THE FUTURE OF NON-TEXT MEDIA AT UC Berkeley: Content and Technologies at Risk
Draft #1: Jeffrey Skoller, Associate Professor, Film And Media, Oct 2014

Draft #2 March 2015

This report was developed by LIBR in response to the urgent need to form a coherent, comprehensive, and stable unit with professional staff to inventory and manage the acquisition, storage, preservation of, and access to UC Berkeley’s audio/visual/digital materials. Currently dispersed, poorly-funded (or funded with pockets of soft money), and disparately-managed, the library of this historical and exponentially-expanding body of material is very much at risk.

Berkeley is not alone. A recent Chronological of Higher Education article made it very clear that even having an inventory of a university’s audiovisual collections is rare (a recent census at the University of Illinois at Urbana-Champaign, CHE reports, turned up 408,000 items in 101 locations, and a similar census at the University of Indiana found 600,000 such items in 50 different formats) (http://chronicle.com/article/Hidden-Away-on-Campuses/149875/). The problem has four major parts: the physical care of deteriorating audio/visual/digital materials; the preservation and repair of play-back machines; the digitization and cataloguing of content for researcher access; and coherent plans for continuous updating of digitized copies to ensure continued access. Copyright issues that bedevil all scholars whose essays contain embedded copyrighted material is a related issue. And of course, cost issues are key to institutional neglect in this area.

There are many corners of the institution with collections of and responsibility for audio/visual/digital materials but the main Library is the central player. The UC library uses, collects, stores, preserves throughout its collections and archives, a wide range of non-text based media materials and formats that are used daily by students, faculty, researchers across the campus and indeed internationally. It logically should take the lead in correcting this problem. These audio, visual, and digital items include films and video of various formats including 16mm motion picture film, Super-8 film, Video--VHS, 3/4” perhaps other formats, Laser Disc, DVD, DVD-R, Blu-Ray and streamed video, Micro-film, Micro-Fiche, photographic transparencies, glass slides, 35-mm slides, film strips, photographic prints & negatives. Audio may include LP records, audio tape (1/4” reel to reel, cassette), CD and perhaps other audio formats. The digitization of books has brought with it the development of new electronic and image based book forms such as hyper-text, CD-ROM, DVD-ROM and other emerging digital-based software, computer operating systems and applications, digital artworks and games. These materials are stored on a range of media, floppy disks, tape, compact discs.

Such visual, audio and digital media are increasingly an integral part of university study, research, and curricula across disciplines from film and media studies in departments across the humanities from Art History and Art Practice, Music Studies, Architecture and Environmental Design to Information Technology, Anthropology, History, and a range of social and hard sciences. These media are not only being used as tools for study and
research, they are increasingly objects of study and research. In the last decade, UC Berkeley has increasingly committed itself to the study of audio, visual, and digital media with the creation of the Film & Media department, which has an internationally recognized PhD program, and the creation of the Berkeley Center for New Media, a graduate research and study center with a Designated Emphasis in New Media. In the last decade there have been nearly a dozen academic appointments of specialists in visual and media studies and production in departments of Art Practice; Rhetoric; Anthropology; Theater, Dance and Performance Studies; Music; East Asian Studies; Spanish and Portuguese; French; Film & Media Studies, and the Journalism School. There are ongoing courses in media studies and production offered by the Media Studies program, American Studies, Ethnic Studies Women and Gender Studies, Computer Science and Vision Science, as well as Anthropology. In the areas of audio and music, the Music department’s Center for New Music and Audio Technologies (CNMAT) houses a dynamic group of educational, performance, and research programs focused on the creative interaction between music and technology. As this focus on research and curriculum development at the University reflects the growing centrality of media culture in the twenty-first century, so the UC Berkeley library is called upon to serve these areas through an articulated commitment to and policy for the integration of such media-based research and study materials into the very center of the Library’s and the University’s mission.

Currently, audio, visual and digital resources, their administration, acquisition, cataloguing, preservation, curation, and storage are highly decentralized, spread across the campus in various isolated departments and libraries. There is no comprehensive inventory or catalogue of these resources. Although there are some timely efforts being made by UCB with a grant from the NSF and by a systemwide team working with the Library’s Preservation Department to identify, preserve and digitize discrete collections of these materials (such as ethnographic sound recordings), as of this writing, the Library does not have a trained Librarian in Media Studies with skills in media collections, their curation, acquisition and preservation. The Library has no Subject Specialty Librarian in contemporary film and media studies who is able to integrate media studies into the library, or assist with teaching and research in this area.

A college-based Visual Resources Center located in the College of Environmental Design holds and cares for the teaching slide collections of the three departments in that college, as well as personal collections of teaching and research slides from former and current faculty. It is a significant collection holding more than 82,000 digital images, 300,000 35mm slides, 35,000 glass lantern slides, and 20,000 mounted study photographs.

The Art History Visual Resources Center (VRC) supports the History of Art department in the areas of digital teaching, image research, and audio visual support for instructional and research purposes. It also oversees a residual 35mm slide collection (most of these images have been digitizing and/or deaccessioned).

Administratively the Media Resource Center, located in Moffitt Library, is part of Instruction and User Services and not part of the academic research collections or Subject
Specialty areas of the library reflecting its role as a teaching resource that largely supplies DVDs for classroom use and viewing facilities for students, rather than as an integrated part of the research mission of the library. The MRC has substantial audio/visual holdings of 22,600 Video discs (DVD, laserdiscs and video CDs), 16,732 Analogue Videotapes, 7,860 35mm slides, 2,733 audio cassettes, 384, compact discs, 374, computer files, 54 CD ROMS, 47 audio discs.

The MRC provides limited in-library viewing and listening facilities for individual and small group study use and makes media available for classroom use. However, the more recent on-line audio/visual streaming technologies that enable media to be streamed directly to classrooms, or to individuals for on-line study, have not been well supported or developed in ways that have kept up with current audio/video on-line streaming technologies and media distribution.

The academic research element of the MRC has been a Media Resources Data-base that Gary Handman created in the 1990s and which, until his retirement in 2012, was known internationally as one of the most important and useful research tools for Film and Media Studies researchers. The development and maintenance of such research tools needs ongoing Library support and requires a knowledgeable Subject Specialty Librarian to maintain and grow it. The responsibilities of such a position and such an office could expand to incorporate the coordination of a campus audio/visual/digital inventory and a census of individuals at UCB with knowledge of and oversight of such collections, their hardware, their states of digitization and cataloguing.

Currently there is no on-going plan or resources budgeted to preserve, curate, or coordinate the audio/video media that has been collected by the Library (and other units on campus), with few designated funds for preservation activities. Such preservation includes, curation, selection, and digitization of many of these formats. Preservation also includes purchase and maintenance of equipment capable of repairing, cleaning, viewing and listening to a range of audio, visual and digital formats that are often outmoded or anachronistic but that are essential to allow academic research.

The Library’s Preservation department has made strides in this area but it is largely built around preservation of print based media, with little to no facilities for audio, visual, and digital preservation. Preservation Department head Barclay Ogden in an interview on Oct 9, 2014, said that historically audio/visual materials were never a part of the central responsibility of the Library. Until recently there was little accurate and complete cataloguing of such materials, and cataloguers were not properly trained in A/V/D cataloguing, so its unclear how complete the current inventory of holdings is. There is need for staff properly trained in A/V/D cataloguing and preservation techniques.

Currently print-based preservation is done on a “use-based” approach in which materials are preserved only when the item is damaged and primarily with a view to continuing patron use. Mr. Ogden indicates that different criteria for preserving A/V/D materials are necessary. Since film, video, audio and digital formats deteriorate over time—even when unused—they need preservation (and migration) time tables based upon their age and
storage conditions, rather than how much they have been used. Deaccession of damaged or deteriorated materials should be a careful curatorial decision and not an ad hoc assessment that an item is, with current hardware or in its current condition, unplayable.

The question of conditions of storage and accessibility is also central to the issue of preservation. Where and under what conditions are such materials currently stored? What needs to remain in original formats and what should be copied and digitized? What kinds of “special” facilities are needed to support the on-going storage of A/V/D materials on the campus library and in other storage areas such as the NRLF?

In light of the growing preservation issues of A/V/D materials, librarians in both the MRC and the preservation departments have undertaken the development of ad hoc preservation projects:

The MRC has received small amounts of funding for two recent special preservation projects. The CAVPP (California Audio-Visual Preservation Program) will pay for digital transfers of California-related material that we are legally able to post openly for streaming and/or download on the Internet Archive (this is an on-going project). The MRC has also participated in the Mellon Foundation Funded project, Video-At-Risk (http://www.nyu.edu/tisch/preservation/research/video-risk/), which resulted in the generation of 81 preservation files and DVDs (100 hours of footage) by the vendor Media Preserve.

Mr. Ogden as part of a UC wide Audiovisual Preservation Taskforce, has proposed a University wide pilot project to collectively assess the Audio/Visual/Digital holdings across the University, and to determine a systemwide approach to preservation and access to the A/V/D collections. In a proposal written Aug 20, 2014, the charge of this task force includes:

1. Conduct an assessment of the UC Libraries’ holdings (e.g. locally recorded media that document the intellectual life of our campuses, versus commercially produced media which represent significant historical investments) taking into account the variance among campuses.

2. Briefly articulate the extent of the problem and the real impact if no action is taken. Propose a prioritization strategy.

3. Analyze and recommend possible solutions that will provide appropriate preservation and access to recordings, weighing in on formats, metadata access and the infrastructure requirements to sustain a UC media preservation program (e.g. coordinated through a single campus’ leadership, multi-campus collaboration, or CDL-centralized approach).

4. Develop an intellectual property rights framework or assessment checklist to aid campuses in assessing which parts of their media collections can be digitally reformatted to enable both preservation and access. See:

In exploring the media libraries of a sampling of UC Berkeley’s peer institutions (Stanford, USC and UCLA) we find a very different organizational and support picture. A/V/D areas in these peer institutions tend to be integrated and centralized, allowing for the sharing of resources, budgets and skills; UC Berkeley lags far behind in the development of these research and preservation areas.1

**USC**

The **USC Digital Library (USCDL)** helps fulfill the mission of the USC Libraries to actively support the discovery, creation, and preservation of knowledge and develop collections and services that support and encourage the academic endeavors of faculty, students, and staff.

Spanning a wide range of visual media, the USC Digital Library offers digital images of drawings, illuminated manuscripts, maps, photographs, posters, prints, rare illustrated books, as well as audio and video recordings. Encompassing the subject strengths of the vast collections of the libraries at the University of Southern California, these materials represent the applied sciences, fine and decorative arts, history, performing arts, and social sciences. A portion of the images contained in the USC Digital Library come from the collections of collaborating institutions which, like USC, have valuable archival collections that are of interest to a wide range of people.

**The USC Cinematic Arts Library**’s primary mission is to support the curriculum of the School of Cinematic Arts and to foster study and research. In addition to an extensive book collection, the library also holds many archives focusing on the history of the film industry and containing many rarely seen photographs, as well as scripts, scores and other artifacts. The Cinematic Arts Library is committed to becoming a multimedia archive of materials ranging from the raw materials that go into the making of motion pictures, to the finished products themselves, and to all of the new technologies for preserving the moving image and presenting it to a new generation of filmgoers. The library promotes

---

1 Much of the information about the media libraries I studied came from their library websites or from direct correspondence with the media librarians. In particular, I want thank Henry E. Lowood, Curator, History of Science & Technology Collections: Film & Media Collections at Stanford University, who gave me access to all of Stanford’s media facilities and Stanford’s many media librarians. He also generously provided me information about the structure and organization of Stanford’s media collections and facilities.
interdisciplinary teaching and collaborative projects such as digital imaging and archiving.

**UCLA**

In addition to UCLA’s Instructional Media Collections and Services (IMCS) which primarily serves faculty and departmental personnel who use media in the classroom. The IMCS houses and maintains several department and study center collections and features an ever-growing collection of DVDs, videotapes, laserdiscs and films.

The UCLA Library’s Preservation Department focuses its efforts in four main areas: conservation, collections care and bindery, audiovisual preservation, and preservation administration. The preservation program works to preserve and provide access to moving images and recorded sounds held in library collections. Activities include in-house services to conserve, preserve, restore, and share primary resources created or saved in obsolete media formats and coordination with vendors and contractors to handle large or complex projects.

**Services** Currently all analog-to-digital AV reformatting is outsourced, as are the baking of magnetic tape, film-to-film preservation, and other large projects that need a large amount of conservation repair and treatment.

- **Reformatting**: Outsourcing large projects requiring one-off reformatting; involves inspection, preparation, delivery to vendor, and quality control
- **Processing and rehousing**: Preparing condition reports, rehousing, verifying content of all film formats and VHS and audio compact cassettes that are in playable condition
- **Conservation repair and treatments**: Cleaning of film, recorded disc, VHS, and Umatic tape; splicing repair of film, video cassettes, quarter-inch reel-to-reel audiotape and audio cassettes; re-shelling VHS and audio compact cassettes
- **Quality Control**: Ensuring that audio and video digital files requested have been created and meet specified standards and playback through spot checks of files and file states; verifying MD5 checksums for each file; confirming that requested metadata has been created and supplied by vendor; inspecting physical condition of newly created film preservation elements
- **Digital Preservation, Sustainability, and Maintenance**: Collaborating with other Library departments to finalize standards and to ensure necessary amount of digital storage space and multiple backups in geographic locations, stored with accompanying metadata and verified MD5 checksums
- **Development**: Working with the UCLA Library's Development office and other departments and staff to obtain funding for activities and services
**Stanford University**
The Stanford Library is a model for an integrated media library in which instructional services, preservation, digitalization, archival collections and audio/video/digital technical recourses are centralized.

**History of Science & Technology Collections: Film & Media Collections**
Instructional Media Collections and Services (Media and Microtext Center), consist of nearly 70,000 titles that include DVD, and analogue video (VHS), a historical collection of Software and video games. All are in circulation. The center has a range of individual and group viewing facilities. Center is approx. 10,350 sq ft, including office space, public viewing areas, etc. On-line media studies data bases.

Henry E Lowood
Curator, History of Science & Technology Collections: Film & Media Collections
Cecil H. Green Library
(650) 723-4602

<table>
<thead>
<tr>
<th>Collection</th>
<th>Linear feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVDs</td>
<td>3514.6</td>
</tr>
<tr>
<td>VHS tapes</td>
<td>1750</td>
</tr>
<tr>
<td>Videogames</td>
<td>309.2</td>
</tr>
<tr>
<td>Laserdiscs</td>
<td>40.8</td>
</tr>
<tr>
<td>Other</td>
<td>99.2</td>
</tr>
<tr>
<td>Empty</td>
<td>1478.8</td>
</tr>
<tr>
<td><strong>Total space</strong></td>
<td><strong>7192.6</strong></td>
</tr>
</tbody>
</table>

Additionally they have more media items stored in CD-style cabinets:

<table>
<thead>
<tr>
<th>Collection</th>
<th>Piece count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio CDs (ZCD)</td>
<td>2581</td>
</tr>
<tr>
<td>Videogames (ZMS)</td>
<td>3751</td>
</tr>
<tr>
<td>(includes videogames, CD-ROMs, game cartridges, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

**Stanford Visual Resources Center**
The Art & Architecture Library's Visual Resources Center (VRC) provides digital images for teaching and research at Stanford University. The VRC also houses a
slide collection that circulates only to members of the Department of Art & Art History. However, all members of the Stanford community may access the VRC's digital collection via the ImageBase. The ImageBase, which consists of approximately 90,000 digital images created by the VRC and 34,000 digital images from the Archivision collection, is accessible only to Stanford faculty and students. Our collection strengths include American art, Chinese art, architecture, and photography.

Peter P Blank  
Head, Art & Architecture Library  
Anna M. Fishaut  
Assistant Art Librarian  
Katharine A Keller  
Reference Librarian/VRC Cataloger  
Amber Ruiz  
Curator, Visual Resources Center

**The Archive of Recorded Sound**

Recorded Sound collection contains over 400,000 items that span sound recording history--from its beginnings to the present day. Nearly all formats ever developed to record sound are represented: wax cylinders; shellac, acetate, aluminum, and vinyl discs; magnetic wire and tape recordings; compact discs. Collections are particularly strong in the areas of jazz and opera.

Jerry L McBride  
Head Librarian, Music Library, Head Librarian, Archive of Recorded Sound  
Jonathan Manton  
Sound Archives Librarian  
Aurora Perez  
Operations Manager

**Stanford Media Preservation and Digitalization Lab**


The Stanford Media Preservation Lab (SMPL) serves to **preserve and enhance access** to original sound and moving image collection materials held by Stanford University Libraries. The lab’s core operations are centered around creating a **high-quality** copy of the original content in digital formats that are easily accessed by researchers and others, and that **enable ongoing, long-term management** of the content for future users. We work closely with curators, archivists, conservators and other staff responsible for the care and management of special collections and archival materials.

They also provide a variety of consultation services to the Stanford community to assist in the assessment and ongoing management of audio and moving image collections in analog and digital form.

SMPL is one of several digitization labs managed by **Digital Library Systems and Services**.
**Born-digital / Forensics Lab**
Stanford University Libraries is acquiring an increasing amount of digital archival material / handheld media. This principally comprises magnetic and optical disks and tapes containing digital files produced both via historical computing platforms on legacy media and technology stacks, as well as via contemporary applications and file formats on modern media. Two Born-digital / Forensics Labs have been built to preserve and provide access to these at risk materials. The labs have the ability to read a wide range of digital media such as floppy discs, CDs/DVDs, hard drives, computer tapes, and most consumer types of flash memory.

**Digital Production Group**
The Digital Production Group (DPG) produces high quality digital images of items in Stanford University Libraries' various collections for faculty, staff, and curatorial needs. We manage and operate six digitization labs staffed by highly skilled professional imaging specialists and student assistants. Our labs are capable of converting a wide variety of traditional library materials to digital formats, including printed books, journals, fine art, photographs, maps, manuscripts, and more.

**Recommendations For UC Berkeley Library in Light Of These Models**
While we understand that the UC Berkeley Library does not have the financial resources of private institutions like Stanford and USC, as can be seen, the Berkeley Library is far behind in the development of non-text-based facilities, staff, and collections; nevertheless there is much that can and should be done to acknowledge and develop this crucial area of audio/visual/digital resources for research and instruction. Below are a series of broad suggestions for a systemic restructuring of this area that would allow the identification and development of best practices in this crucial area of knowledge preservation and institutional transformation.

- Hire a trained media arts Curator/Director/Librarian/Selector who can restructure the current facilities and further develop and modernize this area as a curricular and research center within the Library. This individual would be trained in modern media library techniques for acquisition, cataloguing, preservation and archiving such materials for academic research and instructional support.

- Reorganize the audio/visual/digital areas into a centrally-managed system and a centrally-located space to allow for rigorous access controls, as well as strong workflows and clear reporting lines. This centrally managed system for audio/visual/digital collections would include both the instructional facilities appropriate for teaching and classroom use and an academic/research component designed for scholarly research and the preservation of A/V/D archival collections.
Currently the Media Resource Center is part of Instruction and User Services and only reflects the instructional needs of a portion of the University’s A/V/D resources. We recommend that this area be moved to become part of the Research Collections for Humanities and Social Sciences to connect it with the larger academic research areas of the library. Such a system, would allow for greater sharing of resources. This would help to increase access and use of existing media by faculty, students, and researchers both near and far. It will also help UCB attract new collections, better align content use with copyright law and donor agreements, and assemble a central corpus of content for greater research potential. Simultaneously, such a centralization of resources could create more productive, mutually supporting links to currently-curated University non-text based collections such as those housed in the Bancroft library, the Pacific Film Archive, Environmental Design, and the Art History Library.

- Create an inventory of A/V/D resources on campus, and a standing advisory committee composed of those knowledgeable in this area on campus.

- Rename this combined unit to reflect the centrality of media in the Library and its enlarged purpose of serving classroom instruction, research, and study (e.g. The Audio/Visual/Digital Media Study Center). Such a unit could provide an excellent naming and funding opportunity.

- Create (or expand current print preservation department to include) a centralized Media Preservation and Digitalization Lab for A/V/D media that could be used by departments, faculty and staff across the campus to digitize and properly preserve audio, visual, software materials used for teaching and research. This essential activity would involve the hiring a Conservator trained in media preservation to work with the current Library Preservation department.

- Hire support staff—including a Curator/Librarian and a Conservator trained in media preservation as noted above—in proportion to need in order to accomplish the work of the unit, in researching and implementing Best Practices in every facet of this ever-changing area.

- Modernize media access for classroom and study use through development of centralized digital streaming networks for on-line research and to classrooms.

**UC Berkeley Faculty Endorsements:**

Kristen Whissel  
Professor and Chair of Film & Media
Linda Williams
Class of 1940 Professor of Rhetoric & Film & Media

Mary Ann Doane
Class of 1937 Professor of Film & Media

Anton Kaes
Class of 1939 Professor of German and Film & Media

Mark Sandberg
Professor of Film & Media and Scandinavian Studies

Greg Neimeyer
Associate professor Art Practice and Director of the Berkeley Center for New Media