

Information Technology at YUL

Michael Dula *CTO, Yale University Library*

March 27, 2014

Library Information Technology

• Library IT: 25 staff

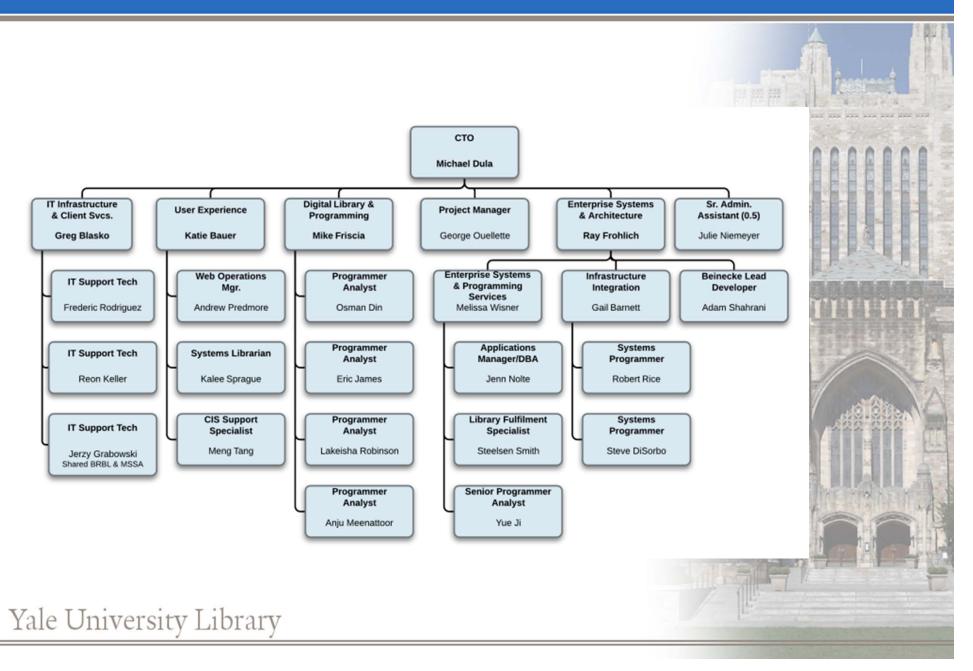
- Enterprise Systems
- Systems Infrastructure and Integration
- Digital Library & Programming Services
- Workstation and Technology Services
- User Experience





Organization Chart

Yale



Major Projects Underway



- Library Enterprise Systems
 - Voyager
 - Atlas Systems: Aeon, ILLiad, Ares
 - Serials Solutions suite
 - SQL Server reporting
 - ArchivesSpace
- Servers and Storage Architecture
 - Digital Collections Infrastructure
 - VMware migration
 - Next generation storage architecture

Digital Collections Programming

- Hydra/Fedora Architecture
- LadyBird cataloging tool development
- Initial collections

- Library Staff Support
 - ServiceNow
 - Expert Users Program
 - Backup project
 - Asset Management
- User Experience
 - Universal Search (Blacklight)
 - LibGuides
 - YUL Website
 - Google Analytics
- Miscellaneous
 - EliScholar
 - LIT Website
 - Identity Management
 - Project Management University participation



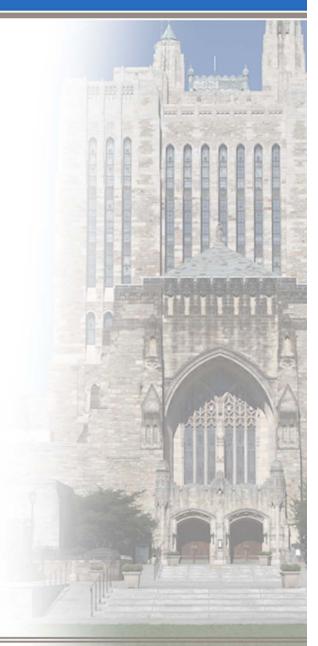
Enterprise Systems and Infrastructure

Ray Frohlich

Director, Enterprise Systems and Architecture

Enterprise Systems

- Melissa Wisner, Manager
- Yue Ji, Senior Programmer Analyst
- Jenn Nolte, Applications Manager/Database Administrator
- Steelsen Smith, Library Fulfillment Systems Specialist





Enterprise Systems

Areas of Responsibility

- Application administration, programming and integration
- Project management and coordination
- Business analysis
- Vendor management

Supported Services

- Voyager
- Atlas Systems (Aeon, Ares, ILLiad)
- Serials Solutions Systems (Summon, 360 Suite)
- SQL Server Reporting Services
- ArchivesSpace



Recently Completed Projects



- MARC Record Extract Tool
- Aeon migrated to Yale ITS managed and hosted infrastructure
- ILL web form update
- HATHI Trust holdings extract-completed

Upcoming Projects

May 2014

Aeon upgrade v3.6

June 2014

- Illiad upgrade and migration to Yale ITS
- Serials Solutions 360 Link/MARC Updates implementation
- Serials Solutions Summon v2.0 upgrade

July 2014

Ares upgrade and migration to Yale ITS July 2014

Fall 2014

- Serials Solutions 360 Counter/Resource Manager implementation
- Core web services (ATK Caches, Orbis Caches, LSF, Illiad, etc.) migration to ITS
- ILS migration prep data cleanup group



Initiatives and Opportunities



- Greater collaboration with non-YUL IT technical staff
- Transition from ad hoc to generalizable web services
- Data and service integration (Integration CoP)



Systems Infrastructure & Integration

- Gail Barnett, Manager
- Steve DiSorbo, Systems Programmer
- Bob Rice, Systems Programmer





Systems Infrastructure & Integration

Areas of Responsibility

 Systems administration, programming and integration

Supported Services

- 100+ physical and virtual servers
- Storage and tape library systems



Yale

Recently Completed Projects



- Digital Repository infrastructure design and implementation
- Fortunoff Archive reconciliation
- Kissinger Project vendor data pre-import processing
- ArchivesSpace development environment
- YFAD performance tuning

Upcoming Projects

Spring 2014

- Beinecke VMware guest migration to ITS (~5 guests)
- ArchivesSpace production environment implementation

Summer 2014

- Initial VMware guest migration from YUL IT infrastructure to ITS (~50 guests)
- Digital Repository Next Generation Storage Infrastructure implementation



Initiatives and Opportunities



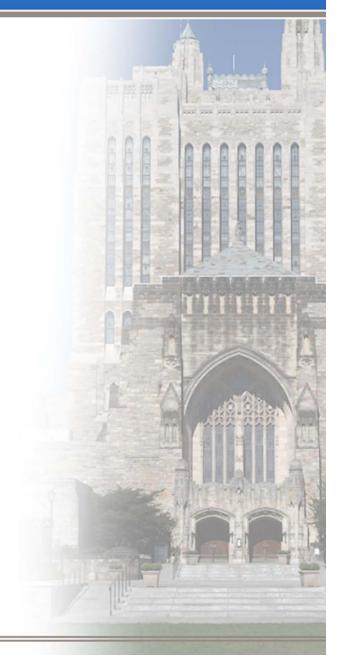
- Greater collaboration with Yale ITS
- Approach new projects with "hosted first" mindset
- Unit reorganization





Thank You!

Ray Frohlich <u>raymond.frohlich@yale.edu</u> 432-2965





Programming

Mike Friscia

Manager, Digital Library & Programing Services



Team



Osman Din – Senior Programmer

- Source code manager
- Source code style and design patterns
- Ladybird 2.0 technical lead

Eric James – Senior Programmer

- Fedora Commons contributor/committer
- Hydra technical lead
- Lakeisha Robinson Programmer Analyst
 - Blacklight technical lead

Anju Meenattoor – Programmer Analyst

- Application support for Kissinger
- Hydra development for Special Collections



Hydra Stack

- Fedora
- Blacklight
- Ladybird
- Active Fedora
- SOLR
- Media Server
- Internet Archive Book Reader
- Ingest applications







Ladybird Version 1.0

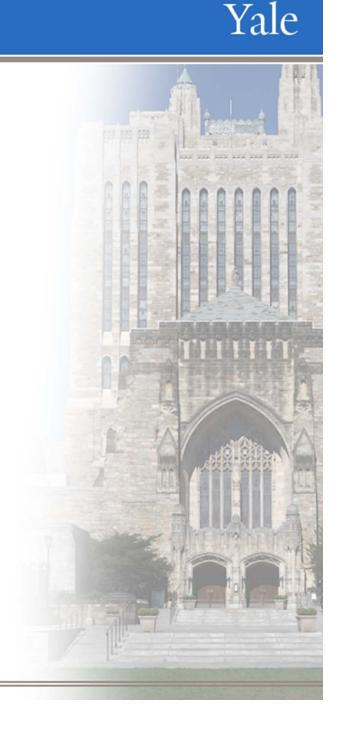
- Development started June 2010
- Version 1.0 reached December 2013
- 2,067,198 assets
- 17 background applications
- 4 desktop applications
- 3 web application
- 3 SQL databases
- 360GB of raw data





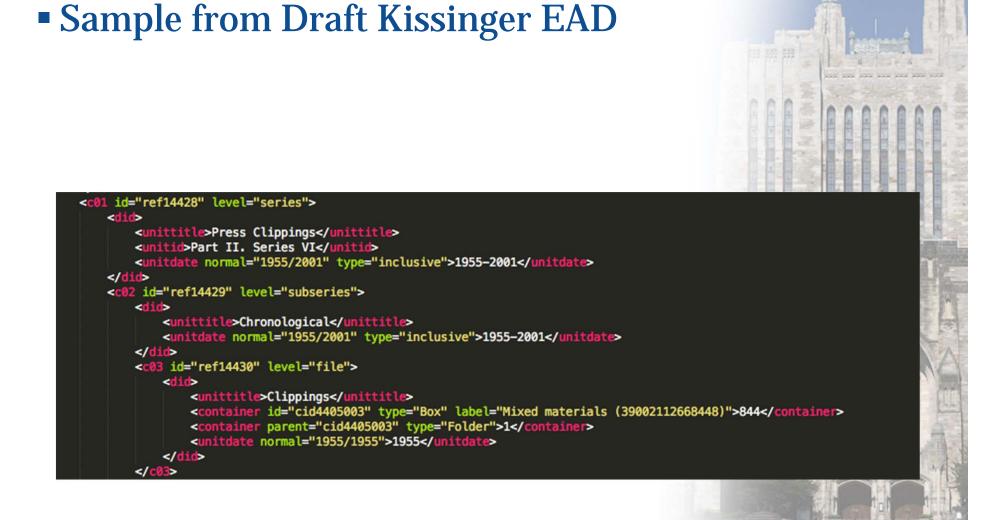
Ladybird – Current Development

- EAD Import
- Visual display of complex objects
- Hydra publish dashboards
- Metadata error catching
- PREMIS event logging
- Audit pages



EAD Import





EAD Viewed in Ladybird





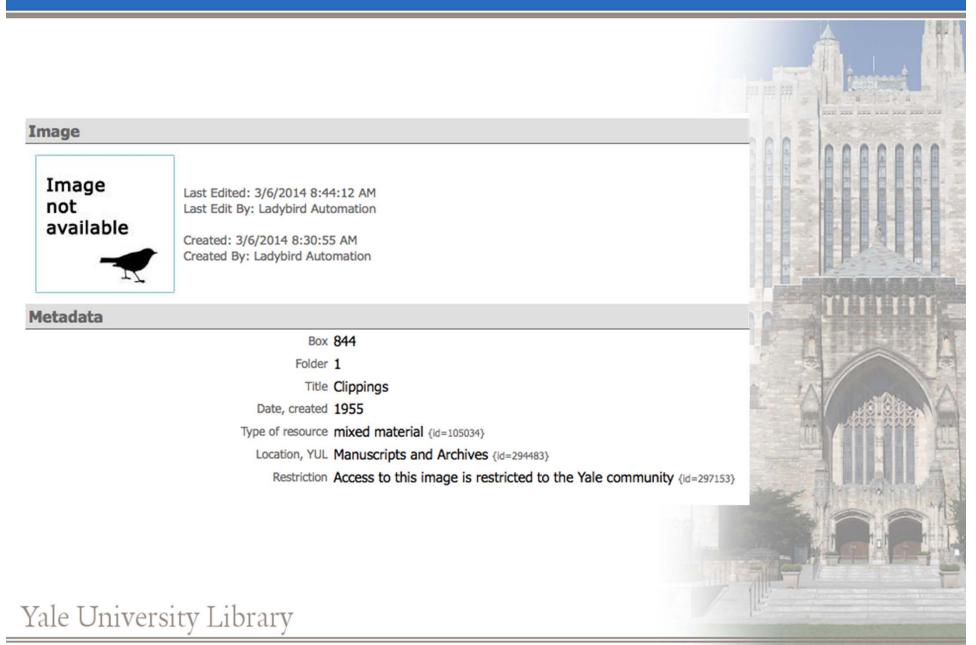
• 11224035 Kissinger (Henry A.) Papers (6)

- 11224036 Early Career and Harvard University (5)
- 11229080 Government Service (4)
- 11230512 Post-Government Career (3)
- 11235406 Cartoons and Graphic Materials (4)
- 11235475 Photographs (3)
- 11236343 Press Clippings (3)
 - 11236344 Chronological (356)
 - 11236345 Clippings
 - 11236346 Clippings
 - 11236347 Clippings
 - 11236348 Clippings [1 of 2]
 - 11236349 Clippings [2 of 2]
 - 11236350 Clippings [1 of 3]
 - 11236351 Clippings [2 of 3]



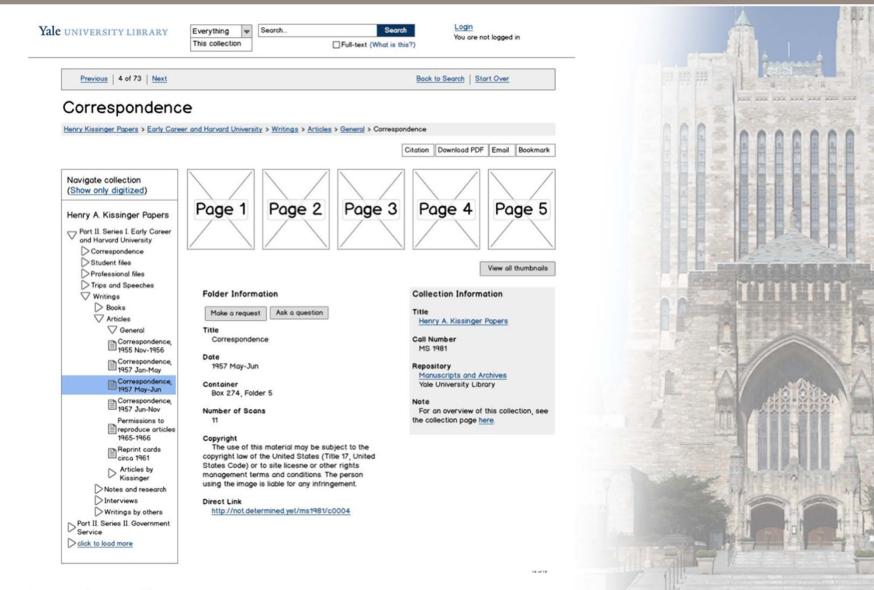
Component View in Ladybird





Published to Blacklight





Ladybird to Hydra

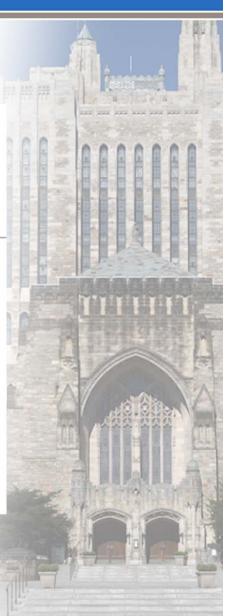


Ingest/Publish to Hydra check this to confirm your action

This record has 104 children

Title {fdid: 70}PassedType of resource {fdid: 99}PassedLocation, YUL {fdid: 100}PassedRestriction {fdid: 103}PassedDigital Collection {fdid: 275}Passed

hpid action		hydraID	dateReady		dateHydraStart			dateHydraEnd		
i9636 update digcoll:4073 10/28/20		10/28/2013 12:33:27 PM		10/28/2013 1:16:43 PM			10/28/2013 1:16:44 PM			
31199 insert		digcoll:4073	8/28/2013 4:11:55 PM		8/30/2013 5:13:17 PM		8/30/2013 5:13:25 PM			
pathHTTP			mime	Type dsid		OIDpointer		fSize	fName	
http:	http://lbxml.library.yale.edu/10687885_access.xml http://lbxml.library.yale.edu/10687885_metadata.xml			text/xm	h	accessMetadata				
http:/				text/xm	h	descMetadata				
http:/	//lbxml.lib	nl.library.yale.edu/10687885_rights.xml			mimeType dsid OIDpointer fSize fName access.xml text/xml accessMetadata metadata.xml text/xml descMetadata					
http:/	http://lbfiles.library.yale.edu/10687885.pdf				tion/pdf	pdf				
						oidPointer	10	687708		



Ladybird to Hydra



Hydra Dashboar 2014 Mar 2014 (27 Feb 2014 (17 Jan 2014 (28	786) Dec 2 (21) Nov	2013 2013 (122104) 2013 (7185) 2013 (39526)	Fri 03/ Thu 03 Fri 03/ Thu 03	014 3/24/2014 (1) 21/2014 (10) /20/2014 (30) 14/2014 (3) /06/2014 (2738) /04/2014 (4)					
Letter from Long Project: Yale Indian Object ID: 1068231 Blacklight ID: digco	Papers Project (cio 4 II:2993	or John Mason d:9 ; pid:27) dateHydra		Hydra Ingest Time	No: of child records	No: of child records in			
date 2/12/2014	dateReady 2/12/2014	Start 2/27/2014	dateHydraEnd 2/27/2014 8:39:35	0:0:2	in Ladybird	Blacklight			\mathbf{T}
8:11:56 PM	8:12:08 PM	8:39:33 AM	AM	0.012	£.	-		1	
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Auditing

Yale

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	date	oid	messagetype	messagecontents	application	classnote
1	2014-03-26 02:18:54.680	11365105	PREMIS	E:Vadybird\project28\staging\11365105\3522418_190	ladybird_filesToTempStore	program.moveFiles()
2	2014-03-26 02:18:54.677	11365105	PREMIS	Checksum e4fc6d6c26795177695389f3050375a0 file:\\	ladybird_filesToTempStore	program.moveFiles()
3	2014-03-26 02:15:18.357	11365105	PREMIS	Checksum 3a85c315ed2f5393f3183ea2436e45af file:\\	ladybird_filesToTempStore	program.moveFiles()
4	2014-03-26 02:15:18.357	11365105	PREMIS	E:\vadybird\project28\staging\11365105\3522418_190	ladybird_filesToTempStore	program.moveFiles()
5	2014-03-26 02:15:16.730	11365105	PREMIS	E:\ladybird\project28\staging\11365105\3522418_190	ladybird_filesToTempStore	program.moveFiles()
6	2014-03-26 02:15:16.730	11365105	PREMIS	Checksum 1d12de9dcf4b16af68a2ee64b0338f8f file:\\s	ladybird_filesToTempStore	program.moveFiles()
7	2014-03-26 02:15:15.090	11365105	PREMIS	Checksum 95985527efb2ead3d72472a41d0e3b38 file:\	ladybird_filesToTempStore	program.moveFiles()
8	2014-03-26 02:15:15.090	11365105	PREMIS	E:Vadybird\project28\staging\11365105\3522418_190	ladybird_filesToTempStore	program.moveFiles()
9	2014-03-25 16:55:20.040	11365105	PERFORMANCE	processed 3KB in 0.5928114 seconds	ladybird_fileProcess_IMID	
10	2014-03-25 16:55:19.957	11365105	EVENT	calculate checksums	ladybird_fileProcess_IMID	
11	2014-03-25 16:55:19.953	11365105	PREMIS	E:\ladybird\project28\import\3522418_1908_022-006_t	ladybird_fileProcess_IMID	process()
12	2014-03-25 16:55:19.950	11365105	EVENT	C#_file set	ladybird_fileProcess_IMID	
13	2014-03-25 16:53:46.460	11365105	PERFORMANCE	processed 519KB in 2.6052501 seconds	ladybird_fileProcess_IMID	
14	2014-03-25 16:53:46.340	11365105	PREMIS	E:\ladybird\project28\import\3522418_1908_022-006_ti	ladybird_fileProcess_IMID	process()
15	2014-03-25 16:53:46.340	11365105	EVENT	calculate checksums	ladybird_fileProcess_IMID	
16	2014-03-25 16:53:45.833	11365105	EVENT	C#_file set	ladybird_fileProcess_IMID	
17	2014-03-25 16:53:45.320	11365105	PREMIS	JP2 created from TIF: E:\ladybird\project28\import\3522	ladybird_fileProcess_IMID	processDerivative(False
18	2014-03-25 16:53:44.350	11365105	PREMIS	JPG created from TIF: E:Vadybird\project28\import\352	ladybird_fileProcess_IMID	processDerivative(True)



Next 6 months of Development

- Authorization for restricted content access
- Full Text search
- DOI/Handle generation for ingested objects
- Import and Ingest performance tuning
- PDF on demand
- Ladybird as a Hydra Head
- File downloads from Blacklight
- Blacklight upgrade to version 5.x



Long Term Goals

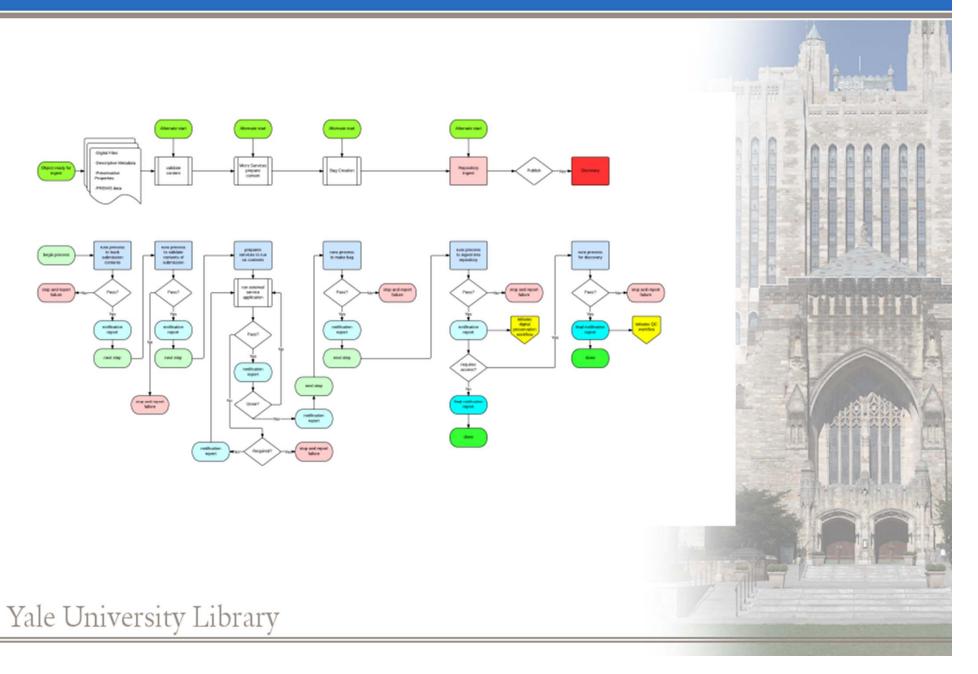
- Ladybird 2.0 as Hydra Head
- Hydra ingest moved to BagIT model
- Workflow System Architecture





Workflow System Architecture







Thank You!

Mike Friscia <u>michael.friscia@yale.edu</u> 432-1856





Workstation & Technology Services

Greg Blasko

Manager, Workstation & Technology Services



About W&TS



Staff

- Greg Blasko, Manager
- Reon Keller, IT Support Technician
- Frederick Rodriguez, IT Support Technician
- Jerzy Grabowski, IT Support Technician (50% MSSA, 50% Beinecke)
- I part-time student worker
- Contacts
 - http://web.library.yale.edu/lit/wts
 - **432-1849**
- Office
 - Sterling Memorial Library, Room 509

About W&TS

Scope of Support

- Support YUL Libraries, except:
 - Beinecke, Law, Medical, Walpole
- 650+ Workstations
 - Windows 7
 - Windows XP
 - Mac OS X
 - iOS (iPad)
- Access Services, Acquisitions, Administration, Arts, Business Office, Cataloging, Classics, Collection Development, Divinity, CSSSI, HCRE, ICRS, Library IT, LSF, Maps, Music, MSSA, OHAM, Preparations, Preservation, Security, Shipping



About W&TS



Areas of Support

- Asset Management
 - Procurement, installation, and maintenance of staff workstations and laptops
 - Image builds and application deployment
 - Active Directory and Group Policy management
 - Network access and security
- Workstation Support
 - Function as primary point of contact for resolving incidents, service requests, and other IT support issues throughout the Library system
- Consultation and Collaboration
 - Technical consultation for Library staff
 - Collaborate with other units within Library IT and ITS to provide new system services and enhancements to Library staff

W&TS Projects

ServiceNow

IT service management (ITSM) software

Expert User Program

Revamp

Workstation Backup

TSM Overages

Other Initiatives

- Website Content
 - Staff Workstation Policy
 - Supported Software Matrices
- SharePoint 2013







"To be recognized globally as the leading technology organization across universities, through rocksolid services, innovation, technology leadership and community satisfaction."

- Len Peters, Associate Vice President and CIO

ServiceNow at YUL: ITIL & ServiceNow

Yale



 Framework of standards and best practices leading to the implementation and management of quality information technology services

ServiceNow

- IT service management (ITSM) software based on ITIL standards
- Incident and service request tracking system for ITS and Library IT

ServiceNow at YUL: Why ServiceNow?

- Library IT needed a ticketing system
- Adopt IT service management (ITSM) strategy
- ServiceNow provides interoperability with ITS



Yale



Incident form on Library IT Web site

- Drupal form (CAS logon required) sends an Email to ServiceNow intake address
- Automatically create tickets assigned to ITP Library IT - W and TS

• W&TS will triage tickets:

- Expert Users (Tier I)
- W&TS Technicians (Tier II+)
- Other Library IT groups
- ITS Service Desk



ServiceNow at YUL: Service Requests



Service Request form on Library IT Web site

- Drupal form (CAS logon required) sends an Email to a Library IT account
- Manually create service request tickets in ServiceNow
- Provides a consistent user experience now with the expectation that automatic intake into ServiceNow will be facilitated at some point in the future

ServiceNow at YUL

2



Yale University Libra	Your Library Account of Ask Yale Library of Reserve Rooms of Places to Study
RESEARCH V SERVICES V	LIBRARIES & COLLECTIONS V INFORMATION & POLICIES V
Library Information Technolog	CY .
HELP AND CONTACTS	Workstation and Technology Services
Michael Dula Chief Technology Officer 203-432-1371 Julie Niemeyer Sr. Administrative Assistant 202-482-7950 Report a Problem Service Request Library III help desk: 432-1849 Staff Directory Organization Chart	Contact Us - Please use one of the buttene below to contact Workstation and Technology Services (CAS log-in required): Report a Problem Service Request ABOUT WORKSTATION AND TECHNOLOGY SERVICES (W&TS) The Workstation and Technology Services (W&TS) unit of the the Yale University Library IT department is responsible for the lifecycle of the Library's networked staff computing infrastructure including over 800 workstations and laptops supporting over 550 Library staff. W&TS functions in these areas: Asset Management - We oversee the entire staff workstation lifecycle through:
	, , ,

ServiceNow at YUL: Next Steps



Knowledgebase Contributions

 ITS to provide permissions and training to easily publish knowledge content specific to YUL systems and services

Reporting

 Employ drop-down lists to get systems, software and other keywords into the incident ticket for later report filtering



Expert User Program: Goals



- Distribute basic IT support services to qualified staff within the Library departments
- Expedite resolution of daily incidents and request fulfillment due to on-site specialized expertise
- Provide an opportunity for staff to expand their technical skillset by participating in this program
- Allow more time and resources for W&TS to focus on R&D leading to new solutions and system enhancements

Expert User Program

Skills Evaluation

 W&TS will develop a method to evaluate the IT proficiency of potential expert users. Staff will be accepted into the program after demonstrating a minimum skill set. Yale

Documentation

 W&TS will develop detailed documentation, FAQs, and user guides for all IT supported functions that fall within the Expert User role. Documentation will be hosted on a new SharePoint site, which is expected to be rolled out spring 2014.

Expert User Program

Training

 W&TS will take advantage of the 10 seat YUL Technical Training center in SML room 332 to conduct quarterly training sessions for Expert Users. Yale

Monthly Meetings

 W&TS will be holding monthly Expert User Meetings to discuss common issues, changes to the YUL IT infrastructure, and communicate any pertinent news coming out of Yale ITS.

ServiceNow

 W&TS will conduct training and assist Expert Users in navigating the system.

Backup Costs (Jul-Dec 2013)

- Workstations
 - **\$45,582**
- Servers
 - **\$10,276**

6 Month Total: \$55,858!





Backup Overages

Tivoli Storage Manager

- Overage charges for backups >100 GB
- Backs up all local data by default
- External hard drives, Drobo/RAID systems
- Retains file spaces
- Result: bloated backups/high overage charges
- Some server backups deemed obsolete
- Identified workstations with largest overages
 - Il systems: overages of 1-4+ TB
 - 27 systems: overages of 100 GB 1 TB
- Worked with staff to minimize backups





Backup Savings



Monthly Savings: \$4,900!



Other Initiatives



Windows XP Upgrades

Microsoft ceasing support on April 8

Email Migrations to YaleConnect

- Pantheon Email server
- A/V Enhancement
 - Lecture Hall / Lecture Capture
- Network Upgrades in SML
- Website Content
 - Staff Workstation Policy / Supported Software Matrices
- SharePoint 2013





Thank You!

Greg Blasko gregory.blasko@yale.edu 432-0640





User Experience Projects

Katie Bauer

User Experience Librarian

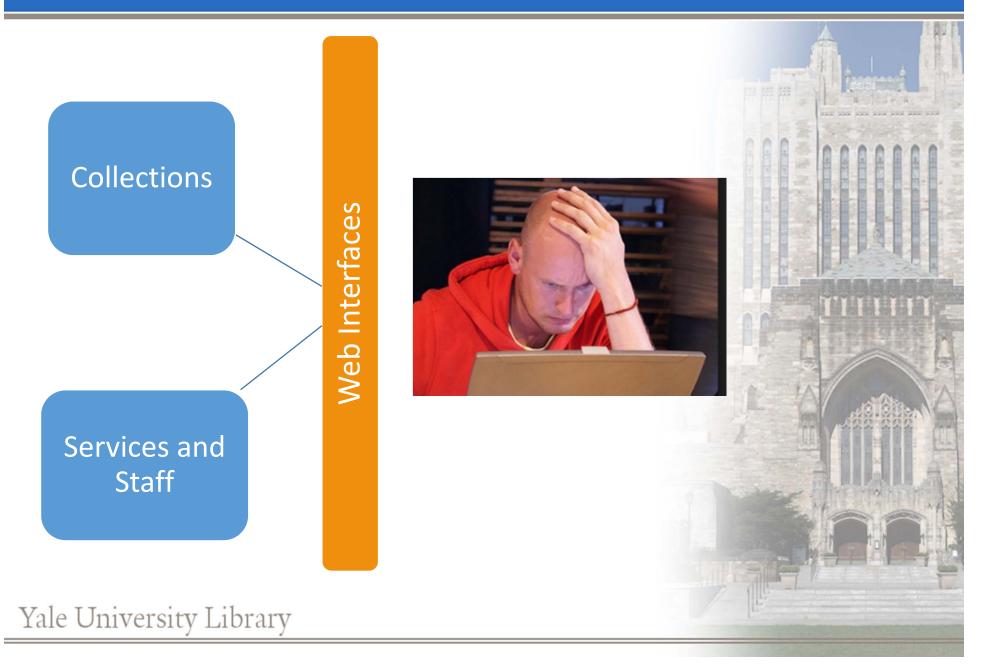


- Kalee Sprague, Systems Librarian
- Andrew Predmore, Web Operations Manager
- Meng Tang, CIS Support Specialist



User Experience Areas of Responsibility





Unity, Simplicity, Visibility

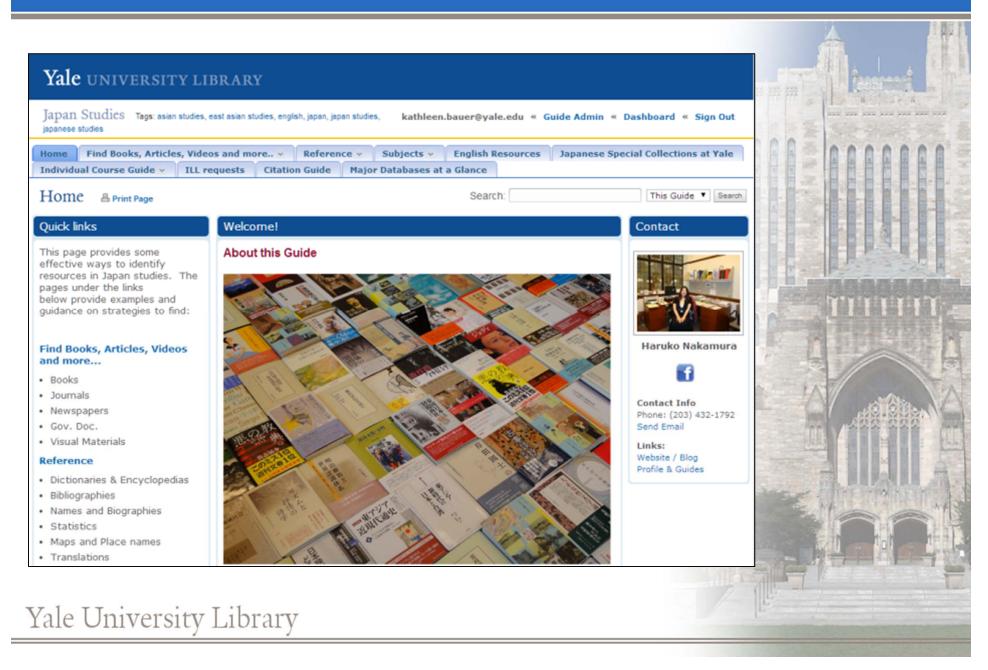
- More consistency, better branding
- Reduce redundancies, clean up what exists
- Raise visibility of services
- Better discovery of content
- Use data to improve user experience



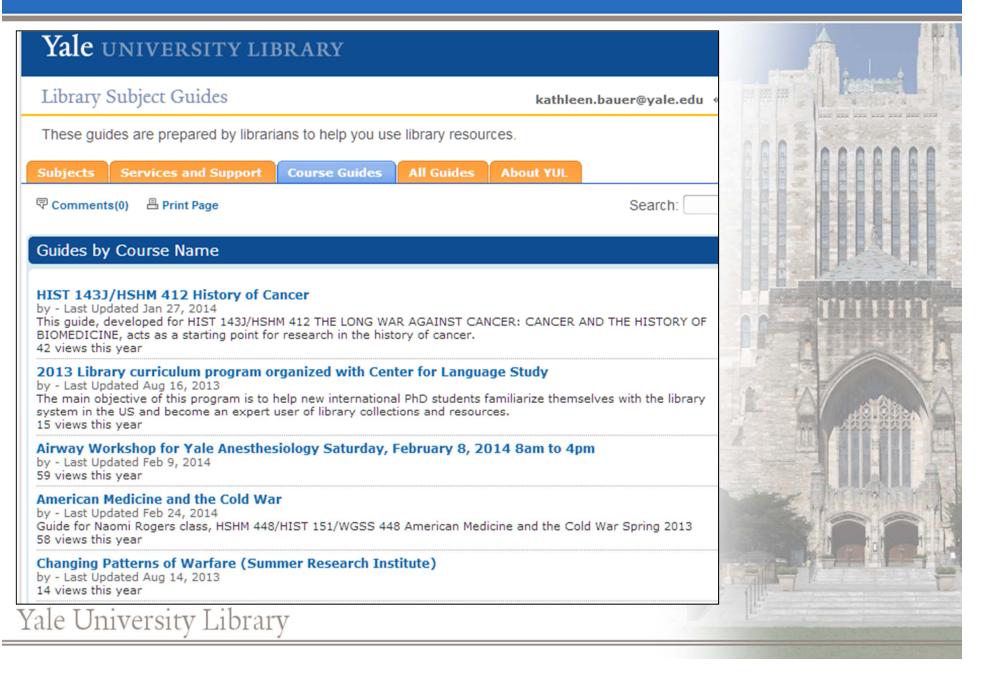
Yale

LibGuides

Yale



Make Content More Visible—LibGuides Phase 2 Yale



Links in ClassesV2 to Course & Subject Guides

Update list of subjects

ClassesV2 Subject	Library List of Subjects
Linguistics	Linguistics
Philosophy	Philosophy
African Studies	African Studies, Languages & Literatures
American Studies	American Studies
East Asian Studies; East Asian Languages and Literatures; Chinese; Japanese; Korean	East Asia Studies, Languages & Literatures
Global Affairs	Global Affairs/International Relations

• Use tagging and Libguides API

- Link to a <u>specific guide</u>
- Link to a set of guides in one subject
- Link to a set of guides in multiple subjects



Yale

Unify Search

• Summon 2.0

Blacklight Integrated Search

- Summon
- Orbis and Morris
- Hydra (digitized content)
- Website

http://hydratest.library.yale.edu/search



Yale

Website Migration to YaleSites



- Arts, MSSA, Divinity, International Programs, Buildings and Places have migrated to YaleSites
- Major content to move: Personal Librarians, Music, Primary Sources



Integration of Web and Digitized Content

Yale

Yale Indian Papers Project

Home » Letter from Lurea Dick to the Superintendent of the Niantic Tribe

Letter from Lurea Dick to the Superintendent of the Niantic Tribe

Respected Sir,

I have taken the liberty to address these few lines to you by way of application to you as superintendent of the Niantic tribe of Indians for certain lands or money arising from the sale thereof.¹ I am a legal heir to the lands or estate of Philip Occuish. I am one of his great grandchildren. My mother's name was Dimiss Occuish who has been dead upwards of thirty years. I have been informed that some portion of said estate is kept for the benefit of remote heirs and John Occuish, a son of Anna Occuish, (my mother's sister) informs me that he has received ten dollars from the estate, and says he is coming down in the course of this season to get his full share. I hope, Sir, from what I have written, you will be enabled to trace out my claim satisfactorily to your mind, and that you will take the proper steps, in relation to what remains of the estate, to preserve my share of the same and forward the amount to me. I must request the favor that you will write me on the subject at your earliest possible convenience. Do not send the money by any one until I order it. Below you will find the names of two persons who testify that they know me to be the heir that I have represented myself to be. Please to direct to me at —Manchester, Calumet Co. Wisconsin Territory, Pequot P.O.

Lurea Dick

Manchester, July 20, 1844

Certification: We, the undersigned, do hereby certify that we do know that the above named Lurea Dick is the great grandchild of the above mentioned Philip Occuish and is therefore a legal heir to the Occuish estate in the Niantic reservation, Connecticut. In testimony where of we have here unto subscribed our names this the twentieth day of July A.D. 1844.

Olive Charles, her mark

Martha Palmer

Post script: Martha Palmer wishes to inform her two sisters and brothers that she and her sister Lucy are alive and well and wishes them to write to her soon. Thomas Commuck wishes to be remembered to Mary Paul and George Waukeet.

Notation: See next page²

Yale University Library

Document Links

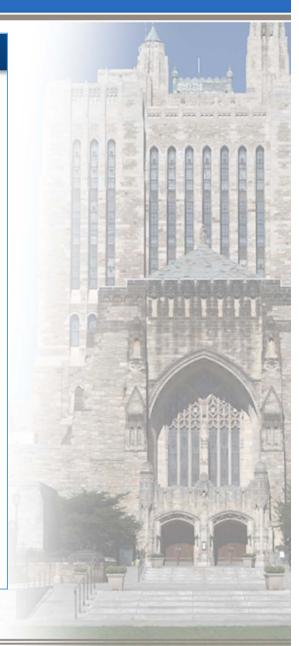
Digital Image Document Details Scholars' Transcription Annotated Transcription

Tribes

Brothertown Niantic, Western

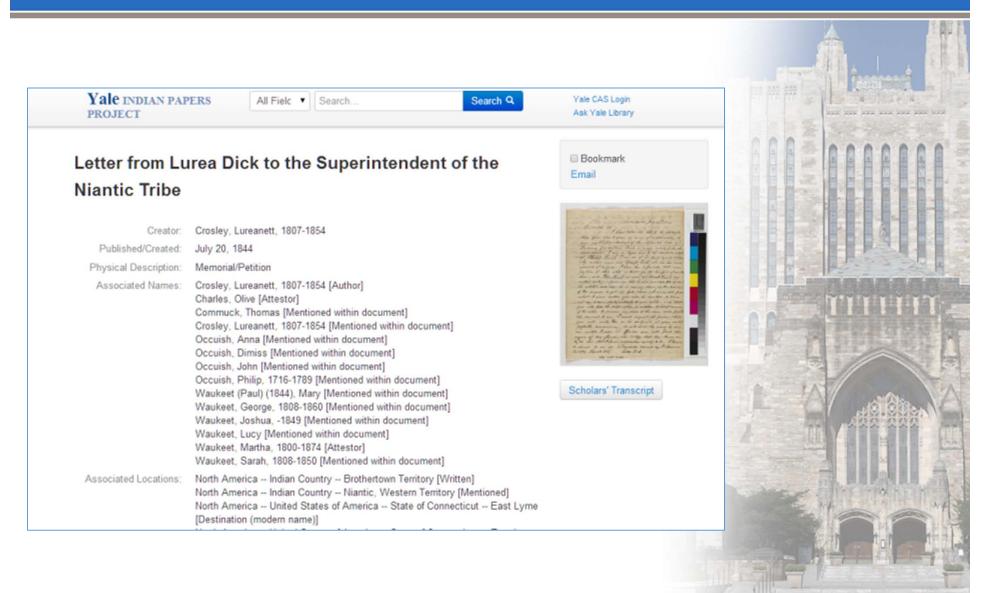
Commentary

Brothertown Removal



Website and Yale Indian Papers





Use Data to Continuously Improve Interfaces

- Focus group discussion of Finding Aids
- Planning usability testing for LibGuides
- Google Universal Analytics

Secondary dimension: Refined Keyword 🔻 Sort Type: Default 💌				
Search Term (?)	Refined Keyword 🕜 💿	Total Unique Searches ? ↓	Results Pageviews / Search ?	
		188,822 % of Total: 100.00% (188,822)	1.45 Site Avg: 1.45 (0.00%)	
. collections	archives	34 (0.03%)	1.50	
. archives	collections	28 (0.03%)	1.64	
. ocn728102534	Paran, Margo.	19 (0.02%)	1.05	
. archives	publications	12 (0.01%)	1.58	
. topic	а	12 (0.01%)	1.50	
. 35	Digital Initiatives	11 (0.01%)	1.27	



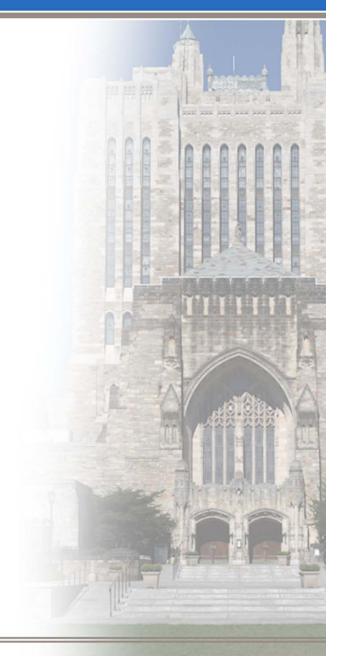
Yale

User Experience



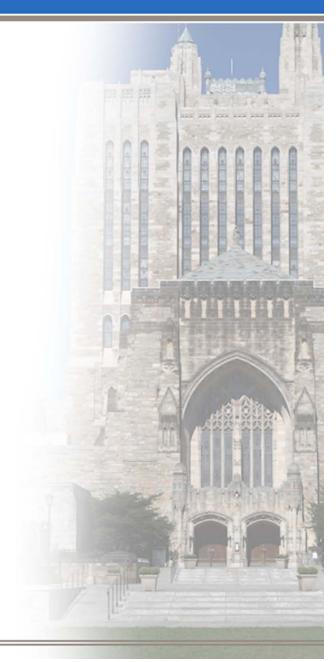
Thank You!

Katie Bauer <u>kathleen.bauer@yale.edu</u> 432-2491



Miscellaneous Projects

- EliScholar
- Identity Management
- Project Management
- Community Participation
- LIT Website









Michael Dula CTO

