


# Preparing for technological changes within academic libraries

A person with a backpack is climbing a rocky mountain peak. The person is silhouetted against a bright blue sky with large, white, fluffy clouds. The mountain is dark and rugged, with sharp peaks. The person is wearing a cap and shorts, and is using a rope to assist in climbing.

Rachel Vacek, Head of Web Services  
University of Houston Libraries  
@vacekrae, revacek@uh.edu

*Library Futures Series, Oklahoma State University Library*

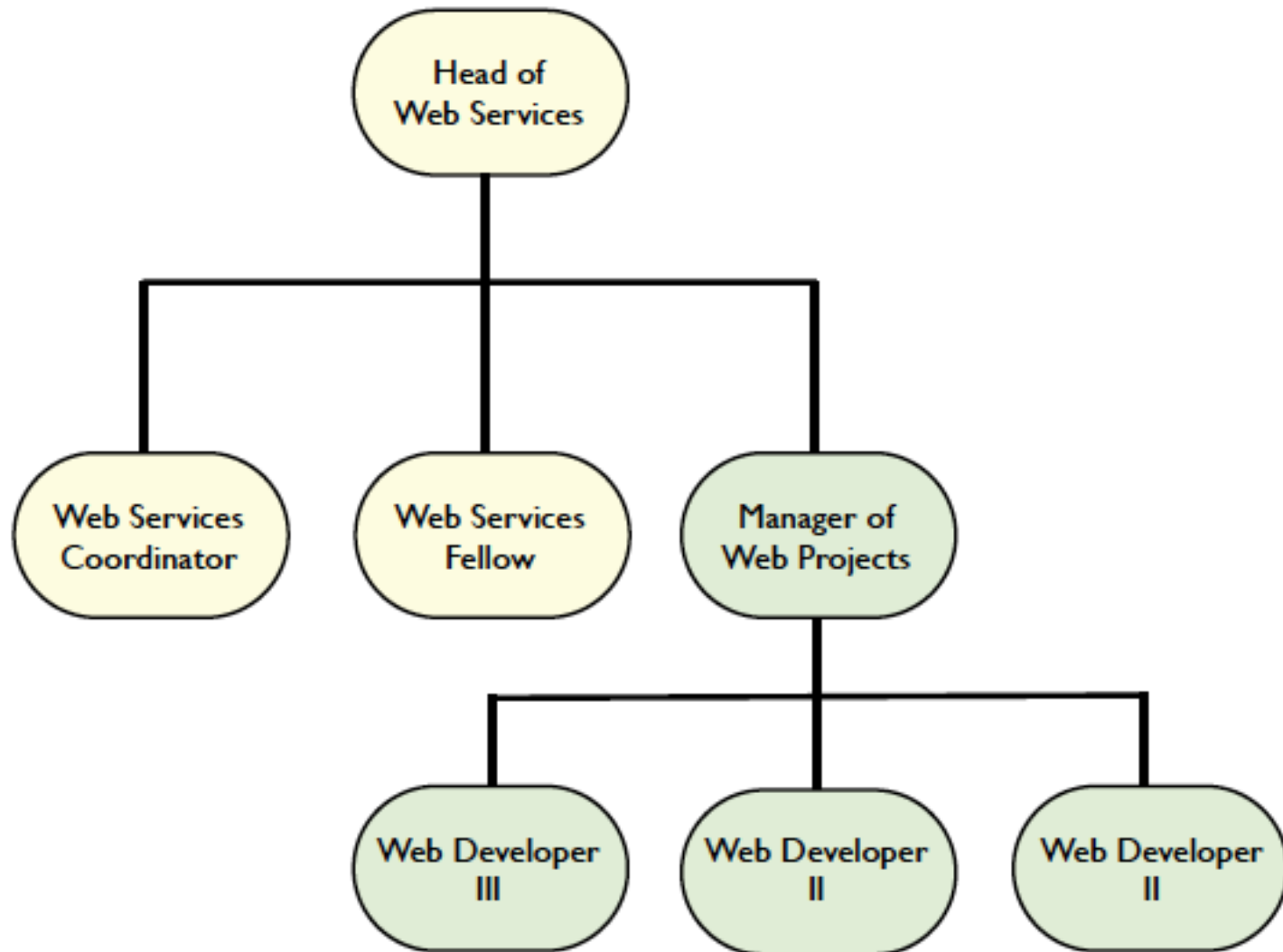
November 13, 2012







# Web Services Org Chart





# Outline

- **INNOVATE**
  - Create opportunities for technology innovation
- **STREAMLINE**
  - Streamline and integrate web content
- **MOBILIZE**
  - Plan for relevant and needed mobile services
- **PREPARE**
  - Interact with library users in new and unexpected ways

# INNOVATE

*If you always do what you always did, you will always get what you always got.*

- Albert Einstein



# Innovation within the UH Libraries

- Micro-grant program
  - Events, contests, services
- Tuesdays with TED
- Tech training program
- In-house experts teach tech classes
- Brown bag lunch discussions about technology conferences recently attended
- Tech gadget petting zoo
- Reading group – articles from Journal of Library Innovation, or anything else thought-provoking



# Innovation on campus / in community

- Collaboration with other departments on campus
- Collaboration with a class
- Digital signage
- Gamification
- Events
- “Field trips” to other facilities on campus or to other libraries



cougar  
social  
media

# SHOWCASE



The Cougar Social Media Showcase, held in 2010, was an event that engaged local universities as well as academic libraries to share how diverse groups incorporated social media into various aspects of higher education.

# REDISCOVER DISCOVERY

## 2ND ANNUAL DISCOVERY DAY CAMP



This free event, first held in 2011 and again in 2012, focused on new and developing trends in library discovery systems and provided an opportunity for attendees to discuss the implementation, usability, and evaluation of discovery tools.

Discovery Day Camp 2011: <http://info.lib.uh.edu/p/ddc2011>

Discovery Day Camp 2012: <http://lws.lib.uh.edu/sites/ddc2/>



# Technology training program

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## PAGES

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**About**

**Instructors**

**Participants**

**Schedule**

**Intro**

**Blogs**

**RSS Feeds**

**Tagging**

**Social Networking**

**Managing Online Personas**

**Online Collaboration Tools**

**Images**

**Audio and Podcasting**

**Video**

**Mobile Technologies**

**What's Next and Wrap Up**

The inspiration for the UH Libraries' "Technology Training Program" came from Learning 2.0 online program (often called "23 Things") that Helene Blowers created while at the Public Library of Charlotte and Mecklenburg County. Since 2006, over 250 libraries worldwide have created similar programs.

In 2010-2011, we offered a similar discovery learning program designed to encourage library staff to explore new technologies and reward them for participating in the program over the course of a year.

# Tuesdays with TED

Every other week each summer, I have hosted a TED Talk viewing and discussion over the lunch hour. I found relevant and timely topics, posted a schedule, and invited anyone in the library. Feedback was encouraging and people overall liked the ability to discuss topics that aren't often addressed in libraries but could potentially have an impact.



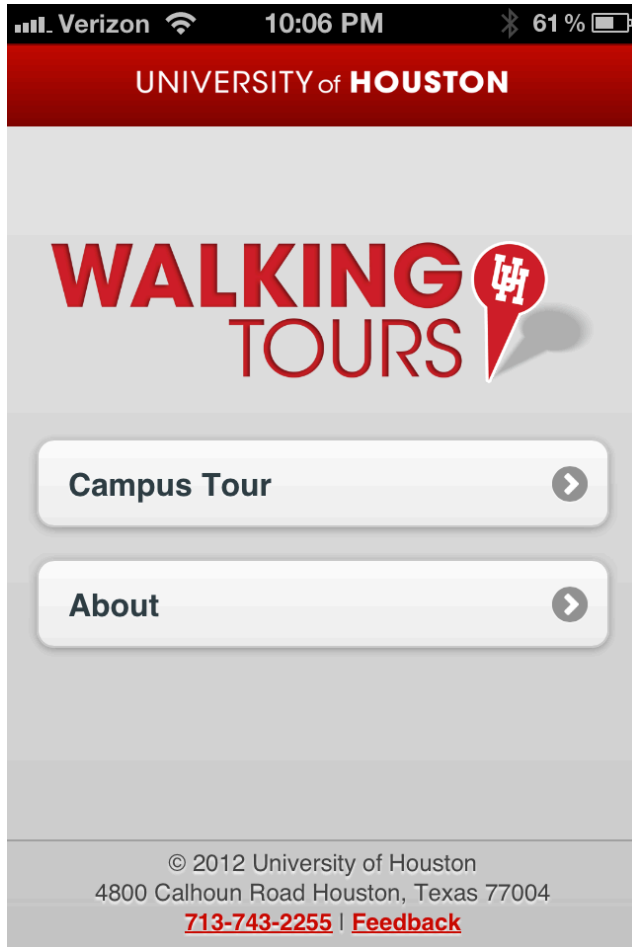
# iPhone app made by students



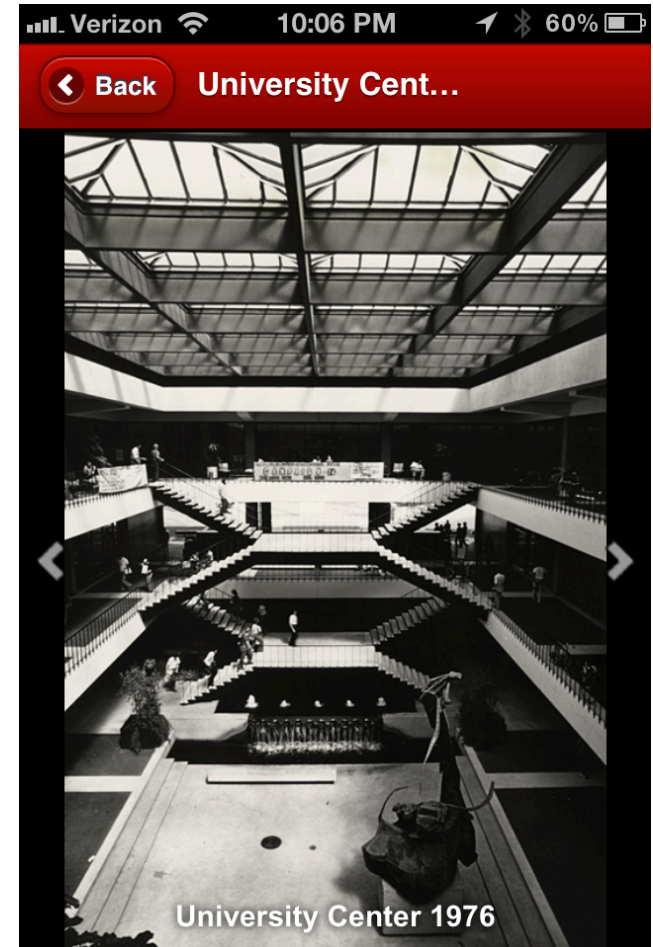
In 2009, an iPhone app for searching the UH Libraries' Catalog was developed by graduate students in the "Ubiquitous Computing" course in the University of Houston Computational Physiology Lab. The app has since been retired and removed from the Apps store, and we now use Library Anywhere for our mobile catalog, available through our mobile site: <http://m.lib.uh.edu>.



# Campus mobile walking tours



In early 2012, we collaborated with the Admissions office and UH IT to create a campus walking tour. It also highlights images from our Digital Library / University Archives for key buildings or locations across the campus.



# INNOVATE: Key concepts

- Create a culture where
  - Risk-taking is rewarded
  - Failures are just opportunities where you learned more than you expected
  - Innovation and discussion about ideas are the norm, not the occasional activity

# INNOVATE: Key concepts

- Create a culture where (cont.)
  - Experimental collaboration with students, faculty, or other campus partners is encouraged
  - Events facilitate wider discussion about topics or ideas
  - Support is demonstrated by a commitment to funding innovation



# STREAMLINE

*It is failure that guides evolution; perfection provides no incentive for improvement, and nothing is perfect.*

- Colson Whitehead, novelist

# What applications are integrated into your library website?

The screenshot displays the Oklahoma State University Library website. At the top, the 'LIBRARY' title is prominent, with navigation links for 'Feedback | Weather | Help | Contact Us' and a search bar. A secondary navigation bar includes 'My Account', 'Hours', 'Library Jobs', 'EndNote', 'Laptops', 'Find...', and 'OSU Home'. The left sidebar features a list of services: 'Request Forms', 'Library Services', 'About OSU Libraries', 'Support the Library', 'Branch Libraries', 'Citation Manuals', 'Anywhere Library Access', and 'Give Us Feedback'. Below this is a 'Text us: (405) 301-8102' link and a 'Library Chat' button. The main content area includes a large image of students in a library setting with the text 'create / innovate / educate / Go STATE'. Below this is a search bar with tabs for 'Books', 'Articles', and 'Everything'. To the right, there's a 'Search the entire O'Colly!' section with a date 'Sunday - Nov 11, 2012' and time '9 am-2 am'. Further right is a 'LIBRARY NEWS' section with social media icons and a 'LIBRARY WebCam' link. The bottom of the page features the 'OKLAHOMA STATE UNIVERSITY' logo and a footer with links to 'OSU HOME', 'OSU-OKC LIBRARY', 'OSU-TULSA LIBRARY', 'OSU INSTITUTE OF TECHNOLOGY LIBRARY', 'OSU-CHS LIBRARY', and 'ACCESSIBILITY'. A copyright notice at the very bottom reads 'Copyright © Oklahoma State University All rights reserved | Stillwater, OK 74078 | 405.744.5000'.

**LIBRARY**

Feedback | Weather | Help | Contact Us

My Account | Hours | Library Jobs | EndNote | Laptops | Find... | **OSU Home**

**OSU**

Request Forms  
Library Services  
About OSU Libraries  
Support the Library  
Branch Libraries  
Citation Manuals  
Anywhere Library Access  
Give Us Feedback

Text us: (405) 301-8102  
**Available** Library Chat

**create / innovate / educate / Go STATE**

Books Articles Everything

Search for Books and Articles at the OSU Library ...

**Search the entire O'Colly!**

TODAY  
Sunday - Nov 11, 2012  
9 am-2 am

**LIBRARY NEWS**

Watch Library Videos on Ostate.tv  
Conversation with Robin Ventura-Nov. 16  
more...

**UPCOMING EVENTS**

National Bundt Cake Day  
Nov. 15, 10:00 am

**LIBRARY WebCam**

**OKLAHOMA STATE UNIVERSITY**

OSU HOME | OSU-OKC LIBRARY | OSU-TULSA LIBRARY | OSU INSTITUTE OF TECHNOLOGY LIBRARY | OSU-CHS LIBRARY | ACCESSIBILITY

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# Multiple applications

Innovative  
interfaces



Pharos



PM Wiki



Blackboard



WORDPRESS



ILLiad™

A single interface for more efficient interlibrary loan

# Multiple access points

- Users can enter into your library site from
  - Course management system
  - Search engine
  - University website
  - Bookmarks in their browser
  - Off campus
  - Marketing flyer
  - Social media
  - From a mobile device
  - From different types of computers

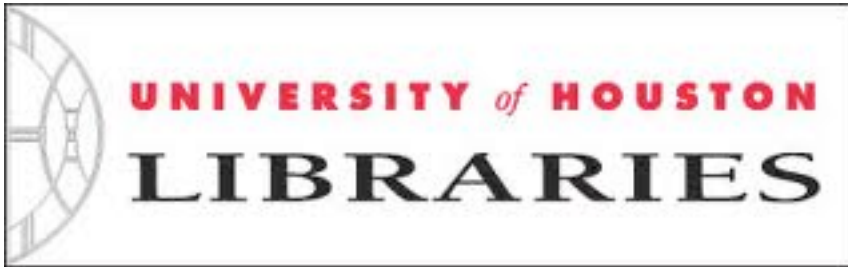


# Multiple access points

- [info.lib.uh.edu](http://info.lib.uh.edu)
- [library.uh.edu](http://library.uh.edu)
- [guides.lib.uh.edu](http://guides.lib.uh.edu)
- [digital.lib.uh.edu](http://digital.lib.uh.edu)
- [search.lib.uh.edu](http://search.lib.uh.edu)
- [weblogs.lib.uh.edu](http://weblogs.lib.uh.edu)
- [ask.lib.uh.edu](http://ask.lib.uh.edu)
- [archon.lib.uh.edu](http://archon.lib.uh.edu)
- [uh.edu/library](http://uh.edu/library)
- [uh.edu/libraries](http://uh.edu/libraries)
- [lws.uh.edu](http://lws.uh.edu)
- [login.ezproxy.lib.uh.edu](http://login.ezproxy.lib.uh.edu)
- [illiad.lib.uh.edu](http://illiad.lib.uh.edu)



# Multiple brands



UNIVERSITY of **HOUSTON** | LIBRARIES



UNIVERSITY of  
**HOUSTON**

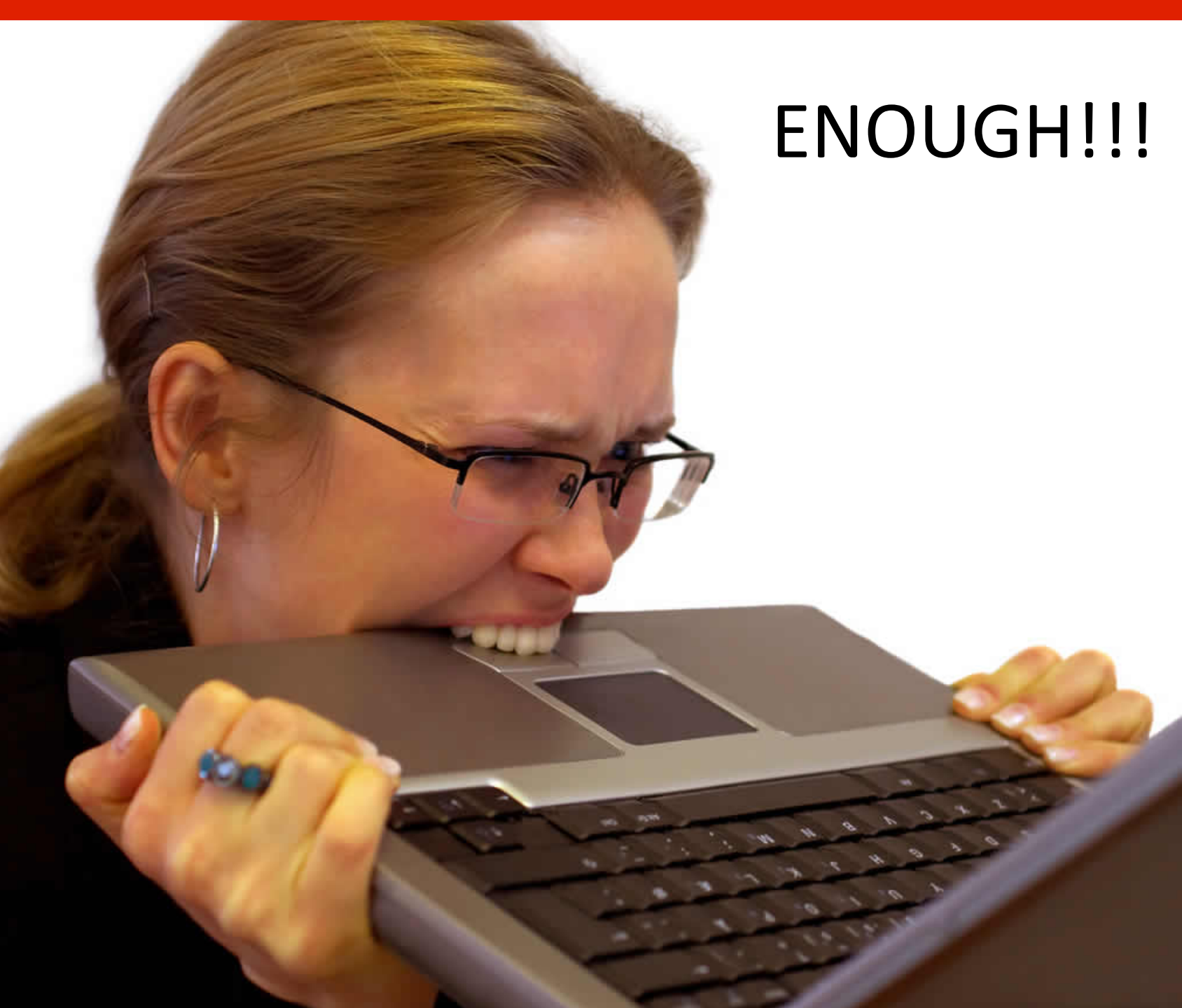


# Multiple sources for content

- Website CMS
- Mobile website CMS
- LibGuides
- LibAnswers
- Blogs
- Social Media
- And multiple people throughout the library create that content



ENOUGH!!!



# Organizational politics need to change

- Applications are managed by multiple departments within the library
- Departments need to be less isolated, more agile, and willing to work closely with one another and with stakeholders
- Usability test results, analytics, transaction logs, database usage, etc., need to be transparent to everyone within the library

# Take advantage of APIs

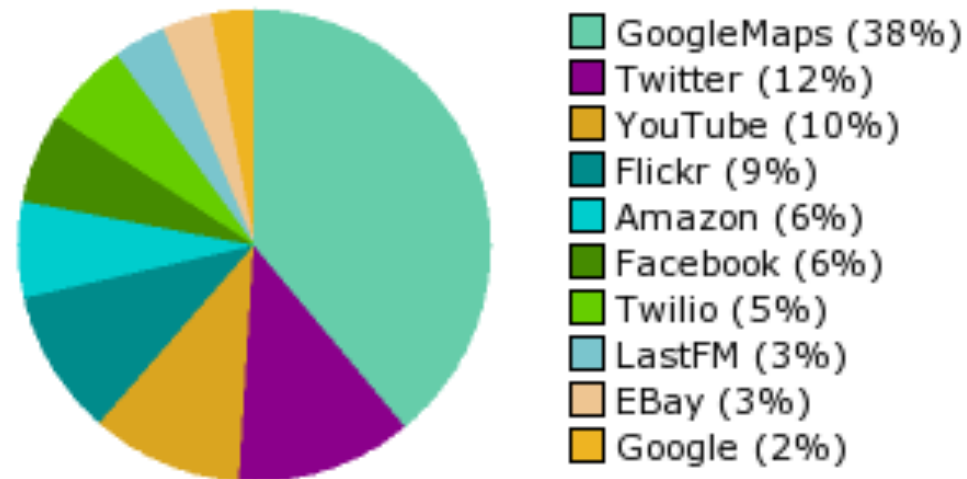
- What is an API?
  - An API is a way for a website or service to talk to another website or service
  - You can mix information and media from other services into your own site or application
- Example
  - Yelp uses the Google Maps API to show where restaurants are on a map

## Top APIs for Mashups

Last 14 days

See all time

Click on a slice or label to see details



ProgrammableWeb.com 11/11/12



# APIs in libraries

- Some APIs allow for complex interactions, others just permit widget construction
- Most ILSs, institutional repositories and discovery platforms provide APIs
- Many content management systems also have APIs
- Structured data coupled with APIs means content can more easily be pulled across multiple platforms

# Why is this important?

- Streamlining web content / data makes it easier for your library to maintain that content
- It's easier to create a consistent, single, unified user experience
- Helps to prevent duplicative work
- Makes your content more flexible and reusable



What are we doing  
at the UH Libraries  
to streamline and improve  
our web user experiences?



# Web User Experience (UX) Program

- Usability testing on any application or service within the library
- Dedicated librarian provides this service
- Budget for
  - Software: TechSmith Morae software, CrazyEgg Click Analytics, Google Analytics, transaction log tool
  - Hardware: 2 desktops, 2 laptops, web cameras, camera for recording mobile device usage
  - Training: workshops, webinars, data analysis
  - Incentives: food, contest prizes, gift cards, and swag

# IA3 Committee

- IA3 (It's All About Access)
  - A library committee dedicated to explore ways to improve access and make connections between physical and digital sources, and provide users with an expanded context for exploring materials without being limited by format



# APIs we created / use / will use

- **Staff Directory** – content is pulled from our intranet to our main and mobile websites
- **Hours** – content is pulled from our main library website to our mobile website
- **Electronic Databases** – we parse an exported MARC file to display certain information about each database on our main library website, and that info could be pulled into our mobile website, course management system, etc.

# APIs we created / use / will use

- **Digital Library** – content will be pulled into a custom user interface, and could be pulled into a mobile version
- **Finding Aids** – pull records into specific subject-based collection pages
- **Discovery landing page** – pull info from multiple resources into a search landing page
- And many more...

**C.O.P.E.**

**Create Once,  
Publish Everywhere**

Daniel Jacobson's philosophy, API guru and software engineer at Netflix



# STREAMLINE: Key Concepts

- More web-based services are in every area of the library, from public services to technical services
- There is an ever increasing amount of systems to maintain
- It is more complicated to fold that increasing amount of systems into a single UX on the library's web presence

# STREAMLINE: Key Concepts

- Using open source or custom built systems or hosted systems with APIs can help with maintenance and the single UX
- Remember that there is no single solution, and this is not an easy process
- You may need a dedicated web developer(s) to build applications or work with APIs

# MOBILIZE

*Technology has become as ubiquitous as the air we breathe, so we are no longer conscious of its presence.*

- Godfrey Reggio, film director

# Changing trends

- NMC Horizon Report: 2012 Higher Education Edition:
  - People expect to be able to work, learn, and study whenever and wherever they want to
  - The technologies we use are increasingly cloud-based, and our notions of IT support are decentralized

# Time-to-Adoption Horizon

- One Year or Less:
  - Mobile apps
  - Tablet computing
- Two to Three Years
  - Game-based-learning
  - Learning analytics
- Four to Five Years
  - Gesture-based computing
  - Internet of things





# Smartphone Users in the World

**80%**

of the world's  
population now has  
a mobile phone



Number of  
Smartphones in  
U.S

**91.4 Million**



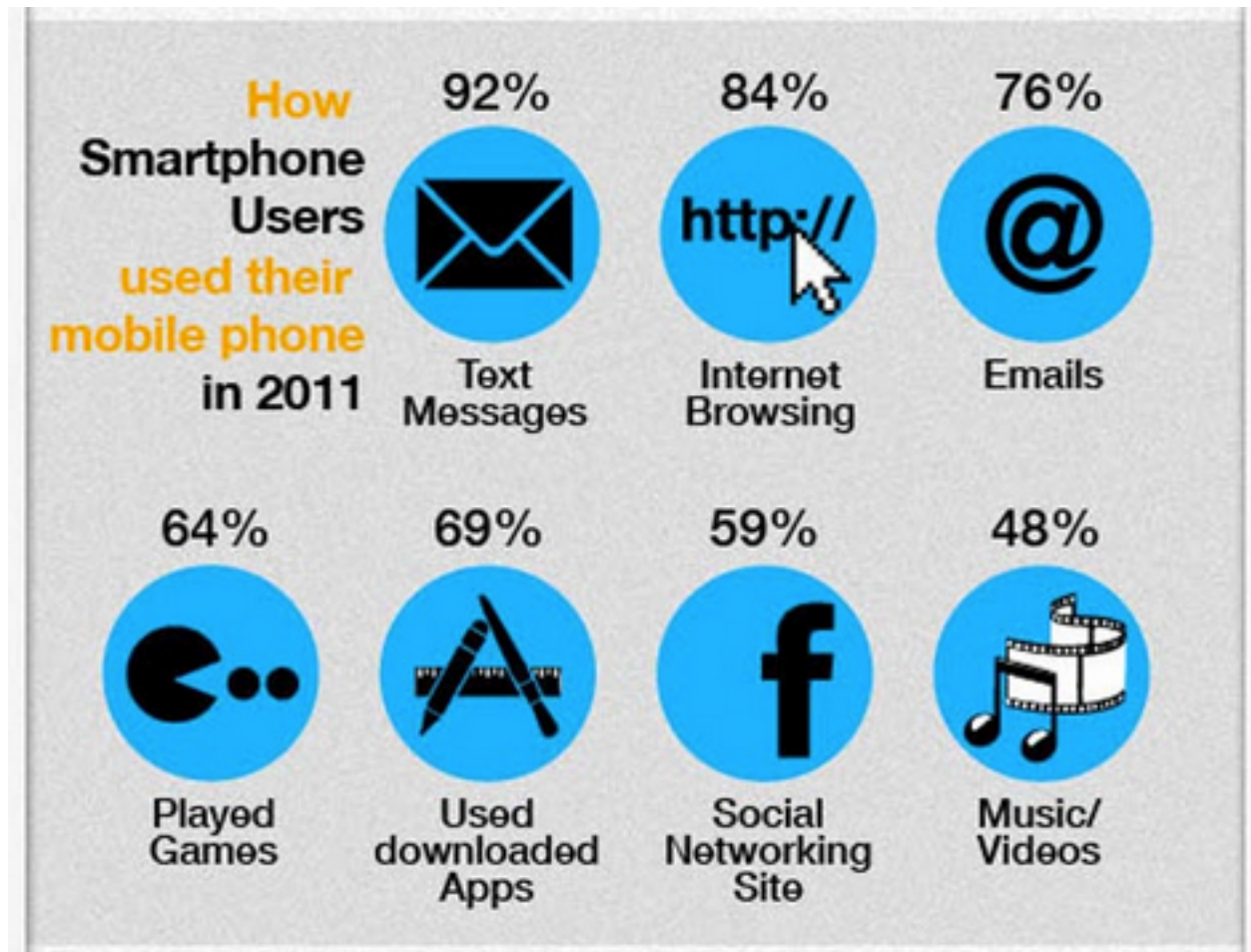
Mobile Phones in  
World

**5 Billion**



Out of  
which only  
**1.08 Billion**  
are smart phones








64% of mobile  
phone time is  
spent on apps

(Nielsen,  
April 2012)

<http://na.ad-tech.com/sf/wp-content/uploads/DigitalConsumer.pdf>





Adults spend more  
media time on  
mobile than  
newspapers and  
magazines  
combined

(eMarketer,  
December 2011)

61% of people who visit a mobile unfriendly site are likely to go elsewhere

(Karim Temsamani, Interactive Advertising Bureau (IAB), February 2012)

<https://snaphop.com/2012-mobile-marketing-statistics/>

In a 2011 EDUCAUSE study of undergraduates:

55% own smartphones

62% have iPods

21% have a tablet

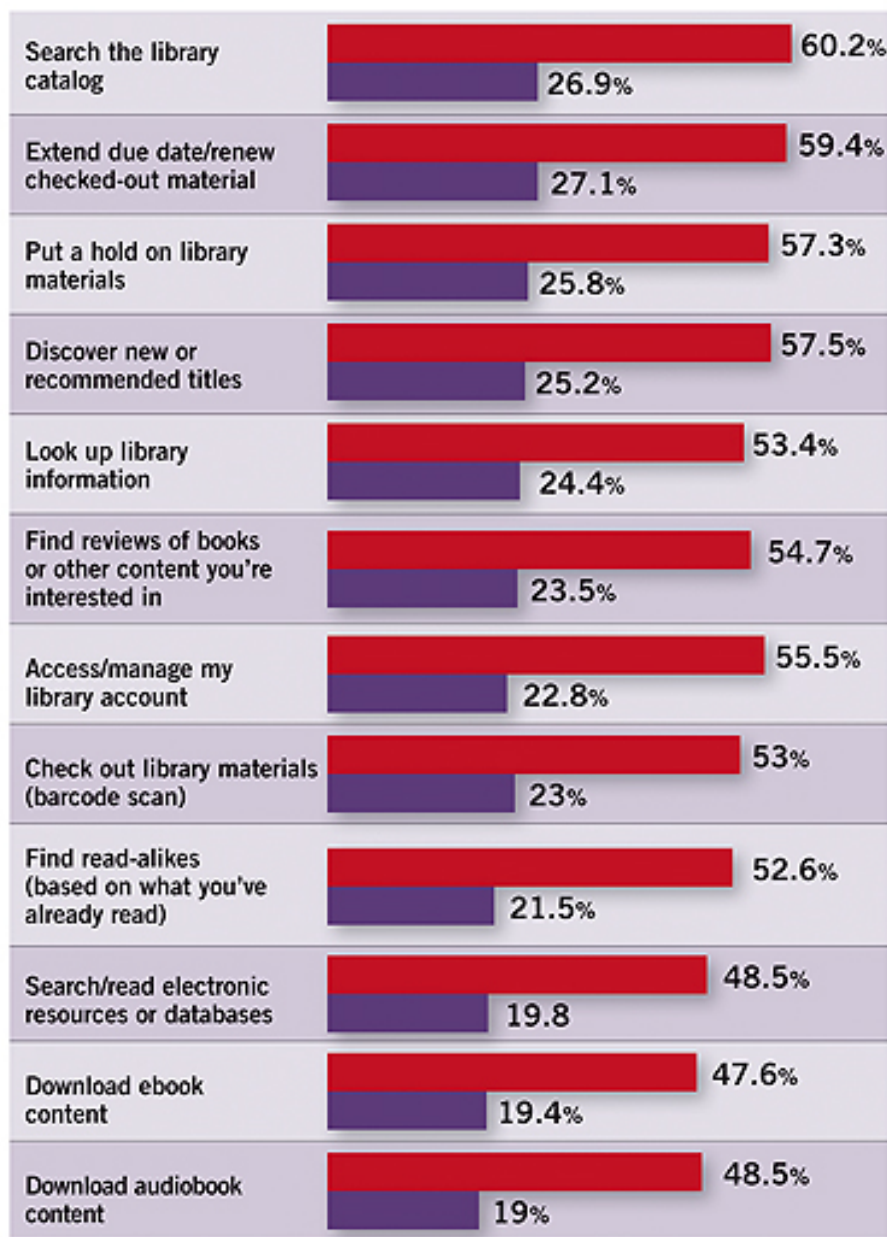
TWO-THIRDS of the students use  
these devices for academic purposes



# What does this mean for libraries?

# What do library users want most?

<http://www.thedigitalshift.com/2012/02/mobile/the-state-of-mobile-in-libraries-2012/>



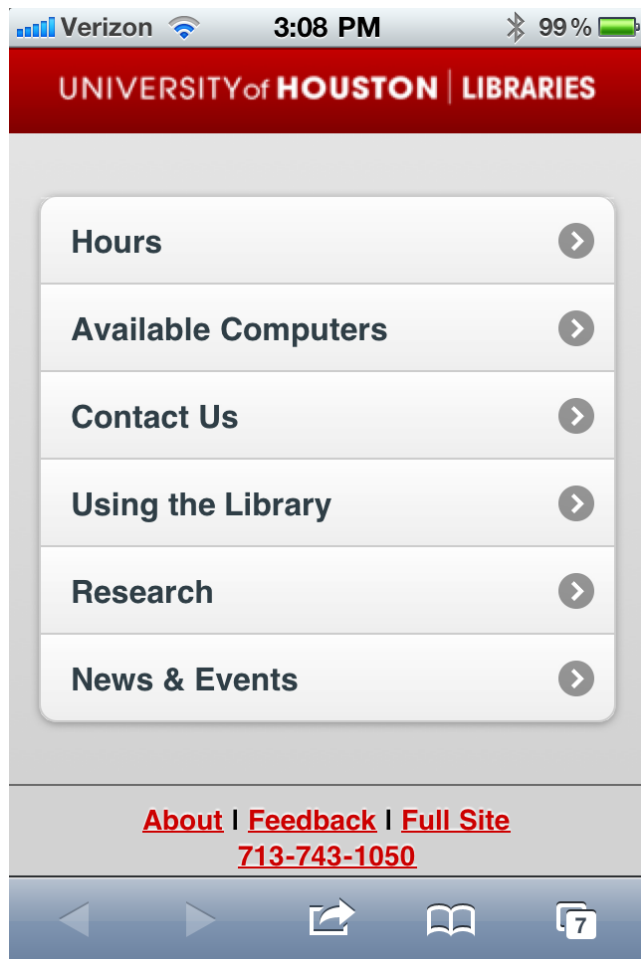
■ Have app-capable smartphone or tablet ■ Do not have a device for mobile apps

SOURCE: LIBRARY JOURNAL PATRON PROFILES JANUARY 2012

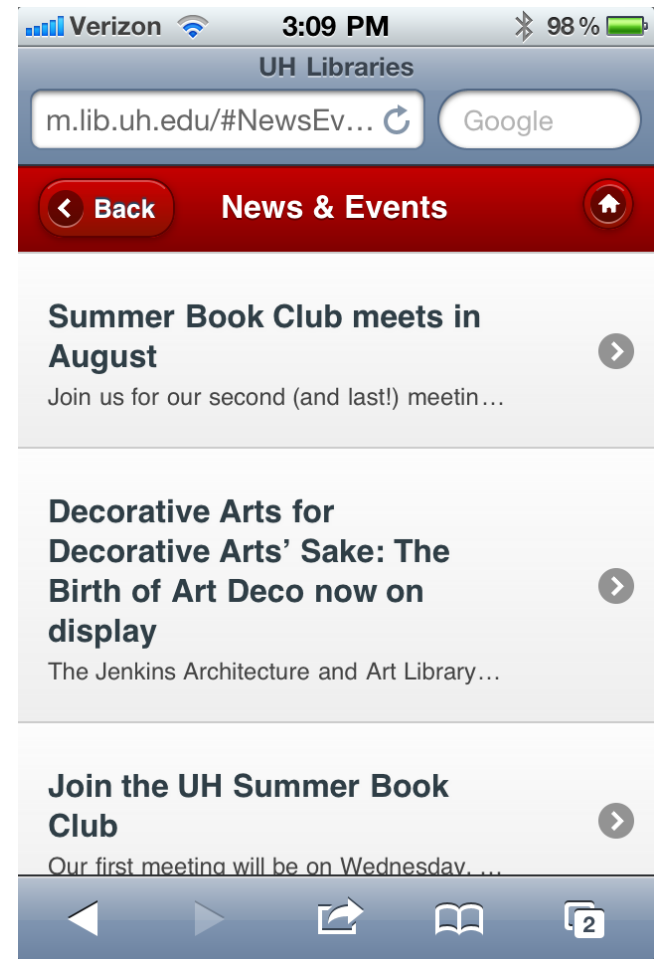




UH Libraries  
Mobile Web Presence  
[m.lib.uh.edu](http://m.lib.uh.edu)

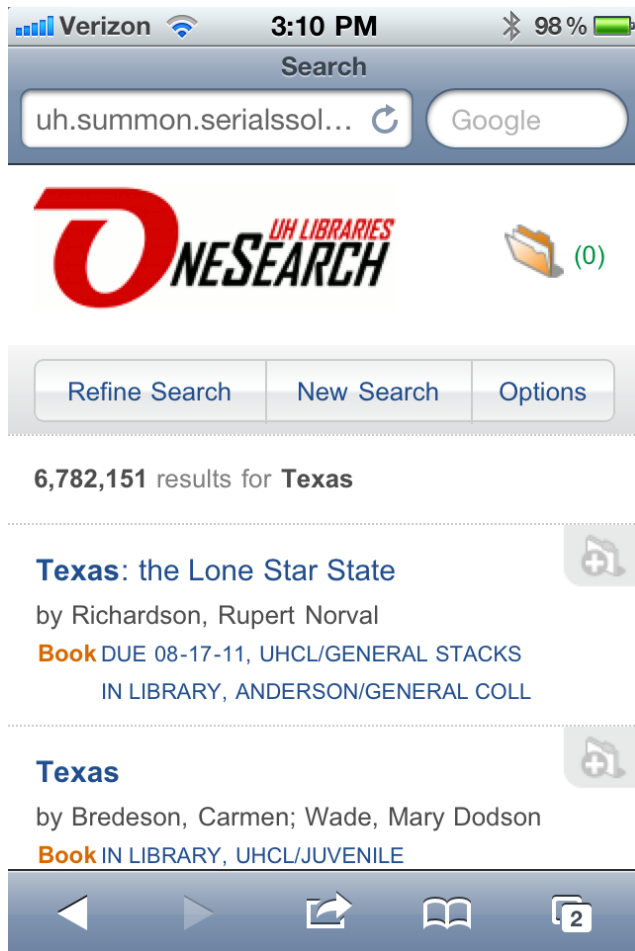


Think differently about the hierarchy of your homepage

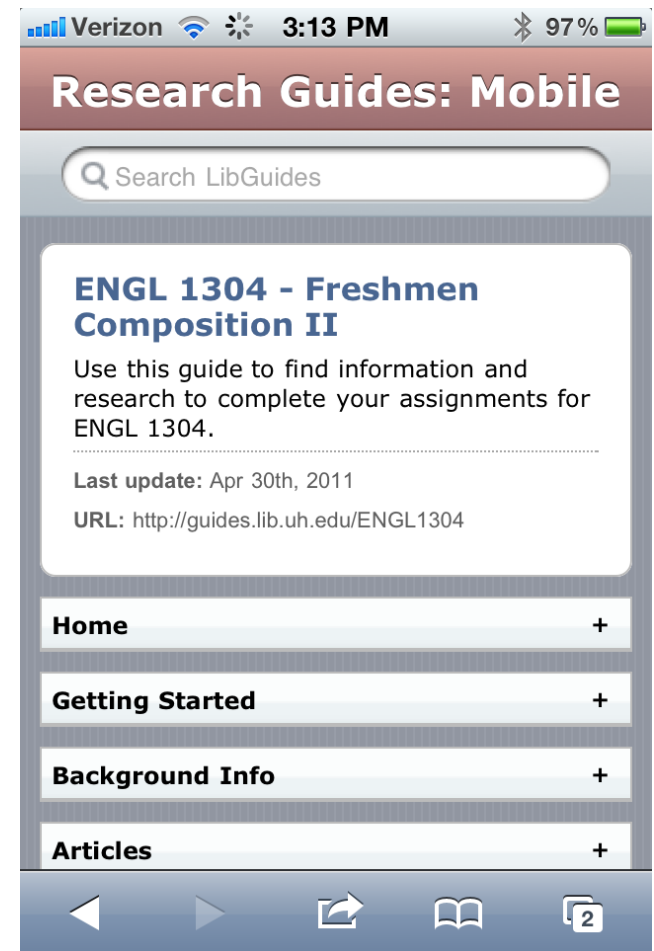


RSS feeds are quick and easy but have limitations

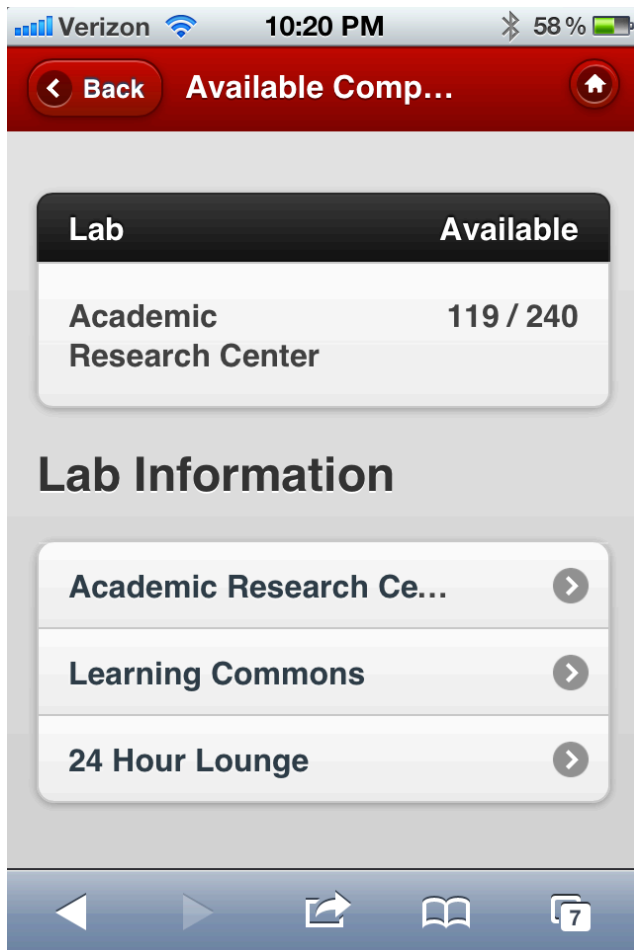




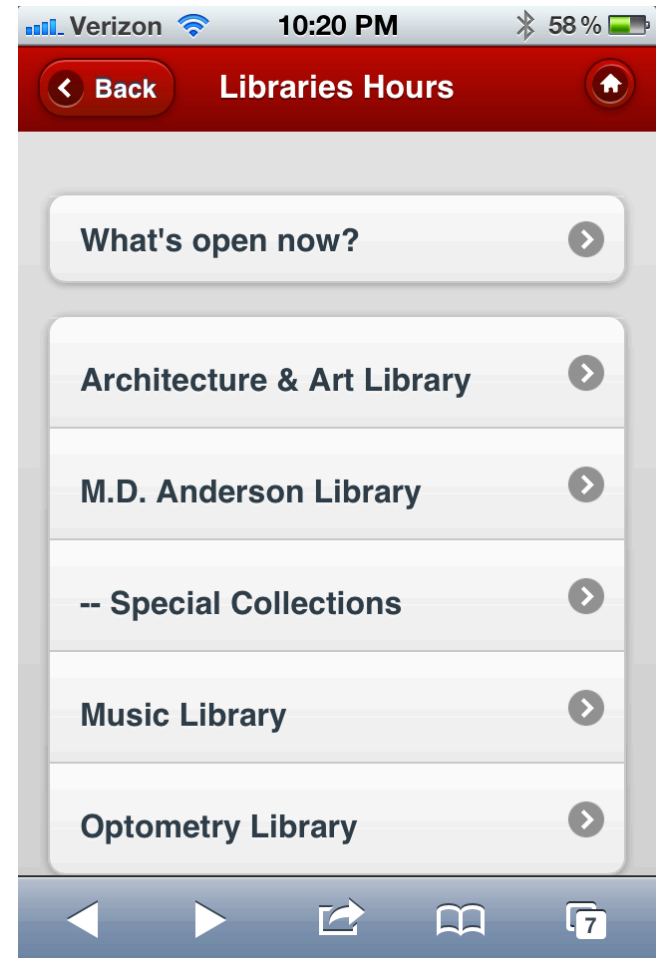
Include catalog and/or discovery platform, but be clear on tool's purpose



LibGuides comes with a mobile interface, too

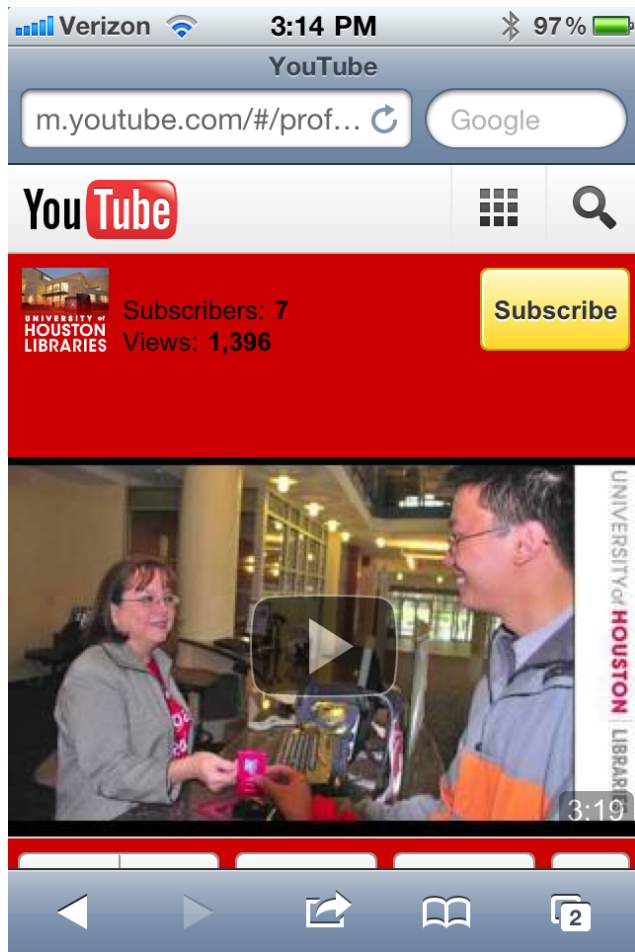


Show computer  
availability

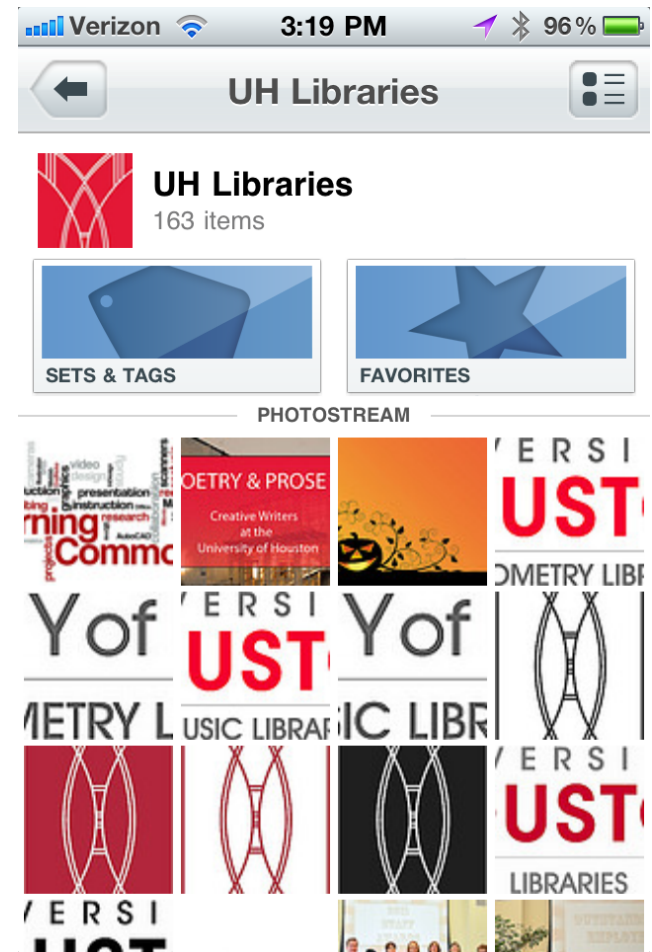


Pull in hours from our  
Hours API





You have videos? Create a channel and include them



Show off your images on your library's Flickr site

# Features we have coming soon

- Mobile version of the Digital Library
- Expanded computer availability to other labs in the library
- Mobile friendly databases
- Library equipment availability
- Room/computer reservation
- More social media integration
- Emergency alerting service
- Augmented reality layer

# The rise of QR Codes

QR Code scans increased  
by 4549% between Q1,2010  
and Q1,2011



<http://www.digitalbuzzblog.com/infographic-the-rise-of-qr-codes/>

# QR codes in the UH Libraries

- To connect our physical and virtual collections
- To offer additional services
- Marketing
- Contests and games
- Exhibits
- Informational signage



# Potential QR code applications

<b>Printed handouts</b>	To get more info, lecture links, library resources, etc.
<b>Assignments / Tests</b>	To ensure anonymity in grading.
<b>Classroom / Lab Equipment</b>	To view instructional video on how to use equipment.
<b>Submit Surveys / Feedback</b>	To link directly to web-based feedback forms, submit positive/negative feedback by scanning a particular code, etc.
<b>Experiential Learning</b>	To enhance learning games, historical tours, etc.
<b>Marketing signage</b>	To get more event info, schedule, map of location, etc.
<b>Books / Journals</b>	To link to e-versions or supplemental material.
<b>Study Aids</b>	To make cheat-proof flashcards.

# MOBOLIZE: Key concepts

- Understand your users mobile behaviors and needs before you decide between a mobile app or website
- Don't just recreate your entire website in a whole new mobile website
- Start small, add more complex features over time
- Walk a day in your users' shoes to get a feel for what services might be helpful on a mobile device

# MOBOLIZE: Key concepts

- Reuse your content if possible via APIs to not have to maintain content in multiple places
- Be willing to try new mobile services and understand that not all of them will be successful



# PREPARE

*You can design and create, and build the most wonderful place in the world. But it takes people to make the dream a reality.*

- Walt Disney

# Moving from search to discovery

- Location aware services
  - Foursquare
  - Yelp



- Pinterest pure discovery on things you like, and then organize the things you like
- A mashup of content/data from multiple systems can enhance discovery
- “Frictionless” access or sharing is automatic, not manual

# Explosion of data

- There is a growing increase in the need for data curation, management, and preservation
- Libraries also create lots of content and have systems full of content that people might need
  - Web content: hours, staff directory, database list, computer/equipment/room availability, research guides, jobs, e-journals,
  - Collections: finding aids, digital collections, institutional repositories

# Potential uses for that data

- Digital humanities initiatives on campus
- Custom discovery interfaces
- Specific departments on campus
  - For example, pull library hours into digital signage in student union or resident halls
  - Builds trust on campus – I'll share my data if you share yours



# Potential uses for that data

- Libraries need to grow from purely collection-based to also include creation-based
- Library users might want to use the data in new and creative ways
  - Spurs innovation
  - Why just build the APIs for your own purpose?
  - Encourage communication and engage users

# PREPARE: Key concepts

- Users want to access, share, and easily discover resources and services anywhere, anytime, and on any device
- Build tools that you can use to help your library, but share those tools with others, too
- Web content and data that is flexible can be used in ways you'd never image

# Additional Resources

- Futures Thinking for Academic Librarians: Higher Education in 2025 (Staley and Malenfant, 2010)
  - <http://www.ala.org/ala/mgrps/divs/acrl/issues/value/futures2025.pdf>
- The Value of Academic Libraries: A Comprehensive Research Review and Report (Oakleaf, 2010)
  - [http://www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/value/val\\_report.pdf](http://www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/value/val_report.pdf)
- How College Students Manage Technology When in the Library for Crunch Time (Head and Eisenberg, 2011)
  - [http://projectinfo.org/pdfs/PIL\\_Fall2011\\_TechStudy\\_FullReport1.1.pdf](http://projectinfo.org/pdfs/PIL_Fall2011_TechStudy_FullReport1.1.pdf)



# Additional Resources

- NMC Horizon Reports, Higher Education Editions, 2011 and 2012
  - <http://www.nmc.org/system/files/pubs/1316814265/2011-Horizon-Report%282%29.pdf>
  - <http://nmc.org/pdf/2012-horizon-report-HE.pdf>
  - Video summary: <http://youtu.be/NyQK2ZucXJI>
- ECAR National Study of Undergraduates and Information Technology (EDUCAUSE, 2011)
  - <http://www.educause.edu/Resources/ECARNationalStudyofUndergradua/238012>
- The State of Mobile in Libraries 2012
  - <http://www.thedigitalshift.com/2012/02/mobile/the-state-of-mobile-in-libraries-2012/>
- Value of Academic Libraries: A look forward (Hinchliffe, 2010)
  - <http://crln.acrl.org/content/71/9/466.full>

# Thank you!

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Presentation also available on

<http://www.slideshare.net/vacekrae>