



# eLearning Forum

Raymond Yee, Technology Architect

October 24, 2003



# IU Mission - Who We Are

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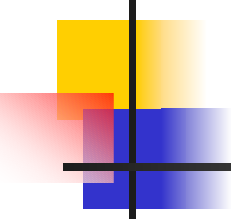
The Interactive University uses the Internet to open UC Berkeley's unique resources and people to the public, especially K-12 schools. Our goal is to use technology to democratize the content and community of the campus.



# Principles

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1. Engage the academic core of campus and add value to campus teaching and learning
2. Partner with K-12 teachers and support improvement in student achievement
3. Employ balanced models of Internet use informed by research
4. Create content, web based events, and projects that scale
5. Leverage campus and national partnerships to realize IU's mission and to support partners



# The Wealth of Materials: Creators want them to be used

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- California Digital Library: OAC, MOAC, eScholarship
- MIT's OpenCourseWare (OCW)
- UC Berkeley Interactive University, UT Austin Knowledge Gateway
- Art museums online: e.g., LACMA Online, Pacific Asia Museum
- Digital library projects: MERLOT, CalPhotos
- Preprint archives, "free online scholarship"



# The Need for Better Tools

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- Users can **look** but not easily manipulate digital content (texts, images, video) -- **data silos**
- We want malleable, reusable pieces that work together regardless of **data type** or **data origin**.
- How do we get content and ideas to **flow freely** among sources, tools, and destinations?



# Scholar's Box

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"You have wonderful resources [at the university], but there's little filtering and selection with K-12 teachers and students in mind, and sometimes even little understanding of how important these materials are, or their possible interpretation. It would be wonderful to mine the many archives for nuggets that teachers could use—and kids could relate to—especially if we associate them with essential questions in the curriculum." *High School Social Studies Teacher and Curriculum Coordinator, Oakland Unified School District*

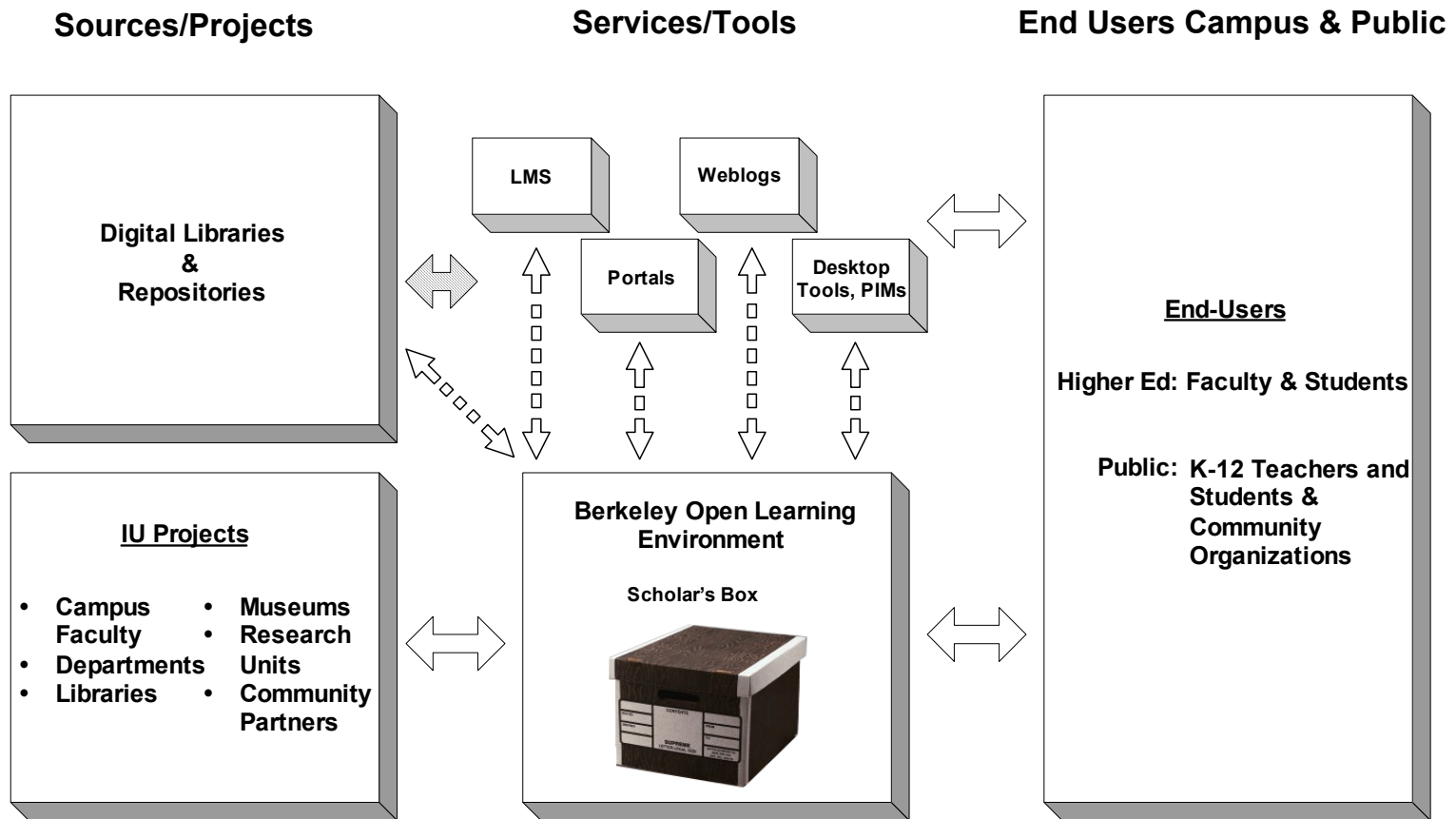


# Scholar's Box

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*Rip. Mix. Burn.* "Apple, of course, wants to sell computers. Yet its ad touches an ideal that runs very deep in our history. For the technology that they (and of course others) sell could enable this generation to do with our culture what generations have done from the very beginning of human society: to take what is our culture; to "rip" it - meaning to copy it; to "mix" it - meaning to reform it however the user wants; and finally, and most important, "burn" it - to publish it in a way that others can see and hear. Digital technology could enable an extraordinary range of ordinary people to become part of a *creative* process." *Lawrence Lessig, The Future of Ideas*

# Opening Content







# Functionality of Scholar's Box

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1. **Gather** digital content with metadata and context from many sources.
2. **Create** custom collections and learning content: manipulate, annotate, transform.
3. **Share** collections and documents with others. Connect content to other tools.

# Session 1

**New Collection** October 21, 2003 5:50 p.m.



**Title:** California flowering plant and butterfly

**Author:** Fupalley, Jules (active ca. 1849-ca. 1859), French, artist

**Type:** Image

**Date:** 185-

**Description:**

**Publisher:** Bancroft Library

**Copyright:** UC Regents

**ISBN:**


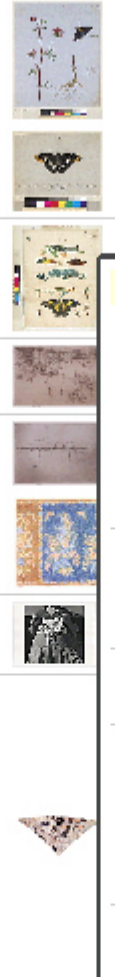
**Price:**

**User Notes:** drawing on tinted paper: watercolor

**Other:** [Small Image](#)

**Sources:** [Medium Image](#)  
[Large Image](#)

**Search Results** October 21, 2003 5:50 p.m.



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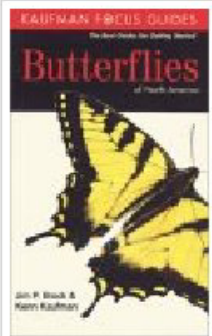

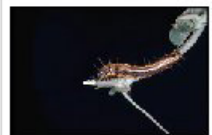
**Sources:** [Medium Image](#)  
[Large Image](#)

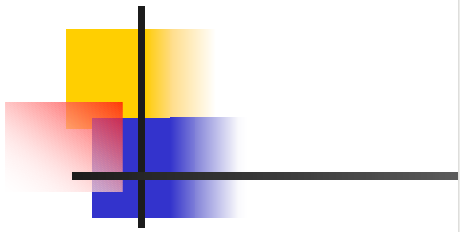
Mozilla

File Edit View Go Bookmarks Tools Window Help

**Title: Butterfly Resource Collection** **Saved: October 20, 2003 05:20 P.M.**

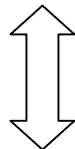
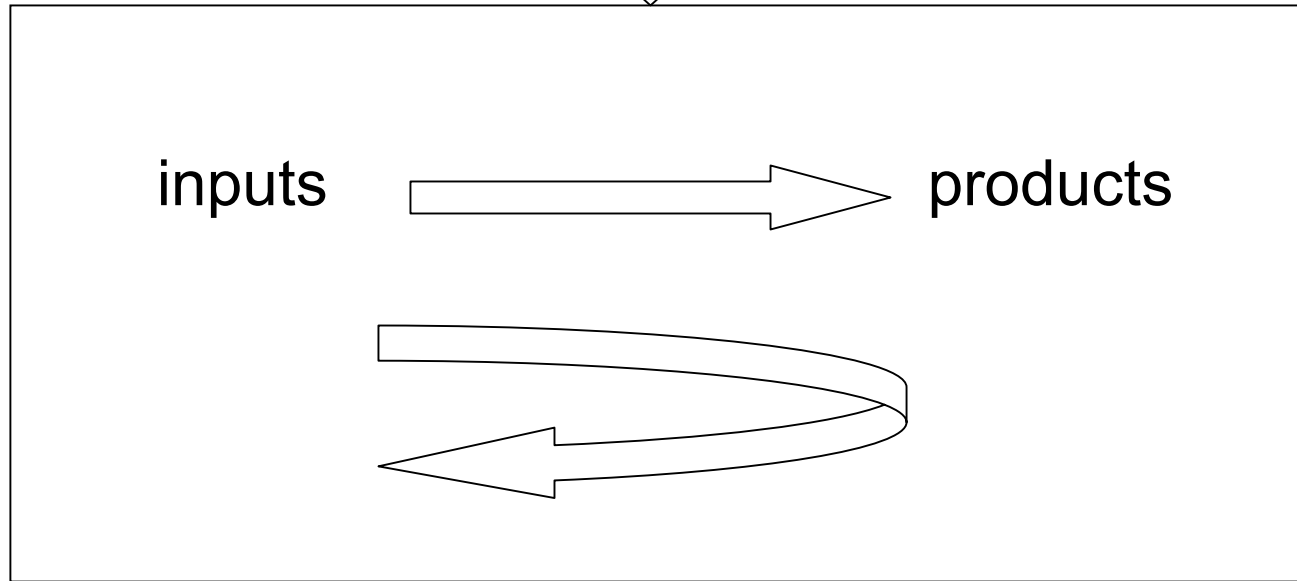
**Notes:** This is the first collection of butterfly resources I put together from Amazon, CDL, and CalPhotos.

	<p><b>Title:</b> Butterflies of North America (Kaufman Focus Guides)  <b>Author:</b> Brock, Jim P., Kaufman, Kenn  <b>Type:</b> Book  <b>Date:</b> 01 November, 2001  <b>Publisher:</b> Houghton Mifflin Co  <b>Copyright:</b> March, 2003  <b>ISBN:</b> 0618153128  <b>Price:</b> \$22.00  <b>Notes:</b> ...more than 2,200 digitally edited photographs and an easy-to-use species index-a format.. The guide offers images of larval (caterpillar) stage butterflies along with details on feeding preferences of butterflies in their different stages of development. It also gives migratory information on these delicate and beautiful creatures. The book ranges geographically from the lower 48 states through Canada and Alaska, with maps provided for all butterflies depicted.</p>	<p><b>Other Sources:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Amazon</a></li> <li>• <a href="#">Booksense</a></li> <li>• <a href="#">Berkeley Public Library</a></li> <li>• <a href="#">The Library Of Congress</a></li> <li>• <a href="#">Melvyl</a></li> <li>• <a href="#">Book Crossing</a></li> <li>• <a href="#">All Consuming</a></li> </ul>
	<p><b>Title:</b> Caterpillars, chrysalises, a butterfly, and insects of California, BANC PIC 1963.002:1305:013--ALB  <b>Author:</b> Rupalle, Jules (active ca. 1849-ca. 1859), French, artist (attributed to)  <b>Type:</b> Image  <b>Date:</b> 1855  <b>Publisher:</b> Bancroft Library  <b>Copyright:</b> UC Regents  <b>ISBN:</b>  <b>Notes:</b> This picture is watercolor by Jules Rupalle.</p>	<p><b>Other Sources:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Small Image</a></li> <li>• <a href="#">Medium Image</a></li> <li>• <a href="#">Large Image</a></li> </ul>
	<p><b>Title:</b> <i>Agraulis vanillae</i> Gulf Fritillary butterfly  <b>Author:</b> Stennett S. Heaton  <b>Type:</b> Image  <b>Date:</b></p>	<p><b>Other Sources:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Small Image</a></li> <li>• <a href="#">Medium Image</a></li> <li>• <a href="#">Large Image</a></li> </ul>

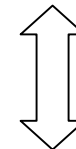


# Technology Architecture

Interfaces (DHTML/web services)



Data sources



repositories

personal documents



# Barriers to Implementation

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- Different/proprietary/opaque data formats
- Specialized or domain specific protocols – or no protocols at all
- How to break the barriers – or build bridges?

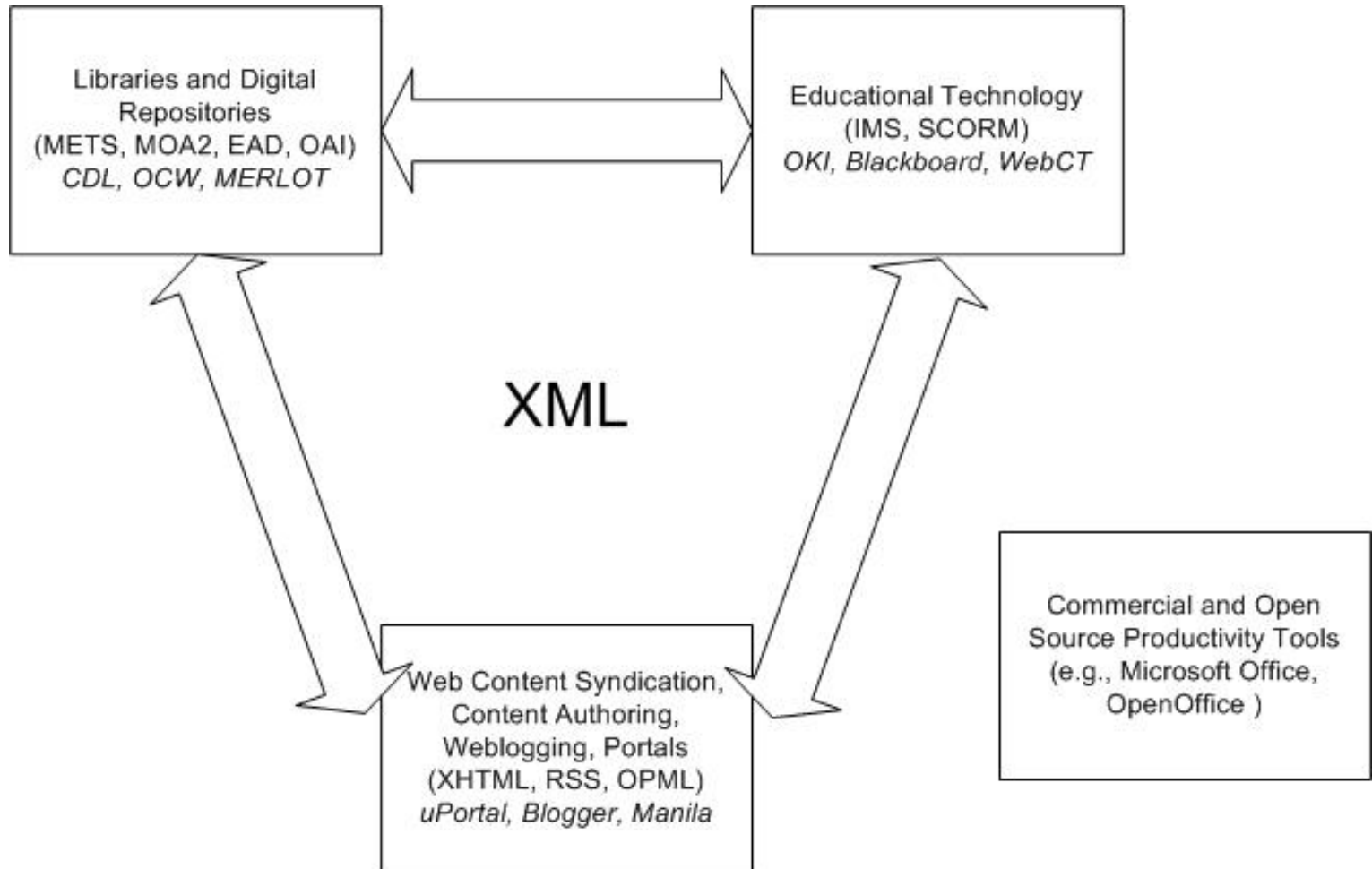


# Data silos of a scholar-geek

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- Text in Microsoft Word, LaTeX, OO.o, PDF, HTML
- Bibliographic references in multiple library systems, Endnote, BibTeX, Amazon
- URLs in browser history, RSS feeds, web pages, Word documents, blogs, Ecco
- XML data formats: RSS, METS, OPML, DocBook, SCORM, ShadowPlan...
- Multiple calendars, address books, email lists

# Interoperability among domains via XML crosswalks





# Infrastructure: A Wish List

1. Unified object models for all data
2. Object dis-aggregator and re-aggregator functionality
3. A “universal canvas” for composing and authoring of multimedia documents
4. Translators among data and metadata schemes
5. Integrated handlers for many protocols: SOAP, XML-RPC, Z39.50, HTTP, SMTP and inter-application communication
6. Hooks into groupware, P2P and centralized file sharing for sharing of content



# Promising developments

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- Chandler [[url](#)]
- Microsoft Office 2003 (maybe?)
- OpenOffice.org [[url](#)]
- Multivalent Browser as a universal canvas [[url](#)]
- Groove [[url](#)]
- Fusion of weblogging and RSS and other forms of content syndication



# For more info

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- The Interactive University:  
<http://iu.berkeley.edu/iu/>
- Raymond Yee  
[yee@uclink.berkeley.edu](mailto:yee@uclink.berkeley.edu) ,  
<http://iu.berkeley.edu/rdhyee>

