SCHOLARSHIP DOMAINS

Learning

Undergraduate Education: "Increase and support a diverse student body"

We employ an undergraduate student workforce with a high technological literacy and those students represent broadly diverse backgrounds. Within a total workforce of 12, half are women and 58 percent are international and/or ESL students. Moreover, there is a broad range of academic departments represented so that there is an intellectual diversity in addition to ethnic and gender diversities.

eLearning and Information Systems: "Strengthen library systems appropriate for the 21st century"

The Digital Library and Archives is essentially the Research and Development arm of the library. Most of the systems we create further the digital scholarly communication infrastructure and it is on that infrastructure that the library systems of the 21st century will rest. Our work is both system-wide and content-specific.

In terms of system-wide work, we have reorganized 10 years of incrementally built servers into one modern, manageable, server cluster. This involved setting up a private gigabit network, reformatting every machine in the cluster, and deploying them into specific roles instead of "all-in-one" machines. This resulted in a system that is fault-tolerant, load-balanced, more secure, and more powerful, despite running on the exact same hardware. We have received unsolicited comments from users who have noticed that websites became noticeably faster as a result of this. Additionally, we now have space to create short-term "Virtual Servers" at will for testing projects like CONTENTdm.
- 1,006,777 files were migrated to the new system
- 8 servers and 40 hard drives comprise the system.

We also developed a commodity-parts backup system as a cost-effective alternative to CNS's Network Backup Service. We had the need to backup filedrop, a file server with capacity for 6.3 Terabytes of data. The Network Backup Service's rate of $3 per gigabyte made their service cost-prohibitive. We developed software to build a backup server out of a normal PC, with several extra hard drives installed.
- Backup Server: ~ $3000
- Cost for CNS Service (based on published prices, current usage): ~ $12,600
- Current data being backed up: 4,200 GB; 2,381,048 files

April 16th/Institutional Repositories/RUCore/CONTENTdm

Dealing with the digitized condolence materials left in the wake of April 16 became a predominant activity in DLA this year. See
http://scholar.lib.vt.edu/416_archive/ and http://scholar.lib.vt.edu/prevail/

- Banners   588
- Cards   621
- Handcraft/Textiles   1,033
- Memory Books   200
- Photographs   171
- Poems   2
- Posters   393

One of the results of this tragedy was that the large amount of memorial materials the library catalogued and managed became an impetus for investigating systems for handling large amounts of data. In this way, DLA was able to further its institutional repository research and development. The generous collaboration offered by library colleagues at Rutgers University in its RUcore group allowed us to bypass many of the initial programming challenges we would have faced and move on to the cataloging and processing the large number of items. This work lies somewhere in between the generalized systems work detailed above and the more content-specific work detailed below as it was and is a good test-bed for systems that can be used to organize a number of collections. The RUcore group agreed to help VT by housing this material in its institutional repository for one year. Therefore, at the end of October 2008 we will transfer the materials to the commercially available institutional repository CONTENTdm.

Initial RUcore work required coordination between DLA and other library departments, including Cataloging, Systems, and Special Collections. At its most basic level, this work included:
- Three days of training for 20-30 library staffers at VT.
- Travel to Rutgers for more training for one staffer and broader orientation for the new DLA systems administrator and DLA director, and 3 VT IT personnel.
- Collecting data, including picture taking, by DLA staff.
- Supporting gathering memorial artifacts, including cataloging and description.
- Loading images and other items into the RUcore system.
- Development and application of a controlled vocabulary to describe ~2,000 items.
- Development of applications to map that controlled vocabulary to fields RUcore uses.
- Development of systems for batch loading the items after the test period was over.
- Development of records recovery systems necessary after Rutgers suffered hardware failures.
- Conversion of 3 large oral history files to a format that would work in RUcore.

The expected transfer to CONTENTdm occasioned research, including:
- Report prepared detailing which universities use CONTENTdm and how.
- Participation webinars by all DLA personnel.
- Initial planning testing (e.g., equipment, Mac-compatibility, etc.).

Our content-specific systems work is spread over multiple projects, for example:

ETD/BTD: Electronic Theses and Dissertations/Bound Theses and Dissertations
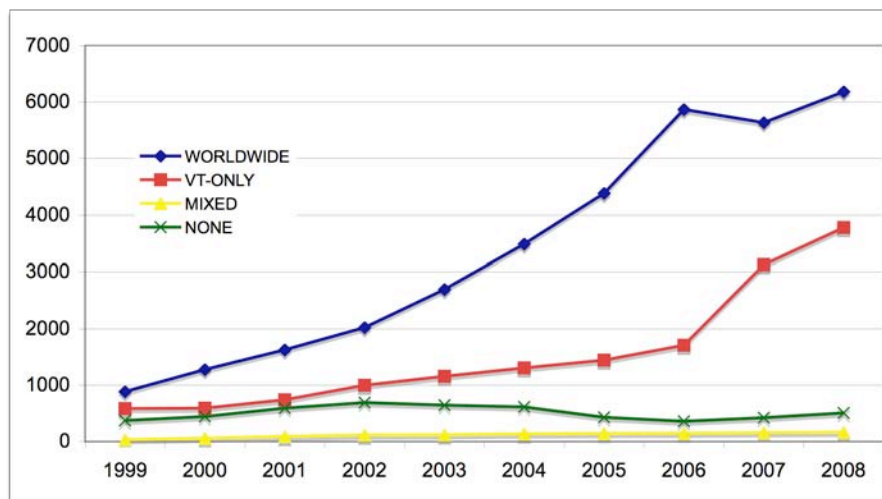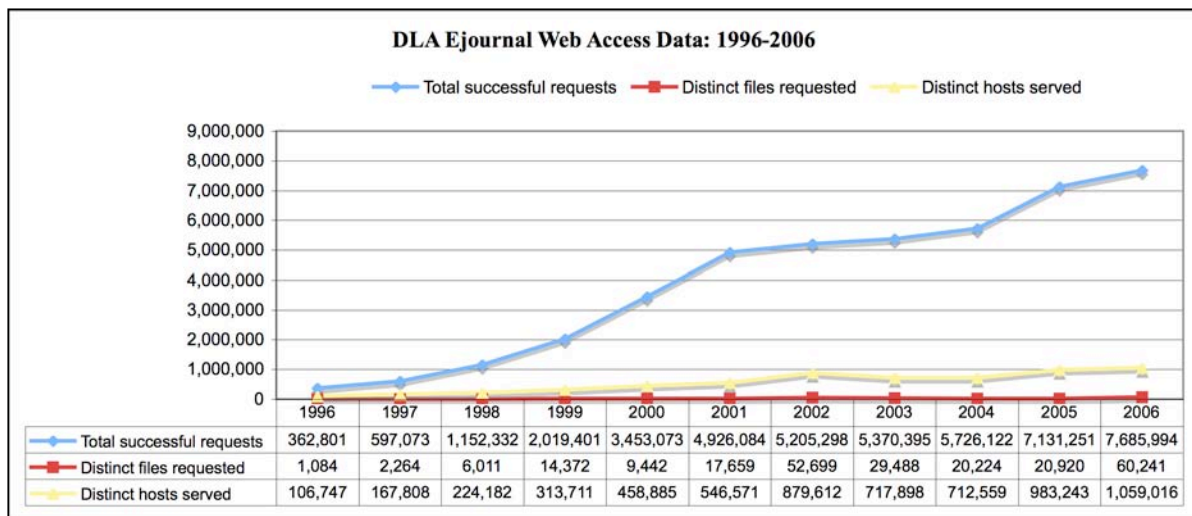

Increasing Availability of VT ETDs

- Working with several other library departments and Learning Technology's Digital Imaging department, DLA refined policies and procedures for adding print-only theses and dissertations published before 1997 to the ETD database.
- Part of these system developments included developing the BTD Importer script. This automates several of the steps that were being done manually for every BTD that is scanned by Digital Imaging. It looks up the document's metadata in Addison, checks the ETD-db for duplicates, adds the document to the ETD-db, and informs Technical Services so they can review the new record and add link to it from Addison. The script runs automatically whenever new documents are available, and processes each file in seconds, compared to several minutes previously required by a Library Systems staffer.
- The library has scanned, converted to text, and posted 328 (7,897 MB) BTDs as of March 2008. There are another 783 (121.67GB) scanned and waiting to be posted. [All online as of June 20.]
- When BTDs are posted, they are accessible to the Virginia Tech community. In May 2008, we began actively seeking permission from BTD authors to open access to the worldwide community. This included information posted in the *VT Magazine* distributed to all alumni and its online website, as well as from the DLA ETD website: http://scholar.lib.vt.edu/theses/btd_permission.html

EJOURNALS   http://scholar.lib.vt.edu/ejournals/
- 416 new articles
- 1,283 updated web pages
- Integrated an additional ejournal, *Journal of the American Rhododendron Society,* which had existed as a print journal for 44 years.
- Updated usage statistics reports for all ejournals for the years 2004-2006

- Trained and monitored 3 new student workers on HTML, basic CSS, web-accessibility, 2 new students for the ejournal mark-up process, and 2 new students for our shift to Server Side Includes. DLA staffer Kimberli Weeks worked remotely from North Carolina handled this almost entirely.
- Trained and monitored 2 new students on the ejournal proofing process.
- Completed training material for ejournal article markup.
- Completed a table mark-up checklist and revised the ejournal checklist; made tracking spreadsheets for all mark-up work.

DLA Ejournal Web Access Data: 1996-2006

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total successful requests	362,801	597,073	1,152,332	2,019,401	3,453,073	4,926,084	5,205,298	5,370,395	5,726,122	7,131,251	7,685,994
Distinct files requested	1,084	2,264	6,011	14,372	9,442	17,659	52,699	29,488	20,224	20,920	60,241
Distinct hosts served	106,747	167,808	224,182	313,711	458,885	546,571	879,612	717,898	712,559	983,243	1,059,016

SAHC: South Atlantic Humanities Center   http://sahctest.lib.vt.edu/
- Received $3500 from CLAHS funded student web workers.
- DLA Data Wrangler developed plug-in enabling preservation in MetaArchive, distributed archive
- Revised the design and layout of 20 pages for this site, including fixing the search box, the administrative interface, the navigation bar, improving images, and moved multiple files.
- Assisted in documentation of site structure to enable transfer to DLA from Virginia Foundation for the Humanities and New City Media.

IAWA: International Archive of Women in Architecture   http://spec.lib.vt.edu/iawa/
- Maintained mailing list of over 3,000 members
- Mailed newsletter and annual reports.
- Compiled Archivist's Report for 2007. A noteworthy addition to the Archives was the papers of Mary Brown Channel, Virginia's first registered woman architect.

- $5,000 awarded by Beverly Willis Architecture Foundation and matched by another library donor. Hired graduate students to augment the IAWA Biographical Database. Implemented Google mini-search engine specifically for distributed IAWA resources, including the ImageBase, Manuscript Guide, biographical database, etc.
- Created Willis homepage: http://spec.lib.vt.edu/iawa/WillisBev.html

Graduate and Professional Education: "Achieve transformative graduate education"

The work DLA has done on ETDs (detailed above in the Learning/eLearning and Information Systems section and below in the Discovery/Innovative Technologies and Complex Systems section) is based on long-term and innovative partnerships with the VT Graduate School which have indeed transformed the graduate school experience such that the results of that research have become far more accessible to the worldwide community of scholars and learners.

Educating the Whole Student: "Develop diverse and inclusive living and learning communities"
See first entry above under Undergraduate Education/Increase and support diverse student body.

Discovery
Health, Food, and Nutrition

Supported the Peacock-Harper Culinary History Collection including website announcements of fund-raising events, worked at YMCA Book Fair selling duplicates from culinary donations, and initiated scanning of rare and unique books from Special Collections that research revealed were not being included in other digitizing projects.

3,000,000th barcode

Social and Individual Transformation

One of DLA's most valued staff members encountered some life situations that encouraged her to experiment with telecommuting. She did so successfully, which allowed her to keep working under circumstances that would have otherwise prohibited it.
- 303 gallons of gasoline saved   • 3371.25 lbs. of pollutants saved
- She greatly increased hers and the department's knowledge of virtual collaboration, communication and training, effective small group dynamics, and remote technical support.

MetaArchive: Distributed Preservation   http://www.metaarchive.org/

The MetaArchive Cooperative builds trusted archives to provide long-term care for digital materials. The Cooperative was formed in 2004 out of increasing concern that the digital items that define our culture and history might be forever lost due to natural disaster, human error, or sheer neglect. The Cooperative functions as a community initiative that actively participates in the preservation of each member's digital materials. The Library of Congress awarded the MetaArchive Cooperative an additional 18-month contract extension to continue our work. With $1,125,000 from the National Digital Information Infrastructure and Preservation Program (NDIIPP) and its six partner institutions (Emory University, Auburn, Florida State, Georgia Tech, Virginia Tech, and the Louisville), the MetaArchive Cooperative will extend the a distributed digital preservation community that fosters and promotes long-term survival of the digital assets of cultural memory organizations, including libraries, archives, and museums.

- Wrote grant proposals and budgets.
- Rebuilt the VT MetaArchive server after the simultaneous failure of two hard drives.
- Developed and modified 15 plug-ins for multiple collections within this archive
- Increased the VT's unique and rare collections preserved in this networked archive from 5GB to 80GB. http://www.metaarchive.org/conspectus/
- Participated in weekly teleconference calls and meetings in Atlanta and Louisville.
- Developed a system to sign and install its own plug-ins. Due to staff turnover at Virginia Tech as well as at the lead university, Emory, there was a "knowledge hole" where for a time no one at Virginia Tech could describe how to do this process. With DLA's outstanding student, Daniel Culpepper, Andy Fabian figured it out and automated it, providing needed documentation back to the MetaArchive.

Engagement

While the work we do that draws in the community does not fit neatly within the above categories, it is nevertheless among our most popular and time-consuming tasks, and represents a significant portion of our outreach-based activities.

ImageBase/Digital Images   http://imagebase.lib.vt.edu/

- 217 images burned onto 39 CDs for patrons
- Prepared spreadsheets with descriptive metadata linked to images for batch uploading into VT ImageBase.
  - 2,572 images added
  - 791.2 GB moved from Luna-insight.lib.vt.edu to filedrop server
- 26 culinary rare books scanned

WDBJ7   http://scholar.lib.vt.edu/VA-news/WDBJ-7/

- Reestablished partnership with WDBJ7 due to new staff needed to learn how to upload scripts.
- Redesigned the original workflow; altered Perl scripts; manually checked and renamed over 200 files, manually changed folders that crashed.

<center>**FOUNDATION STRATEGIES**</center>

Development of the Organization

"Recruit, retain, and develop the best staff and faculty"

Staff member telecommuted for six months:
- Effectively used videoconferencing technology and increased knowledge in cutting-edge communication and collaboration technologies.
- Effectively supported students working in ejournal and technical areas.
- Created an inexpensive, replicable telecommuting model that used videoconferencing to alleviate common telecommuting hurdles (i.e., alienation, reduced communication for work related tasks), increased employee productivity and job satisfaction, promoted a greener environment and added marked work-life balance benefits that would enhance recruitment and retention
- Supported the library meeting the state mandate of having 20% of the public and private sector able to telecommute by the year 2010.

Investment in the Campus Infrastructure

"Promote effective management of the university's space and land resources for learning, living, and work"

DLA separated from Special Collections after a 12-year collaboration, an infrastructure and resource allocation adjustment made by Dean Hitchingham. This included separating offices and moving 3 permanent faculty and staff workspaces and multiple wage work stations to 2036 and 2038 Newman, as well as the separation of responsibilities and files.
- Purchased or allocated furniture.
- Trained Special Collections staff to perform tasks that would no longer be handled by DLA (e.g., budget monitoring, purchasing, book ordering, statistical reporting, etc.)
- Led the search committee for the new director of Special Collections and all DLA/Special Collections staff participated in the interview process
  - Tested pod casting candidates' presentations
- Continued collaboration on ongoing and new projects, including the Prevail Archives, and the allocation and maintenance of Special Collections web pages.
- Continued programming development of a Special Collections accessions database

"Promote robust and integrated information technology strategies"
- See the system-wide accomplishments under Learning/eLearning and Information Systems.

Effective Resource Development, Allocation, and Management

"Increase funding from private and other sources"
- See information regarding MetaArchive Cooperative and IAWA