# Student's World: Photo Diary Study



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Computers in Libraries - April 16, 2007

www.hennigweb.com/presentations/cil2007/



# Outline

- why we did it
- methodology
- findings
- what we plan to do because of it
- further resources



# you hear all these theories:

"students are using google"

"they aren't coming to libraries"

"they use wikipedia, instead of scholarly resources"



We wanted to find out what our students REALLY do.



So we studied their information-seeking habits in the context of real life.



In the past we've done usability tests of our systems, one by one.



### **Web Advisory Group**

### **Usability Testing**

The Web Advisory Group coordinates usability testing for web interfaces

#### New home page [paper prototype]

New home page - usability test results : April 2004

### **Digital Library of MIT Theses**

Digital Library of MIT Theses usability test results: June 2003

#### MIT Institute Archives web site

Archives web site usability test results: May 2003

#### The "Big Test" results: November 2002

The aim of this test was to learn how our students use our many web-bainterfaces together. Included in the test were:

- web site: <a href="http://libraries.mit.edu/">http://libraries.mit.edu/</a>
- listings of databases + e-journals: <a href="http://libraries.mit.edu/vera">http://libraries.mit.edu/vera</a>
- web OPAC: <a href="http://libraries.mit.edu/barton">http://libraries.mit.edu/barton</a>
- Individual databases listed in Vera
- test version of SFX menu screens in Alternative Press Index/Firstsearch test account
- "Ask Us Live" (live chat reference service, no longer live at MIT)
- subject pages: <a href="http://libraries.mit.edu/subjects/">http://libraries.mit.edu/subjects/</a>
- The Information Navigator: <a href="http://libraries.mit.edu/tutorials/general/">http://libraries.mit.edu/tutorials/general/</a>

#### MIT Libraries' GIS web site

GIS web site usability test results: September 2002

#### MIT Libraries' DSpace web site

DSpace web site usability results: August/September 2002

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But that only tells us how each system works or doesn't work for them, once they've found it and are using it.



# usability testing is good for: fixing an existing system

contextual research is good for: deciding what to build



# So we turn to... anthropology



# An anthropologist on staff

Name	Title & Department	Phone & Email
Finger, Ann	Department Head, Circulation/Reserve & Stacks	585-275-9308 afinger@library.rochester.edu
Finger, Christopher	Library Assistant, Interlibrary Loan/Photocopy	585-275-4454 cfinger@library.rochester.edu
Fleig, Wendy	Analyst/Programmer, Computer Network Services	585-275-6356 wfleig@library.rochester.edu
Flickner, Rose	Library Assistant, Interlibrary Loan/Photocopy	585-275-4454 rflickner@library.rochester.edu
Foster, Nancy	Lead Anthropologist, Digital Initiatives Unit	585-273-5036 nfoster@library.rochester.edu
Fox, Deborah	Music Subject Librarian, Art and Music Library	585-275-9277 dfox@library.rochester.edu
Frontz, Stephanie	Department Head, Art and Music Library	585-275-4476 sfrontz@library.rochester.edu

Thanks, University of Rochester!



If you can't follow the users around all day in their environment, instead you can give them a "cultural probe."







We called it the "photo/diary study."



# students volunteered to track their information-seeking behavior for one week



# in-depth interviews



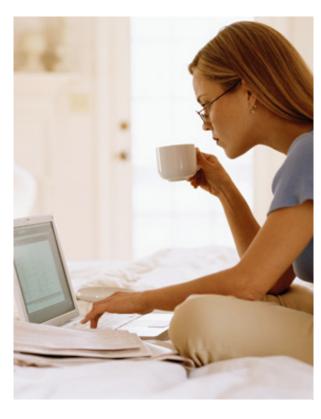
16 undergrads + 16 grad students

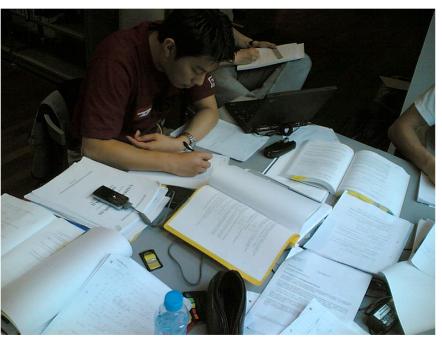








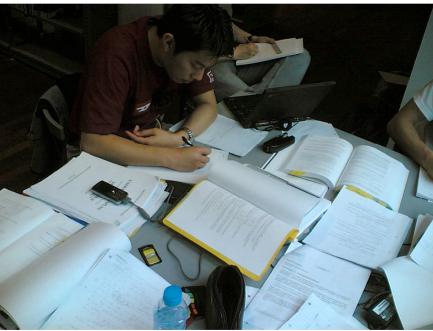














### students from:

- I art & architecture
- 14 engineering
  - 6 science
  - 5 school of humanities & social sciences
  - 3 management
  - 3 undecided

(roughly like the population at MIT)



Their photos, screen shots, and a diary of what they did helped them tell us the story.



## the interviews



# a total of 8 librarians teams of 2 people

- one to conduct the interview
  - one to take notes



## warm up questions

- I. what department are you in?
- 2. how long have you been at MIT?
- 3. about how many times a month do you use the libraries in person?
- 4. about how many times a month do you use our electronic resources?
- 5. about how many times a month do you search for information NOT using the MIT libraries?



## they tell the story of their week

(about an hour)

use the photos and diary to jog their memories



## questions we used to guide the interviews

what were you looking for?
where were you doing your research?
when were you doing this?
what strategies did you use?
what sources did you use?
how did you learn about these sources?



## questions we used to guide the interviews

what **devices** did you use?
what **worked**?
what **problems** did you have?
how often do you usually do this task?



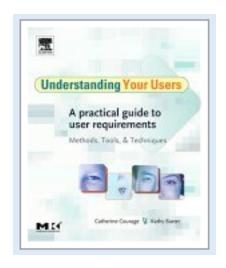
## we repeated back what we heard along the way:

"let me get this right, you're saying that...."

"so in other words you did x?"



## useful book for interviewing techniques:



# Understanding Your Users: A Practical Guide to User Requirements Methods, Tools, and Techniques

Catherine Courage & Kathy Baxter



# results



Everyone was busy and sleep-deprived.

Especially undergrads.

Students rarely asked for help.



# goals, tasks, methods



we used cards to write down each **method** used for each **task** they were working on



we wanted to understand their **goals** so that we could find ways to help them meet those goals



## grad student goals

- research & thesis 64%
- conference presentations & publishing 14%
- current awareness 9%
- helping the lab function
- networking
- job search



# undergrad student goals

- complete their course work 75%
- research 7%
- current awareness 7%

- participate in MIT clubs & social activities



## tasks - most frequent

- search for a known item
- search for information on a topic
- find facts
- search for a partially known item (don't have complete citation)
- take notes & organize information



## tasks - most frequent

- complete class assignment
- check web sites or email or RSS feeds for current awareness
- study for a class
- learn about a software program
- do course readings



## methods - most frequent

- search Google
- go directly to a known URL
- use the library catalog to browse or search
- search our licensed citation databases
- use course web sites
- review class notes
- search our finding tool for e-resources (Vera)



# methods - most frequent

- read textbooks
- consult with other students
- consult with faculty or guest lecturers
- search Google Scholar
- search our licensed full text databases
- physically browse a collection in the library
- refer to books in their personal library
- use Wikipedia



none of that is surprising.

so we asked ourselves...



- were they successful from their own points of view?

- were they efficient and effective from our point of view as librarians?



- were they successful from their own points of view?

grads: yes, for 86% of their tasks

undergrads: yes 93%

(we always asked: did you find what you were looking for?)



- were they efficient and effective from our point of view as librarians?

grads: yes for 77% of their tasks

undergrads: yes 85%

(we subjectively rated each task)



#### For all tasks

	successful (in their own view)	efficient (in our view)
grads	86%	77%
undergrads	93%	85%

percentage of tasks done during the week of the study



- you might say... well librarians will always think of better ways

but...



- we also broke it down by type of task and that's where we saw a big difference



### Searching for information on a topic

	successful (in their own view)	efficient (in our view)
grads	80%	40%
undergrads	82%	64%

percentage of tasks done during the week of the study



### Searching for information on a topic

This is an area where we can help.



They had a tendency to start with sources they were familiar with.









# and with sources recommended by a trusted network of people.





#### advisors

colleagues

friends

family

roommates



### not librarians



#### also common:

- figuring it out themselves



#### that's the culture at MIT



This is another area where we can help.

Help them make connections Include our expert librarians in those connections.



They used a wide variety of sources.



Google

e-books

Google Print

textbooks

Google Scholar

Google maps

MIT Open Courseware

**Amazon** 



Google

e-books

Google Print

library databases

textbooks

Google Scholar

Google maps

MIT Open Courseware

personal libraries

web sites of other universities

social science data sets

**Amazon** 



Google

e-books

Google Print

library databases

old course notes

textbooks

Google Scholar

Google maps

lab notebooks

MIT Open Courseware

personal libraries

web sites of other universities

social science data sets

**Amazon** 

personal contacts (people)



usually began with Google.



Almost everyone had a few favorite resources.



They tended to reuse their favorites, rather than try new ones.



# Many students did their TOPICAL discovery in non-library sources.

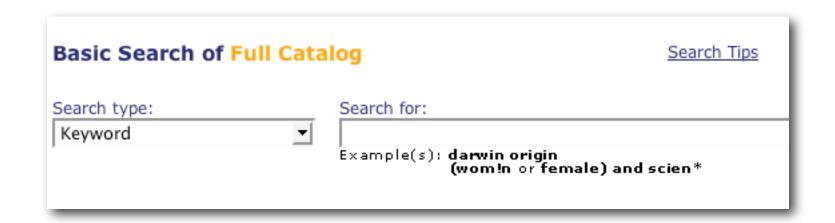


then came to the library to look up the items they found.



# Looking up known items in our systems usually worked well.







Undergrads mainly looked for information related to courses they were taking.



Often a few good sources were enough.



In those cases, people get what's convenient to get.



# Graduate students looked for information related to their research.



- more difficult and time-consuming.

- highly-specific topics.

- needed more depth and comprehensiveness.



I. trouble with knowing where to look

2. trouble with effectively searching the sources they used



They spent a large amount of time with varying degrees of success.



Sometimes used "brute force" methods.

VERY time consuming



from our point of view as librarians

"if they had only known about X!"

(fill in the blank)



from their point of view:

They often thought that's how it had to be.



Another area where we can help.



#### Also:

They used a wide variety of methods for "personal info management."

i.e., organizing what they found



They spend a lot of time doing this (in creative ways).



Most students are suffering from information overload.



# Refworks, Endnote, Zotero, CiteULike, Connotea....

a big interest in this area.



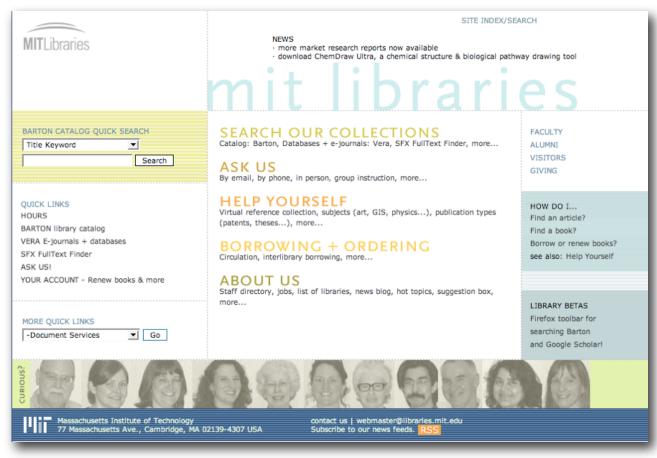
## By the way:

We conducted a large library survey this past year with a very high response rate.

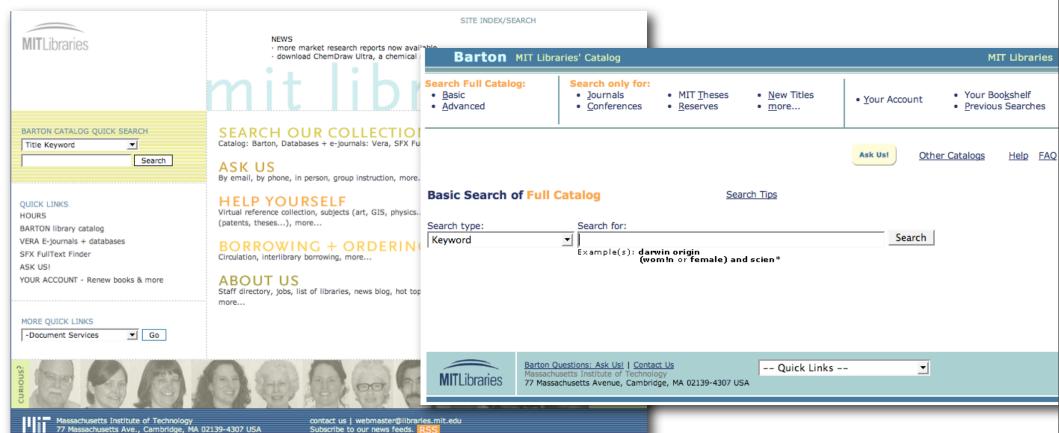


# users want us to simplify search, felt there were too many starting points

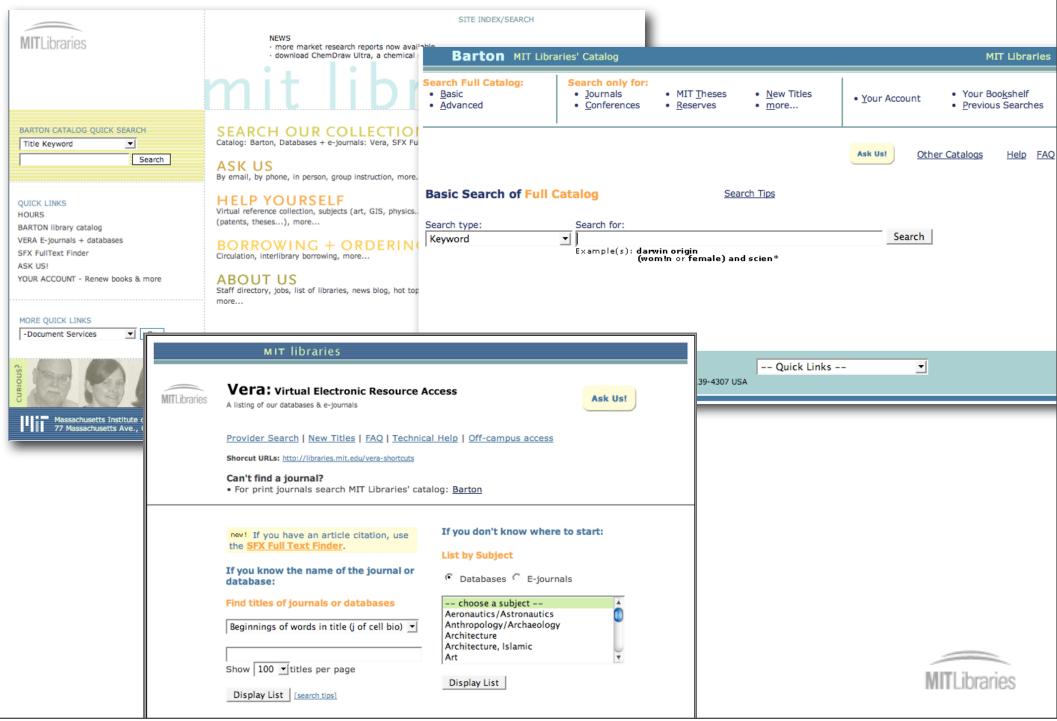


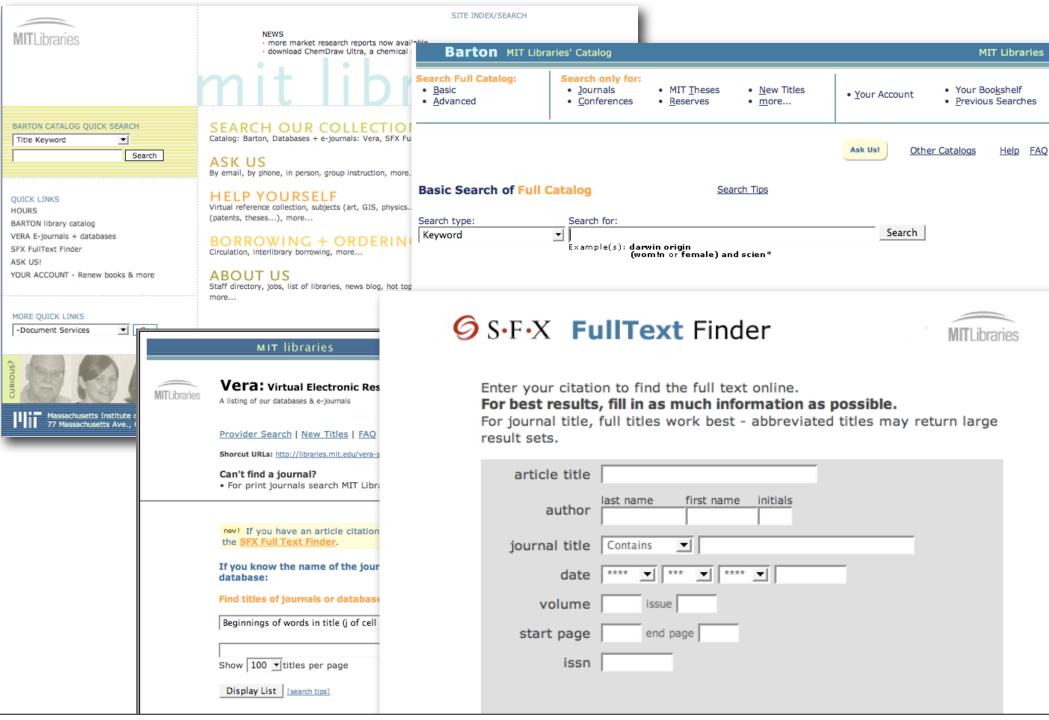












## Another finding:

They are not aware of many of the services we provide beyond the obvious ones.



## A picture of their culture

- sleep deprived
- stressed, in a hurry
- do it yourself
- focused on getting course work done or doing research
- current awareness important
- relying on trusted network of friends and colleagues



## A picture of their culture

- not asking for help
- not knowing about all our services
- not knowing about all our research databases
- using "brute force" methods
- struggling with organizing the info they have already found
- need to share the info with colleagues



so what are we going to do?

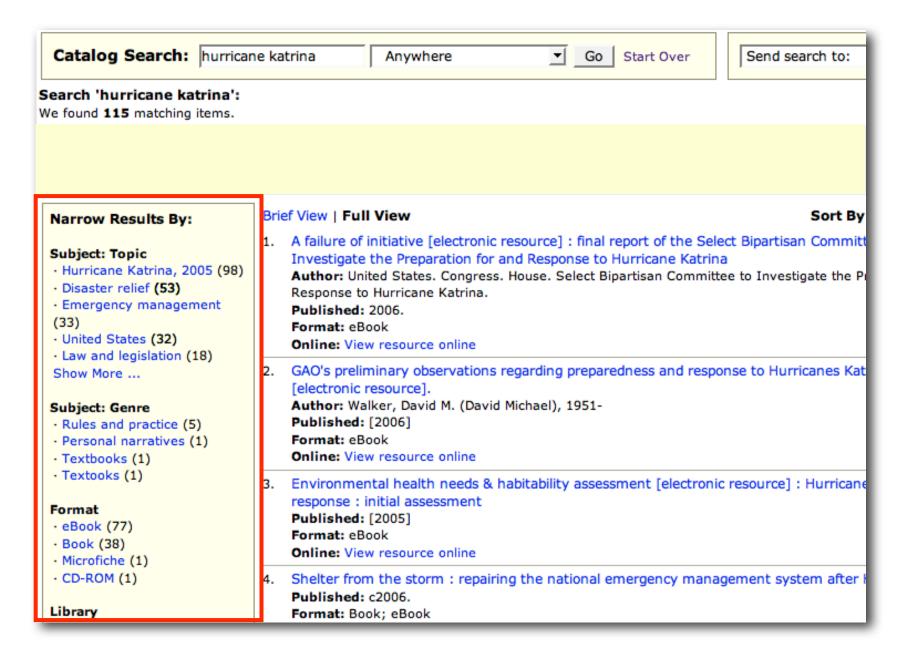


## **Priorities**

- Make topical discovery easier and more effective.
- Incorporate community & trust features in our systems.
- Embed ourselves & our systems where users are.
- Build our expertise into the systems, create systems that you learn from by using.



## Faceted browsing improves discovery





# We're looking at different solutions for a new catalog interface using faceted browsing:

- Endeca
- Siderean
- Univ. of Rochester XC
- build our own using Solr & Lucene
  - Worldcat Local

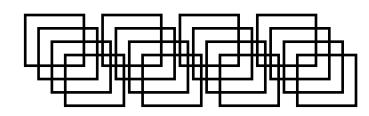


## Not just our catalog, but also to include:

- DSpace repository
  - Image collections
- Future archival collections
  - Pages from our web site

all with different types of metadata: MARC, Dublin Core, VRA, etc.





nearly 500 research databases

aggregated search of our local content with faceted browsing

catalog DSpace image collections archives

federated search of licensed e-content



And we're building a better way for students to discover our research databases (almost 500 of them), using federated searching.

(to be released next fall)



## community and trust features



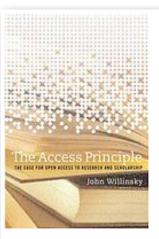
## So many community features available now:

- Social bookmarking
- Tagging
- Comments
- Reviews
- Rating
- Popularity rankings (circ stats and e-resource usage stats)



## We want more of these features in our systems





## The access principle : the case for open access to research and scholarship

by John Willinsky

Language: English Type: Sook (2) Internet Resource

 Publisher:
 Cambridge, Mass.
 : MIT Press, 2006.

 ISBN:
 0262232421
 9780262232425
 9780262232425

 0262232421
 OCLC:
 59756105
 Cite this Item

Subjects: Open access publishing. | Scholarly electronic

publishing. | Science publishing. | More ...

Web Resources: mitpress.mit.edu

Libraries

Details

Subjects

Editions

Reviews

Bookmark

#### Reader Reviews

Write an online review and share your thoughts with other readers.

Displaying Reviews 1 - 1 out of 1

Review by Ellen Finnie Duranceau, 2006-12-14

Reviewer: 01oclc00006686

A new MIT Press book, The Access Principle: The Case for Open Access to Research and Scholarship illuminates many of the complex issues and concerns reflected in campus initiate to support faculty in the retention of rights when assigning copyright to publishers. Opening Access: The Right to Know In The Access Principle, John Willinsky, University of British Columbia Professor of Literacy and Technology and developer of Open Journals Systems software, offers a compelling summary of the important social, political, and economic issuraised by the "state of declining access to research and scholarship within an otherwise explobal academic community," and describes how changing models for scholarly publishing increase access to (and the impact of) research and scholarship. Willinsky defines the acceptinciple as the belief that a "commitment to the value and quality of research carries with it responsibility to extend the circulation of such work as far as possible and ideally to all who interested in it and all who might profit by it." He places this access principle in a long line of

We'd like a system where the MIT community can contribute reviews



We'd like a multi-university tagging sytem.

(PennTags.. across academia).



## putting ourselves where users are



### Where are the users?

- Google
- Google Scholar
- Google Print
- Wikipedia
- Amazon
- iTunes
- Facebook
- Stellar (course management system at MIT)
- MIT departmental web sites
- faculty web sites at other institutions



We are already embedded in Google Scholar.



Scholar Preferences	
Interface Language	Display Google tips and messages in: English
Search Language	<ul> <li>Search for pages written in any language (Recommended).</li> <li>Search only for pages written in these language(s):</li> <li>Chinese (Simplified)</li></ul>
Library Links (what's this?)	mit e.g., Harvard  Show library access links for (choose up to three libraries):  Open WorldCat (Library Search)  Massachusetts Institute of Technology (Full Text@IngentaConnect)  Massachusetts Institute of Technology (Full text - MIT Libraries)  Online access to library subscriptions is usually restricted to patrons of that lib library password, use a campus computer, or configure your browser to use a li website or ask a local librarian for assistance.



#### Scholar All articles Recent articles

Results 1 - 50 of about 145,000 for global warming [definition]. (0.11 seco

#### All Results

W Nordhaus P Cox

P Vitousek

W Cline

J Hansen

#### Beyond Global Warming: Ecology and Global Change Full text - MIT Libraries - group of 2 »

PM Vitousek - Ecology, 1994 - esajournals.org

Ecology: Vol. 75, No. 7, pp. 1861-1876. Beyond Global Warming: Ecology and

Global Change. Peter M. Vitousek. Abstract. While ecologists ...

Cited by 419 - Related Articles - Web Search - BL Direct

#### Fingerprints of global warming on wild animals and plants - Full text - MIT Libraries - group of 5 »

TL Root, JT Price, KR Hall, SH Schneider, C ... - Nature, 2003 - frontiersinzoology.com Click here to read Fingerprints of global warming on wild animals and plants. Root TL, Price JT, Hall KR, Schneider SH, Rosenzweig C, Pounds JA. ...

Cited by 350 - Related Articles - Cached - Web Search - BL Direct

MITLibraries SFX: Related Links	
Title: Beyond Global Warming: Ecology and Global Change Source: Ecology [0012-9658] Vitousek yr:1994 vol:75 iss:7 pg:1861	
Full Text	
Full text available via JSTOR	
Year: 1994 Volume: 75 Issue: 7 Start Page: 1861	
Full text available via ProQuest Research Library	
Year: 1994 Volume: 75 Issue: 7 Start Page: 1861	
Other holdings  Check availability in Barton: MIT Libraries' Catalog	
Reference Create a persistent link to this page	



# Browser extensions

 LibX - Firefox extension libraries.mit.edu/libx





#### Install MIT LibX now!

Browser Requirements:

ONLY Firefox 1.5 or higher

#### Installation:

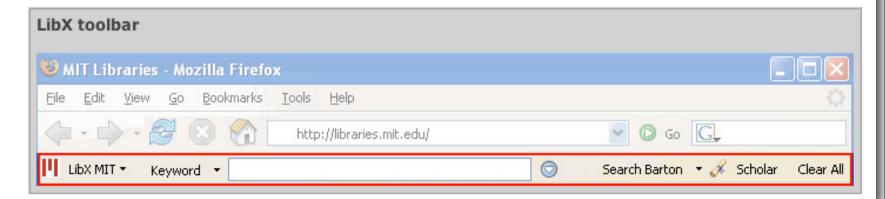
If Firefox displays a message below the toolbars, "To protect your computer, Firefox prevented this site..." see <u>Installation Help</u>

#### **Library Betas**

#### LibX - MIT Edition BETA

#### What is LibX?

- Toolbar: LibX is a Firefox toolbar that allows you to quickly search the Barton catalog, Vera, Google Scholar, the SFX FullText Finder and other search tools
- Right-click menu: when you have installed LibX you can highlight text on a web page or PDF and right-click for a menu of search options
- Embedded links: LibX will also embed links on search results in Amazon, Barnes & Noble, Google Scholar, NYT Book Reviews, and more that will lead you to MIT-only resources
- 1. Toolbar: Enter search words in the box in the LibX toolbar; the Barton catalog is the default, but you can switch to Vera, the SFX FullText Finder or Google Scholar. You can search by multiple terms in different fields (author, title, ISBN/ISSN, etc.) and by clicking on the down arrow of you can add additional search boxes. Which fields can be searched changes based on which database is being searched.





# LibX

### adds our search to the browser toolbar



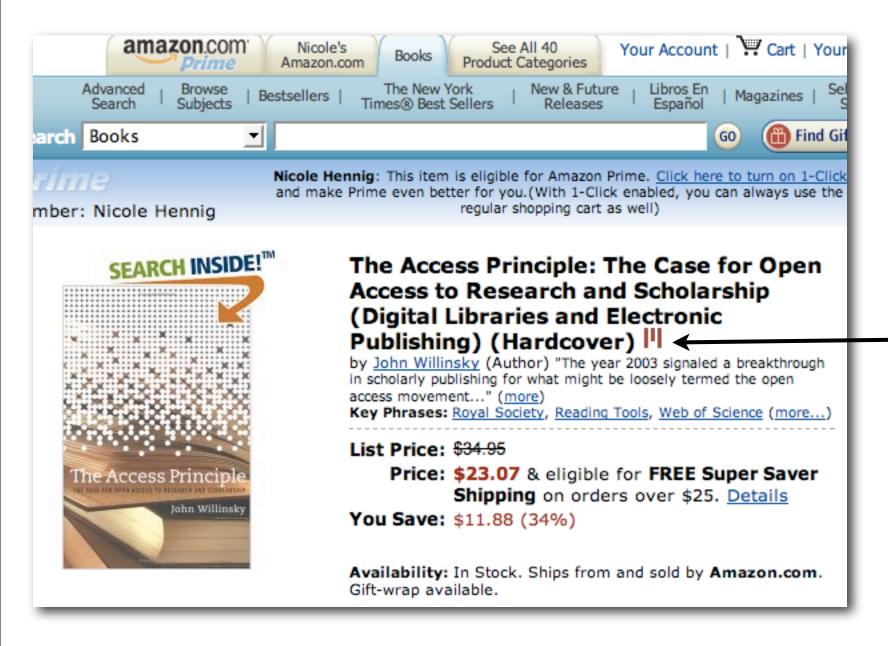


Puts links to the libraries where the users are:

- such as Amazon, Barnes & Noble, Powell's
- New York Times book reviews
- Google
- and more.



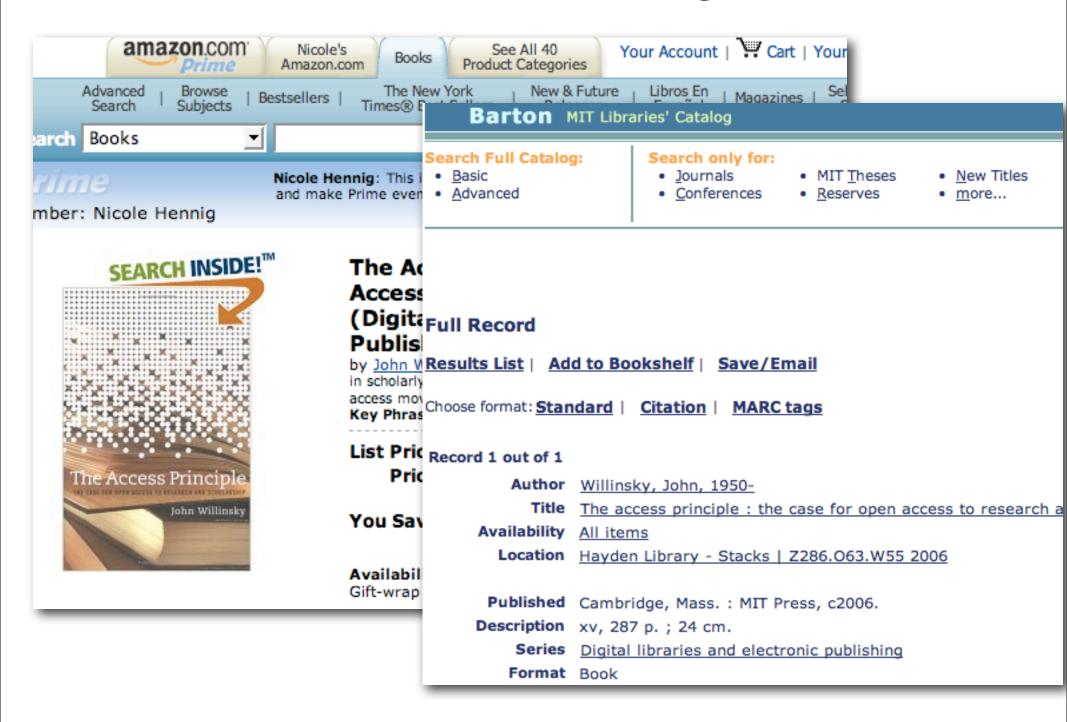
# Links from Amazon to our catalog



cue

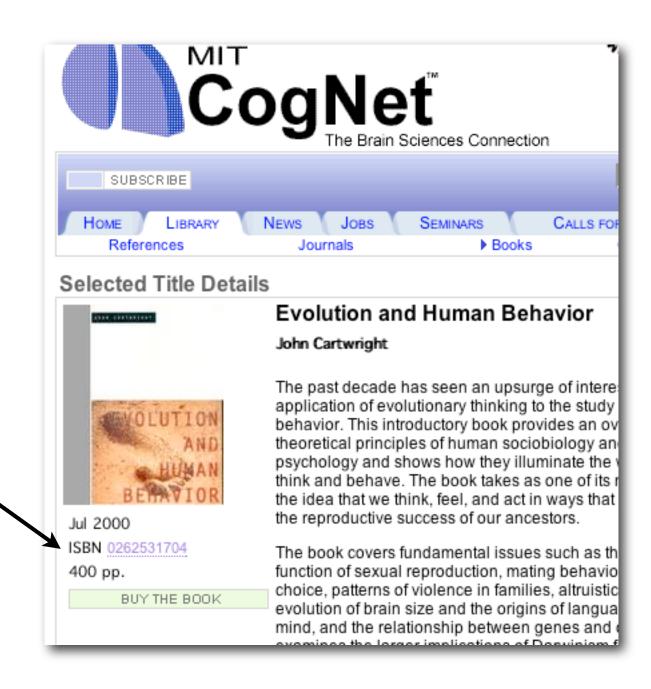


# Links from Amazon to our catalog



# LibX

links ISBNs to our catalog



Without LibX, the ISBN is not a link.



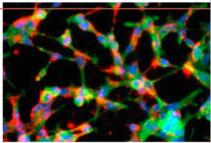
# LibX

right-click
sends selected
text on a page
to
Google Scholar
and more



:: SUPPORT THE CENTER

#### NEWS & EVENTS



Targeted nanoparticle-aptame bioconjugates for cancer chemotherapy in vivo. Image courtesy / Benjamin A. Teply

Publications

Brar, G.A., Kiburz, B.M., Zhang, J.E., White, F. and Amon, A. (2006)

Rec8 phosphorylation and recombination promote the step-wise loss

of cohesions in meiosis Nature 441: 532-536

Copy Select All

Clark, A. and Orr-Weav the Centromere: Confro Dev Cell. 5: 544-547.

Search Google for "Rec8 phosphoryl..."

Tag This Page...

Farokhzad, O., Cheng, I. Richie, J.P. and Langer, bioconjugates for cance 103: 6315-6320.

View Selection Source

Krishnan, K. and Lindqu prion illuminate pucleat Create Zotero Item and Note from Selection

Lee, T.I., Jenner, R.G., Kumar, R.M., Chevalier Koseki, H., Fucikamik, Add Selection to Search as...
Search Barton by Keyword Now!
Search Barton by Title Now!
Search Barton by Author Now!
Search via Google Scholar
Reload this Page via MIT Librarie

Reload this Page via MIT Libraries Off-Campus Proxy



# libx.org



# LibX - A Firefox Extension for Libraries

#### Main



**Announcements** 

FAQ

**Editions** 

**Screenshots** 

**Publications** 

**Publicity** 

**Upcoming Features** 

**Known Issues** 



Virginia Tech University Libraries

and

Virginia Tock

LibX is a **Firefox** extension that provides direct access to your library's resources.

LibX is an **open source** framework from which **editions** for specific libraries can be built.

Currently, **45 academic and public libraries** are offering LibX editions to their users, an **additional 77 libraries** are testing editions. Take a look at the **screenshots & screencasts** hosted at this site.

#### LibX Features

- Toolbar & right-click context menu: Direct access to the catalog via a toolbar and context (right-click) menu
   - automatic construction of simple or advanced searches. Search by entering terms, select and right-click, or
   select and drag-and-drop without having to navigate to the library catalog page. LibX supports Millennium,
   Voyager, Aleph, Sirsi, Dynix/IPAC, and user-defined catalogs.
- Adaptive context menus: The context menu changes automatically depending on what is selected. For
  instance, if an ISBN is selected, the context menu will offer the option to search directly using that specific
  identifier. Currently recognized are CrossRef DOIs, ISBNs, and ISSNs, and PubMed IDs.
- OpenURL support: OpenURL is a standard that helps your library get you to appropriate resources, including
  the full text of journals to which it subscribes. LibX gives direct access to your institution's OpenURL resolver,
  which can directly point you at the full text of an article you are looking for. (OpenURL resolvers are often called
  "Find it@", "Article Finder", "Article Linker", "WebBridge", "Get it@", "Find Fulltext", "Article Express" or similar
  names.) OpenURL can work well in connection with Google Scholar.
- Google Scholar Support (The 'Magic Button'): Select text and search for the selected text on Google
  Scholar. In addition, LibX will read Scholar's results for you, determine whether the paper was found and if so,
  ask the OpenURL resolver for a paid-for copy, should you not have access to the copy to which Scholar links.
  You can use this feature even from inside a PDF, which makes retrieving papers referenced in a PDF file a snap.
  If your library has not subscribed to Scholar's services, see Question 11 in the FAQ: Can I get the Google
  Scholar search to work even if my institution has not registered with Google?
- Web Localization via Embedded Cues: LibX places localized cues in web pages you visit if the library has resources related to that page. Whenever you see the cue, click on the link to look at what the library has to

### Other ways to put ourselves where they are

- our news blog (Wordpress)
- RSS feeds for the blog and for new titles in our catalog
- podcasts in iTunes
- "insideMIT" portal under development, build library widgets for that
- work on extending library systems inside course management systems



We now have a "betas" page

... similar to Google Labs



#### MIT libraries

SITE INDEX SEARCH



#### **MIT Libraries' Betas**

The MIT Libraries are experimenting with new technologies to help make access to information easier. The tools below are in "beta" form - they are still being tinkered with, but we'd like you to try them out and tell us what you think!

What works well? What doesn't? Have you written any scripts or tools yourself? Let us know! Email us at betas-lib@mit.edu.

#### **RSS** feeds for new books BETA

Check out the latest and greatest books that have recently arrived in the MIT Libraries! See: Recent Additions to the Collections.

We have RSS feeds for many different subjects - you can even find out about new music CDs and DVDs. Don't know what RSS is or how to use it? No problem - you can simply view new items via the link above. You can also have lists of new items emailed to you on a regular basis.



#### New Humanities Virtual Browsery BETA

The Humanities Virtual Browsery has been revamped! In addition to highlighting new books, the redesign also introduces several new features:

- an RSS feed
- the ability to comment on books, and discuss them with the rest of the MIT community
- links to informative book reviews
- information about the availability of the book in the Humanities Library
- links to other books by the same author

#### **Graduates of Betas**

#### Dewey Research Advisor

starting points for specific research questions in the fields of business, management, and economics

#### LibX - MIT Edition

a Firefox extension that adds a toolbar for quickly searching the Barton catalog, Vera, and Google Scholar. embeds links to MIT resources in Amazon, Google Scholar, and more.



#### Labs.google.com, Google's technology playground.

Google labs showcases a few of our favorite ideas that aren't quite ready for prime time. Your feedback can help us improve them. Please play with these prototypes and send your comments directly to the Googlers who developed them.

#### New! Google Code Search

Search public source code

10/05/06 - Give us feedback - Discuss with others

#### New! Google Reader

Use Google's web-based feed reader to keep track of your favorite web sites 09/28/06 - Give us feedback - Discuss with others

Google Transit (currently available in select cities)
Plan trips using public transportation

09/25/06 - Give us feedback - Discuss with others

Google Music Trends

See what music is popular among Google Talk users

8/16/06 - Give us feedback - Discuss with others

● Google 趋势 (Google Trends in Chinese)

世界在搜索什么

7/31/06 - <u>给我们反馈</u> - <u>参加讨论</u>

Accessible Search

Web search for the visually impaired

7/19/06 - Give us feedback

Google Extensions for Firefox (Google Browser Sync now available)

Add powerful new tools to your Mozilla Firefox browser

6/7/06 - Give us feedback - Discuss with others

#### **Graduates of Labs**

- Google Docs & Spreadsheets
  Create, store and share documents
  and spreadsheets on the web
- Google Video Search TV programs and videos
- Personalized Search
  Get the search results most relevant to you
- Personalize Your Homepage See information you care about on your Google homepage
- Google Maps
   View maps, get driving directions, and search for local businesses and services.
- Google Scholar
   Search through journal articles, abstracts and other scholarly literature
- Google SMS (US)
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Google labs showcases a few of our favorite ideas that aren't quite ready for prime time. Your feedback can help us improve them. Please play with these prototypes and send your comments directly to the Googlers who developed them.

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### **MIT Libraries' Betas**

The MIT Libraries are experimenting with new technologies to help make access to information easier. The tools below are in "beta" form - they are still being tinkered with, but we'd like you to try them out and tell us what you think!

What works well? What doesn't? Have you written any scripts or tools yourself? Let us know! Email us at <a href="mailto:betas-lib@mit.edu">betas-lib@mit.edu</a>.

Successful systems **extend** the users' work practice.

- Karen Holzblatt



Design works best when it models user behavior.

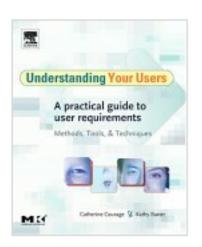
-Joshua Porter



We should look for ways to understand and extend the practice of our users.



### **Useful resources**

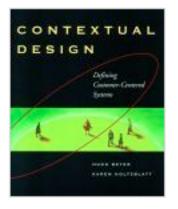


Understanding your users: a practical guide to user requirements methods, tools, and techniques.

Morgan Kaufmann, 2004.

Catherine Courage and Kathy Baxter.

http://www.amazon.com/Understanding-Your-Users-Requirements-Technologies/dp/1558609350/



Contextual design: a customer-centered approach to systems designs.

Morgan Kaufmann, 1997.

Hugh Beyer and Karen Holtzblatt.

http://www.amazon.com/Contextual-Design-Customer-Centered-Interactive-Technologies/dp/1558604111



www.hennigweb.com/presentations/cil2007/



# questions?



# Key reports with similar findings & recommendations to ours

Rethinking how we provide bibliographic services for the University of California. Bibliographic Services Task Force. December 2005.

http://libraries.universityofcalifornia.edu/sopag/BSTF/Final.pdf

Perceptions of Libraries and Information Resources. OCLC Reports, 2005.

http://www.oclc.org/reports/2005perceptions.htm

The Changing Nature of the Catalog and Its Integration with Other Discovery. Library of Congress, 17 March 2006.

http://www.loc.gov/catdir/calhoun-report-final.pdf

