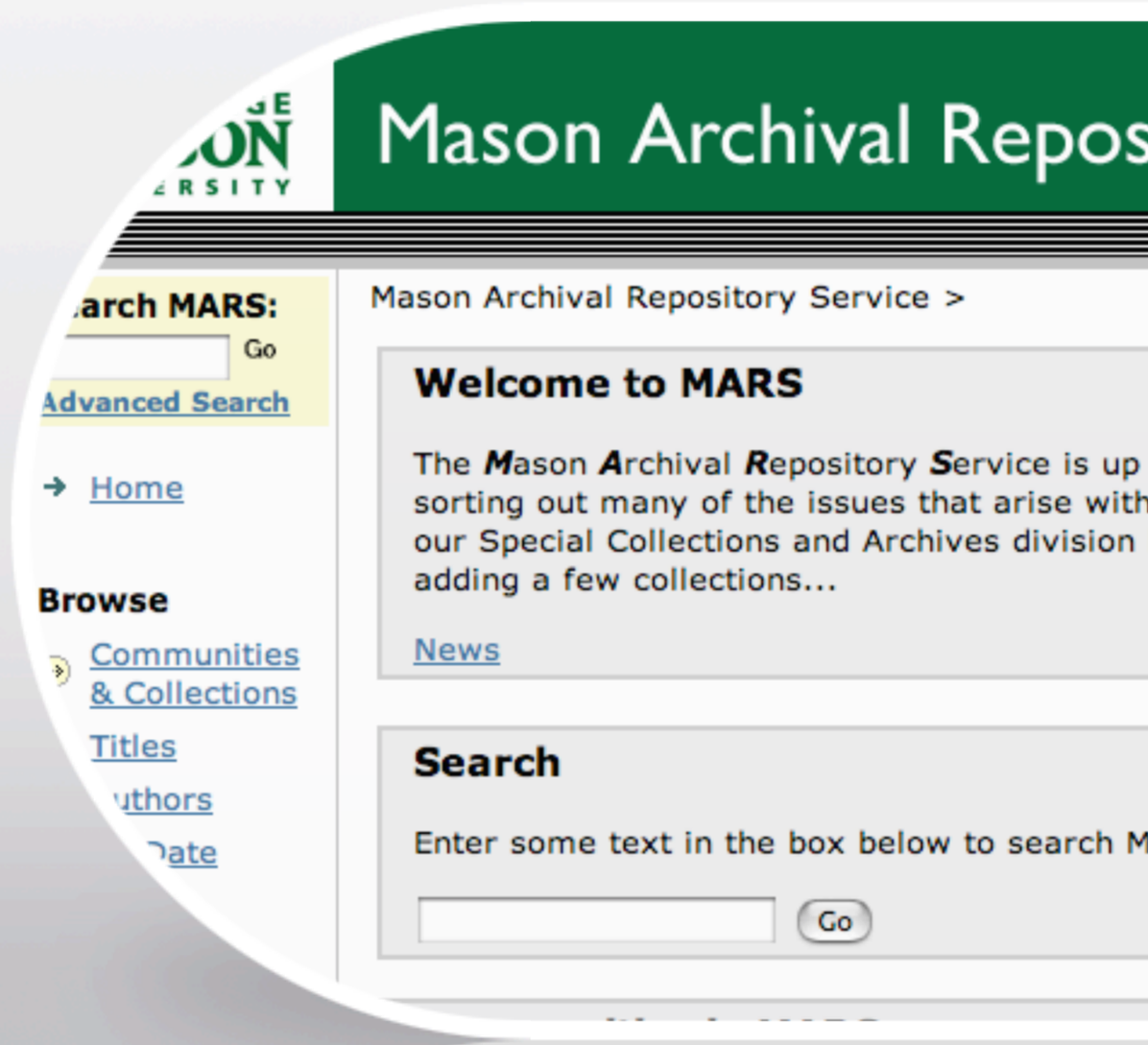
MARS

Mason Archival Repository Service



Wally Grotophorst,
Associate University Librarian - Systems,
University Libraries, George Mason University

Over many years, research libraries have developed and optimized a series of "best-practices" for managing information.

For most of that time, there has been a rough balance between content creation (publishing) and the capacity of libraries to manage the information flow

But the pace and the nature
of content creation is changing...

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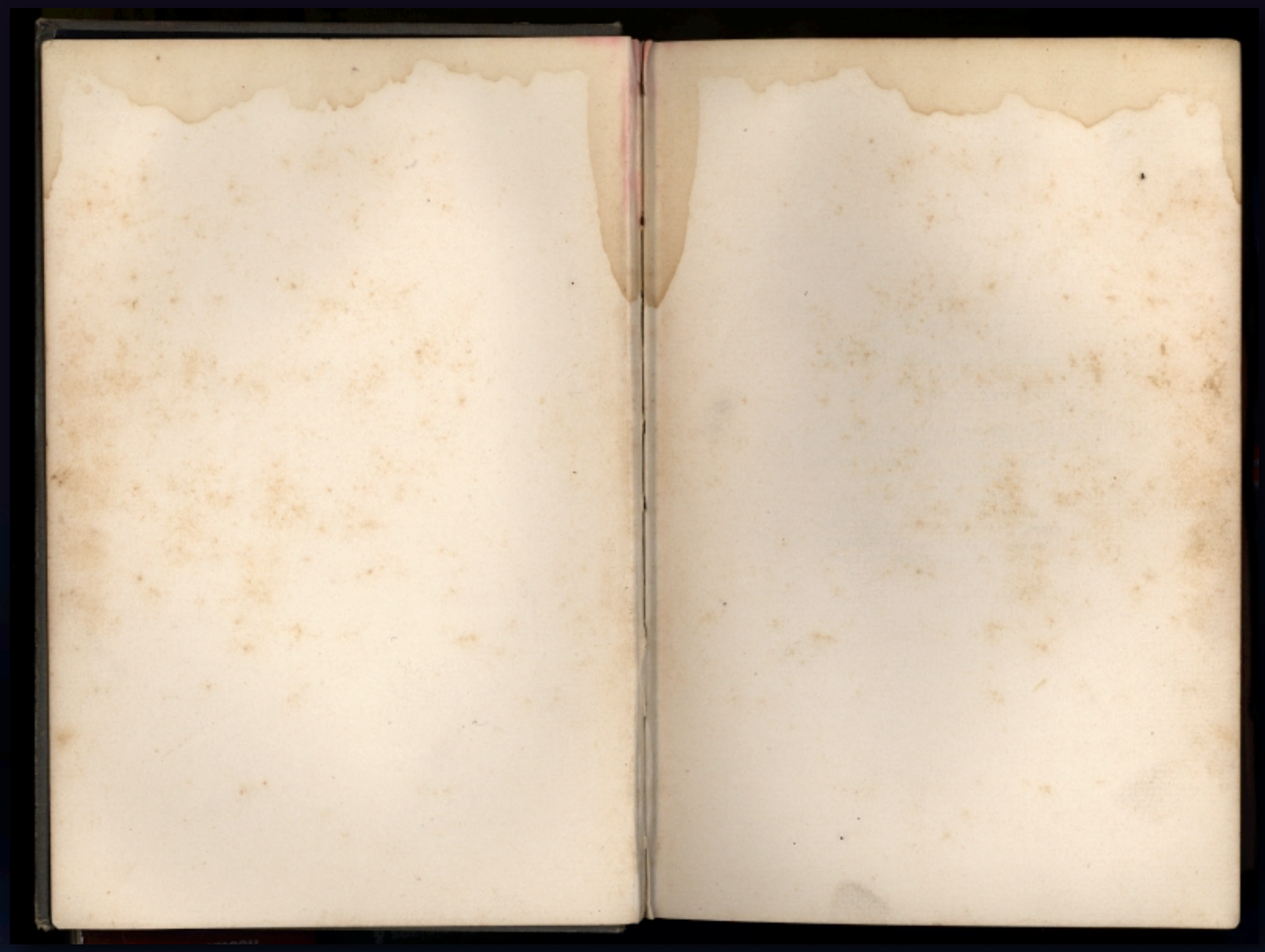
We’re moving from a world where everything existed in physical form to...

“...if it’s not online it might as well not exist.”

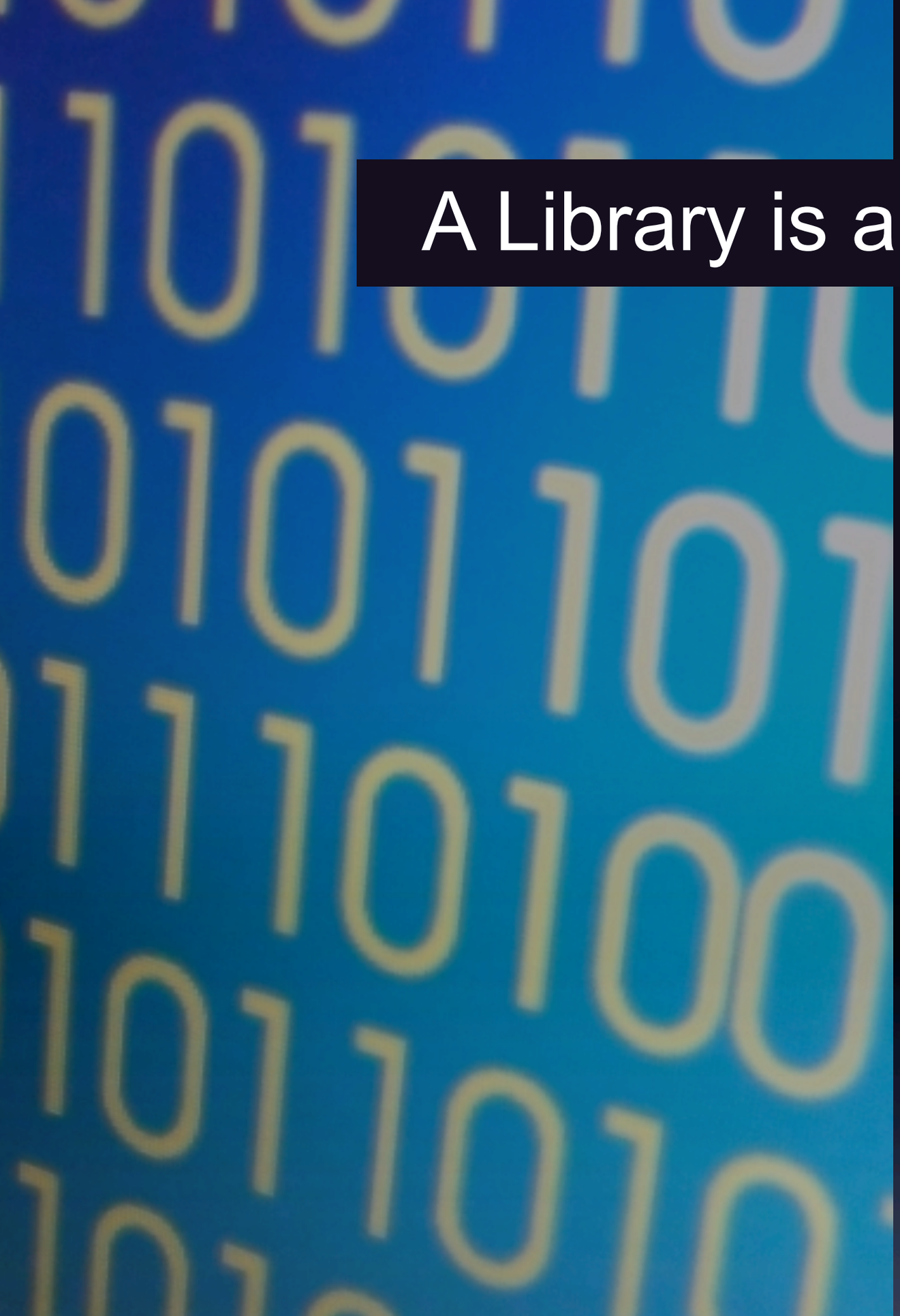


Scholars poring over medieval manuscripts or ancient stone tablets can still read what scribes set down a thousand years ago.

Today, we're generating billions of bits of digital data that could become indecipherable in just a few years.

A Library is a Memory Organization

Our core mission is
to **archive**,
preserve and
provide **access**
to information



A Library is a Memory Organization

In the **digital** realm, this mission **does not change**

An important measure of a research library today is its ability to **archive**, **preserve** and provide **access** to information in **digital** formats in perpetuity.

As the environment changes, we must anticipate new demands and re-engineer our services to meet them

Scholarly Journals

An important transition is underway

Between 1986 and 2000

The consumer price index rose **57**%

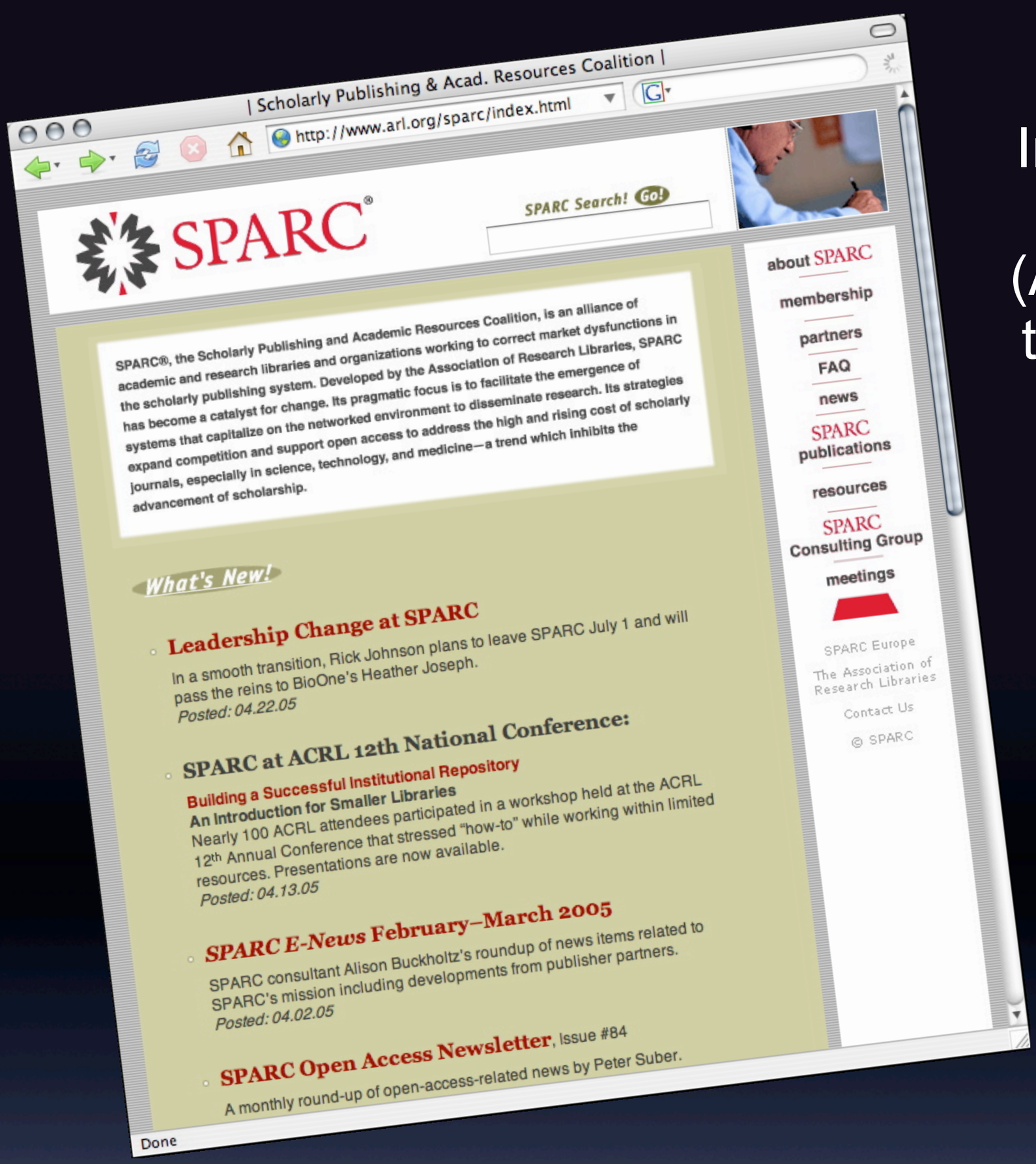
The unit cost for books increased **66**%

Faculty salaries increased **68**%

Health care costs increased **107**%

The unit cost for journals increased **226**%

Why? Corporate mergers and consolidations reduced competition; pressure to publish on faculty fed submission-publication-subscription pressure on libraries; prices rise as libraries drop subscriptions; etc.



In 1997, the Association of Research Libraries (ARL) founded SPARC* to begin addressing the growing dysfunction in the economics of scholarly publishing

* **S**cholarly **P**ublishing and **A**cademic **R**esources **C**oalition

Mason is a member of SPARC

Open Access?

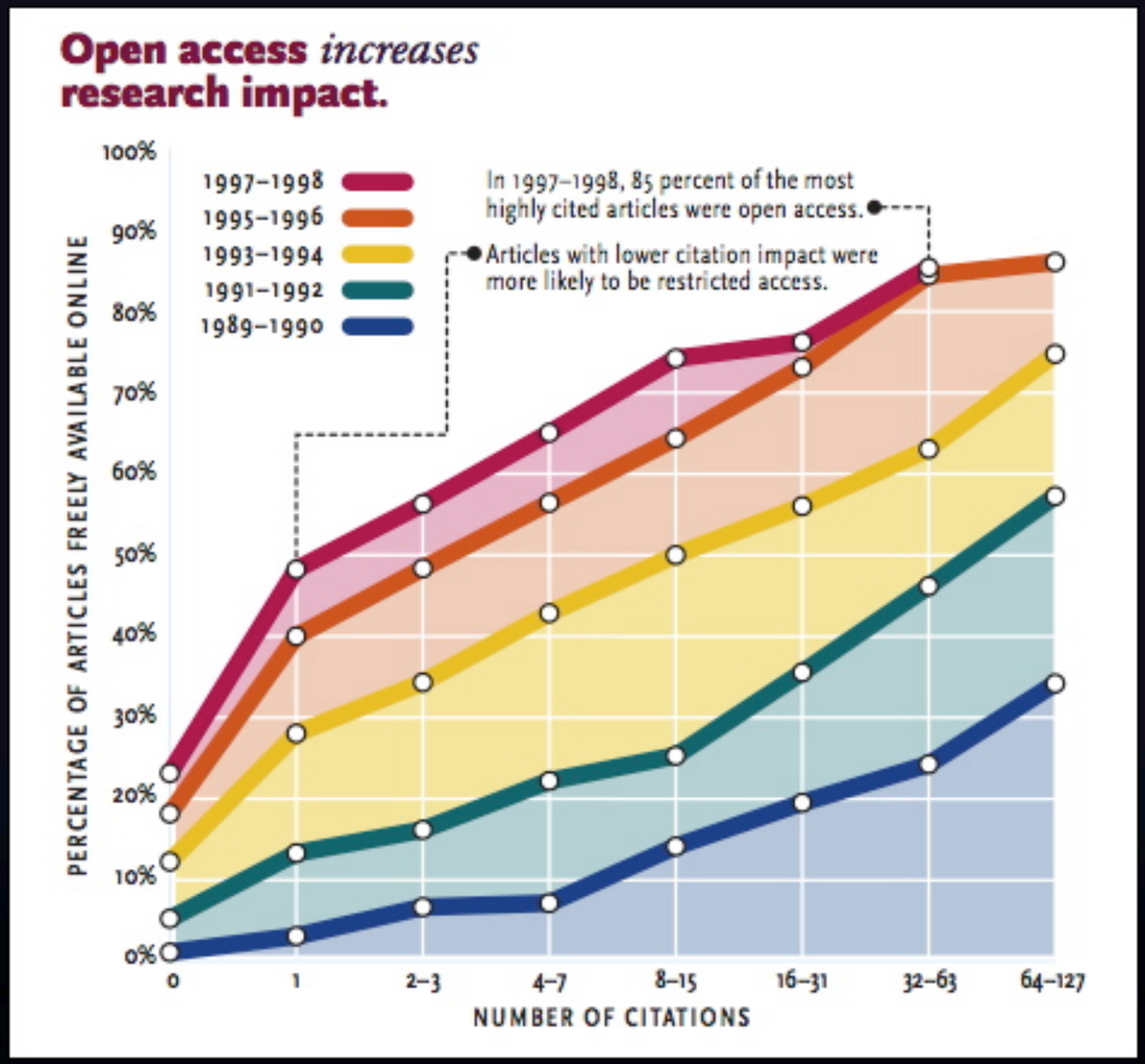
Open access journals use a funding model that does not charge readers or their institutions for access.

"By 'open access', we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, ... without financial, legal, or technical barriers other than those inseparable from gaining access to the internet.

The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."

-- from Budapest Open Access Initiative, 2001

Open Access publications are transforming scholarly communication in fields like computer science, biology, mathematics and chemistry



Steve Lawrence, a scientist at NEC Research Institute, analyzed nearly 120,000 computer science articles cited in a standard disciplinary bibliography. When he looked at articles with successively higher levels of impact or citations, he found successively higher percentages of open-access articles, and vice versa. He found the strength of this correlation steadily increased over a decade.

May 2005, NIH "requests and strongly encourages" peer-reviewed final manuscripts be placed in PubMed Central

NOT-OD-05-045: Implementation of Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research

http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-045.html

Implementation of Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research

Notice Number: NOT-OD-05-045

Key Dates

Release Date: April 29, 2005
Effective Date: May 2, 2005

Issued by

National Institutes of Health (NIH), (http://www.nih.gov)

The National Institutes of Health (NIH) published its Public Access Policy (Policy) in the February 3, 2005, and in the *Federal Register* on February 9, 2005. These announcem including Questions and Answers regarding copyright and other concerns, are availab http://www.nih.gov/about/publicaccess/.

The purpose of this Notice is to provide a summary of the Policy and to furnish guidar manuscripts.

Summary of the Policy

The Policy becomes effective May 2, 2005. The Policy requests and strongly encou peer-reviewed author's final manuscripts available to other researchers and the pu PubMed Central (PMC) [see http://www.pubmedcentral.nih.gov] immediately after submission, authors are given the option to release their manuscripts at a later tir publication. NIH expects that only in limited cases will authors deem it necessary

The Policy applies to all research grant and career development award mechan and Individual Ruth L. Kirschstein National Research Service Awards, as well a to peer-reviewed, original research publications that have been supported in w not apply to book chapters, editorials, reviews, or conference proceedings. NI resulting from 1) currently-funded NIH research projects or 2) previously-supp accepted for publication on or after May 2, 2005. Publications resulting from n submitted. We welcome comments and suggestions about the submission pr

The NIH Manuscript Submission System

The password-protected, Web-based, NIH Manuscript Submission (NIHMS to facilitate the submission process. This system allows easy identification intramural project numbers by associating them with the corresponding ex research study. Currently, manuscript files from NIH Intramural PIs can be staff. Manuscript files from extramural PIs may be submitted by the PI onl to the NIHMS system by either the extramural PI or a third party on the PI librarians, publishers, etc.).

approval of the submitted materials and the determination designed for individual submiss

PubMed Central Homepage

http://www.pubmedcentral.nih.gov/

PubMed Central

A free archive of life sciences journals

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PubMed Central (PMC) is the U.S. National Institutes of Health (NIH) free digital archive of biomedical and life sciences journal literature.

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Get **answers** to other questions about PubMed Central.

Find out how you can **include your journal in PMC**.

The **NIH Public Access** plan is meant to make the published results of NIH-funded research freely available to everyone.

NIH-funded authors: see the **NIH Manuscript Submission** system.

It's about preservation and access: **digitizing the complete run of back issues** of many of the journals in PMC.

Looking for a thoroughly modern journal article DTD? Take a look at NLM's **Journal Publishing XML DTD and schema**.

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Last updated: April 29, 2005

Done

Library & Information Technology Association

Technology and library users, an ongoing discussion

T echnology experts who are members of the Library and Information Technology Association (LITA), a division of the American Library Association, met for a managed discussion in Orlando, FL on June 27th, 2004 to discuss what they feel are the top technology issues and trends in today's libraries.

Experts in attendance included : Joan Frye Williams, Clifford Lynch, Walt Crawford, Milton Wolf, Tom Wilson, Roy Tennant, Eric Lease Morgan, and Marshall Breeding.

THE TOP TRENDS

- **ISSUE 1:** Institutional Repositories
- **ISSUE 2:** Open Access
- **ISSUE 3:** Web Services
- **ISSUE 4:** Personal Search Software
- **ISSUE 5:** RSS (Really Simple Syndication)
- **ISSUE 6:** Biometrics
- **ISSUE 7:** E-Resource Management
- **ISSUE 8:** JPEG 2000

ISSUE #1: Institutional Repositories

The Case for Institutional Repositories: A SPARC Position Paper
http://www.arl.org/sparc/IR/ir.html

This position paper from the Scholarly Publishing and Academic Resources Coalition states that institutional repositories "provide a critical component in reforming the system of scholarly communication" by reasserting control over scholarship by academics, as well as bring economic relief to the academy."

ARL 226: Institutional Repositories: Essen

http://www.arl.org/newsltr/226/ir.html

SO Lost Packet Planet Gmail

ARL

ARL Bimonthly Report 226
February 2003

Institutional Repositories: Essential Infra
in the Digital Age

by Clifford A. Lynch, Executive Director, Coalition for Netwo

Introduction

In the fall of 2002, something extraordinary occurred in the co
revolution, shifting the dynamic among individually driven i
evolution of disciplinary scholarly practices. The developme
new strategy that allows universities to apply serious, system
place in scholarship and scholarly communication, both mov
role of supporting established publishers in modernizing sc
digital content, and also scaling up beyond ad-hoc alliances,
with a few select faculty pioneers exploring more transformative new uses of the

Many technology trends and development efforts came together to make this strategy possible. Online storage costs have dropped significantly; repositories are now affordable. Standards like the open archives metadata harvesting protocol are now in place; some progress has also been made on the standards for the underlying metadata itself. The thinking about digital preservation over the past five years has advanced to the point where the needs are widely recognized and well defined, the technical approaches at least superficially mapped out, and the need for action is now clear. The development of possible journal article collections in disciplines such as high-energy physics has network can change scholarly communication by altering development of a series of extraordinary digital ecifically for the digital medium to

An **institutional repository** is a set of **services** that a university offers to the members of its community for the **management** and **dissemination** of digital materials **created by the institution** and its community members.

-- *Clifford Lynch, CNI*

Google Scholar: site:gmu.edu

http://scholar.google.com/scholar?q=site%3

Google Scholar BETA

site:gmu.edu

Search

Advanced Scholar Search
Scholar Preferences
Scholar Help

Scholar

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[A distributed, developmental model of word recognition and naming]
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MODELS WITH VERY COMPLICATED DYNAMICS Robert M. May* Abstract. ...
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Science, 1996 - archlab.gmu.edu - dx.doi.org - ncbi.nlm.nih.gov

[Distributed representations of structure: A theory of analogical access and mapping]
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Inc. 1997, Vol. 104, No, 3, 427-466 0033-295X/97/$3.00 ...
Psychological Review, 1997 - hfac.gmu.edu - psych.ucla.edu

[A computational model of semantic memory impairment: Modality-specificity and emergent category- …]
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Journal of the American Statistical Association, 1990 - galaxy.gmu.edu

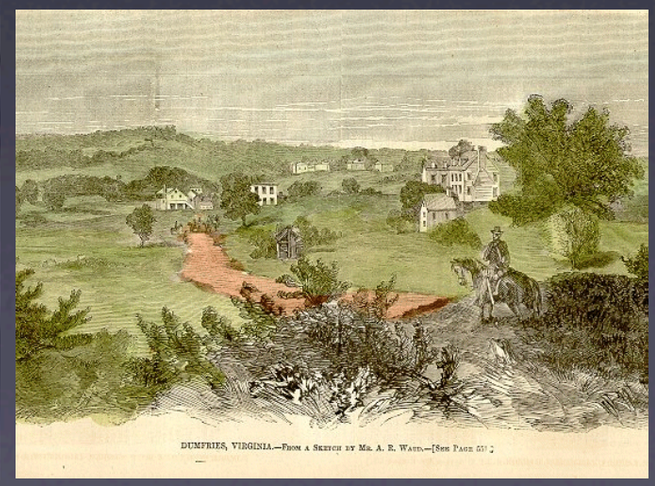
[PS] A Unified Framework for Enforcing Multiple Access Control Policies

mmediate and
arly publishing
y disaggregated
prove over time.

Further, they build on a growing grassroots faculty practice of self-posting research online.

But the underlying technology offers additional benefits...

University Libraries also needs a digital archiving solution for our growing collection of photo, video and audio objects as well as other digital resources (digitized or born digital).



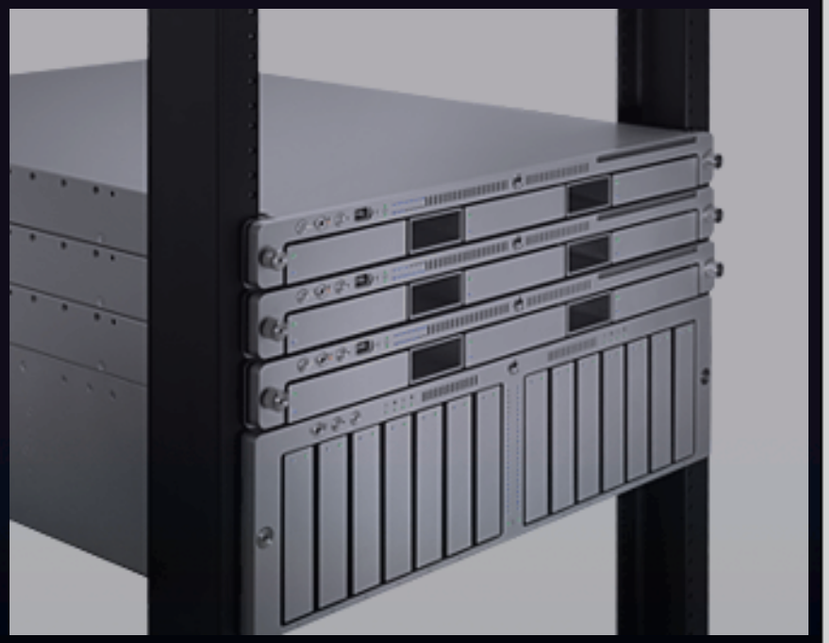
And ideally, the solution would be **web-based**, support recognized **metadata standards**, be **interoperable** with other archival systems, **support format migration**, and **expose our collections** to users worldwide via popular search engines...

The Digital Archiving, Preservation & Access Task Force

Wally Grotophorst, Library Systems, Chair
Daniel Cohen, Center for History & New Media
John Creuziger, TSD, ITU
William Fleming, Mercer Library
Polly Khater, Bibliographic Services
Paul Koda, Special Collections & Archives
George Oberle, Media Librarian
Lene Palmer, RCMS
Angela Weaver, Reference
Rosemary Chase, Copyright Office

Academic Year 2003-2004

We are building an Archival Repository System, using DSpace software



It will provide IR services and also serve as a digital archiving system

DSpace Federation

http://www.dspace.org/

DSPACE

Home

Introducing DSpace

DSpace Technology

DSpace Federation

Building an IR with DSpace

Mailing Lists

DSpace Wiki

- FAQ
- Technical FAQ
- News & Related Readings
- Related Projects
- Live DSpace Sites

About DSpace

A groundbreaking **digital repository system**, DSpace captures, stores, indexes, preserves and redistributes an organization's **research material** in digital formats.

Research institutions worldwide use DSpace for a variety of digital archiving needs -- from institutional repositories (IRs) to learning object repositories or electronic records management, and more.

DSpace Open Source Community

DSpace is **freely available** as **open source software** you can customize and extend.

An active community of developers, researchers and users worldwide contribute their expertise to the **DSpace Community**.

Anyone who uses DSpace can get involved, in a number of different ways:

- Programming
- Defining feature requirements
- Writing documentation
- Testing new features
- Sharing your design or marketing expertise

Services we'll provide:

- **Accession and Data Storage** – governed by submission agreements negotiated between the Library and object provider.
- **Digital Object Integrity and Migration** – create policies and procedures to ensure the physical and intellectual integrity of objects in the repository. Work with contributor of object (if possible) to perform transformative migration where required
- **Discovery and Access** – Support the identification and retrieval of repository objects. Provide OAI-compliant metadata for objects in the repository to "expose" these objects to users worldwide (subject to access and retrieval limitations negotiated with object contributors)
- **Education and Outreach Services** – Promote importance of digital preservation, explain policies of digital repository, and provide expert consultation on digital preservation issues.

Tiers of Service

- **Archived** - Materials of significant and widespread value; complex,normalized metadata; commitment to periodic migration.
- **Preserved** – Materials have enduring value, but not enough to merit significant investment currently; basic metadata, supplied by content submitters; commitment to preserve in current format, but not migrate. The bulk of the repository's content will merit this level of service.
- **Stored** - Materials not owned or managed by Mason, but which have long term value to Mason scholarship; mirrors of e-journals, other web sites, datasets, working papers, learning objects and so on. No commitment to migrate or preserve.

So what does MARS mean to Mason?

A reliable, professionally managed, persistent archive of scholarly digital objects of enduring value to the university

A means to share with the broader scholarly community the research work produced by Mason faculty

Improved visibility in virtual collections built via metadata exchange (e.g., OAIster, Google Scholar, Yahoo, etc.)

Visible support for the open access movement which benefits the library and the university.

Organizational Structure

Faculty Advisory Committee

Advisory to Office of the University Librarian

Digital Repository Service

Based in Library Systems Office, managed by DRS Librarian

DRS Group

Representatives from: Library and general IT; archives; cataloging (metadata); library liaison program

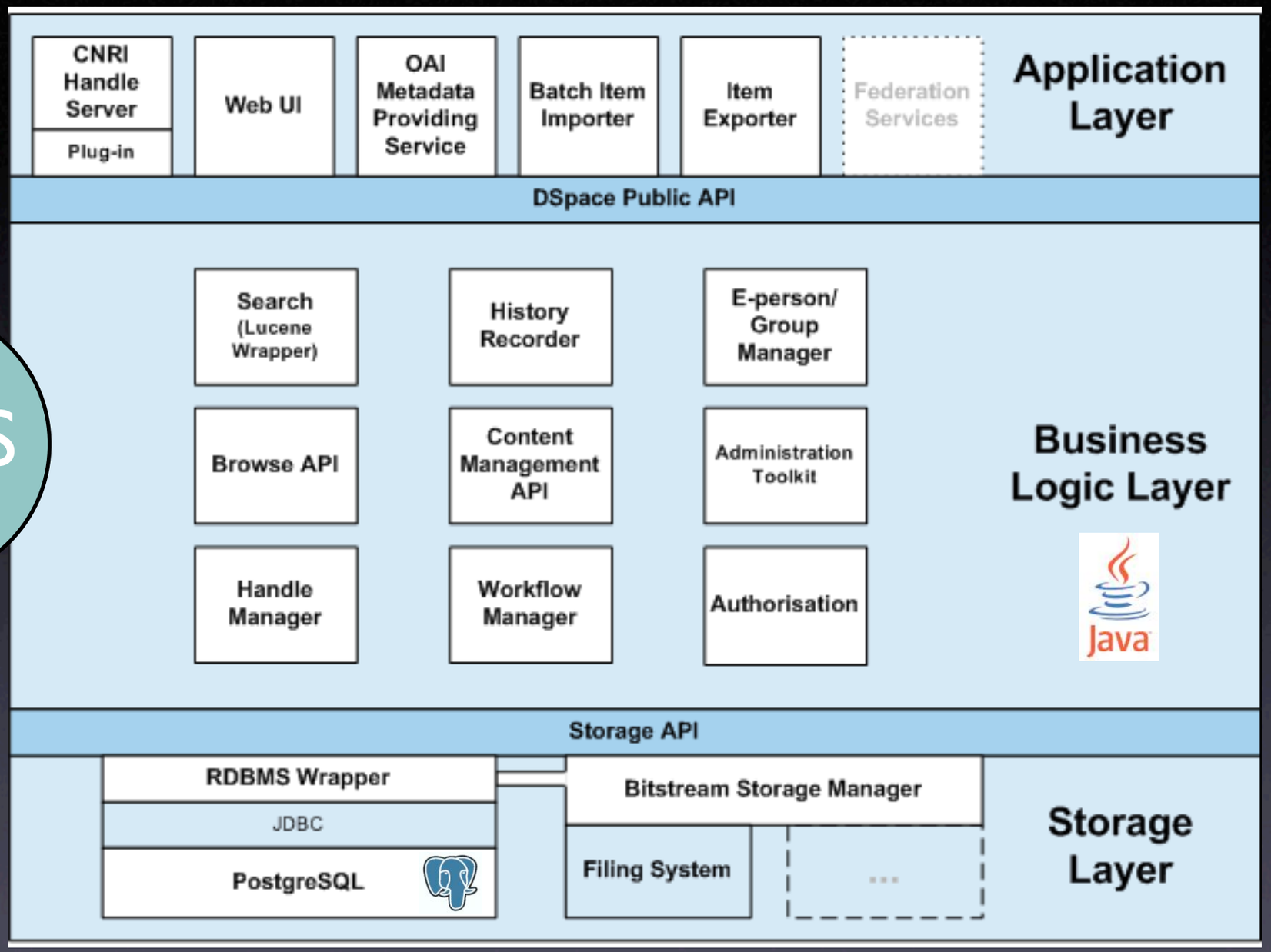
MARS architecture

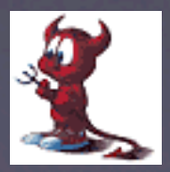
java-based application server

servlet container

JBOSS

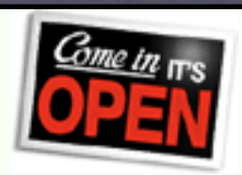
Tomcat





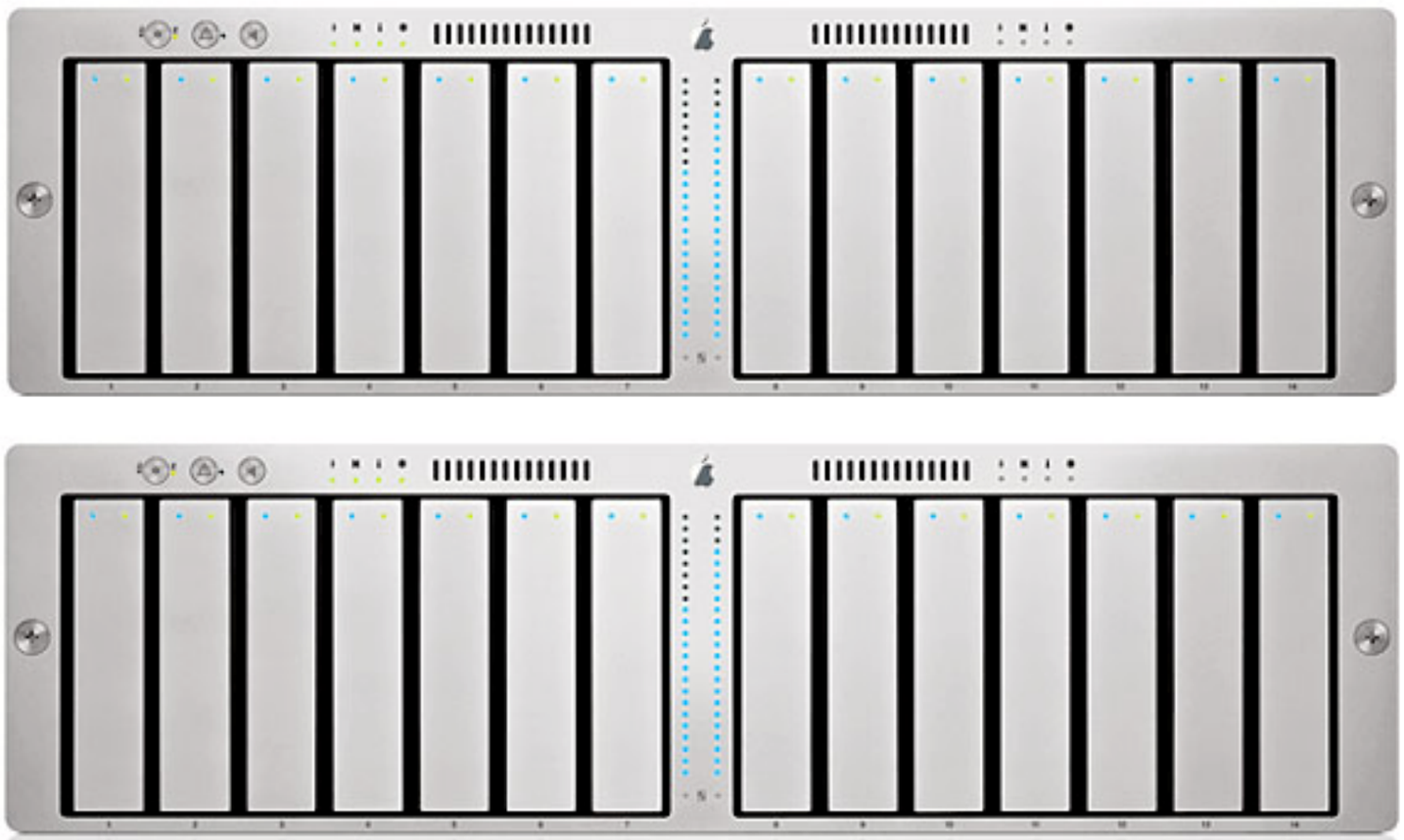
Mac OS X Server

All software open-source



Apple X-Serve G5

Dual 2 GHz CPUs



Apple X-Serve RAID

MARS currently has a 3.3 TB RAID 5 capacity but could expand to 5.5 by fully populating existing enclosures

X-Serve RAID uses inexpensive ATA drives, 512K cache per channel, battery backup for cache, and dual 2Gb fibre channel link

redhat.

YES CERTIFIED SUSE LINUX Novell.

Designed for Microsoft Windows Server 2003

LSI LOGIC

QLOGIC

EMULEX

Library Systems Office
University Libraries

Mason Archival Repository Service: Home

http://u2.gmu.edu:8080/dspace/index.jsp

Mason Archival Repository Service

Search MARS:

Go

Advanced Search

- Home

Browse

- Communities & Collections
- Titles
- Authors
- By Date

Sign on to:

- Receive email updates
- My MARS authorized users
- Edit Profile

- Help

powered by DSpace

Mason Archival Repository Service >

Welcome to MARS

The ***M***ason ***A***rchival ***R***epository ***S***ervice is up and running. We're still sorting out many of the issues that arise with any new service but our Special Collections and Archives division has already begun adding a few collections...

News

Search

Enter some text in the box below to search MARS.

Go

Communities in MARS

Select a community to browse its collections.

University Libraries

Welcome!

We're building a archival repository system for Mason--a project of the Library Systems Office of University Libraries.

Platform:

- DSpace 1.2.1 (final)
- OS X Server (10.3.9)
- Apple XServe G5
- Apple XServe RAID

MARS uses DSpace Software Copyright © 2002-2004 MIT and Hewlett-Packard - Feedback

Done