



---

Cyberinfrastructure Planning Project for the Arts & Humanities  
University of California, Berkeley, and the University of Chicago

Chad J. Kainz  
Senior Director, NSIT Academic Technologies, University of Chicago  
Co-Director, Project Bamboo

HASS Workshop, 15 August 2008

Bamboo is made possible through the support of the Andrew W. Mellon Foundation.



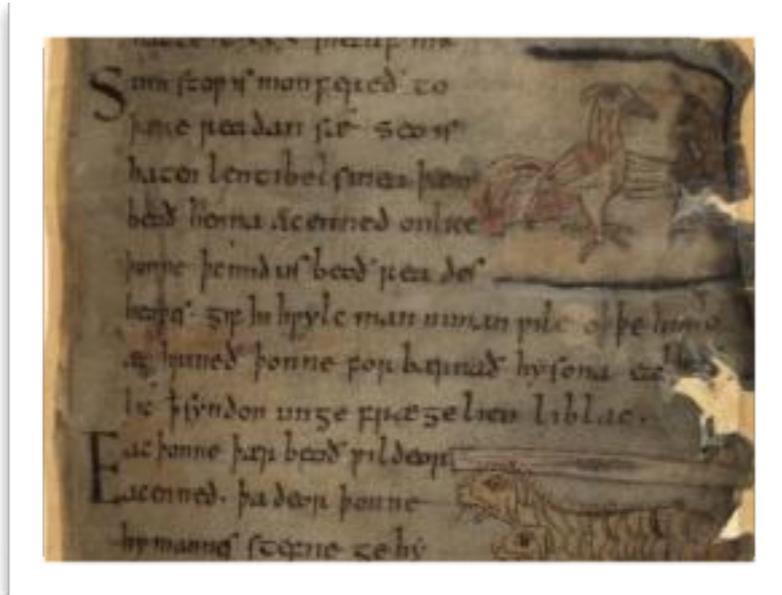
THE UNIVERSITY OF  
 CHICAGO  
NETWORKING SERVICES AND  
INFORMATION TECHNOLOGIES

Image Removed



**1/3 time** spent on research and scholarship  
**2/3 time** sorting through technology





**2/3 time** spent on research and scholarship  
**1/3 time** sorting through technology



faculty

researchers

computer scientists

information scientists

librarians

content partners

information technologists

professionals

**innovation**

# 2008

Bamboo is a community-driven cyberinfrastructure initiative that includes **faculty** and **researchers** engaged in humanistic inquiry, **computer scientists** and **information scientists** interested in innovative models for shared services, and **librarians**, academic **content partners**, campus **information technologists** and other **professionals** who want to work together across disciplinary, organizational, institutional, and geographical boundaries to better enable and foster **innovation** in the **arts and humanities**.

# 1987

“...we encourage the support of **interdisciplinary research teams**, rather than just facilities, to ensure that long-term visualization developments be **grounded in real problems.**”

One recommendation was that teams should include **computer scientists and engineers, visualization scientists, systems support personnel, artists, and cognitive scientists.**

“Visualization in Scientific Computing” edited by Bruce McCormick, Thomas A. DeFanti, Maxine Brown. *Computer Graphics*, vol. 21 no. 6, November 1987

# **Revolutionizing Science and Engineering Through Cyberinfrastructure:**

Report of the National Science Foundation  
Blue-Ribbon Advisory Panel on  
Cyberinfrastructure

---

January 2003

---

**Daniel E. Atkins, Chair**  
University of Michigan

# Our Cultural Commonwealth

**The report of the American Council  
of Learned Societies Commission on  
Cyberinfrastructure for the Humanities  
and Social Sciences**

[www.acsls.org](http://www.acsls.org)







How can we advance  
arts and humanities research  
through the development  
of shared technology services?

# Bamboo Planning Project

2008

April 2008 - Project starts

**Document:** *Scholarly Practice in the Arts and Humanities.*

**Document:** *The Arts and Humanities Services Roadmap*

**Workshop One:**

April 2008  
Berkeley

May 2008  
U of Chicago

June 2008  
U of Chicago in Paris

July 2008  
Princeton

**Workshop Two:**

September 2008  
Berkeley

**Workshop Three:**

November 2008  
U of Chicago

**Demonstrator**

January

February

March

April

May

June

July

August

September

October

November

December

September 2009 - Project ends

**Document:** *The Arts and Humanities...*

**Document:** *Organizational Options and Issues for Building Bamboo*

**Document:** *The Bamboo Implementation Proposal*

**Workshop Four:**

February 2009  
Berkeley

**Workshop Five:**

May 2009  
U of Chicago

**Demonstrator**

**Demonstrator**

2009

“... it should be stressed that the Bamboo Planning Project is designed to be community driven and as such, the workshop program should be viewed as an initial plan that is **subject to change** ... the process is not static and is meant to be reasonably flexible to ensure fruitful participation for the duration of the effort.”

# Workshops

---

1. Understanding Arts and Humanities Scholarship
  - April 2008: Berkeley (1a)
  - May 2008: Chicago (1b)
  - June 2008: Paris (1c)
  - July 2008: Princeton (1d)

Over 300 people from 90+ institutions took part in Workshop One (we expected, at most, 200 participants from 50 institutions)

2. Exploring Scholarly Practices (October 2008)
3. Identifying Services (January 2009)
4. Selecting Services and Defining Partnerships (March 2009)
5. Forming a Consortium (May 2009)



# Between Workshops

---

- Engage interested individuals who could not participate in the workshops to help us analyze data posted on the planning wiki
- Leverage communities of practice to better understand and distill what we've collected
- Foster an extended Bamboo community that can lend support and ideas to workshop attendees and the workshop-based planning program

# Demonstrators & Pilot Projects

---

The purpose of inter-workshop pilot projects is to test ideas and develop demonstrators that can be shared with Bamboo participants.

- Explore commonalities uncovered in the workshops
- Demonstrate the shared services approach to participants
- Experiment with new application models
- Test ideas
- Promote opportunities for technological collaboration across disciplines, organizations, and institutions

# Documents

---

1. Report derived from Workshops One through Three:  
*Scholarly Practice in the Arts and Humanities*
2. Report derived from Workshops Two through Four:  
*Arts and Humanities Services Roadmap*
3. Report derived from Workshops Four and Five:  
*Organizational Options and Issues for Building Bamboo*
4. Proposal: *Bamboo Implementation Project*

# Leadership Council

---

## Janet Broughton

Dean of Arts & Humanities,  
Univ. of California, Berkeley

**Gregory A. Jackson,**  
Vice President/CIO, Univ. of  
Chicago

## Anthony Cascardi

Director, Doreen B.  
Townsend Center for the  
Humanities, Univ. of  
California, Berkeley

## James Chandler

Director, Franke Institute for  
the Humanities, Univ. of  
Chicago

## Charles Faulhaber

Director, Bancroft Library,  
Univ. of California, Berkeley

## Ian Foster

Argonne National  
Laboratory, and Director,  
Computation Institute, Univ.  
of Chicago,

## Judith Nadler

Director, Univ. of Chicago  
Library

## Martha Roth

Dean of the Division of  
Humanities, Univ. of  
Chicago

## Stuart Russell

Chair, Electrical Engineering  
and Computer Science,  
Univ. of California, Berkeley

## Shelton Waggener

Assoc. Vice Chancellor/CIO,  
Univ. of California, Berkeley

---

Planning Project  
Leadership Council

# Leadership Council

---

**Janet Broughton**  
Dean of Arts & Humanities,  
Univ. of California, Berkeley

**Gregory A. Jackson,**  
Vice President/CIO, Univ. of  
Chicago

**Anthony Cascardi**  
Director, Doreen B.  
Townsend Center for the  
Humanities, Univ. of  
California, Berkeley

**James Chandler**  
Director, Franke Institute for  
the Humanities, Univ. of  
Chicago

**Charles Faulhaber**  
Director, Bancroft Library,  
Univ. of California, Berkeley

**Ian Foster**  
Argonne National  
Laboratory, and Director,  
Computation Institute, Univ.  
of Chicago,

**Judith Nadler**  
Director, Univ. of Chicago  
Library

**Martha Roth**  
Dean of the Division of  
Humanities, Univ. of  
Chicago

**Stuart Russell**  
Chair, Electrical Engineering  
and Computer Science,  
Univ. of California, Berkeley

**Shelton Waggener**  
Assoc. Vice Chancellor/CIO,  
Univ. of California, Berkeley



---

Planning Project  
Leadership Council

# Leadership Council

---

**Janet Broughton**  
Dean of Arts & Humanities,  
Univ. of California, Berkeley

**Gregory A. Jackson,**  
Vice President/CIO, Univ. of  
Chicago

**Anthony Cascardi**  
Director, Doreen B.  
Townsend Center for the  
Humanities, Univ. of  
California, Berkeley

**James Chandler**  
Director, Franke Institute for  
the Humanities, Univ. of  
Chicago

**Charles Faulhaber**  
Director, Bancroft Library,  
Univ. of California, Berkeley

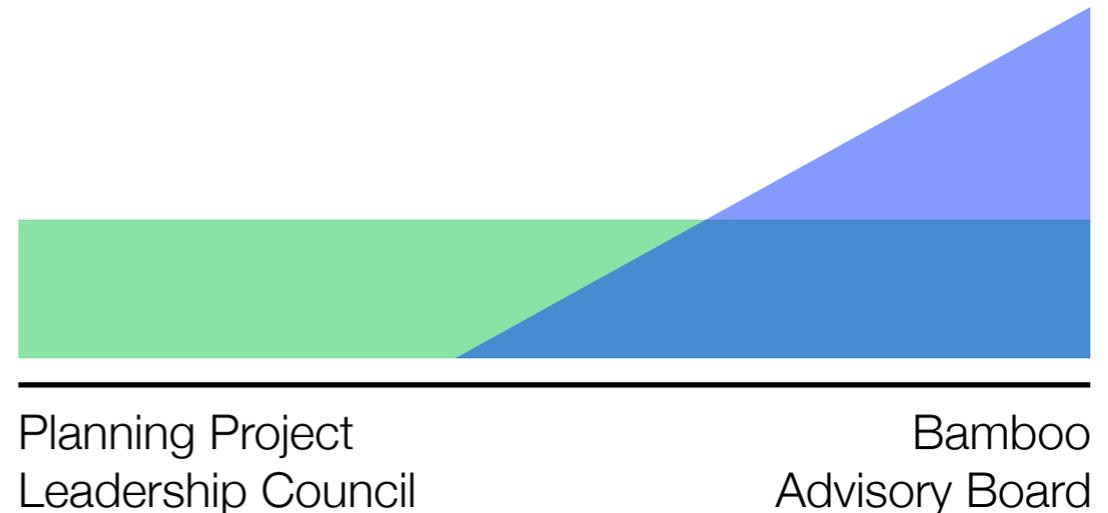
**Ian Foster**  
Argonne National  
Laboratory, and Director,  
Computation Institute, Univ.  
of Chicago,

**Judith Nadler**  
Director, Univ. of Chicago  
Library

**Martha Roth**  
Dean of the Division of  
Humanities, Univ. of  
Chicago

**Stuart Russell**  
Chair, Electrical Engineering  
and Computer Science,  
Univ. of California, Berkeley

**Shelton Waggener**  
Assoc. Vice Chancellor/CIO,  
Univ. of California, Berkeley



technology

# technology services

loosely-coupled

discoverable

sustainable

predictable

mashable

reusable

reliable

flexible

profiles (same idea as SCORM?)

disciplinary standards

industry norms

specifications

**standards**

**technology services**

loosely-coupled

discoverable

sustainable

predictable

mashable

reusable

reliable

flexible

profiles (same idea as SCORM?)

disciplinary standards

industry norms

specifications

**standards**

**technology services**

loosely-coupled

discoverable

sustainable

predictable

mashable

reusable

reliable

flexible

**practices**

research and teaching

partnerships and support

qualitative and quantitative

methodologies and protocols

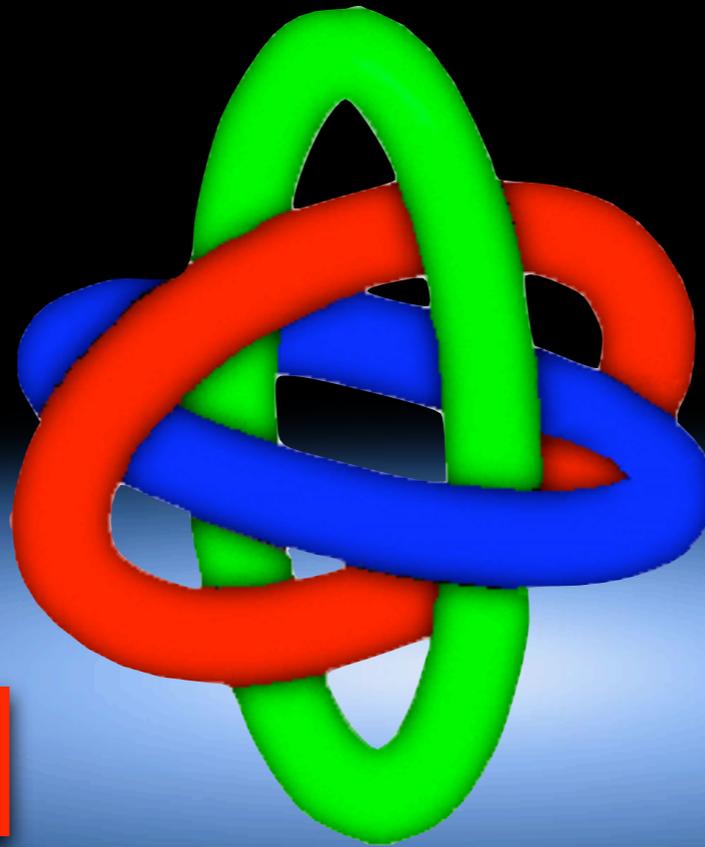
# Borromean Ring Teams

National Science Foundation vision for cyberinfrastructure.

Behavioral &  
Organizational Sciences

Users,  
Communities of Practice,  
Organizations in Society

Computer & Information,  
Science & Engineering



- Relationships of mutual respect.
- Relationship of mutual benefit within the norms of the “ring community.”
- Participatory, iterative design, use, evaluation.
- A culture of collective reward.
- To be a bit eccentric (can't be circles)

**\*Three symmetric, interlocking rings, no two of which are interlinked.  
Removing one destroys the synergy.**

Image Removed

One doesn't build infrastructure for researchers of Anglo-Saxon literature and culture who specialize in Lacanian psychoanalytic critical theory.

Image Removed

Image Removed

One doesn't build infrastructure for researchers of Anglo-Saxon literature and culture who specialize in Lacanian psychoanalytic critical theory.

*Why?*

Because there are probably only eight people in the world who do that.

For the humanist, the library is his or her laboratory,  
the place in which is found, or hidden,  
the raw materials for research.

Section III.4: *Library and Scholarly Communications*  
Bamboo Planning Proposal



Image courtesy John Laudun  
Department of English, Univ. of Louisiana, Lafayette

The library is not **raw**...



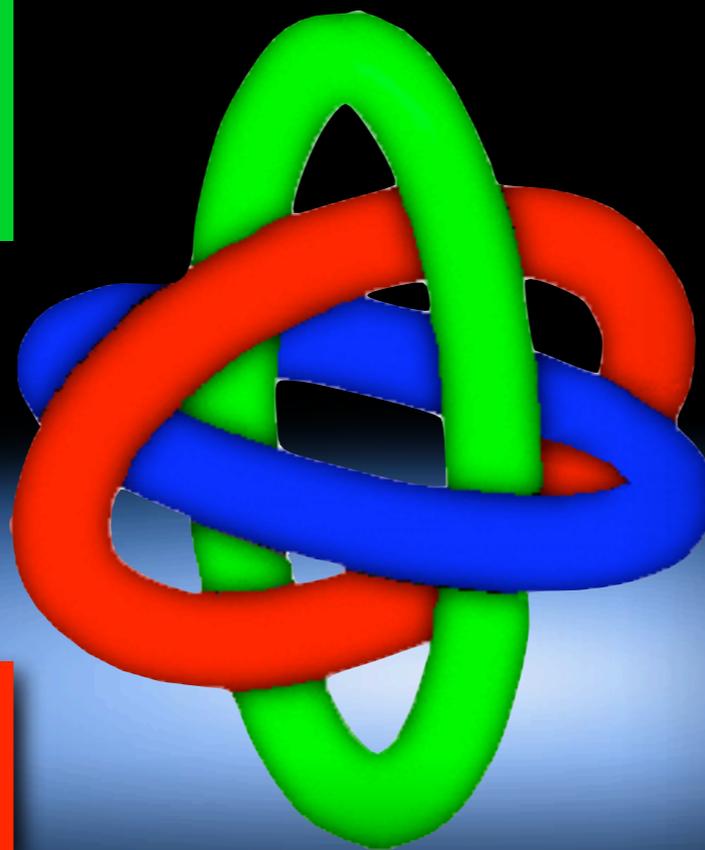
The library is not **raw**...  
the world is

**RAW**

**John Laudun**

Assistant Professor, English & Folklore, Univ. of Louisiana, Lafayette  
Bamboo Workshop 1b, Chicago, May 16, 2008

# Bamboo Vision of Cyberinfrastructure



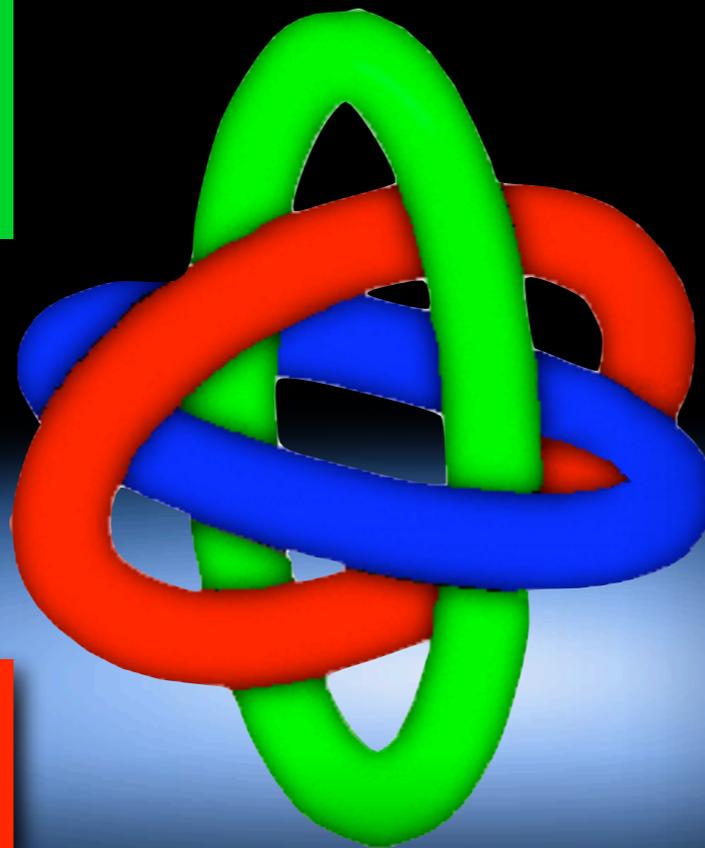
- Relationships of mutual respect.
- Relationship of mutual benefit within the norms of the “ring community.”
- Participatory, iterative design, use, evaluation.
- A culture of collective reward.
- To be a bit eccentric (can be circles)

**\*Three symmetric, interlocking rings, no two of which are interlinked.  
Removing one destroys the synergy.**

# Bamboo Vision of Cyberinfrastructure

Growing and deep **understanding of practices, directions, commonalities** in the arts and humanities among humanists, librarians, technologists, etc., now and in the future

understanding of practices  
and commonalities



- Relationships of mutual respect.
- Relationship of mutual benefit within the norms of the “ring community.”
- Participatory, iterative design, use, evaluation.
- A culture of collective reward.
- To be a bit eccentric (can be circles)

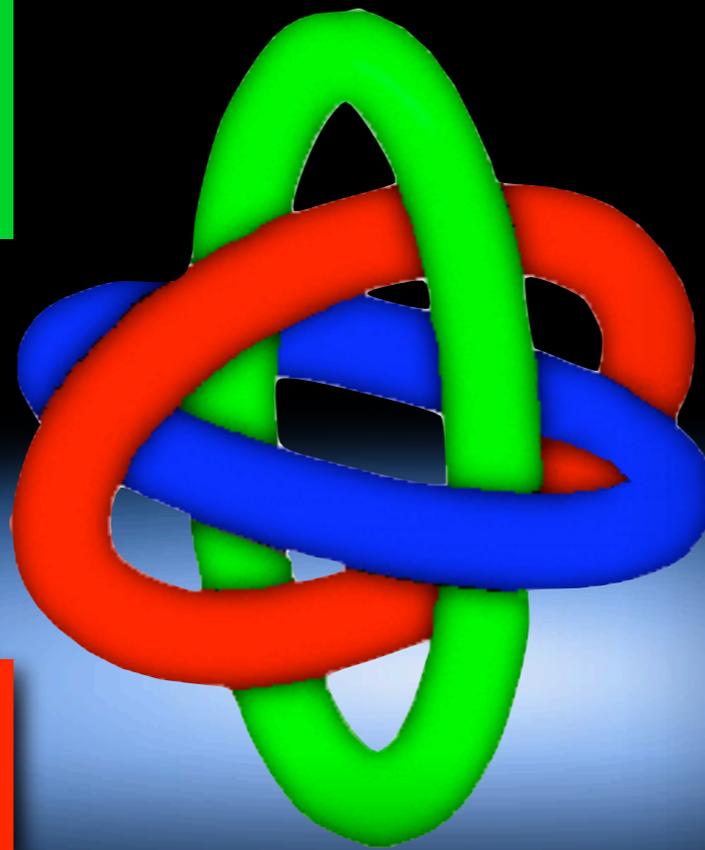
**\*Three symmetric, interlocking rings, no two of which are interlinked.  
Removing one destroys the synergy.**

# Bamboo Vision of Cyberinfrastructure

**Shared technology services** from across the world that can easily be discovered, used, combined, integrated into key research and teaching practices and projects

understanding of practices  
and commonalities

shared technology  
services



- Relationships of mutual respect.
- Relationship of mutual benefit within the norms of the “ring community.”
- Participatory, iterative design, use, evaluation.
- A culture of collective reward.
- To be a bit eccentric (can be circles)

**\*Three symmetric, interlocking rings, no two of which are interlinked.  
Removing one destroys the synergy.**

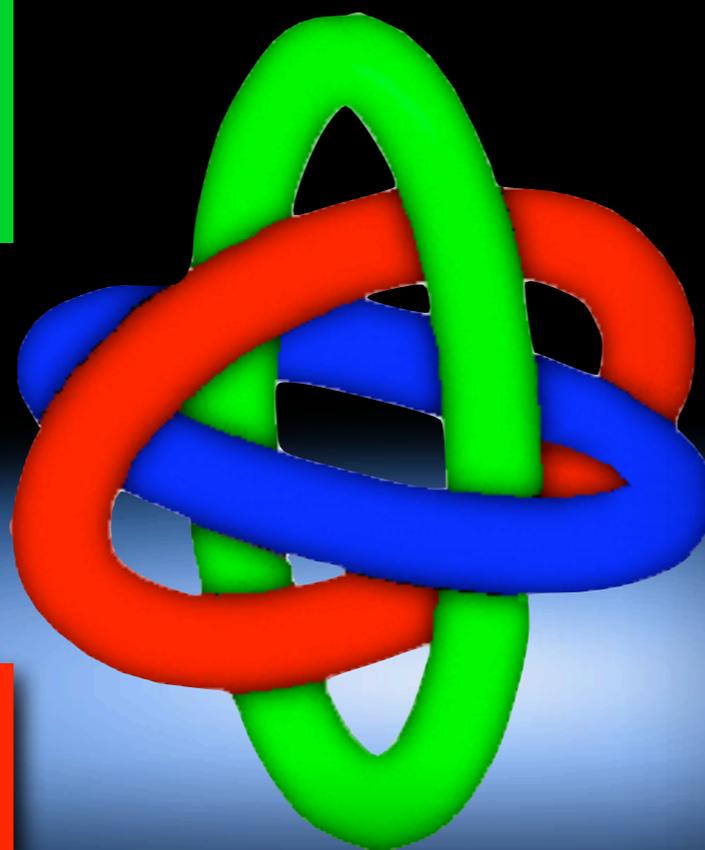
# Bamboo Vision of Cyberinfrastructure

Evolving and stable **organizational, partnership, and social models** to support academic innovation using technology within and between campuses and other key organizations

understanding of practices  
and commonalities

shared technology  
services

organizational, partnership,  
and social models

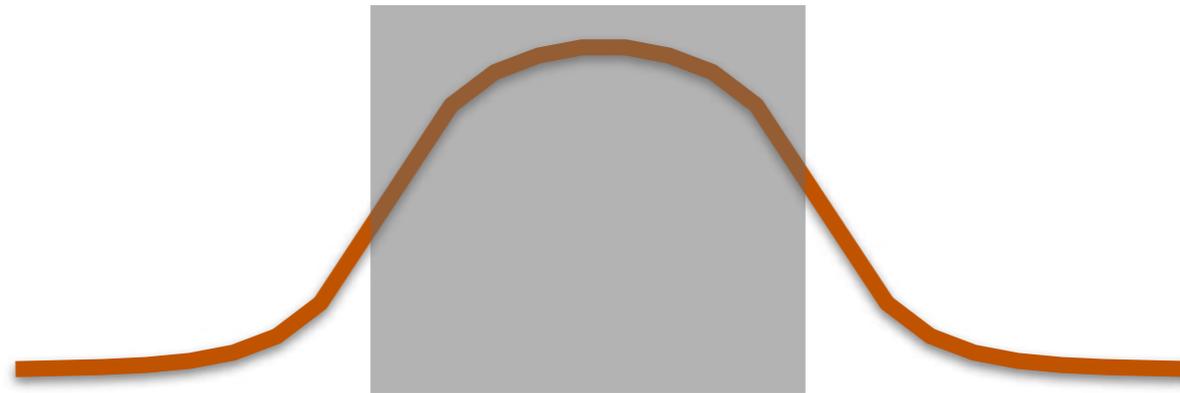


- Relationships of mutual respect.
- Relationship of mutual benefit within the norms of the “ring community.”
- Participatory, iterative design, use, evaluation.
- A culture of collective reward.
- To be a bit eccentric (can be circles)

**\*Three symmetric, interlocking rings, no two of which are interlinked.  
Removing one destroys the synergy.**

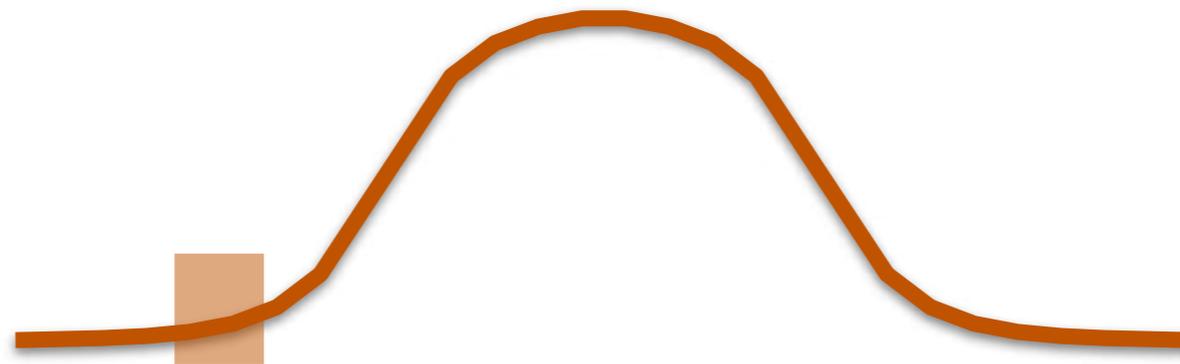


explore practices to discover what is  
**common**  
and then fill the gaps

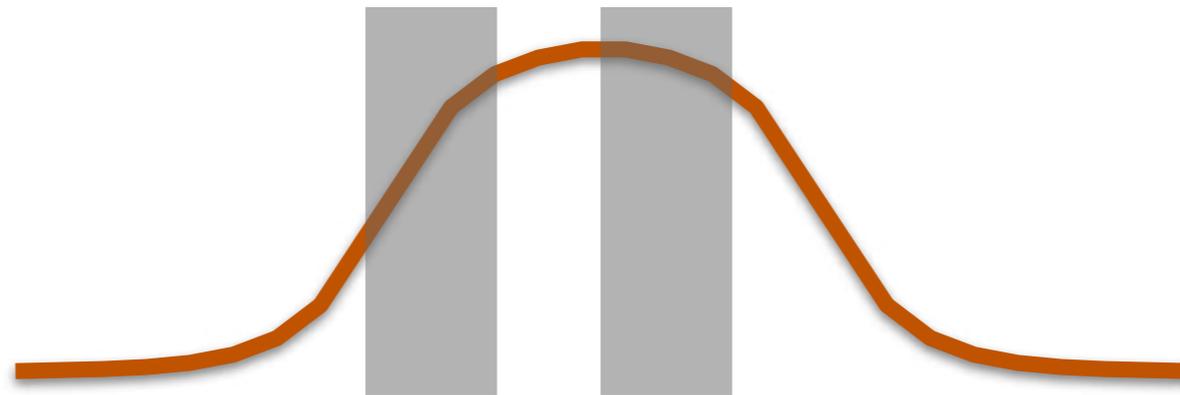


but that could lead to unintentional  
**normalization**

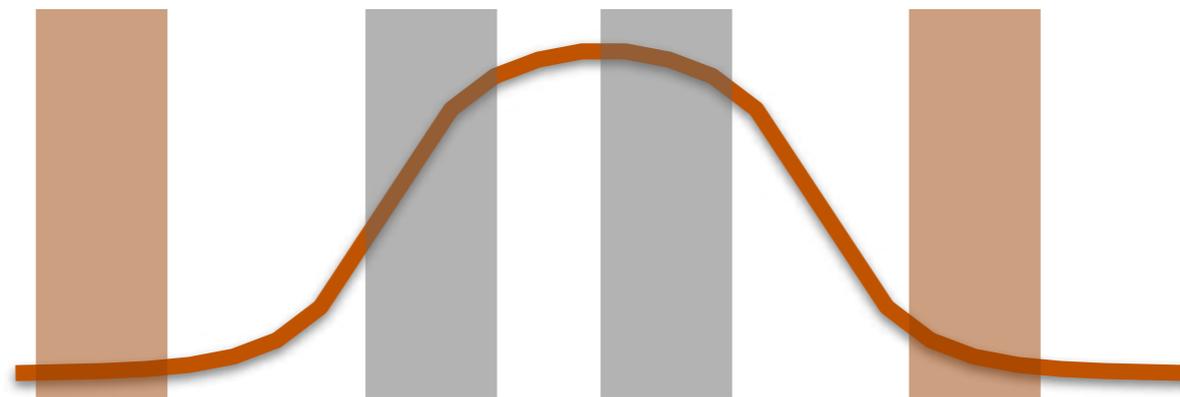
... a serious concern raised by faculty  
attending the Berkeley workshop



instead, start by finding some things in  
**common**



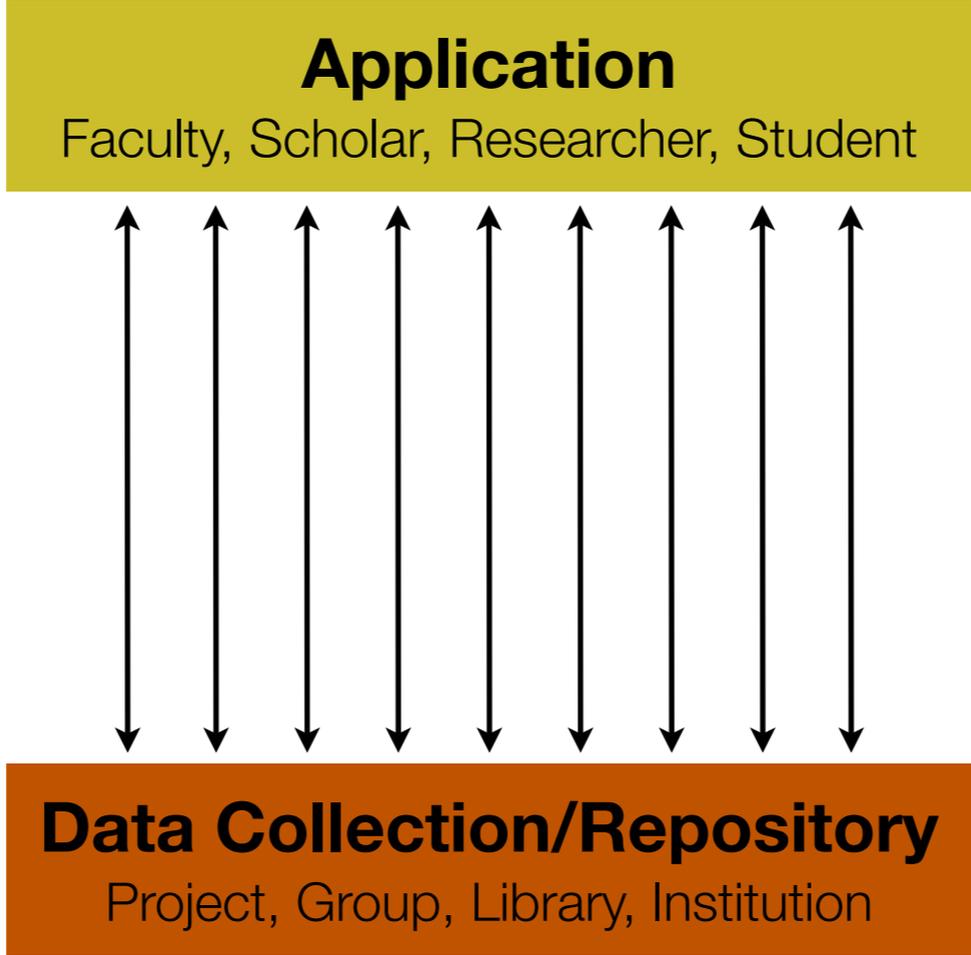
instead, start by finding some things in  
and seek out the **un**common





## **Data Collection/Repository**

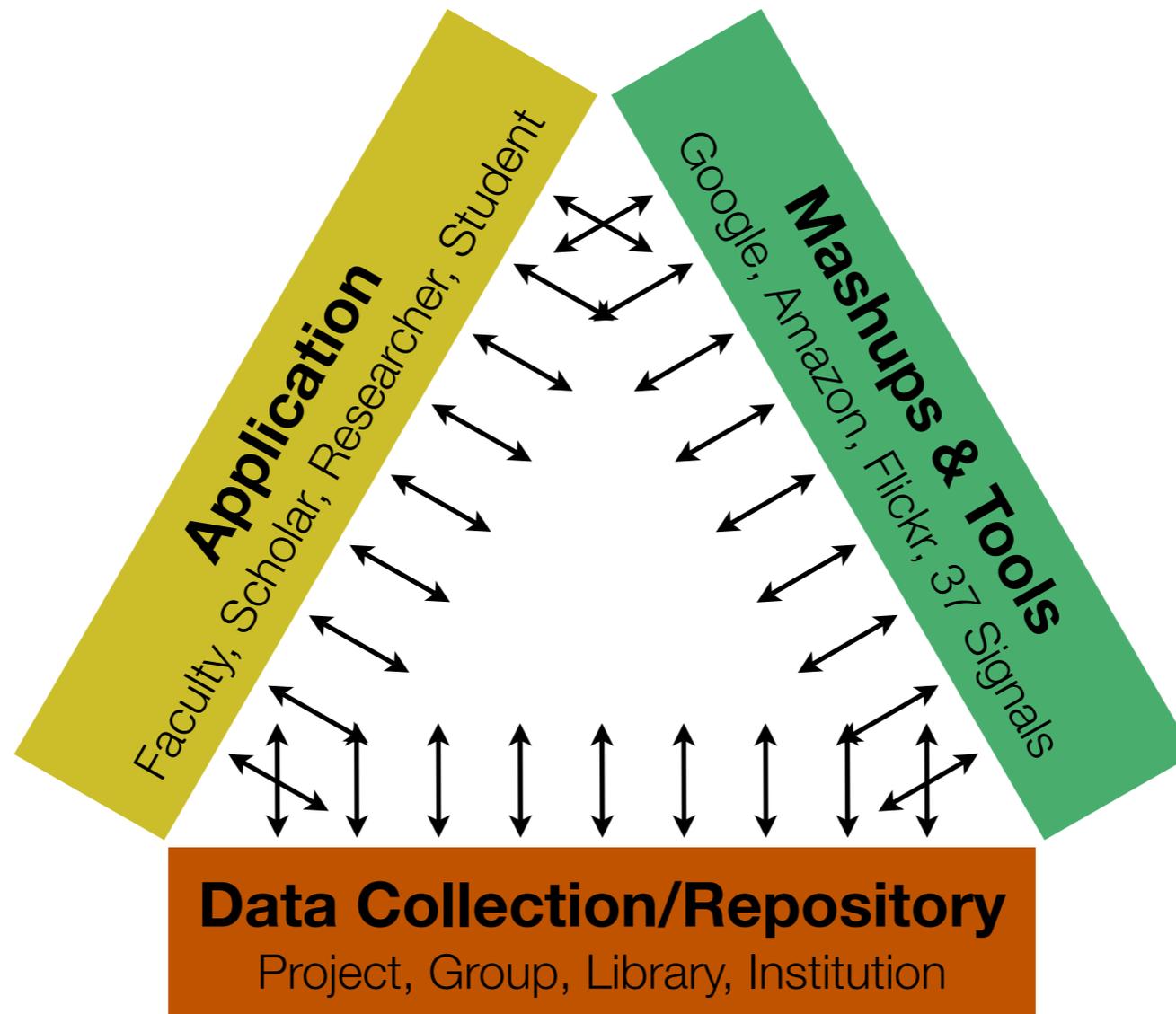
Project, Group, Library, Institution





**Application**  
Faculty, Scholar, Researcher, Student

**Data Collection/Repository**  
Project, Group, Library, Institution



lightweight infrastructure  
common interfaces  
shared services  
standards

support models  
social networking  
research + learning  
scalable participation  
community development

# The planning project will be a success if we...

---

- ▶ better understand humanities scholarship and artistic practice in a manner that enables the design of shared technology services and delivery models
- ▶ create a shared technology services roadmap
- ▶ identify organizational, staffing, and partnership models that can support the on-going provision of these services
- ▶ establish a core set of institutional and organizational collaborators who want and are willing to lead efforts that contribute toward the vision of Bamboo
- ▶ move forward with the Bamboo Implementation Project
- ▶ created opportunities for new collaborations

What does Bamboo mean to me?

## What does Bamboo mean to me?

A future that creates research, teaching, and learning opportunities across disciplines and institutions that can be fully enabled through technology.

## What does Bamboo mean to me?

Reducing the barriers between libraries, museums, and IT, and reducing the duplication in investments.

## What does Bamboo mean to me?

A fantastic opportunity to take the kinds of technology that I have been working on to the next level.

## What does Bamboo mean to me?

If resources are also made more readily and simply accessible for users who are relatively unsophisticated in technological terms, there will be a real impetus to new interpretations and new questions.

## What does Bamboo mean to me?

The potential to offer me better insight into the needs of humanists – a better understanding of how they do research – so that I am better able to support them in their work.

## What does Bamboo mean to me?

To develop and to share a consensus model of the research process; this should inform development of standards and processes.

## What does Bamboo mean to me?

Bamboo promises to continue to bring scholars together for information sharing and collaboration on a massive scale.



In the natural world, bamboo is a **highly flexible organic material that serves multiple purposes**: it can live as a single stalk on a desk or grow quickly into renewable forests; be used for constructing buildings or decorating them; become as strong as hardwood or as flexible as cloth; and can be lashed together to keep water out as in a boat or transport water as in a pipe. We envision the **project** as being quite similar: **sustainable, configurable, flexible, and reliable** – hence the name **Bamboo**.

