

Library IT Annual Report– FY15 Summary

The following are highlights from the separate annual reports for each of the different IT groups. Additional details can be found in the attached reports for each group.

Selected accomplishments from FY15

IT Production Services

Help Desk

- Coordinated Library-wide preparation and follow up efforts related to the CARLI Voyager integrated library system version upgrade;
- Organized and executed the selection and implementation of a new ticketing system (OTRS) used regularly by technology, facilities, cataloging, and several other Library units; and
- Transitioned 187 distribution lists and 83 shared email accounts from the Library's internal mail server (Squirrel Mail) to the campus Exchange email service.

Workstation and Network Support (WNS)

- Completed hardware replacement for 170+ Library faculty, staff and public access workstations;
- Assisted with the design and implementation of the Computing Technology Allocation Program (CTAP), which enables Library faculty and academic professionals to select technologies that best support work responsibilities and research; and
- Coordinated technology installations and upgrades in Library spaces, including Main Library rooms 106 and 100, and ACES Funk Library rooms 206 and 309.

Infrastructure Management and Support (IMS)

- Completed the service and database migration project, a project which inventoried all Library servers and services, appropriately transferred all production servers to the DCL data center, migrated most development servers to the Main Library data center, and closed the Grainger data center;
- Implemented source control, bug tracking and feature requests processes available for all Library development projects; and
- Designed and implemented file-level backup processes for Library servers (replaces shadow copies and enhances bit-level replication for disaster recovery).

Web Team

- Completed the design and launch of an all-new Library gateway in conjunction with Web Team Delta and the Prototyping unit;
- Migrated the current Library content management system (OpenCMS) from an antiquated operating system (Red Hat Linux 4) located the Main Library data center to a supported operating system (Red Hat Linux 6) located in the DCL data center;
- Completed selection and partial implementation of a new Library content management system (WordPress); created mockups and prototypes, and performed usability testing for a new interlibrary loan website in WordPress; and
- Selected and implemented workflow tools for code management, testing, optimization, versioning, and deployment.

Software Development Group

- Completed several software development and implementation projects integral to Library operations and new initiatives, including DOI creation and management for the Research Data Service, graduate assistant applicant database, web-based tracking database for Preservation/Conservation workflows, and a researcher tracking database for use the Illinois Researcher Connection system, among others;
- Assisted with the deployment, customization, and maintenance of several commercial applications, including RBML's Aeon request and workflow management software for special collections, the CONTENTdm digital image collection management system, and the Veridian digital newspaper system; and
- Continued to provide support for several grant-funded research projects, including the Preservation Self-Assessment Program (PSAP), Emblematica, and the HathiTrust Research Center.

Scholarly Communications and Repository Services

- Deployed to production a new version of the Vireo electronic thesis and dissertation deposit system for use by the Graduate College;
- Supported the Research Data Service; helped gather requirements for the Illinois Data Bank (IDB) research data repository; utilized the Library's Medusa system to begin implementing the functionality needed for the IDB;
- Continued improvements to the Medusa Collection Registry digital preservation archive, including content packaging and transfer to Amazon Glacier for disaster recover, content migration from a Library-operated storage system to one managed by NCSA, including replication across the campus Storage Condo and the Campus Cluster, additional preservation tools for curators, such as event tracking, virus scanning, and fixity verification, and the beginning of a public search and browse functionality that could eventually replace CONTENTdm and which will also be used by the IDB; and
- Added a book tracker functionality to Medusa which ingests batch bibliographic records and determines whether the items have been ingested by HathiTrust, Google Books, or the Internet Archive.

Challenges and Gaps

- Onboarding and managing hourly workers (Academic Hourly, student assistants, Extra Help) to fill the growing demand for IT services while retaining high quality of customer service;
- Working with aggressive timelines for project completion, including several server retirements required through vendor and campus initiatives (UIUC domain retirement, end of Microsoft Server 2003 support, etc.);
- Not enough support for sandbox systems; no formal strategy for supporting systems and services along the path from prototype to production to sunset;
- Requirement to support a growing catalog of services with increased uptime and support expectations;
- Intermittent unplanned critical projects requiring reassignment of unit resources to debug and address issues;
- Gap between the needs of Library website users and the current design and functionality of the Library content management system;
- Staff resignations and reassignments also presented a challenge, especially for the Software Development Group.

Key goals and initiatives for FY16

IT-wide Goals

- Develop a set of common position descriptions and a common career progression for those positions that can be applied to all IT professionals in the Library; the primary root goal is to improve recruitment and retention of a skilled and motivated workforce; a secondary root goal is to better align the Library with IT career tracks on campus, such as at Technology Service and the College of Engineering;
- Increase engagement with emerging campus developments related to IT, including continued operational and executive leadership participation with the Data Center Shared Service, and also participation in the CIO's IT Power Plant initiatives; the primary goal being to position Library IT to best take advantage of emerging commodity IT services which emerge from these campus initiatives with a focus being cost savings and improved operational efficiencies for the Library and campus; and
- Continue to improve IT responsiveness to the Library's ongoing and emerging technology needs; this will include deep engagement with Content Access Policy and Technology (CAPT) committee, continuing regular engagement with technology-needy Library units, and the reconstitution of a Library IT Advisory Committee.

IT Production Services

Help Desk

- Grow the Help Desk's role as liaisons to non-technical Library faculty and staff, fostering relationships on shared Library knowledge and experience;
- Explore functional options for improved software license management and implement a viable solution; and
- Coordinate evaluation of effectiveness and value for emerging technologies within the Library, such as data analysis and visualization tools.

Workstation and Network Support (WNS)

- Provide technical consultation and expertise for the implementation and support of equipment in the Grainger Library Information Design and Data Center (GLID2);
- Identify and implement end-point management service (SCCM) improvements to streamline the process of software deployment and updates; and
- Evaluate and update technology equipment in Library public, learning, and conference spaces, including improvements to video conferencing, display, and scanning technologies.

Infrastructure Management and Support (IMS)

- Service lifecycle management- work closely with developers and service owners to develop comprehensive standard operating procedures and required milestones for the full software and application life cycle, from provisioning a demonstration service to rolling the service to production and through sunset of that service;
- Improve innovation support by leveraging advancements in virtualization software and implementing automation and continuous integration for deploying and managing virtual machines; IMS will coordinate the creation and implementation of a flexible

technology environment focused on providing systems and services for trial and experimentation; and

- Coordinate work between campus and Library units to implement credit card payment gateways for ILL/Document Delivery, Archives, RBML, DCC, public printing, and other services.

Web Team

- Develop and refine a user-centric information architecture for the new WordPress CMS and linked resources;
- Transition Library units from the OpenCMS to the new WordPress content management system, beginning in Fall 2015 and continuing through 2016 with an estimated 50% of units transitioned before June 30, 2016; and
- Complete the design and implementation of the ELK¹ stack for collecting and analyzing web logs; also test implementation of other web analytics tools to better meet Library assessment needs related to web content.

Software Development Group

- Continue development of ongoing projects, including the BibLeaves bibliographic database as a possible replacement system for public RefWorks collections, Illinois Research Connection support, and the Preservation/Conservation workflow tracking database; and
- Continue to be responsive to faculty and staff requests for technical programming support for special projects and research.

Scholarly Communications and Repository Services

- Release the first production version of the Illinois Data Bank for research data management;
- Expand the capabilities of the Medusa system, including the collections registry, preservation archive, and public search and discovery system, including self-deposit, persistent identifiers, such as DOIs, and better management features; and
- Continue to maintain and enhance the IDEALS institutional repository and the Vireo ETD deposit systems.

Library IT Staff

Unless otherwise noted staff are full-time academic professionals who served in the shown position for the entire fiscal year. For details refer to the individual unit reports.

- Tom Habing (Interim Director of Library Technology)
 - Jim Dohle (Director of Library IT Production Services)
 - Megean Osuchowski (Help Desk Coordinator)
 - Helen Zhou (50%) (Electronic Access Specialist)
 - Drew Kenton (20%) (IT Support Associate) (Civil Service)
 - Lillian Helms (Help Desk Support Specialist) (started: September, 2014)
 - Thais Menezes Zimbres (50%) (Help Desk Support Specialist) (worked less than two months)

¹ <https://www.elastic.co/webinars/introduction-elk-stack>

- Lee Galaway (Manager of Workstation Network Support)
 - Scott Clemens (Research Programmer)
 - Eric Mosher (Research Programmer)
 - Rhonda Jurinak (Technology-Enhanced Spaces Support Specialist)
 - Drew Kenton (50%) (IT Support Associate) (Civil Service)
 - Jason Harvey (Academic Hourly) (left: August, 2014)
 - Jill Anne Nakayama (Academic Hourly) (started: September, 2014)
 - Jason Strutz (Manager of Infrastructure Management and Support)
 - Jon Gorman (Application Support Specialist)
 - Chuck Kibler (Network Engineer)
 - Tim Vruwink (Research Programmer)
 - Unfilled (Information System Analyst)
 - Unfilled (Data Analyst)
 - Robert Slater (Technical Architect for Library Web Content)
 - Ja Eun (Jemma) Ku (Applications and Systems Support Specialist)
 - William Weathers (Web Developer and User Interface Specialist)
 - Helen Zhou (50%) (Electronic Access Specialist)
 - Tom Habing (Manager of Software Development Group)
 - Colleen Fallaw (Research Programmer) (transferred: April, 2015)
 - Alex Dolski (Research Programmer) (transferred: May, 2015)
 - Janina Sarol (Research Programmer)
 - Jason Heldreth (Research Programmer)
 - Jon Gorman (50%)(Application Support Specialist) (moved to 100% IMS: May, 2105)
 - Kirk Hess (Digital Humanities Specialist) (resigned: January, 2015)
 - Robert Manaster (Research Programmer)
 - Bill Ingram (Manager of Scholarly Communications and Repository Services)
 - Howard Ding (Research Programmer)
 - Seth Robbins (Research Programmer)
 - Colleen Fallaw (Research Programmer) (started: April, 2015)
 - Alex Doski (Research Programmer) (started: May, 2015)

Library IT Help Desk Unit Annual Report

Date: 09/11/15

Manager: Megean Osuchowski

I Unit Narrative

1. Major activities and accomplishments of the unit in FY15 (July 1, 2014 to June 30, 2015):
 - Transitioned distribution lists and shared email accounts (Squirrel Mail) to Exchange accounts
 - Coordination and migration of queues and tickets to a new instance of OTRS ticketing system
 - Processed laptops for the Computer Technology Allocation Program and laptop assessment
 - Held GA training sessions for IAS and UGL in Fall 2015
 - Implemented a training plan and checklist for IT students and academic hourlies in coordination with WNS
 - Preparation and implementation of upgrade to Voyager 9.1.1 in June 2015
 - Assisted in training and documentation in using the AITS system status application for maintenance and outages

2. Major challenges faced by the unit during FY15:
 - Staffing changes: Training of new Help Desk coordinator (Megean Osuchowski), the resignation of Thais Menezes Zimbres, and training of new academic hourly Lillian Helms.
 - Working with an aggressive timeframe for the migration and retirement of Library systems and servers in Fall 2014.

3. Significant changes to unit operations, personnel, service profile, or service programs:
 - Staffing changes and dependence on temporary staff for a critical role in the unit.
 - Taken on new responsibilities in managing all Library email accounts (shared, aliases, listservs).
 - Taken on more active role in OTRS administration.

4. Articulate (with appropriate examples) the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement:
 - Conducted iPad pilot program for reference services
 - Organized feedback for the Hoot reservation system pilot for course reserves
 - Improved process of setting up new employees in library systems as well as creating a guide for employees new to the library and campus
 - Developed IT training and revised documentation for incoming graduate assistants

5. Progress made on Unit Annual Goals for FY15 (as enumerated in the FY14 Unit Annual Report):
- *Serve as liaisons to non-technical library faculty and staff, building relationships on shared Library knowledge and experience.*
 - Continue to serve as liaisons to non-technical library faculty and staff by participating in Library committees and engaging faculty and staff with tech-dependent projects to build relationships on shared Library knowledge and experience.
 - Coordinated with WNS and Facilities to ease the transition of incoming employees into new systems and university accounts
 - *Continue iterative development of IT unit and Help Desk web presence.*
 - Expanded documentation for Exchange email services with the migration from Cliff to Exchange
 - Revised documentation to clarify reporting procedures for after hours staff
 - Added resources for increased computer security awareness
 - *Continue Lync user education and support, especially in video conferencing, which has been identified as an area of growth in the next year.*
 - Provided video conferencing and troubleshooting online documentation
 - Participated in Lync video conferencing and video call training
 - *Coordinate evaluation of effectiveness and satisfaction for emerging technologies within the Library such as conference room technology and mobile devices for roving reference.*
 - Collected surveys on use and satisfaction of conference room technologies.
 - Implemented iPad pilot for reference units.
 - *Participate in the development and implementation of mobile computing policies and programs within the Library, including the technology allocation program for Library faculty and staff.*
 - Implemented CTAP program with WNS and established an effective workflow.
 - *Collaborate with CARLI and ExLibris to solve reoccurring Voyager issues.*
 - Continued to document and share Voyager bugs with CARLI. The documented issues have been much less frequent this year.
 - Worked with CARLI, WNS, IMS, Voyager SysAdmin group, and library units to upgrade to Voyager 9.1.1 in June 2015
 - *Coordinate development and implementation of a software asset management (SAM) system for use in Library IT.*
 - Investigated potential SAM systems and requested quotes
 - Project sidelined due to migration projects and cost of SAM services
 - *Assist with the selection and implementation of a new trouble ticket system for use by various groups in the Library (IT, CAM, Facilities, etc.).*
 - Coordinated the ticketing system migration project including the setup of demo installations of OTRS and Request Tracker, soliciting feedback, and migrating queues and open tickets to new instance of OTRS

6. Articulate Unit Annual Goals for FY16:
- Serve as liaisons to non-technical Library faculty and staff, building relationships on shared Library knowledge and experience.
 - Continue iterative development of IT unit and Help Desk web presence.
 - Continue Lync/Skype for Business user education and support, and add RightFax support.
 - Coordinate evaluation of effectiveness and satisfaction for emerging technologies within the Library, such as data analysis and visualization tools
 - Collaborate with CARLI and ExLibris to resolve reoccurring Voyager issues.
 - Explore sustainable options for OTRS development.
 - Explore viable options for improved software license management.
 - Improve IT training for incoming GAs.

II Statistical Profile

1. Hardware and Software Support Profile

- Lync support
 - 547 Lync accounts supported
 - 9 Conference phones
 - 6 Private Lines
 - 84 Resource accounts
 - 448 Faculty/staff accounts
- Loanable technology inventory overview
 - 492 equipment loans processed in FY15
 - Loaner inventory
 - 1 Blackberry
 - 25 Laptops (16 PCs & 9 Macs)
 - 5 iPads
 - 1 Lync speakerphone
 - 2 Microphones
 - 9 Headset microphones
 - 5 Projectors
 - 1 Clicker set of 30
 - 2 Training headphones
 - 3 External CD/DVD burners
 - 3 Video cameras
 - 2 Voice recorder kits
 - 3 Webcams

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY15.

- Megean Osuchowski – Help Desk Coordinator
 - 1.0 FTE (7-1-14 to 6-30-15)
 - Helen Zhou – Electronic Access Specialist
 - Academic Professional
 - 0.5 FTE (7-1-14 to 6-30-16)
 - Drew Kenton – IT Support Associate
 - Civil Service
 - 0.2 FTE (7-2-14 to 6-30-15)
 - Lillian Helms
 - Help Desk Support Specialist
 - Academic Hourly
 - 1.0 FTE (9-14 to 6-30-15)
 - Thais Menezes Zimbres
 - Help Desk Support Specialist
 - 0.5 FTE (7-1-14 to 8-14)
- Provide overview of physical working space for unit:
 - Help Desk space includes 4 desks, a public workstation, a workstation configured to an off-campus network, and various storage resources at the west entrance to the Library IT offices in 424.
 - Specify the amount of the unit’s FY15 Student Assistant wage budget and Student Assistant FTE.
 - The Help Desk did not have a Student Assistant wage budget for FY13. Student Assistants were shared with WNS and paid with printing revenue.

3. User Services

- IT support requests (OTRS tickets)
 - Total tickets that were resolved or routed by the Help Desk: 3131
 - Total number of tickets requesting Lync support: 167
 - Voyager account creation requests: 124
 - Processed 1574 public printing refunds.
 - Processed 369 new hire or job ended permission-related requests.
 - CTAP requests: 33

4. Other statistics (optional)

Migration statistics

- Migrated 83 shared email accounts and 187 distribution lists

New web documentation created:

- Computer security tips: <http://www.library.illinois.edu/it/helpdesk/security.html>
- Exchange email documentation: <http://www.library.illinois.edu/it/helpdesk/exchange/index.html>
- Audio/video dongle documentation:
<http://www.library.illinois.edu/it/helpdesk/howto/dongles.html>
- System information for new employees:
<http://www.library.illinois.edu/it/helpdesk/howto/newemployees.html>

Library IT Workstation and Network Support (WNS) Annual Report

Date: September 4, 2015

Manager: Lee Galaway

I Unit Narrative

1. Major activities and accomplishments of the unit in FY15 (July 1, 2014 to June 30, 2015):
 - Replaced approximately 170 Library faculty, staff and public access workstations as part of our normal hardware refresh.
 - Replaced approximately 200 LCD monitors as part of our normal hardware refresh.
 - Participated in the startup of Library ITs new Computing Technology Allocation Program (CTAP)
 - Worked with Help Desk and the Director of IT Production Services to develop strategies and processes for the new program
 - Researched and recommended hardware standards
 - Purchased and configured new products for our CTAP demo pool
 - Met with CTAP clientele to determine what hardware best fits their needs
 - Successfully filled 27 CTAP requests
 - Worked with the Director of IT Production Services, Media Commons and Library Facilities to identify and install new technology for Main Library Room 106
 - Three 80" LCD displays with audio and video switching equipment
 - Installed a new 65" LCD monitor in SSHEL South for group study purposes
 - Installed a new 65" LCD monitor and staff PC in ACES conference room 206
 - Installed a new 55" LCD monitor in ACES group study room 309
 - Worked with other Library IT staff to implement and upgrade to the OTRS ticketing system
 - Worked with Library Facilities to move the University Archives to Room 146 Main Library
2. Major challenges faced by the unit during FY15:
 - Balancing daily trouble tickets with project work.
 - Leveraging hourly workers to fill growing demand for unit services
 - Training new staff and students while maintaining a high level of service.
 - Average work week for our student staff has shrunk to less than ten hours per week, necessitating the hiring and training of more staff to cover the work load.

3. Identify significant changes to unit operations, personnel, service profile, or service programs:
 - Academic Hourly employee turnover:
 - Bryan Choi left WNS in August 2014.
 - Jason Harvey transitioned to a GA position with Grainger, but continues to fill in hours as needed with WNS.
 - Jill Anne Nakayama joined WNS in September 2014 and left in August 2015 to take a permanent position with Math IT.
 - Student Hourly employee turnover:
 - Additions
 - Nick Kenealy (August 2014)
 - Jake McCombie (September 2014)
 - Susan Zhao (September 2014)
 - Malcolm Range (February 2015)
 - Luke Spalding (February 2015)
 - Dennise Arres (February 2015)
 - Anaga Vijaykumar (February 2015)
 - Departures
 - Elzabad Kennedy (March 2015)
 - Andrew Hanselman (May 2015)
 - Ryan Haskell-Glatz (May 2015)

4. Articulate (with appropriate examples) the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement;
 - A fundamental responsibility of WNS is the support of the entire workstation and network infrastructure that is required by nearly every Library function.

5. Review progress made on Unit Annual Goals for FY15 (as enumerated in the FY14 Unit Annual Report);
 - Continue hardware (workstation and laptop) refresh cycle and plan to normalize amount of equipment refreshed annually
 - *Substantially complete for FY14 – ongoing progress.*
 - Participate in the development and implementation of mobile computing policies and programs within the Library, including the technology allocation program for Library faculty and staff.
 - *Completed*
 - Evaluate candidate trouble ticket systems and assist in the deployment and support of a new ticketing system for use by various groups in the Library (IT, CAM, Facilities, etc.)
 - *Completed*
 - Test and implement campus-sponsored mobile device management solution (Airwatch)
 - *Completed*

- Investigate and deploy campus tools for network address management (IPAM)
 - *On hold – Programming clock cycles needed to proceed.*
- 6. Articulate Unit Annual Goals for FY16:
 - Provide technical consultation and expertise for the implementation and support of equipment in the Grainger Library Information Design and Data Center (GLID2);
 - Hardware refresh for Technical Services (CAM)
 - Develop task sequences for Unit specific configuration
 - Install hardware
 - Identify technology needs and update equipment in Grainger Commons and conference rooms 329 and 335
 - Large format displays (possibly 4k LEDs)
 - Audio and video switching
 - Evaluate and update equipment as needed in Library public spaces, instructional spaces and conference rooms
 - Large format scanning for patron access
 - Identify and implement SCCM improvements for software deployment
 - Develop task sequences and add software titles to Software Center
 - Monitor software releases and deploy updates as needed

II Statistical Profile

1. Hardware and Software Support Profile

- Hardware
 - 310 public access desktop PCs
 - 44 circulation desk PCs
 - 37 public access printers
 - 552 faculty/staff desktop units (PC and Mac)
 - 120 networked staff printers (laser, receipt and MFP)
 - Thousands of network ports
 - 33 network subnets maintained
- Software
 - Windows 7, Windows 8.1, Mac OSX (10.10)
 - Adobe Acrobat Pro, Creative Suite applications
 - CARLI Voyager 7.2.5 (Acquisitions, Catalog, and Circulation)
 - Internet Explorer, Google Chrome, Mozilla Firefox
 - Microsoft Forefront Virus Protection
 - Microsoft Lync 2013
 - Microsoft Office Professional 2013
 - Notepad++
 - OCLC Connexion
 - Windows Media Player, VLC media player

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY15.

- Lee Galaway – Manager Workstation Network Support
 - Academic Professional
 - 1.0 fte
 - 7-1-14 to 6-30-15
 - Scott Clemens – Research Programmer
 - Academic Professional
 - 1.0 fte
 - 7-1-14 to 6-30-15
 - Eric Mosher – Research Programmer
 - Academic Professional
 - 1.0 fte
 - 7-1-14 to 6-30-15
 - Rhonda Jurinak – Technology-Enhanced Spaces Support Specialist
 - Academic Professional
 - 1.0 fte
 - 7-1-14 to 6-30-15
 - Drew Kenton – IT Help Desk Specialist
 - Civil Service
 - 0.5 fte
 - 7-1-14 to 6-30-15
 - Jason Harvey – Academic Hourly
 - Academic Hourly
 - 1.0 fte
 - 7-1-14 to 8-15-14
 - Jill Anne Nakayama – Academic Hourly
 - Academic Hourly
 - 1.0 fte
 - 9-1-14 to 6-30-15
- Provide overview of physical working space for unit
 - Workstation Network Support personnel occupy approximately 387 square feet of office space in Room 424 of the Main Library. Additionally, 315 square feet in Room 424a, 135 square feet in Room 438 and 287 square feet in Room 19c are used for hardware storage and maintenance.
 - Specify the amount of the unit’s FY15 Student Assistant wage budget and Student Assistant FTE.
 - Elzabad Kennedy (7-1-14 to 3-15-15)
 - Jackson Deremiah (7-1-14 to 6-30-15)
 - Ryan Haskell-Glatz (7-1-14 to 5-9-15)
 - Andrew Hanselman (7-1-14 to 5-9-15)
 - Colin Althaus (7-1-14 to 6-30-15)
 - Nick Kenealy (8-31-14 to 6-30-15)
 - Jake McCombie (9-28-14 to 6-30-15)
 - Susan Zhao (9-28-14 to 6-30-15)
 - Malcolm Range (2-1-15 to 6-30-15)
 - Luke Spalding (2-1-15 to 6-30-15)

- Dennise Arres (2-1-15 to 6-30-15)
- Anaga Vijaykumar (2-1-15 to 6-30-15)

3. User Services & Assistance Profile

- IT support requests (OTRS tickets)
 - Nearly 2000 work requests were logged for WNS in FY15.
 - These work requests varied in scope from basic hardware/software trouble tickets to requests for new equipment and services.
- Classroom & instructional space technology support
 - Main Library Room 314
 - 15 student Desktop PCs
 - 1 Instructor Desktop PC
 - 1 overhead projection unit
 - UGL Room 291
 - 40 student Desktop PCs
 - 1 Instructor Desktop PC
 - 1 overhead projection unit
 - Integrated sound system
 - ACES Room 509
 - 36 student Desktop PCs
 - 1 Instructor Desktop PC
 - 1 overhead projection unit
 - Integrated sound system
- Public service point support
 - 44 circulation workstations throughout the various unit libraries
- Public printing
 - 37 public access printers
 - Associated print release stations
- Technology programs support
 - Scholarly Commons
 - 16 public access workstations (PC and Mac)
 - 4 faculty/staff workstations
 - 2 laptops
 - Media commons
 - 6 public access workstations (Mac)
 - 2 faculty/staff workstations
- Other public facing service support and training
 - Rhonda Jurinak hosted dozens of training sessions on the technology offered in Library conference rooms.

Library IT Infrastructure Management and Support (IMS) Annual Report

Date: 08/26/2015

Manager: W. Jason Strutz

I Unit Narrative

1. Major activities and accomplishments of the unit in FY15 (July 1, 2014 to June 30, 2015):
 - All production services run out of DCL data center (except DHCP)
 - Retired all RHEL 4 and earlier servers
 - Retired all Windows 2003 and earlier servers
 - Retired Squirrel Mail
 - Removed all server equipment from Grainger 53
 - Separated Gateway from other Library websites
 - Implemented source control for all Library development projects
 - Implemented bug tracking and feature request software for all Library services
 - Upgraded OTRS ticketing system
 - Implemented file-level backup to replace volume shadow copies and enhance bit-level replication for disaster recovery
 - Implemented staging/production environments for all production services
 - Implemented 2 factor authentication for select production services, including upgrading to a wildcard certificate for EZProxy
 - Began support for Omeka and WordPress
 - Partnered with College of Engineering for business and facilities applications, such as Banner account charts and key inventory

2. Major challenges faced by the unit during FY15:
 - Strict deadlines for retiring Windows Server 2003 and UIUC Active Directory – based services
 - Achieving consensus on technology and processes for software development and long-term code maintenance
 - Handling recurring procurement issues
 - Supporting a growing catalog of services with increased uptime and support expectations

3. Significant changes to unit operations, personnel, service profile, or service programs:
 - Increased collaboration with NCSA for repository storage and research data programs
 - Greatly improved support for services that formerly ran out of the Grainger server room, including Easy Search

4. Articulate the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement:
 - Support of Oak Street and Stacks transfer applications and work flows;
 - Support of campus Exchange email system shared inboxes and distribution lists;
 - Collaboration with Engineering IT Shared Services for administrative applications, including vacation/sick leave reporting, Banner account charts, and key inventory;
 - Improved support for collection and content management systems, including CONTENTdm, Omeka, Guide on the Side, and WordPress;
 - Service on the Library Assessment Committee;
 - Participation in campus-wide shared service initiatives for data center consolidation and server virtualization;

5. Articulate Unit Annual Goals for FY16:
 - Increase adoption of procedures and best practices for application and software life cycle management
 - Improve business continuity and disaster recovery procedures, including
 - Load balance critical web services including the reverse proxy, Easy Search, and the Library Gateway.
 - Create custom 404 messages for all production services
 - Provide training to IT and Library faculty/staff on topics such as the VPN/remote gateway, encryption, hot topics in IT, source control, etc.
 - Implement a centralized web log and analytics tool to replace weblogstats and better manage our web and application logs.
 - Ensure that all production services are fully documented, both for end users and internally for IT.
 - Migrate the production virtual infrastructure to a campus-wide virtualization shared service
 - Retire NetInfo for DHCP, in favor of IPAM
 - Improve innovation support by leveraging advancements in virtualization software, and implementing automation and continuous integration for deploying and managing virtual machines
 - Audit database and web applications for security, data classification, and run-time errors due to upgraded software versions
 - Bring Windows configuration management up to the standards set by current Linux configuration management tools, such as Fabric and Puppet
 - Implement 2 factor authentication on all servers
 - Enable forced https on all web applications
 - Goals for Library-specific application support
 - Remove all “emailers” from website so that we decrease the amount of spam seen in many Library inboxes
 - Investigate options for improving functions served by go.php proxy page with better integrated out-of-the-box proxy options

- Determine specific application platforms, such as Drupal, Omeka, DSpace, SharePoint, and others which offer opportunities for innovation, and become application support specialists in those platforms
- Implement credit card payment gateways for ILL/Document Delivery, Archives, RBML, public printing, and other services

II Statistical Profile

1. Hardware and Software Support Profile

(describe the hardware, software, and application support provided)

- **Server and service counts**
 - 22 physical servers (includes all VMWare ESX hosts), down from 31 last year
 - 135 virtual servers (includes development, test, and sandbox/innovation servers)
 - 480 TB usable storage
 - Tier 1 – Compellent SAN (Raw/Usable TB): 200/182 for production, 150/132 for DR/sandbox
 - Tier 2 – Equallogic storage (Raw/Usable TB): 216/153
 - Disk Arrays – PowerVault for Crash Plan backup (Raw/Usable TB): 16/13
 - 47 public-facing services
 - Some important patron-facing IMS supported services include:
 - The Library Gateway and all Library websites
 - Easy Search
 - Online Journals and Databases, the Journal and Article Locator, and the A-to-Z list
 - Interlibrary Loan and Document Delivery
 - Electronic Reserves including streaming media
 - The Voyager catalog
 - Public Printing
 - Wide and varied digital collections, including the Illinois Digital Newspaper Project, Illinois Harvest, Brittle Books, Kolb-Proust, and many smaller, specialized collections
 - Ask a Librarian and the Question Board
 - 27 services used primarily by Library faculty and staff
 - 33 services internal to Library IT in support of those other services
 - 273 databases (includes development, test, and deprecated databases)
 - 250 distinct websites / web applications
- **Ongoing large scale projects**
 - Database and web application audit
 - Windows configuration management
 - Printing shared service
 - Virtualization shared service

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY14.
 - W. Jason Strutz – Manager Infrastructure Management and Support
 - Academic Professional
 - 1.0 FTE (7-1-13 to 6-30-14)
 - Jon Gorman – Application Support Specialist
 - Academic Professional
 - 1.0 FTE (7-1-13 to 6-30-14)
 - Chuck Kibler – Network Engineer
 - Academic Professional
 - 1.0 FTE (7-1-13 to 6-30-14)
 - Tim Vruwink – Research Programmer
 - Academic Professional
 - 1.0 FTE (7-1-13 to 6-30-14)
 - Unfilled – Information Systems Analyst
 - Academic Professional
 - 1.0 FTE
 - Unfilled – Data Analyst
 - Academic Professional
 - 1.0 FTE
- Provide overview of physical working space for unit
 - Infrastructure Management and Support personnel occupy approximately 400 square feet of office space in Room 424 of the Main Library; IMS maintains server and storage hardware in Main Library Room 416, and co-located space in the DCL data center;
- Specify the amount of the unit’s FY15 Student Assistant wage budget and Student Assistant FTE.
 - IMS did not have a Student Assistant wage budget for FY15, and no Student Assistants were employed.

3. User Services & Assistance Profile

- IT support requests (OTRS tickets);
 - 527 successfully closed tickets
 - 6 unsuccessfully resolved tickets

Library IT Web Team Annual Report

Date: September 14, 2015

Manager: Robert Slater

I Unit Narrative

1. Major activities and accomplishments of the unit in FY15 (July 1, 2014 to June 30, 2015):
 - Modification of OpenCMS to accommodate changes to campus AD/LDAP configuration
 - Migration of OpenCms to new servers in DCL, which included significant modifications to openCMS to accommodate the move from RHEL 4 to RHEL 6.
 - Development and deployment of BlueCard system (<http://quest.library.illinois.edu/BlueCard>) for Central Access Services, the first Web Team project undertaken using Microsoft Visual Studio, including the use of Entity Framework 6 employing the Code First approach.
 - Selection and implementation of workflow management tools for code management, testing, optimization, versioning, and deployment for Gateway and WordPress content.
 - Implementation of a redirect server for SFX, to accommodate migration of SFX from locally hosted to being hosted with CARLI. This was the first production service the library has implemented using nginx.
 - In conjunction with IMS, transitioned library production web servers from the Main Library VM to DCL (directly assisting with zola and http/https cooper sites)
 - Implementation of AITS system status application (<https://status.uillinois.edu>), including working with AITS to make modifications that allowed the Web Team to integrate posts/updates to that system on the Library Gateway and Library IT Help Desk System Status page (<http://www.library.illinois.edu/it/helpdesk/status.html>)
 - Developed and deployed workarounds that allowed moving/hosting the only actively used Library MT Blogs to PIE, allowing for complete retirement of the Library instance of Moveable Type.
 - Content Migration preparation cleanup on the www directory of cooper.library.illinois.edu, removing inaccessible (by proxy rules or otherwise) content as well as content on a unit/directory level that no longer had identifiable owners or that had not been updated within the last three years (with the consent of the identified owner).
 - Investigation of and partial implementation of a solution for (a) sustainable library hosted instance(s) of Omeka.
 - Mockups, Prototyping, and Usability Testing for a new Interlibrary Loan web site
2. Major challenges faced by the unit during FY15:
 - Shifts in unit priorities and assignments as part of participation in the Web Team

Delta project to implement a new Library Gateway and Library Web Content Management System

- Intermittent unplanned critical projects (production web services experiencing unexpected downtime/degraded performance) requiring reassignment of unit resources to debug and fix
3. Identify significant changes to unit operations, personnel, service profile, or service programs:
- Hiring of William Weathers as the Web Team's new Web Developer and User Interface Specialist (effectively transitioning him from his temporary reassignment to the Web Team as Visiting Faculty to a permanent member of the team as an Academic Professional)
4. Articulate (with appropriate examples) the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement;
- A core operating principle of the Library IT Web Group is the support and coordination of web content managed by Library Faculty and Staff. Specific responsibilities include:
 - Create or modify existing web templates and elements for use by library faculty and staff in various web management systems (including the openCMS Content Management System, WordPress for PIE and the Library CMS, and several third-party solutions, both run locally and hosted, e.g.: Primo, SFX, Voyager, vuFind, LibGuides, etc.);
 - Train, support, and troubleshoot problems in the use of the library web content platforms for all library faculty and staff, including the integration of third party code/resource into library managed web content (flickr, twitter, etc.);
 - Provide iterative improvement for and maintain the library gateway (www.library.illinois.edu)
 - The Web Team's major contributions to library-wide programs this year focused mostly on information services, including:
 - The development and deployment of a more usable and accessible Library Gateway
 - The development and deployment of a calendar-based tool for displaying library hours, including at-a-glance currently open/closed information.
 - The Web Team contributed to the library's assessment efforts by implementing outbound link-tracking on the Library Gateway and a transition to Google Custom Search for site search, enabling the Library to have a more complete picture of how our users are using the gateway to find library resources (a great deal of this data was previously not available, and what was available was difficult to pull together because the gateway links to multiple library web servers, as well as third-party services that make limited/no web access log/data directly available to the library)

- The Web Team contributed to staff training and development by developing both internally focused and library staff focused documentation related to the new AITS Systems Status application and Library Hours (leveraging Google Calendar) project.
5. Review progress made on Unit Annual Goals for FY15 (as enumerated in the FY14 Unit Annual Report);
- Completed the design and launch of a new library gateway in conjunction with Web Team Delta and the Prototyping Unit. Although the prototyping unit contributed a large amount of the initial design concept, the Web Team contributed significant modifications over many iterations to accommodate the latest standards with regards to accessibility, usability, design, and the user interface (see: <http://gateway-dev.library.illinois.edu/20140801/> for comparisons between the current gateway and the initial functional prototype based on the Prototyping units early design work).
 - Completed the selection of, and partial implementation of, a new library CMS (WordPress) to replace openCMS (as of August 2015, implementation of the new WordPress CMS stack was completed). Web Team Delta decided not to implement automated data migration from openCMS to WordPress, instead choosing to require content managers to review content for usefulness, and then manually migrate selected content into the new system as part of that process.
 - Completed transitioning of library unit hours management/display to using a machine-readable calendar format for library hours (via individual unit calendars in Google Calendar), allowing users to leverage this new data format for enhanced display of hours information on library unit pages (“Show only open libraries” and at-a-glance open/closed “badges” etc.). This was a joint project undertaken with the Prototyping Unit, in which they developed the JAVA API for retrieving data from Google Calendar, while the Web Team implemented the client side code for display of and interaction with this data.
 - Some progress was made towards implementing a new web log and analytics approach for all library managed web content. The Web Team worked with other Library IT units to select and new analytics tool (ELK), and IMS implemented a dev server for testing. Log shipping was configured for zola (www.library.illinois.edu reverse proxy) to the ELK server. Significant work remains to be completed on this project.
 - Minimal progress was made on the planned project to work with Library IMS to transition critical Library web services into a high availability/global load balancing environment—most notably the development of a dev/stage/production stack for zola (www.library.illinois.edu reverse proxy), however, HA/load balancing has not yet been implemented using the stage server yet. This was partially due to shifting internal priorities within both groups, as well as a decision to defer moving forward on this project while campus level discussions are held and decisions are made regarding the IT Power Plant.

6. Articulate Unit Annual Goals for FY16:

- Development and Deployment of a production version of WordPress themes, plugins, templates, and custom content types for hosting Library Unit Content
- Transitioning the “early adopter” library units to hosting and managing their unit web content in the new WordPress Library CMS
- Development of WordPress training materials for Library Staff (including selection of existing generic WordPress tutorials and training materials, as well as locally developing documentation where needed to support local modifications/locally developed custom content types, templates, and plugins)
- Opening up the WordPress CMS to all Units to begin the process of content migration from openCMS to WordPress in earnest, with a goal of assisting more than 50% of library units/sub-sites in transitioning to WordPress by the end of the fiscal year (June 30, 2016).
- Completion of the configuration of ELK for analyzing library Web Logs, as well as the possible implementation of additional web analytics tools to better meet the Library’s assessment needs with regards to web content
- Implement High Availability for zola
- Implement an instance of Omeka Multi-site and transition existing Library Single-site Omeka content to the multi-site instance

II Statistical Profile

1. Hardware and Software Support Profile

(describe the hardware, software, and application support provided)

- Production systems which comprise the Library web presence (in order of amount of content/prominence- this list is certainly not exhaustive but covers 95% of the servers that house our Library IT managed web content)
 - Zola stack (dev, stage, and production): Apache server configured to run as a reverse proxy server to facilitate serving/branding content from a variety of library web servers all from the same host name, <http://www.library.illinois.edu> (stage version will become part of the High Availability zola project this year)
 - cms.library.illinois.edu (only accessible from a campus IP address): current Library Content Management System (OpenCMS 7.0.4, Apache Tomcat) – contains the majority of static (non-application) library web content on systems maintained by library IT.
 - WordPress CMS stacks (wordpress, wordpress-stage, wordpress-dev and wordpress-sidecar, wordpress-sidecar-stage) for hosting new Library CMS content (non-sidecar stack) as well as specialty WordPress projects that don’t meet the requirements or otherwise can’t be hosted in the main WordPress CMS (sidecar)
 - apache-ns.library.illinois.edu – an Apache web server that houses unit library non-CMS web content, mostly content written in PHP (and some PERL), that doesn’t require https or auth/auth restrictions to accessing the content.
 - apacheprod.library.illinois.edu (<https://www-s2.library.illinois.edu>) – an apache web server for hosting secure (https) content, mostly composed of content that requires access restrictions

- Number of publicly-accessible web pages (files of types .htm*,.doc*,.rtf,.php,.pl) and hit counts/analytics information
 - Content in the cms.library.illinois.edu: 13,310 pages
 - Content on apache-ns.library.illinois.edu (previously cooper.library.illinois.edu): 23,586. This represents a significant decrease from the previous year's total of 259,599 pages. Most of this reduction is due to the content migration preparation cleanup the Web Team undertook, identifying inaccessible (by proxy rules), orphaned, or too old to be accurate/useful.
 - Gateway information (<http://www.library.illinois.edu/index.php>) (from Google Analytics).
 - Fiscal Year 2015 (July 1, 2014 – June 30, 2015):
 - Pageviews: 1,654,761
 - Unique Pageviews: 1,109,066
 - Fiscal Year 2014 (July 1, 2013 – June 30, 2014):
 - Pageviews: 1,854,445
 - Unique Pageviews: 1,239,612
- *Number of active web content contributors (in the CMS):*
 - Accounts that have been used during FY 2015: 145
 - Total Active Accounts: 399
 - Total Accounts (including retired/departed users deactivated accounts): 650 (due to a quirk with openCMS, it is recommended that accounts be set to inactive, rather than deleted, to avoid issues with file ownership/locks on content they are the original creator/last editor of).

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY15.
 - Robert Slater – Technical Architect for Library Web Content
 - Academic Professional
 - 1.0 FTE (7-1-2014 to 6-30-15)
 - Ja Eun (Jemma) Ku – Inter Applications and Systems Support Specialist
 - Academic Professional
 - 1.0 FTE (7-1-2014 to 6-30-15)
 - William Weathers – Visiting Faculty
 - Faculty
 - 1.0 FTE (7-1-2014 to 12-31-2014)
 - William Weathers – Web Developer and User Interface Specialist
 - Academic Professional
 - 1.0 FTE (1-1-2015 to 6-30-2015)
 - Helen Zhou -- Electronic Access Specialist
 - Academic Professional

- 0.5 FTE (7-1-14 to 6-30-15)
- Provide overview of physical working space for unit
 - The Web Team personnel currently occupy approximately 300 square feet of office space in Room 424 of the Main Library
- Specify the amount of the unit's FY14 Student Assistant wage budget and Student Assistant FTE.
 - The Web Team did not have a Student Assistant wage budget for FY14, and no Student Assistants were employed.

3. User Services & Assistance Profile

- IT support requests (OTRS tickets)
 - The Web Team answered more than 165 OTRS tickets in the past year (7/01/2014-6/30/2015);
 - This doesn't include closed tickets from the older OTRS system (7/01/2014-1/22/2015)
 - This also doesn't include the large volume of direct request received via email by Web Team Members or drop-ins at the Help Desk or openCMS Drop-in Sessions.
 - Support ranges from requests to do minor tasks (debug and then remediate minor JS/CSS/HTML issues) to training the requesting user how to make those fixes themselves, to request for complete (re)design of new web parts/pages/sites, to support for using third-party services (like Google Calendar for library unit hours management).
- Digital signage
 - The Library licenses the use of the CITES managed 4Winds Digital Signage System to manage content (and contract for support) for 18 digital signs at various location (although only 16 are currently in use).
 - The Web Team serves as the Library Administrators for the 4 Winds Server (developing and managing templates, scheduling content "buckets") as well as developing systems and workflows that allow librarians and staff to manage their own content (or content buckets) without necessitating making them administrators on the 4 winds software

Library IT Software Development Group (SDG) Annual Report

Date: 09/15/2015

Manager: Tom Habing

I Unit Narrative

1. Major activities and accomplishments of the unit in FY15 (July 1, 2014 to June 30, 2015):
 - The SDG developed an application to register DataCite DOIs for use by the Research Data Service. Tom Habing was the lead programmer.
 - The SDG completed two web-based applications to assist with the hiring of graduate assistants. One application is used by applicants to describe their interests and skills and upload their resume and cover letter. The second application is used by hiring managers to discover and track potential candidates for the graduate assistant positions. Robert Manaster was the lead programmer.
 - The SDG assisted with the migration of servers and infrastructure out of Grainger and the Main Library and into the shared data center at DCL.
 - Several new collections were added to the Library's BibLeaves bibliographic database management and discovery application, including all collections from the old DLXS system. This allowed the DLXS system and its server to be retired. Robert Manaster and Tom Habing were the lead developers.
 - The SDG assisted RBML in the procurement and deployment of the Aeon request and workflow management software for special collections, including integration with the Oak Street offsite storage inventory system.
 - The SDG completed work on major functions for the PresCons workflow and tracking system used by the Preservation/Conservation unit to manage and track their workflows. The lead developer was Jon Gorman.
 - The SDG developed several desktop application to assist the Digital Content Creation (DCC) unit with their work flows, especially prepping material for submission to HathiTrust. Lead developers were Tom Habing and Kirk Hess.
 - The SDG continued to support locally developed applications with bug fixes and new feature additions. Examples include the JOYCE system for hiring and firing student hourly employee.
 - The SDG provided support for the Illinois Researcher Connections (IRC). Robert Manaster developed a tracking database used to manage the assignment of people to different roles in the Elsevier Pure system. Jason Heldreth provided assistance in collecting citations to books from databases which are not well supported by Pure.
 - The SDG developed the BookTracker system for tracking the disposition of digitized books. The system is part of the Medusa suite of applications and can be used to determine whether a digitized Library book resides in Google, Internet

Archive, or HathiTrust. The lead developer is Alex Dolski.

- The SDG provided support, customization, and upgrades for the CONTENTdm digital collection management system. Alex Dolski was the lead developer.
- The SDG provided development and support for the Library's Easy Search system. The lead developer is Jay Heldreth.
- The SDG provided technical support related to the evaluation and deployment of the ArchivesSpace system, including testing data migrations from Archon to ArchivesSpace. The lead developer was Robert Manaster.
- SDG staff members provided substantial support to several grant-funded research projects during this period.
 - Alex Dolski supported the Preservation Self-Assessment Program (PSAP) grant from IMLS, including stepping into a leadership role when the project coordinator left for a new job.
 - Janina Sarol provided support for the Emblematica grant from the National Endowment for the Humanities (NEH). She also supported experimental work with Linked Open Data which has been coordinated by several Library faculty researchers.
 - Tom Habing has also provided support for several grant-funded research projects, such as the HathiTrust Research Center, Emblematica, and numerous smaller faculty research initiatives.
 - Jay Heldreth continued to provide support for the EthicsCORE grant-funded application.
 - Colleen Fallaw provided programming and technical support to the HathiTrust Research Center and the WCSA grants.

2. Major challenges faced by the unit during FY15:

- Staff resignations and reassignments presented a major organizational challenge. See bullets under number three below.
- Prioritizing and assigning limited staff resources to the myriad application developments and integration needs coming from all across the Library continues to be a challenge.

3. Significant changes to unit operations, personnel, service profile, or service programs:

The Software Development Group has undergone significant changes in the past year with staff reassignments and resignations:

- **Tom Habing**, while still the manager of the Software Development Group, was appointed as the Interim Director of Library IT.
- **Jon Gorman**, an application support specialist who was assigned to the SDG at 50%, has been reverted back to the Infrastructure Management and

Support (IMS) group at 100%. However, he continues to support his active SDG projects, but he is now a full-time member of the IMS under the supervision of Jason Strutz.

- **Colleen Fallaw** was a visiting grant-funded programmer in the SDG. She resigned from that position to accept a new position as a programmer for the Research Data Service. Her direct supervisor is now Bill Ingram in the Scholarly Communication and Repository Services group.
- **Alex Dolski** was promoted from a partially grant-funded visiting programmer to a regular full-time position. To better coordinate his work on access systems, his reporting line was recently changed from the SDG to the Scholarly Communication and Repository Services group; he now reports to Bill Ingram.
- **Janina Sarol** was a visiting grant-funded programmer in the SDG. She supports the Emblematica grant and the HathiTrust Research Center Workset Creation for Scholarly Analysis (WCSA) grant. Her direct supervisor is Tim Cole; Tim is a PI on these grants.
- **Jason Heldreth** was a programmer in the SDG. To better coordinate his work on Easy Search and similar discovery and delivery services, he now reports directly to Bill Mischo.
- **Kirk Hess** resigned from his position to accept a new job at the Library of Congress. There is a pending search to replace his position, but the new position will not be in the SDG; it will report to the Preservation/Conservation unit in support of their workflows and digital projects.

The above resignations and reassignments essentially leave the Software Development Group with a fractional-time manager, Tom Habing, and one full-time staff member, Robert Manaster. However, it should be noted that except for the resignations, the above changes were deliberately designed to align staff reporting lines to managers and supervisors who are directly responsible for the work in which the staff are engaged. The reorganization and reassignments were also designed to allow the SDG manager more time to devote to his interim assignment as the Director of Library IT.

Because of the limited staff resources, the SDG is mostly restricted to working on smaller internal-facing business and workflow support applications, such as support for the Illinois Researcher Connections, graduate assistant applications database, and similar.

4. Articulate the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement:

The SDG supports the design, development, maintenance, or procurement and integration of three types of software applications in the library:

1. Business applications which are important to the efficient internal operations of the Library, such as JOYCE and the GA application systems for managing the hiring and firing of hourly employees and graduate students, multiple tracking and workflow applications, like PresCons, used to manage projects such as the book repairs or the digitization of books, or the Aeon request and workflow management software for special collections and RBML;
 2. Public facing applications which support patron needs, such as CONTENTdm for the search and delivery of digital images, BibLeaves which provides searchable access to special bibliographic databases, or Easy Search for web-scale, cross target search and discovery;
 3. Finally, the SDG provides programming and technical support for grant-funded and research projects originating in the Library and in some cases the Library School, such as Emblematica, the HathiTrust Research Center, or the PSAP application.
5. Articulate Unit Annual Goals for FY15:
- Continue development of ongoing projects:
 - Support for additional bibliographic collections in BibLeaves; with the discontinuation of RefWorks the SDG is exploring how BibLeaves might be used to manage any bibliographic collections which will need to be migrated, such as the Black Caribbean Literature collection;
 - Continue to provide support for the Illinois Researcher Connections (IRC) system;
 - Provide bug fixes and minor feature requests for the PresCons workflow tracking system; and
 - Continue to support the development of Easy Search.
 - To the extent possible, continue to be responsive to faculty and staff requests for technical programming support for special projects and research, including support for research in the pre-grant-funded stage.
 - Provide training and “stretch” opportunities to staff.
 - Work with CAPT and other relevant Library committees to set priorities.

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY14.
 - **Tom Habing** (Manager) -- Appointed as Interim Directory of IT, January, 2015
 - **Colleen Fallaw** -- Resigned to accept new position in Scholarly Communications and Repository Services group to support RDS, April, 2015

- **Alex Dolski** -- Reassigned to Scholarly Communications and Repository Services group, May, 2015
- **Janina Sarol** -- Currently supervised by Tim Cole
- **Jason Heldreth** -- Currently supervised by Bill Mischo
- **Jon Gorman** (50%) -- Reverted back to 100% IMS in Spring, 2015; currently reporting to Jason Strutz
- **Kirk Hess** -- Resigned for new job at Library of Congress, January, 2015
- **Robert Manaster**

- **Brendan Caffrey** (Student Hourly) – Graduated Fall, 2014
- **Maria Lux** (Student Hourly) – Working with Web Team

- Provide overview of physical working space for unit
 - Staff are divided between offices at Grainger and the Main Library 424 Suite and in one case partially at Oak Street.

- Specify the amount of the unit's FY15 Student Assistant wage budget and Student Assistant FTE.
 - The student wage budget was \$25,000. After budget reductions this fiscal year, this amount is reduced to \$9,000

Library IT Scholarly Communication and Repository Services (SCaRS) Annual Report

Date: 08/26/2015

Manager: Bill Ingram Habing

Staffing

The Scholarly Communication and Repository Services (SCARS) division of Library IT is led by Bill Ingram, Manager. Research Programmers Howard Ding, Seth Robbins, Colleen Fallaw, and Alex Dolski report to Bill.

- Howard Ding and Seth Robbins were appointed to the SCARS division in FY 2013-2014.
- Colleen Fallaw was hired onto the SCARS division in April 2015 as Research Programmer for Research Data Services.
- Alex Dolski was appointed to the SCARS division in May 2015 as Research Programmer for Digital Library Projects.

Graduate Assistant:

- Nushrat Khan is a 9-month, 50% GA for the Sustainable Environment through Actionable Data (SEAD) grant, for which Bill Ingram is the Library's sub-contract principal investigator. Her contract was just renewed for 2015-2016.

Activities and Accomplishments

Scholarly Communication and Repository Services, as a division of Library IT, officially began in late December of 2013. The group is made up of application developers responsible for analyzing, designing, implementing, and supporting software systems related to scholarly communication and repositories at the Library.

The list of services created and/or maintained by this group includes:

- IDEALS: the campus Institutional Repository,
- Vireo: the campus Electronic Thesis and Dissertation deposit system,
- OJS: the Library's publishing service for undergraduate research journals,
- Illinois Data Bank: the repository service for the Library's Research Data Service,
- Medusa Digital Library: public access search and browse interface for the Library's digital collections,
- Medusa Collection Registry: the Library's digital preservation system and collection registry, and
- SEAD: (Sustainable Environment through Actionable Data) an NSF-sponsored DataNet award to the University of Michigan, the University of Illinois, and Indiana University for creating data services for sustainability science research.

IDEALS — with Sarah Shreeves's departure as IDEALS Coordinator and the resulting vacancy, Bill Ingram and Seth Robbins have had to increase their involvement in the management of the repository and help with onboarding the other librarians who are filling in in the interim while a permanent replacement is found. We have taken on some of Sarah's former duties ourselves, have become major sources of

information about IDEALS, and have spent significant time answering questions, leading meetings, and editing documentation. Seth continues making improvements to the IDEALS user experience, while correcting bugs discovered after last year's DSpace upgrade. He developed a set of scripts and reusable tools for batch ingests to IDEALS requested by department liaisons and collection administrators including those for ISMS, ISGS, CSL, DCC and the Prairie Research Institute. We have also been working with librarians and vendors around the topic of alt-metrics; the company AltMetric is now tracking IDEALS items and we have a prototype interface upgrade to IDEALS that includes AltMetric badges. Bill Ingram has been appointed to the international DSpace Leadership Group, representing the Library. Seth Robbins gave a poster presentation at the 10th International Conference on Open Repositories, *Triaging Digitized Dissertations for Repository Ingest Using Pdfminer and Fuzzy Matching: A Case-Study*, highlighting his work on legacy Proquest dissertations.

Vireo — the team has released our version of Vireo 2 into production, which was a challenge in that it required a major change to the software architecture. This new version is a complete rewrite of the underlying software, and it required significant work to gain approval by the Graduate College. Lead Vireo developer Seth Robbins, working closely with the Graduate College Thesis Office, has adapted our UI customizations to the new software and migrated the data. The service has been running in production now for an entire deposit period (roughly one semester) and is considered a success by all.

OJS — the development team maintains the software and system architecture for the Library's publishing system in partnership with the Scholarly Commons. Not much is required to maintain this service other than the occasional upgrade or security patch.

Illinois Data Bank (IDB) — the team is working with Research Data Services Director Heidi Imker in gathering functional requirements for the service. Colleen Fallaw was hired in April as Research Programmer for Research Data Services. She was appointed to the Repository Development Team and reports to the Manager for Repository Development. Building on the tools developed for the Medusa Digital Library Service and the shared underlying repository architecture, Colleen was able to get a functional prototype of the IDB ready for evaluation within several weeks of being hired. The Illinois Data Bank, Medusa Digital Library, and the Medusa Collection Registry are built on a common repository architecture. By employing this coordinated approach to handling digital assets, we are able to provide access, processing, and preservation to all the digital content in an efficient, uniform way.

Medusa Digital Library — developed originally as a public search and browse interface to the Medusa Collection Registry as part of the Medusa suite of repository services, the Digital Library application (codenamed Kumquat) is now being evaluated as a replacement for CONTENTdm for digital collections, providing parity with features currently available to CONTENTdm end users and administrators. A significant portion of the development effort has gone toward ActiveMedusa, a middleware Ruby interface to the underlying Medusa repository, which uses Solr for lookup and querying. Developed by Alex Dolski, ActiveMedusa allows developers to build persistent domain model representations of repository content in their applications by mapping repository objects to Ruby classes and providing a programming interface to the repository, a customizable RDF ontology and Solr schema, and no-configuration support for node hierarchy traversal. It powers the Illinois Data Bank, the Medusa Digital Library, and is being integrated into the Medusa Collection Registry.

Medusa Collection Registry — the Medusa digital preservation repository provides an enduring storage and management environment for digital content at the Library. All content deposited into the IDB, the Medusa Digital Library, or the Library's preservation storage can be managed by the Medusa Collection

Registry, due to the shared repository architecture. The Collection Registry service is running in production, but is still being heavily developed. By employing an Agile Software Development methodology, working closely and regularly with Library stakeholders over two-week development sprints, lead developer Howard Ding is able to support working, production-quality software for the service while delivering iterative, continuous enhancements, improvements, and new features. Howard has also developed a packager and transfer service for backing up preservation storage to Amazon Glacier.

Medusa's underlying storage system was migrated this year from the Dell DX Object Storage Platform with File Gateway hosted by the Library to the GPFS Storage Condo in partnership with the National Center for Supercomputing Applications (NCSA), which features two copies of every file replicated across two distinct campus nodes and a third copy of every file backed up off-campus with Amazon Glacier. We have ingested 7 million preservation master files from the library's digital collections, totaling 40 terabytes. These files were migrated to Medusa-managed storage from portable hard drives, optical media, and a variety of less-stable storage servers. The content is organized into 733 collections, often in close collaboration with curators, under 32 repositories, or owning units, with collection-level metadata. The Medusa Collection Registry has introduced basic digital preservation tools to curators such as provenance tracking, event tracking, and on-demand technical metadata extraction, virus scanning, and fixity verification for all items in the repository.

A new book-tracking component was added to the Medusa Collection Registry. Developed by Alex Dolski, the book tracker ingests batches of bibliographic records from MARCXML files from CAM, and, based on the unique object IDs of the items contained within, checks for their presence in various services including HathiTrust, Google Books, and Internet Archive. The book tracker displays a list of running tasks and their status, and new tasks can be initiated via a convenient web interface. Currently, over 400,000 items are tracked. By integrating the book tracker with the Medusa Collection Registry, we can provide a comprehensive index of all of the Library's digital assets, local and remote.

SEAD – Bill Ingram serves as the Principal Investigator for Library's sub-contract involvement in the SEAD project. Nushrat Khan works with Bill on the project as a 9-month, 50% Graduate Assistant. Seth Robbins also helped with programming and represented the team at meetings, provided design related input, and helped fix bugs. Their contribution has been to the SEAD Virtual Archive service, for which they provided mechanisms to automatically deposit data into the Indiana University repository, IUScholarWorks, and the University of Illinois repository, IDEALS. Bill was appointed to the project's Architecture Council, along with representatives from NCSA, ICPSR, Indiana, and Michigan. Nushrat recently submitted a poster presentation proposal to the Digital Library Federation's 2015 Forum to be held in Vancouver, BC, in October. Her proposal was accepted and she plans on representing the team at the conference.

Goals

The first goal of the repository development team is to release the Illinois Data Bank research data repository into production. The team's Agile Development practices, proven to be effective for Medusa development, will be used for IDB development as well: continuous involvement of stakeholders, short two-week development sprints, and regular, iterative releases of production software. We will build on the Medusa codebase rather than starting from scratch, integrate existing tools and technologies (when available) instead of building our own, and partner with other groups with similar projects like National

Data Service at NCSA and SEAD. The development team is working closely with the RDS Director and Curators, as well as Metadata Librarians Ayla Stein and MJ Han, in development of the IDB. We have a working prototype and plan to begin user testing in the fall.

The second goal is to expand the capabilities of the Medusa Collection Registry and the Medusa Digital Library applications. The first phase of development work, which began last year, was intended to focus on enabling self-deposit, persistent identifiers, and better management features for Medusa. The second phase of development was to focus on access. Currently both phases are in active development.

The third goal of the team is to maintain IDEALS and Vireo. Although we continue to lag behind the cutting edge of DSpace — IDEALS runs on a customized version of DSpace 3.4, while the most recent DSpace release is 5.3 — a DSpace upgrade would require significant time and resources. With DSpace 6 on the horizon, along with possible alternatives from Bepress and Hydra, it makes little sense to upgrade now when the future is so uncertain. Instead, the team has decided to focus on maintaining our current version of IDEALS, fixing bugs as they are reported, and improving the user experience in small stages: including AltMetric badges on item pages, simplifying search and discovery, and providing a customizable upload/download statistics reporting module, all highly-requested improvements. We also work closely with other librarians, providing programming assistance for ingesting large batches of content into the repository. Likewise, having just completed a successful Vireo upgrade, the plan for the ETD service is to fix the software when needed, but wait to do any major upgrades until a more strategic plan for repositories is in place.