



University of Virginia Library

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http://www.diglib.org/pubs/news05_01/

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I. Collections, services, and systems

A. Collections

The Biddle Edition Archive

A searchable electronic collection of selected Lewis and Clark letters, images, and press coverage surrounding the publication of the Biddle edition of the Lewis and Clark Journals in 1814. The project was sponsored by Douglas Seefeldt, Director of the Lewis and Clark Bicentennial Project, and the Virginia Center for Digital History, and is built upon the full electronic version of Biddle created by the Library in 2003.

<http://www.vcdh.virginia.edu/lewisandclark/biddle/splash.html>

California Newsreel

The Robertson Media Center has entered into a licensing agreement with the documentary distributor California Newsreel to deliver online versions of selected videos

from their Library of African Cinema. These videos have been digitized and are being delivered as MPEG streams to members of the University of Virginia community.

Census of American Studies Resources on the Web

The Census of American Studies Resources on the Web supports the creation, discovery, and delivery of an annotated directory of American Studies resources on the web. Entries in the directory are proposed by members of the larger American Studies community, reviewed, and, if accepted, annotated, categorized, and added to the directory. The project was a collaboration with the American Studies graduate program at UVA and the Institute for Advanced Technology in the Humanities, funded by a grant from the Mellon Foundation. The resource was realized through a local customization of the Scout Portal Toolkit.

<http://infocomm.lib.virginia.edu/toolkit/SPT/SPT--Home.php>

Climatology Virginia

Climatology Virginia was developed by the Science and Engineering Libraries' Digital Lab and the Geostat Center as a resource to enhance the pure research capabilities of those engaged in the field, while lending context wherever possible to encourage a broad reach of understanding. Climatology Virginia brings together many of the facets that make up climate research in the Commonwealth and presents them via the Web. In its first phase, Climatology Virginia includes four datasets from the National Climatic Data Center (NCDC), augmented by extensive metadata, data from 1920-29 in text format, selected digitized NCDC reports, and an annotated directory of climatological resources on the Web.

http://datastore.lib.virginia.edu/vaclim/vaclim_index.html

The Digital Elvis Project

A site that provides access to all material needed for variable format readings or stagings of the play *Elvis People*, written by Doug Grissom of the UVA Drama Department, which explores the impact of Elvis Presley on American culture.

<http://etext.virginia.edu/projects/Elvis/>

Early American Fiction 1789-1875

The University has completed processing of Phase 1 (1789-1849) and Phase 2 (1850-1875) of this Mellon-funded collection of 886 volumes of American fiction in the University of Virginia Special Collections, including works by Louisa May Alcott, Samuel Clemens, Nathaniel Hawthorne, Herman Melville, Harriet Beecher Stowe and some 90 other 19th century novelists. Each text exists as a full set of color page-images and a searchable XML text. Biographies and supporting manuscript materials were also digitized. Some materials are publicly available, while the remainder is available only through license with Chadwyck-Healy.

<http://etext.lib.virginia.edu/eaf/>

Historical Census Browser

The Geospatial and Statistical Data Center is developing mapping functionality to compliment the online data delivery of the U.S. Historical Census Browser. After selecting data for a given year and geographic level, users will be able to create online maps of census characteristics that can be overlaid with related geographic layers showing jurisdictional boundaries, roads, and waterways. The maps can be viewed or saved as PDF documents. Still in testing and development, the mapping functionality is currently available only to the UVA community; full release is expected early in 2005. <http://fisher.lib.virginia.edu/collections/stats/histcensus/>

Japanese Text Initiative (JTI)

The University of Virginia Library Electronic Text Center and the University of Pittsburgh East Asian Library sponsor the Japanese Text Initiative, a collaborative effort to make texts of classical Japanese literature available on the Web. Dozens of texts and a Japanese Haiku Topical Dictionary have been added. The Japanese characters are fully searchable for all JTI texts. A new grant from the Toshiba International Foundation supported the expansion of the corpus by over 200 texts in 2004. <http://etext.lib.virginia.edu/japanese/>

Tibetan and Himalayan Digital Library Tibet Gazetteer

This gazetteer is a browsable and searchable XML-based database of places within the Tibet Autonomous Region. Each record provides various information including name translations, a link to view the location on an interactive web map, and in some cases even census data. Future plans for the Tibet Gazetteer include providing different views of the data, such as contemporary cultural regions, contemporary administrative units, and historical views; and expanding the coverage area. <http://iris.lib.virginia.edu/tibet/collections/cultgeo/gazetteer-frameset.html>

The Winnifred Eaton Digital Archive

Winnifred Eaton (1875-1954), writing under the pseudonym of Onoto Watanna, was the first person of Asian descent to publish a novel in the US. Perhaps more significantly, she was the first Asian American to reach a national mainstream reading audience: between 1898 and 1925, she published over a dozen novels and dozens of short stories and nonfiction pieces, which appeared in mass-market periodicals such as *Ladies' Home Journal*, *Frank Leslie's Popular Monthly*, *Century Magazine*, and *Harper's Monthly*. The collection is edited and compiled by Jean Lee Cole, Assistant Professor in the Department of English at Loyola College. Production and hosting are provided by the Electronic Text Center. <http://etext.virginia.edu/eaton/>

B. Services

Collections and Reference

Find@UVa

Find@UVa is an OpenURL Resolver service that can be used to locate full-text documents in e-journals and e-newspapers from citations. Sixty to seventy percent of UVA's current indexing and abstracting tools can work directly with the OpenURL standard. As of September 30, 2004, Find@UVa links from over 60 indexing and abstracting services, providing access to over 15,000 journal titles in the collections of the University Library, the Health Sciences Library, and the Law Library.

<http://www.lib.virginia.edu/indexes/finders.html>

Document Delivery

The Library offers electronic document delivery for both ILL items and items held locally. Articles are delivered in PDF format, and both borrowing and notification of availability are handled through the catalog and Z39.50 modules of VIRGO, the Library's SIRSI system.

Reference Instant Messaging

Three libraries -- Alderman, Science and Engineering Libraries, and Fine Arts -- are participating in a pilot program using AOL Instant Messenger (IM) for reference chat. The pilot will run throughout the fall 2004 semester, offering service Monday through Friday, 11 AM to 5 PM. <http://www.lib.virginia.edu/questions.html>

Digitization and Media Creation

Electronic Text Center

The E-Text Center develops and maintains most of the library's collection of electronic texts, including materials in fifteen languages. Especially notable are the collections of materials in English and American literature and complete works of major writers in the history of philosophy. Etext provides training and project management expertise, access to equipment that permits the creation and analysis of electronic texts, and a place in which to use the electronic texts that are not available on-line.

<http://etext.lib.virginia.edu/>

Digital Media Lab

The Digital Media Lab of the Robertson Media Center develops and provides collections of digital images, sound, and video for use in research and instruction. The Lab offers consulting services in digital media production and project planning, hands-on tutorials and short courses, a full array of scanners and video and audio digitization equipment,

and analog editing equipment. <http://www.lib.virginia.edu/clemons/RMC/DML/>

Instructional Scanning Services

Instructional Scanning Services is part of a suite of services maintained by the University Library to support the UVA faculty in its use of electronic materials for instruction. Primarily, ISS services take the form of scanning materials into a .PDF format and uploading them to the Instructor's Toolkit learning management system as additional readings. ISS also links materials already in electronic format to the Instructor's Toolkit, and scans materials for other instructional uses. Material digitized by Instructional Scanning Services is made available as electronic course reserves through the Instructor's Toolkit system. Course number or the instructor's last names are added into VIRGO records representing physical and electronic reserves, allowing online searching for all reserves, regardless of format. <http://www.lib.virginia.edu/leo/iss.html>

Geospatial & Statistical Data Center

The Geostat Center provides access to a variety of online spatial and statistical data resources and several offline electronic data products that can be used in the Center. The GIS data collection has a particular focus on current and historic Virginia data. The statistical data collection includes web resources such as the Inter-university Consortium for Political and Social Research (ICPSR) and International Financial Statistics, as well as a variety of homegrown databases providing web access to federally produced data. Geostat also provides computing facilities for data manipulation, research, and instruction, and works closely with faculty and students to train them in the use of its tools and collections. <http://fisher.lib.virginia.edu/>

Rare Materials Digital Services

Rare Materials Digital Services (RMDS) provides digitization of primary and secondary materials from the Library's rare materials to support the teaching and research mission of the University as well as to increase access to these unique items. Rare Materials Digital Services also delivers a variety of digital image collections, including the Holsinger Studio Collection, the Jackson Davis Collection of African-American Educational Photographs, UVA Visual History Online, and the Jefferson Architecture Electronic Archive. RMDS also produces the Department's online exhibitions. <http://www.lib.virginia.edu/rmds/services/digital.html>

Digital Library Production Services

DLPS, founded in 2001, is charged with building a sustainable core digital collection befitting a world-class institution of higher learning. DLPS strives to create and maintain a cost-effective, efficient production line for producing consistent and preservable data. <http://www.lib.virginia.edu/digital/services/dlps.html>

C. Systems

Fedora™

The University of Virginia Library's Digital Library Research and Development Group is continuing to collaborate with Cornell to develop Fedora under a new \$1,400,000 Andrew W. Mellon Foundation grant awarded in 2004. Phase 2 will focus on the development of tools, utilities, and new interfaces for creating objects and submitting content; tools to support migration of existing digital collections into Fedora; enhancements to better enable the creation, management, and delivery of distributed, virtual collections; better integration with 3rd party search engines; support for alternative search interfaces to the native Fedora indexes that conform to emerging international standards such as SRW; development of a set of integrity and management features; and enabling the creation of peer-to-peer networks of Fedora repositories. Version 1.0 was released under on May 16, 2003; Version 1.2.1 was released on April 20, 2004.

<http://www.fedora.info/>

<http://www.lib.virginia.edu/digital/resndev/fedora.html>

Central Digital Repository

In March 2002, UVA Library and Cornell University began work on Fedora™, and, alongside it, UVA began work on its first phase prototype of a Central Digital Repository. During summer 2003, a first phase prototype public interface was tested for the repository. Input was solicited across the Library staff on the design, functionality and usability, as well as suggestions for improvements and additional functionality.

Improvements and additions were categorized and prioritized, guiding the development of the interface and disseminators (delivery programs) for the production Fedora-based repository implementation. Approximately 10,000 images, over 100 electronic texts, and over 3,000 UVA Special Collections finding aids have been loaded into the Repository. Users may search by metadata across all collection formats, or search full-text in each individual collection. All images and page image retrieved are accompanied by menus that allow the user to view the image in an ImageViewer (zooming, panning, brightness and contrast, rotating), or collect the image into personal portfolios using the Digital Object Collector Tool. The first version production Repository and its end-user interface was released to the UVA community for its initial experimental year in October, 2004. Access to content is currently limited to the University of Virginia.

<http://www.lib.virginia.edu/digital/collections/>

Digital Object Collector Tool

UVA Library's Object Collector Tool is a Java-based desktop tool that allows a user to "collect" references to images (including page images) retrieved via searches of the Central Digital Repository. Menus that accompany all images initiate the collection process. An Object Collection window allows a user to organize images into one or more collection portfolios. The references to these images can be saved to the user's local drive

or to a mapped network location as an XML file. The Collector Tool also includes the same ImageViewer (zooming, panning, rotating) as is available to online users of the Repository. The Collector Tool can be used to create slides shows for use in the classroom, or HTML web pages for use as image reserves. The functionality of the Collector Tool will be expanded to include the ability to collect electronic texts and additional formats over time.

<http://www.lib.virginia.edu/digital/collections/CollectorTool.html>

Digibook Scanner

With monies earmarked by the University of Virginia President's Office, Digital Library Production Services was able to purchase a I2S RGB 10,000 Digibook scanner and Book Restorer software in August 2003. This top-of-the-line book scanner is capable of high-resolution color capture of rare and fragile bound books, and the software performs most aspects of post-production image manipulation to integrate several processes into one-stop-shopping. The Digibook is receiving a heavy workout and staff are clamoring for another to add to production capabilities.

General Descriptive Modeling Scheme (GDMS)

Development has continued on GDMS, a DTD developed to create XML files that are structured, annotated descriptions of digital collections. An infinitely recursive set of structural units: each may contain a narrative, a descriptive metadata record and references to, and metadata about, any number of digital resources. GDMS is being tested in several faculty digital projects to describe buildings, archeological sites and artworks, creating structural metadata for digital objects that provide access to related sets of digital images. GDMS has now been incorporated into its first production system, serving as the XML standard used for Art & Architecture objects in the UVA Library Central Digital repository.

<http://www.lib.virginia.edu/digital/metadata/gdms.html>

<http://www.lib.virginia.edu/digital/metadata/>

Metadata Specifications: UVA DescMeta and UVA AdminMeta

Development has continued on the UVA DescMeta and AdminMeta by our Cataloging department and Digital Library Research and Development. The goal is to produce a local set of descriptive elements for specifying the intellectual content of digital resources and administrative elements describing the provenance, source, rights, and technical specifications of each datastream in a digital object. Initially derived from the Dublin Core specification, they have been adapted and extended for local use. The UVA Library has developed DTDs, crosswalks to other standards, and use guidelines.

<http://www.lib.virginia.edu/digital/metadata/descriptive.html>

<http://www.lib.virginia.edu/digital/metadata/administrative.html>

Sirsi Rooms Suite

In 2004-2005 the UVA Libraries are undertaking a trial implementation of Rooms , which includes three components -- OpenURL Resolver, Single Search, and the Rooms portal software. Resolver allows OpenURL to be used to locate documents. Sixty to seventy percent of UVA's current indexing and abstracting tools can work directly with OpenURL, and the next upgrade to the OPAC will add OpenURL links into records. As of September 1, 2004, UVA Library's Resolver, re-dubbed Find@UVA, is available and linked from a button in over 50 licensed indexing and abstracting services. SingleSearch is a metasearch tool, which will allow us to select a group of databases appropriate for a particular information need - a subject area, a class, or a general search such as news services or encyclopedias - and search them simultaneously. Search boxes can be inserted in any Web page. Rooms is the overall name for the system, but it is also specifically the name for the Content Management System (CMS) for managing Web pages from page templates and a database of resources. Sirsi has turned the name a little and calls Rooms a context management system to emphasize that searching and other functions act differently depending on the context. Testing of the Rooms Builder tool will commence after a version upgrade due in 2005.

<http://www.lib.virginia.edu/indexes/finders.html>

II. Projects and programs

A. Projects

New Project Announcements

American Literature Resources CD-ROM

In 2003-2004 a Mellon Foundation grant to Alan Howard of American Studies graduate program at UVA and the Institute for Advanced Technology in the Humanities supported the joint production with the Library of a CD-ROM containing the Census of Resources for American Studies and over 200 core American electronic texts. Some of the texts were digitized by the Library for the project and addition to the Library's digital collections. The CD-ROM was distributed overseas through the United States Information Service.

The Cavalier Daily

Digital Library Production Services and Alderman Library Reference Services are collaborating on a project to digitize the entire run of the UVA student newspaper, *The Cavalier Daily*. The project is currently in prototype as production and delivery standards are being developed. The text is being double-keyboarded by Apex Covantage, Inc.; the digitization is expected to take 5 years to complete.

Civil Rights Video Archive

This digital archive is based on an extensive collection of 16 mm news footage from the Roanoke TV station, WSLs, now in the UVA Library collections. The Virginia Center for Digital History and the Digital Media Lab are collaborating on the digitization and delivery of selected streaming QuickTime video clips.

<http://www.vcdh.virginia.edu/civilrightstv/>

Digital Library Content and Course Management Systems: Issues of Interoperation

UVA Library staff participated in a working group supported by the Mellon Foundation and the Digital Library Federation to examine the interaction of digital libraries and learning management (courseware) systems. To make the most effective use of digital content in teaching, learning applications need to be able to easily interoperate with digital repositories so that teachers and students can discover, access, view, quote, adapt, and evaluate appropriate learning material. A report was published in summer 2004 that includes use cases and a checklist of interoperability functionality and best practices.

<http://www.diglib.org/pubs/cmsdl0407/>

Documentary Newsreels Online

During fall 2004 the Robertson Media Center will offer online versions of nine documentary videos from the premier documentary distributor, California Newsreel. The videos have been purchased in support of several classes, principally "Africa in Cinema," taught by Professor Kandoura Drame in the Department of French. These titles are in high demand by students of African culture and cinema; online distribution will improve access to this material by the UVA community. This project will be a test case for the Robertson Media Center, allowing the Library to evaluate the distribution of motion media over campus networks and giving us the opportunity to examine the students' degree of acceptance of this relatively new type of online resource.

Guide to Good Practice: Cataloging Standards for Describing Cultural Objects and Images

Fine Arts Library staff is participating in a Visual Resources Association project sponsored by the Digital Library Federation and the Getty Grant Program to review and evaluate existing data content standards and current practice in order to compile a manual that may be used to describe, document, and catalog cultural objects and their visual surrogates.

<http://www.vraweb.org/CCOweb/>

Production Workflow Good Practices

UVA Library staff are participating in a Digital Library Federation initiative to document workflow designs, file-naming choices, lessons learned, and software used or developed.

Spanish Film Project

Contemporary film can serve as a very effective tool in foreign language instruction and films from the Robertson Media Center collection are frequently used for that purpose. Professor David Gies proposed to create an on-line collection of short digitized clips from Spanish films, each to be accompanied by transcripts, downloadable activities, and a visual dictionary of words and phrases. From later June to early July 2004, fifteen Spanish language teachers from around Virginia selected and translated clips from Spanish films, created lesson plans and activities, and assembled a database of words, definitions, and images that will comprise the on-line dictionary. The resource is being tested with UVA and Virginia high school instructors and students during the 2004-2005 school year to guide development for the next two years of the project.

Update on Existing Projects

Building an American Studies Information Community

This project, funded by the Andrew Mellon Foundation, was completed in 2004. The project focused on building the infrastructure for an information community by concentrating on collections and tools that are particularly useful to scholars and students studying American Culture. A portal website was developed that includes annotated directories and a threaded discussion list. As part of the project over two dozen volumes related to westward exploration were digitized for the collections and delivered through the Information Community site as a Repository testbed. A related project included the harvesting of approximately 100,000 records from 18 OAI (Open Archives Initiative) repositories for analysis, which led to the development of a thesaurus of subject and geographic terms with which an aggregated search interface can be built. Mappings were also developed for the ingestion of harvested OAI records into a Fedora repository.

<http://infocomm.lib.virginia.edu/amst/>

http://www.lib.virginia.edu/digital/resndev/amst_grant.html

The Cambridge Scholarly Edition of the Works of Ben Jonson

In collaboration with David Gants, the Electronic Text Center and Rare Materials Digital Services are helping to produce a scholarly electronic edition of the Ben Jonson first folio and quarto. The publication and form of this edition is still under consideration.

***Clotel*: A Scholarly Electronic Edition**

Production on a scholarly electronic edition comprising four versions of William Wells Brown's novel (the "first" African-American novel), produced in collaboration with Christopher Mulvey of University College Winchester (formerly King Alfred's College), has been completed and will soon be available through the Electronic Imprint of the University of Virginia Press.

Middle High German Interlinked

A \$250,000 grant from the National Science Foundation (NSF) supported the digitization of over 100 medieval German texts and several related dictionaries by the University of Virginia Library and the University of Trier, Germany. The project is scheduled for completion in late 2004.

<http://etext.lib.virginia.edu/german/mhg/browse/>

Page Barbour Lectures: B.F. Skinner's Lectures on "A Technology of Behavior," 1959

These audio tapes, housed in UVA Library's Special Collections, are being converted by the Digital Media Lab to digital sound files for online delivery.

Supporting Digital Scholarship

The Supporting Digital Scholarship project has completed its third year and issued its final report. The project was developed jointly by Library and the Institute for Advanced Technology in the Humanities (IATH) to investigate the implications of collecting digital scholarly projects into a digital library, and funded by a grant from the Andrew W. Mellon Foundation. The premise of the project is that scholars, given the resources and the support needed, create digital projects that are more like virtual museum exhibitions than like books. These projects usually include large collections of digital versions of primary resources with a network of complex interrelationships interwoven with original scholarly commentary. A number of Library staff participated in both the Technical and the Policy committees. The final report is available at the URL below. The report discusses the technical problems encountered in collecting selections from the Rossetti Archive (<http://jefferson.village.virginia.edu/rossetti/>), the Salisbury Project (<http://www.iath.virginia.edu/salisbury/>), the Tibetan and Himalayan Digital Library (<http://www.thdl.org/>), and the Pompeii Forum Project (<http://jefferson.village.virginia.edu/pompeii/>), and policy implications for the Library in collecting such projects.

http://www.iath.virginia.edu/sds/SDS_AR_2003.html

TEI/NEH Task Force on SGML to XML Migration

Text Encoding Initiative-sponsored international working group has completed its survey of current practice in application of the TEI encoding scheme, in particular with respect to the usage of SGML in electronic repositories. The group has reported on technical, organizational, or other challenges and opportunities presented by the conversion of legacy data to P4 XML format; and proposed migration strategies and practices.

<http://www.tei-c.org/Activities/MI/>

B. Programs

Content Management Services

Acquisitions, Cataloging, Digital Access Services, and Digital Library Production Services have been reorganized into a new division of the Library that covers acquisition, production, description, and delivery of all Library content.

Digital Research and Instructional Services

The Electronic Text Center, Geospatial & Statistical Data Center, and Rare Materials Digital Services have been reorganized into a new division of the Library that supports the production and use of digital content for research and instruction.

III. Specific Digital Library Challenges

Collection of Digital Scholarship

The UVA Library sees it as vital that we collect and preserve digital scholarship. To that end, the Library is developing assessment standards and workflows through which subject librarians will review and select digital faculty research projects for processing and formal addition into the Library's collections. This requires the development of standards and processes for technical assessment of works alongside the more traditional assessment of their content, as well as the development of deposit agreements between the Library and faculty to collect and deliver their digital research. A companion issue is the development of holistic production and metadata standards that apply to the Library production and to production of digital projects by the greater UVA community.

Encoding and Enforcement of Access Restrictions

UVA would like to be able to apply community standards to the encoding of rights, and to establish a policy for the use of a digital object that could be matched with the characteristics of the user making the request. Under consideration is the use of a digital certificate to authenticate the user coupled with a set of policies for either the objects and/or their components.

Scalability of Production

UVA is looking at the development of more efficient and effective workflows for digital content production, encompassing new local production, processing of licensed content for local mounting, and migration of legacy content to new standards and delivery systems.

IV. Digital library publications, policies, working papers, and other documents

Publications and Presentations

- Bauman, Syd, Alejandro Bia, Lou Burnard, Tomaz Erjavek, Christine Ruotolo, and Susan Schriebman. "Migrating Language Resources from SGML to XML: the Text Encoding Initiative Recommendations." In *Proceedings of the Fourth International Conference on Language Resources and Evaluation* (2004): 139–142.
- Grizzle, Ronda. "[Fedora and the Digital Library Architecture at UVA](#)." 2003 Virginia Library Association Meeting.
- Grizzle, Ronda, Ross Wayland, Ross, and Chris Wilper. "Introduction to Fedora and its Applications -- [Basic Concepts](#) and [Content Models](#)." 2004 Joint Conference on Digital Libraries.
- Johnston, Leslie. "[Digital Library Services at the University of Virginia Library](#)." LITA 2003 National Forum.
- Johnston, Leslie. "[Fedora and Repository Development at UVA](#)." 2003 DASER Summit.
- Johnston, Leslie. "[Digital Repository Interoperability with Learning Systems](#)." Spring 2004 Coalition for Networked Information Task Force Meeting, and Spring 2004 Digital Library Federation Forum.
- Manafy, Michelle. "[This Fedora's Big Enough for Any DAM Project](#)." *EContent Magazine* (October 2003).
- Roland, Perry. "Design Patterns in XML Music Representation." 2003 ISMIR Conference.
- Roland, Perry. "The Music Encoding Initiative (MEI) DTD." 2003 MUSICNETWORK Workshop.
- Ruotolo, Christine. "Recommendations of the TEI Task Force on SGML to XML Migration." 2004 ALLC/ACH Conference.
- Thomas, Judith. "[Digital Video, the Final Frontier](#)." *Library Journal* (January 15, 2004).
- Thomas, Judith and Michael Tuite. "News from the Wild Frontier: Digital Video in the Library." LITA 2003 National Forum.
- Thomas, Judith and Michael Tuite. "[Collecting Digital Video](#)." Spring 2004 Digital Library Federation Forum.
- Staples, Thornton. "[The Fedora Project](#)." LITA 2003 National Forum.
- Staples, Thornton. "[Early Development Experiences with Fedora](#)." 2003 EDUCAUSE Conference.
- Staples, Thornton. "[A Digital Library Architecture for UVA](#)." Spring 2004 Digital Library Federation Forum.

Policies, Documentation, and Reports

- Digital Initiatives: <http://www.lib.virginia.edu/digital/>
- Metadata Standards: <http://www.lib.virginia.edu/digital/metadata/>
- Research and Development: <http://www.lib.virginia.edu/digital/resndev/>
- Standards Documentation and Committee Reports:
<http://www.lib.virginia.edu/digital/reports/standards.html>