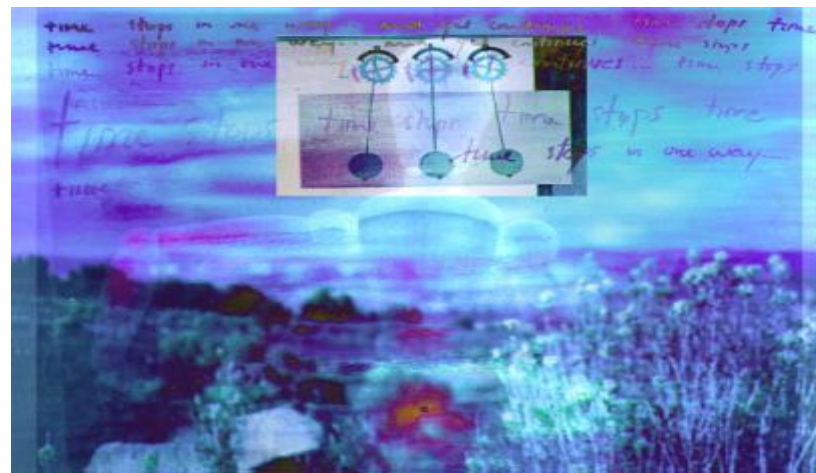


Preserving and Emulating Digital Art Objects



Dianne Dietrich, Digital Scholarship Fellow, Cornell University Library
Madeleine Casad, Curator for Digital Scholarship, Cornell University Library
Jason Kovari, Head of Metadata Services and Web Archivist, Cornell University Library



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities



Rose Goldsen Archive of New Media Art

Preservation and Access Framework for Digital Art Objects

Test bed: 100 born-digital artworks
created for CD-ROM, dating back to
the early 1990s.



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities

Cultural Heritage at Risk:

Preservation challenges



- Media fragility
- Complex technical composition
- Interrelated dependencies
 - Third-party apps and plugins
 - Obsolete Hardware
 - Operating Systems
- Original documentation possibly missing or incorrect
- Lack of established best practices for archival preservation



Cornell University

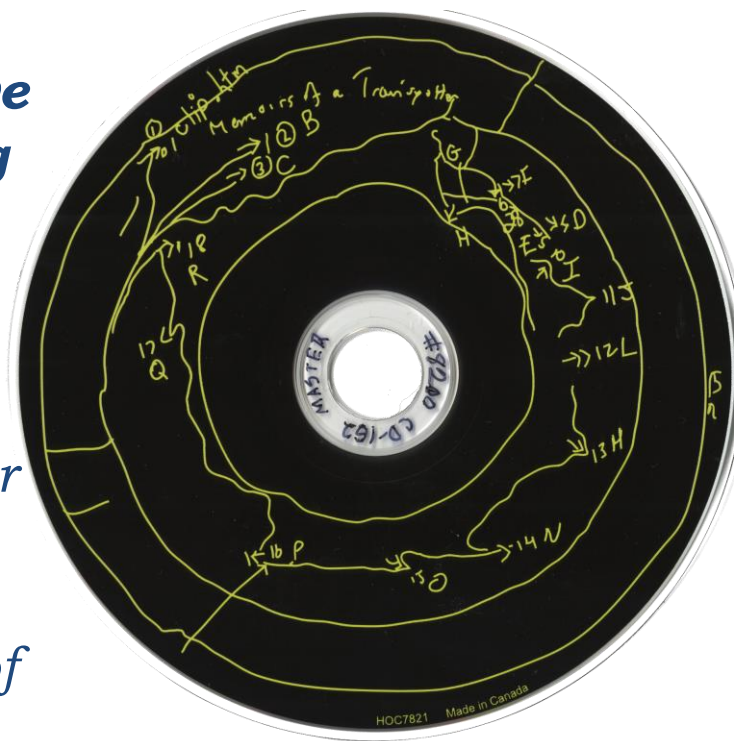


NATIONAL ENDOWMENT FOR THE
Humanities

User Community & Access

“I am worried about context and artistic intent – how do we retain authenticity in the long term?”

“Access to past works are incredibly valuable to me – understanding works not just for their message but also for their technical [aspects that] help new media artist[s] evolve [this] area of practice.”



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities

Disk Imaging & Visual Documentation

```
Acquisition
Linux device      : /dev/sr0
Device size      : 671913984 (671.9MB)
Format           : Linux split dd raw image - file extension
Image path and file name: /media/sdb1/datadrive/emulation/mac_system
Info path and file name: /media/sdb1/datadrive/emulation/mac_system
Hash calculation  : MD5, SHA-1 and SHA-256
Source verification : on
Image verification : on

No bad sectors encountered during acquisition.
No bad sectors encountered during verification.
Sector finished successfully

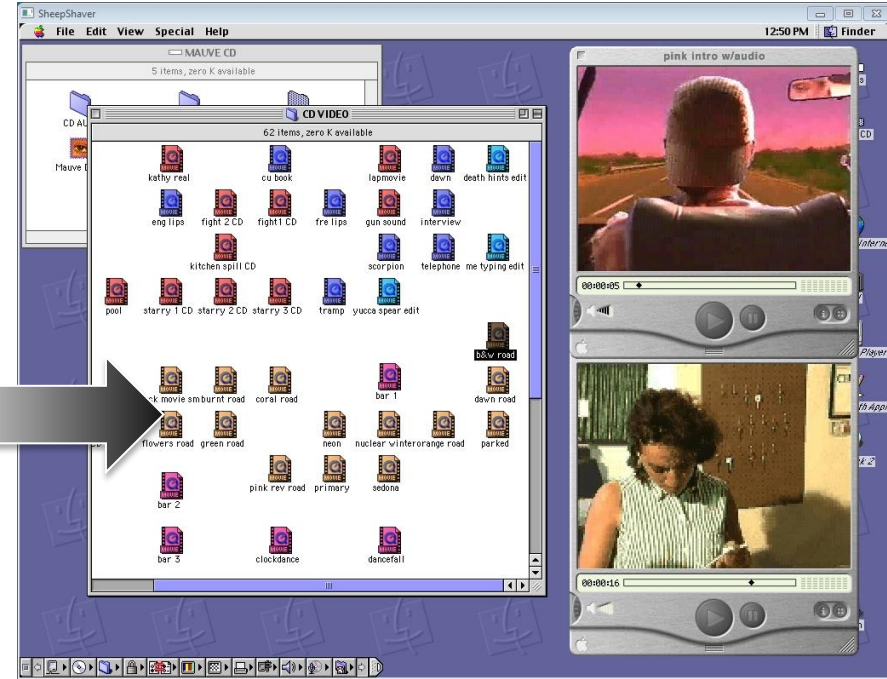
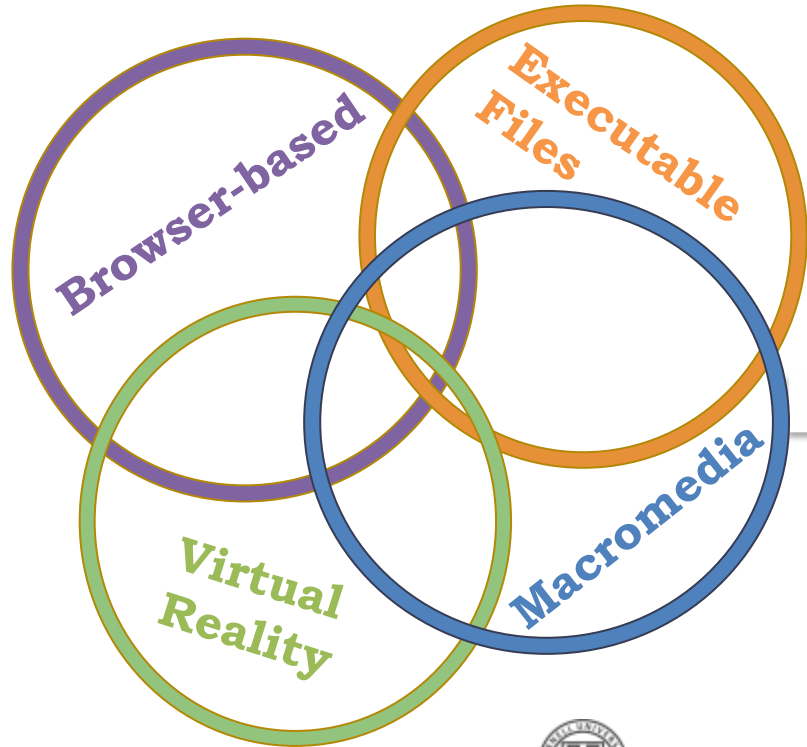
MD5 hash verified source : 4ab4234c71f76fdf90478b5124ece5c7
MD5 hash verified source : 4ab4234c71f76fdf90478b5124ece5c7
MD5 hash verified image  : 4ab4234c71f76fdf90478b5124ece5c7
SHA1 hash verified source : 1e00112d4cc806bc6ff5465bba4c67572efbe85
SHA1 hash verified source : 1e00112d4cc806bc6ff5465bba4c67572efbe85
SHA1 hash verified image  : 1e00112d4cc806bc6ff5465bba4c67572efbe85
SHA256 hash verified source: c18b0c54ca5637dba4a1007d45e307871a548e8
SHA256 hash verified source: c18b0c54ca5637dba4a1007d45e307871a548e8
SHA256 hash verified image: c18b0c54ca5637dba4a1007d45e307871a548e8
Source verification OK. The device delivered the same data during acquisition.
Image verification OK. The image contains exactly the data that was acquired.

Acquisition started : 2013-12-03 12:21:17 (ISO format YYYY-MM-DD HH:MM:SS)
Verification started: 2013-12-03 12:23:45
Ended                : 2013-12-03 12:26:13 (0 hours, 4 minutes and 56 seconds)
Acquisition speed   : 4.33 MByte/s (0 hours, 2 minutes and 28 seconds)
Verification speed   : 4.36 MByte/s (0 hours, 2 minutes and 27 seconds)
```

- Sector-by-sector copy of disc; retain structure and contents
- Separate data from fragile media
- Provide evidence we have made a trustworthy copy



Analysis & Access



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities

Metadata

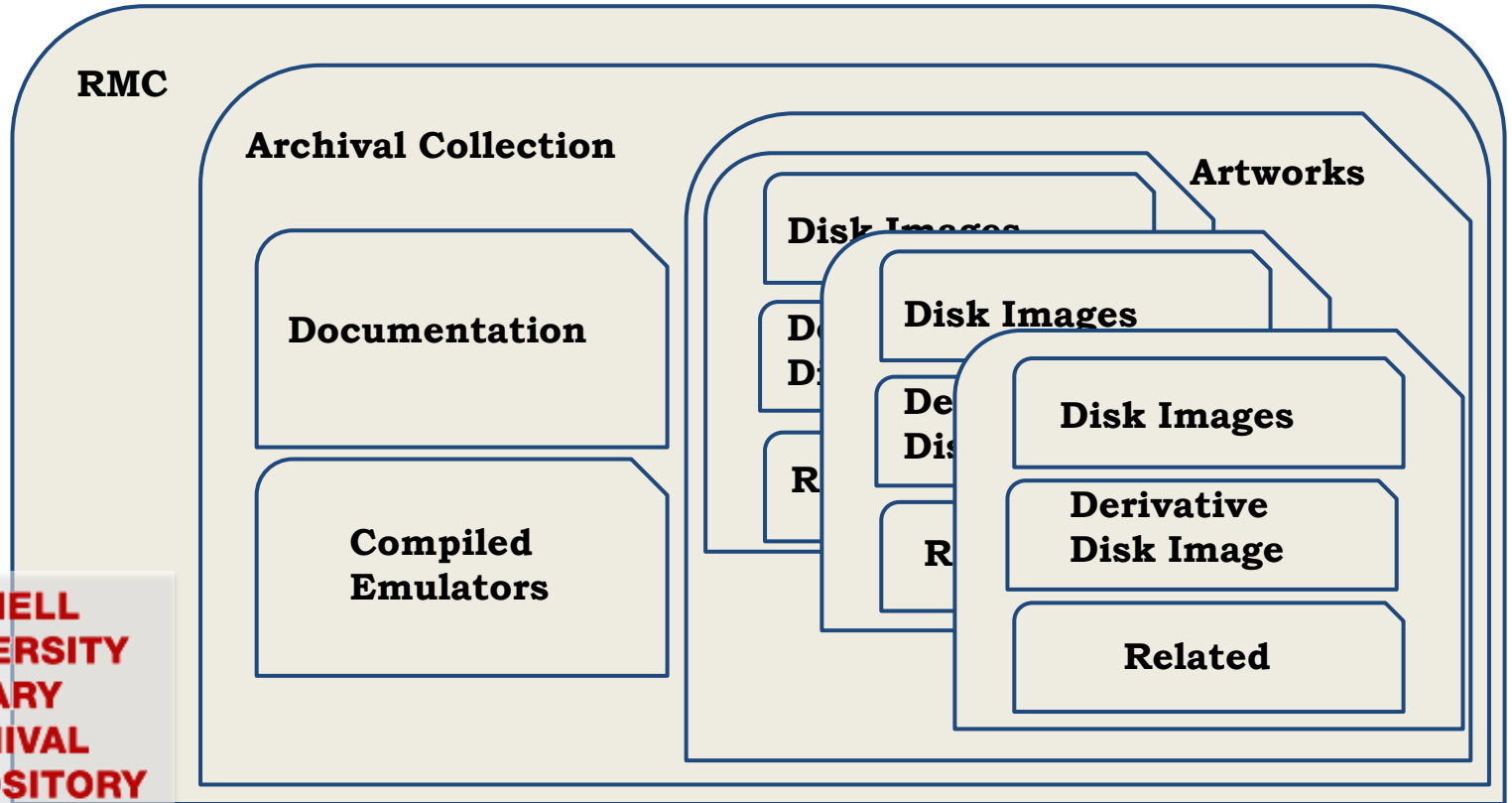
- Descriptive Metadata – MARCXML
- Technical Metadata – DFXML
- Preservation Metadata – PREMIS
- Emulation Documentation – Narrative
- Sector Notes Documentation – Narrative
- Artwork Visual Documentation – VRA Core
- Classifications – Narrative

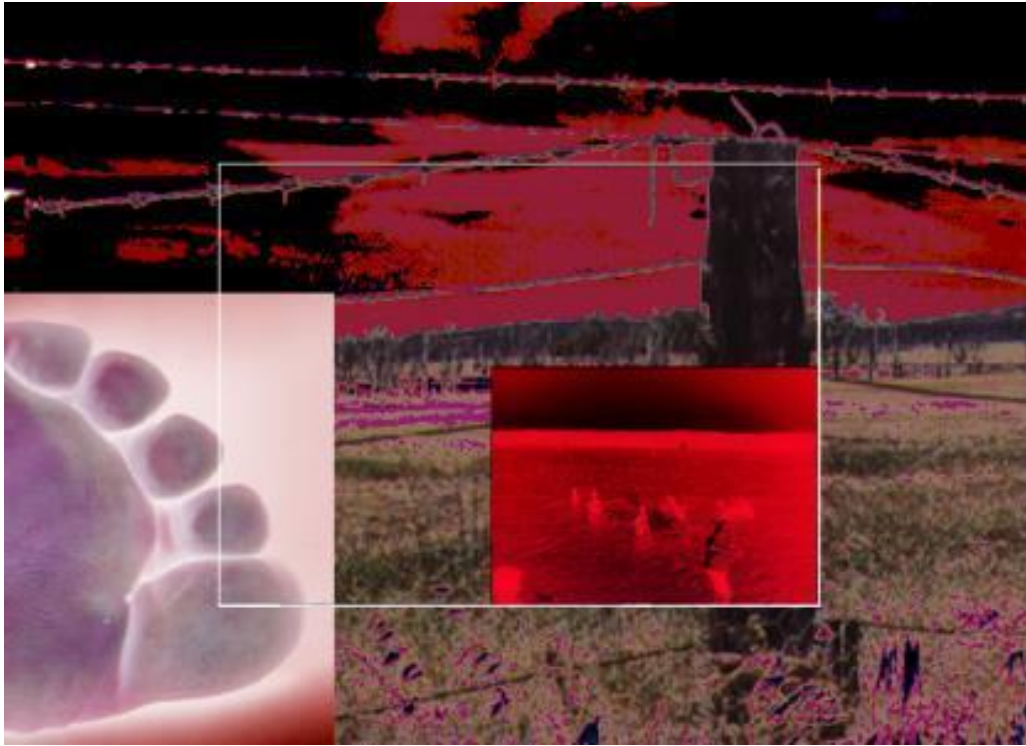
```
bgpagesm.JPG
home_projectCURRENTW
├── attic
│   ├── atticfloor1.JPG
│   ├── atticfloor2.JPG
│   ├── atticslats1.JPG
│   ├── atticwoodend.jpg
│   ├── atticwood.jpg
│   ├── attic.wrl
│   ├── continue.jpg
│   ├── Copy (2) of attic.wrl
│   ├── Copy of attic.wrl
│   └── effects
│       ├── disparty.mpa
│       ├── drip.mpa
│       ├── heart.mpa
│       ├── ominous.mpa
│       └── slowsteps.mpa
├── exit.wrl
├── family1.jpg
├── Kissell1.GIF
├── linked_media
│   ├── familyphoto
│   │   ├── family.dcr
│   │   ├── familyintro2.html
│   │   ├── familyintro.html
│   │   ├── index62html.txt
│   │   ├── index6.html
│   │   └── index6old.html
│   └── kissel
```



Ingest

(into **C**ornell **U**niversity **L**ibrary **A**rchival **R**epository)





Questions?



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities

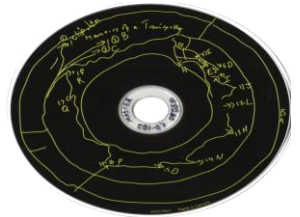
Thank You!



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities



And thank you to the PAFDAO team and advisory board

Grant PIs: Oya Rieger, Timothy Murray

Cornell PAFDAO Team:

Desiree Alexander, Madeleine Casad, Dianne Dietrich, Jason Kovari, Danielle Mericle, Liz Muller, Michelle Paolillo

Consultants at AVPreserve: Alex Duryee, Chris Lacinak, Kara VanMalssen

Advisory Board: Ben Fino-Radin, Jean Gagnon, Rebecca Guenther, Matthew Kirschenbaum, Jon Ippolito, Norie Neumark, Christiane Paul, Richard Rinehart, Simeon Warner



This work supported by a grant from the
National Endowment for the Humanities

Any views, findings, conclusions, or recommendations expressed in this presentation do not necessarily represent those of the National Endowment for the Humanities.



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities

Image credits (in order of appearance)

- Norie Neumark; Shock in the Ear – (screenshot from Contact Zones webpage: <https://contactzones.cit.cornell.edu/artists/neumark.html/>)
- Physical CD – David Thomas; The Encoded Eye, The Archive, and its Engine House
- Mauve Desert. Adriene Jenik; Mauve Desert: a fiction in translation for CD-ROM. Screen captures, Dianne Dietrich.
- The Home Project. Annette Barbier, Drew Browning. Directory listing screen capture, Dianne Dietrich.
- CULAR Logo Courtesy of Michelle Paolillo



Cornell University



NATIONAL ENDOWMENT FOR THE
Humanities