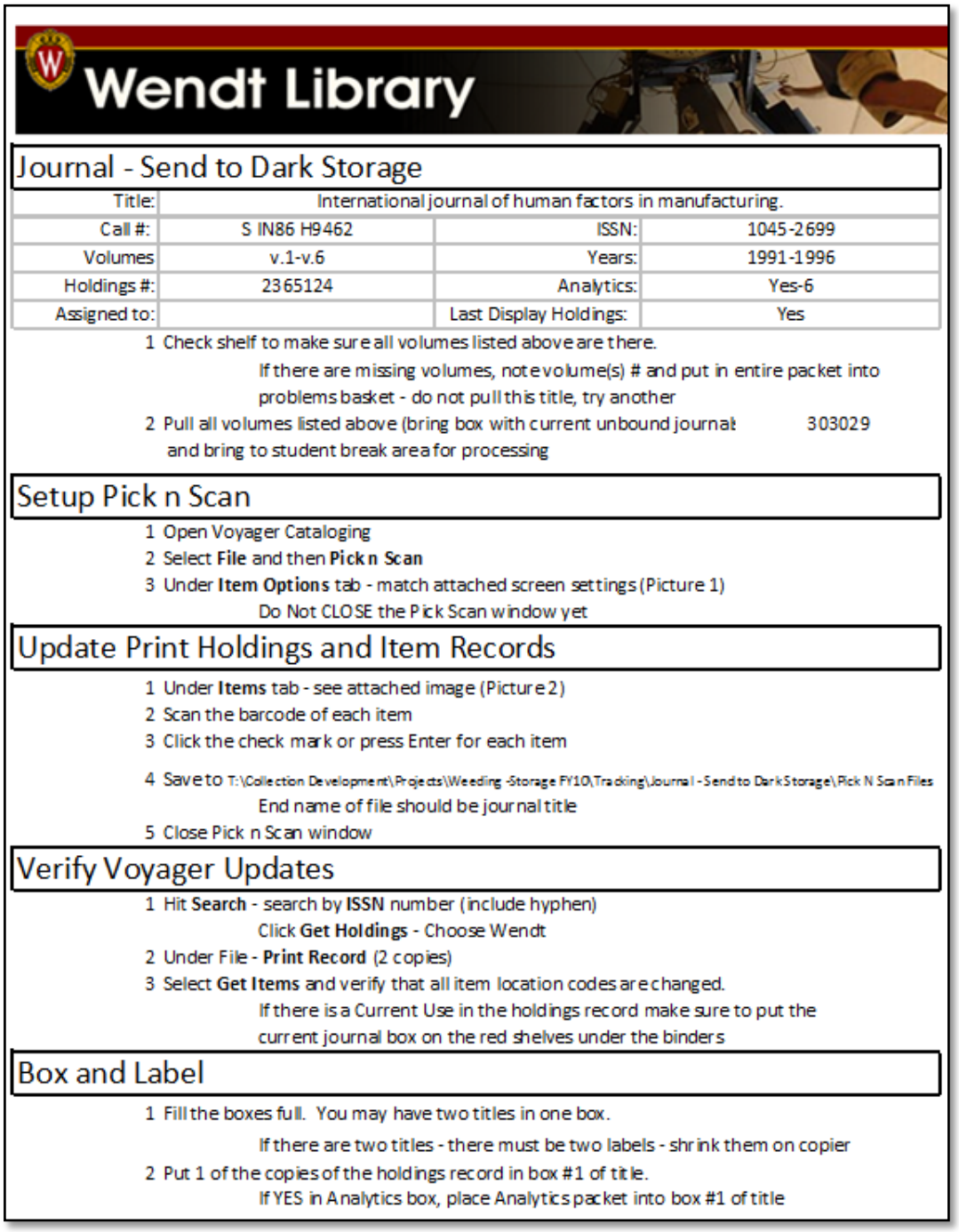

CLEARLY PRINT label information:

TO: Memorial (Wendt Dark Storage)
FROM: Wendt Library
Title: British polymer journal.
Call #: S B7762 P76
Voyager Holdings #: 313039
Perpetual Access WTS Friendly
Notes:
Volumes: v.3-v.23 Years: 1971-1990
Box _____ of _____ of this title

State record boxes were used to package the materials and movers were called when a shipment of boxes was ready. Over 5000 boxes are estimated to be moved out of Wendt Commons.

JOURNALS TRACKING

Students were instructed to go to the shelf and pull the correct call number after checking to make sure that all desired volumes were on the shelf. If there appeared to be missing volumes the students were instructed not to pull the volumes, but rather note the missing volumes and return the work order to a problems/missing basket. They should then take another work order and try again. Librarians check the problems/missing basket daily and search for missing volumes. Once items were pulled from the shelf students would take them to the work area, change their status in the catalog, and box and label the volumes for storage. Here is an example of a journal work order:



Wendt Library

Journal - Send to Dark Storage

Title:	International journal of human factors in manufacturing.		
Call #:	S IN86 H9462	ISSN:	1045-2699
Volumes	v.1-v.6	Years:	1991-1996
Holdings #:	2365124	Analytics:	Yes-6
Assigned to:		Last Display Holdings:	Yes

1 Check shelf to make sure all volumes listed above are there.
If there are missing volumes, note volume(s) # and put in entire packet into problems basket - do not pull this title, try another

2 Pull all volumes listed above (bring box with current unbound journal 303029 and bring to student break area for processing

Setup Pick n Scan

1 Open Voyager Cataloging
2 Select **File** and then **Pick n Scan**
3 Under **Item Options** tab - match attached screen settings (Picture 1)
Do Not CLOSE the Pick Scan window yet

Update Print Holdings and Item Records

1 Under **Items** tab - see attached image (Picture 2)
2 Scan the barcode of each item
3 Click the check mark or press Enter for each item
4 Save to T:\Collection Development\Projects\Weeding -Storage FY10\Tracking\Journal - Send to Dark Storage\Pick N Scan Files
End name of file should be journal title
5 Close Pick n Scan window

Verify Voyager Updates

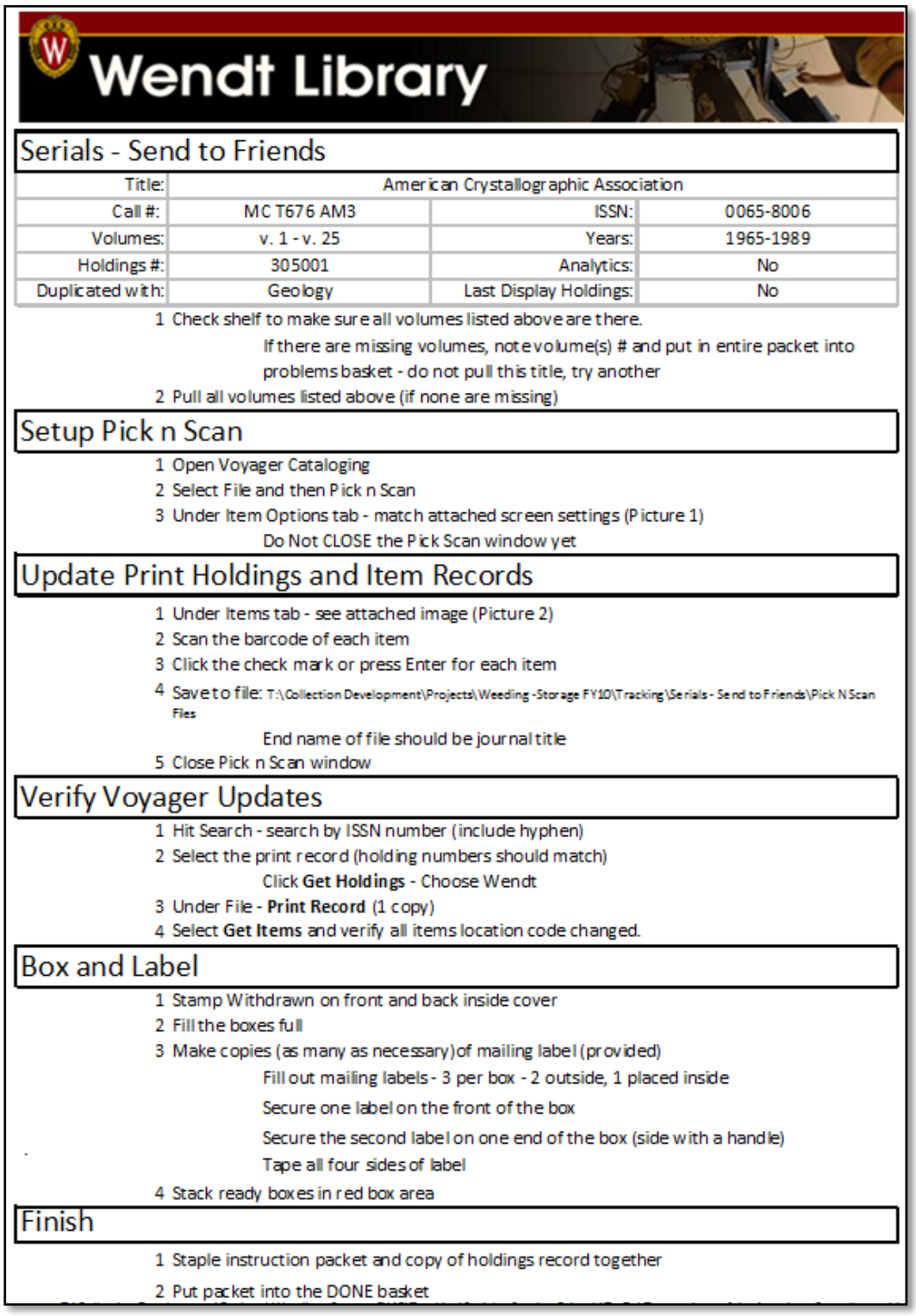
1 Hit **Search** - search by **ISSN** number (include hyphen)
Click **Get Holdings** - Choose Wendt
2 Under File - **Print Record** (2 copies)
3 Select **Get Items** and verify that all item location codes are changed.
If there is a Current Use in the holdings record make sure to put the current journal box on the red shelves under the binders

Box and Label

1 Fill the boxes full. You may have two titles in one box.
If there are two titles - there must be two labels - shrink them on copier
2 Put 1 of the copies of the holdings record in box #1 of title.
If YES in Analytics box, place Analytics packet into box #1 of title

SERIALS TRACKING

Serials were trickier, and spread out around the whole collection, so the first part of the process was performed by either an advanced library student staff or librarians. They would pull carts of serials and leave them for students to complete. Here is an example of a serial work order for campus duplicates that were sent to the Friends of the Library book sale:



Wendt Library

Serials - Send to Friends

Title:	American Crystallographic Association		
Call #:	MC T676 AM3	ISSN:	0065-8006
Volumes:	v. 1 - v. 25	Years:	1965-1989
Holdings #:	305001	Analytics:	No
Duplicated with:	Geology	Last Display Holdings:	No

1 Check shelf to make sure all volumes listed above are there.
If there are missing volumes, note volume(s) # and put in entire packet into problems basket - do not pull this title, try another
2 Pull all volumes listed above (if none are missing)

Setup Pick n Scan

1 Open Voyager Cataloging
2 Select File and then Pick n Scan
3 Under Item Options tab - match attached screen settings (Picture 1)
Do Not CLOSE the Pick Scan window yet

Update Print Holdings and Item Records

1 Under Items tab - see attached image (Picture 2)
2 Scan the barcode of each item
3 Click the check mark or press Enter for each item
4 Save to file: T:\Collection Development\Projects\Weeding -Storage FY10\Tracking\Serials - Send to Friends\Pick N Scan Files
End name of file should be journal title
5 Close Pick n Scan window

Verify Voyager Updates

1 Hit Search - search by ISSN number (include hyphen)
2 Select the print record (holding numbers should match)
Click **Get Holdings** - Choose Wendt
3 Under File - **Print Record** (1 copy)
4 Select **Get Items** and verify all items location code changed.

Box and Label

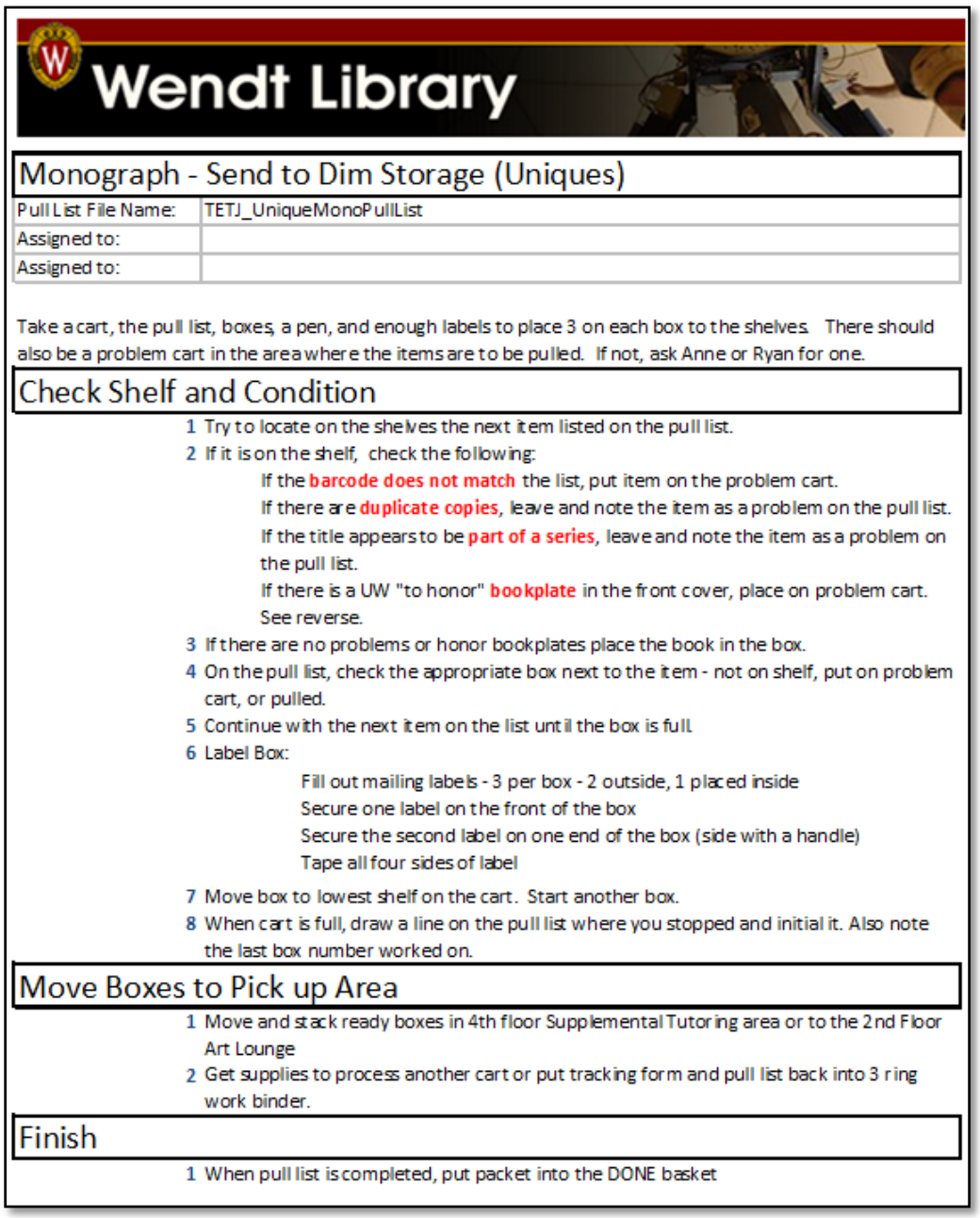
1 Stamp Withdrawn on front and back inside cover
2 Fill the boxes full
3 Make copies (as many as necessary)of mailing label (provided)
Fill out mailing labels - 3 per box - 2 outside, 1 placed inside
Secure one label on the front of the box
Secure the second label on one end of the box (side with a handle)
Tape all four sides of label
4 Stack ready boxes in red box area

Finish

1 Staple instruction packet and copy of holdings record together
2 Put packet into the DONE basket

MONOGRAPH AND CUTTER TRACKING

Once the initial de-duplication work had been done on the monograph and cutter collections the process on the student end was fairly quick. Pull lists were generated by librarians and distributed to students. At the time the pull list was created, librarians would batch modify the status of that pull list so that no indivudual work needed to be done to change the status of those volumes. Students would take the pull list, fill a cart, go back to the processing area, box the items and label the boxes. Here is an example of a monograph work order for sending monographs to dim storage:



Wendt Library

Monograph - Send to Dim Storage (Uniques)

Pull List File Name:	TETJ_UniqueMonoPullList
Assigned to:	
Assigned to:	

Take a cart, the pull list, boxes, a pen, and enough labels to place 3 on each box to the shelves. There should also be a problem cart in the area where the items are to be pulled. If not, ask Anne or Ryan for one.

Check Shelf and Condition

1 Try to locate on the shelves the next item listed on the pull list.
2 If it is on the shelf, check the following:
- If the barcode does not match the list, put item on the problem cart.
- If there are duplicate copies, leave and note the item as a problem on the pull list.
- If the title appears to be part of a series, leave and note the item as a problem on the pull list.
- If there is a UW "to honor" bookplate in the front cover, place on problem cart. See reverse.

3 If there are no problems or honor bookplates place the book in the box.
4 On the pull list, check the appropriate box next to the item - not on shelf, put on problem cart, or pulled.
5 Continue with the next item on the list until the box is full.
6 Label Box:
- Fill out mailing labels - 3 per box - 2 outside, 1 placed inside
- Secure one label on the front of the box
- Secure the second label on one end of the box (side with a handle)
- Tape all four sides of label

7 Move box to lowest shelf on the cart. Start another box.
8 When cart is full, draw a line on the pull list where you stopped and initial it. Also note the last box number worked on.

Move Boxes to Pick up Area

1 Move and stack ready boxes in 4th floor Supplemental Tutoring area or to the 2nd Floor Art Lounge
2 Get supplies to process another cart or put tracking form and pull list back into 3 ring work binder.

Finish

1 When pull list is completed, put packet into the DONE basket

VERIFICATION

Since we relied on student help to pull and process the majority of materials, we devised a process in which librarians would verify item status and make sure the items were properly reflected in the catalog (or not reflected, as in most cases). Verification processes for the different collections varied.

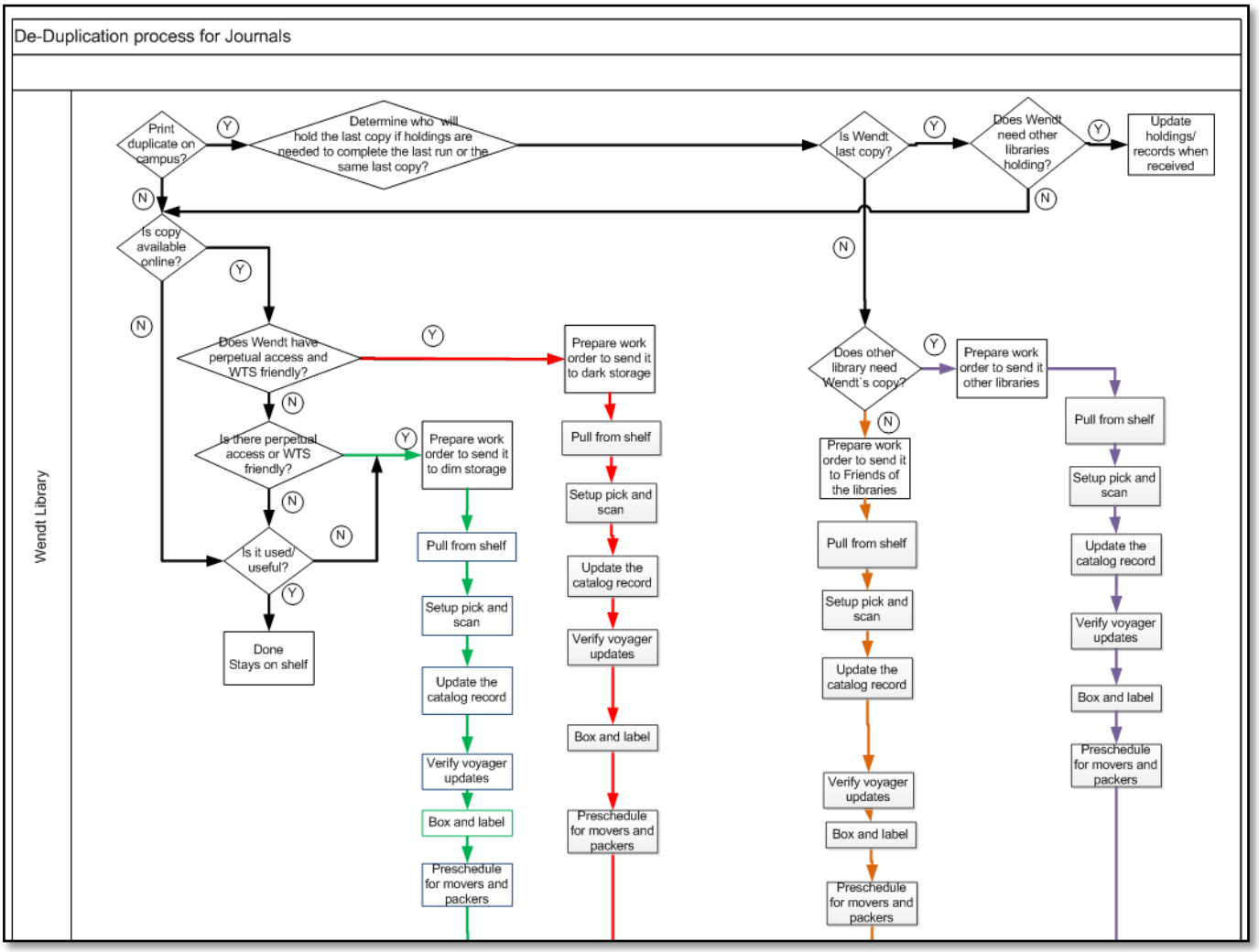
Journal Verification: When processing the journal collection, each volume's status and location code had to be individually changed. Using a completed work order, the librarian would look up the holding record for the specific title and then check to make sure the holdings were suppressed, (the bib if last copy) and that all the location codes were changed. Verifying journals turned in to a bit of a nightmare as it became evident that there were many errors in the catalog. Finding a location code that was not changed meant having to go through all the boxes to find that title, and hopefully the correct volume. Most of the problems were due to missing volumes, or individual volumes that at some point had been bound with another, but the individual item record still remained. Individual item records were deleted once it was determined that they were in fact combined into a larger volume, and items that were found to truly be missing were separated from the original holdings while notes were made in the record. This process was extremely time-consuming in the beginning, when many of the mistakes were due to student error, but as they came to know the project and the cataloging module better the problems decreased.

Cutter Collection Verification: After our initial de-duplication process, this entire collection was slated for storage. Library staff was able to change all the records with a "Cutter" location to a Dim Storage location, thus hiding them in the public catalog. This status change was actually put in place while we were boxing up the collection. We were able to run a report afterwards and pick out any of those items that had additional status (like, checked out, missing, etc.) and individually change those items to reflect their real status.

Monograph/Serial Verification: Multiple pull lists were created for these collections and each pull list included a "pulled" column, a "problem" column and a "not on shelf" column. Items marked as problems were *usually* pulled and put onto a problem cart, pulled items were boxed. Once the list was completed a librarian would go through it and note all of the problems and NOS items to go through at a later date. The rest of the list (pulled items) was then batch modified and all record location codes were changed at once. When time permits, the problems and NOS items will be dealt with on an individual basis.

PROCESS IMPROVEMENT

After a few months into the project, a team of Industrial and Systems Engineering (ISyE) students asked our library if we had any process improvement projects they could use for their senior design project. They selected our space reduction project. To meet their course requirements, they created process maps, interrelationship diagrams, affinity diagrams, and performed numerous time studies. Their study saved us hours of work, identified areas that we could continue to improve, and helped us to justify additional student hours. Here is part of their process map for processing journals:



From their time study reports, they provided volume times to:

Box and Label = 0.3024 minutes/volume (20% allowance)

Check other Libraries for Duplicate Copy and Condition = 5.34 minutes/volume

Load Carts, Update Catalog, Stamp, Box and Label = 0.6956 minutes/volume

Move Volumes to Another Floor = 0.3593 minutes/volume

We used these time study values to estimate the number of student hours needed to process the materials. One of the most surprising, yet helpful, times studies was *check other libraries for duplicate copy and condition*. This was actually over 10 minutes per volume until we changed the process to provide a laptop with the spreadsheet for the student to update as they checked the shelves at other libraries.

How the ISyE Senior Design Team applied the industrial engineering tools to this project was both interesting and valuable. Their analysis not only identified areas for immediate and future improvement, they also facilitated discussion that made us think about how and why we were doing things. This dynamic process design helped us meet our project goals.

COMMUNICATION

Communication was one of the most important factors in making this project work. It is monumentally important that everyone be on the same page at all times. Weekly team meetings were held, individual meetings were held whenever necessary. Everyone involved in this project had other responsibilities that needed to be maintained while this project was in the forefront therefore, constant communication was essential to our success.

CONCLUSION

The removal of library materials from the 4th floor is slated to be finished in March 2011. At that time the stacks will be removed from the floor and a potential remodel will happen. As for the rest of the library we will still have some work to do. The remaining 4th floor collection will have to be interfiled with the appropriate collection either on the 1st or 2nd floors.

To make this last phase easier, we tried to withdraw or move more materials then were actually needed to fit on our other floors. With the cost of keeping a book on open stacks at $4.26 vs. the cost of keeping an item at a high density shelving facility at $0.86, [2] we took our analysis of the collection as far as possible within the timeframe of the project. We truly wanted to shift from keeping materials "just in time" rather than keeping them "just in case[1]".

Our future challenge is now to identify ways to continue to assess and build a collection that provides access without expanding the physical space for the collection. To do this, we will continue to transition to more digital collections. Some of our immediate plans for achieving this objective are to convert gift journals to electronic only, identify more backfiles, and expand our e-book collections.

1. ACRL Research Planning and Review Committee. (2010). 2010 top ten trends in academic libraries. *College & Research Libraries News*, *71*(6), 286 -292.
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3. Schonfeld, R. C., & Housewright, R. (2010). Faculty survey 2009: key strategic insights for libraries, publishers, and societies. *Ithaka S+ R, April*, 2000–2009.
4. Schonfeld, R. C., Housewright, R., & Ithaka, S. (2009). *What to Withdraw: Print Collections Management in the Wake of Digitization*. Ithaka S+ R.
5. Stanford Ushers In The Age Of Bookless Libraries: NPR. (n.d.). . Retrieved January 9, 2011, from http://www.npr.org/templates/story/story.php?storyId=128361395
6. Ward, S.M., & Aagard, M.C. (2008). The Dark Side of Collection Management: Deselecting Serials from a Research Library's Storage Facility Using WorldCat Collection Analysis. *Collection Management*, 33 (4), 272-287.