

# Film and Video Digitization and Editing

Jane Zhao  
Nadalia Liu  
Digital Media Commons  
Fondren Library



# Outline

- ⌘ Rice projects and activities that have multimedia component
- ⌘ Technologies involved and tools used in these projects/activities
  - Creation of media
  - Digitization of analog materials
  - File format conversion
  - Editing
  - Transcribing
  - Archiving
  - Publishing/Distributing
- ⌘ Resources available at the DMC

# Fall 2005, a Video Project of RELI 207 Course

- ✎ Professor Gregory Kaplan asked the students in his class to make a 4-7 minute documentary based on the testimonies they selected from Shoah Visual History Archive.

**USC Shoah Foundation**  
The Institute for Visual History and Education

[Access](#) [Scholarship & Research](#) [Teacher Education](#) [Witnesses for Humanity](#) [Preservation](#) [About](#) [Support Us](#)

## Latest News

Association of Holocaust Organizations convenes at the Institute  
Winter seminar focuses on future of survivor testimony  
January 8, 2013

IWitness endorsed by ISTE, TeachersFirst

Award-winning website gains traction in education world  
December 20, 2012

Institute, Anti-Defamation League train Southern California teachers

Workshop on *Echoes and Reflections*, IWitness  
December 12, 2012

## More News »

Subscribe to the Institute's [RSS Feed](#)

## Upcoming Events

**Jan** USC Shoah Foundation  
16 Monthly Tour  
[RSVP to attend](#)

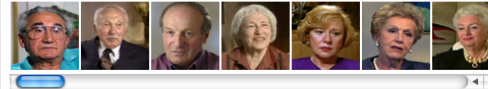
## Featured clips from the Institute's Visual History Archive



**Steve Lewkowicz**  
*Jewish Survivor*

**On the topic of Life Before Genocide:**  
Steve recalls how Jewish kids were harassed at school and Polish kids and Jewish kids played separately.

Click on a thumbnail below to view another clip:

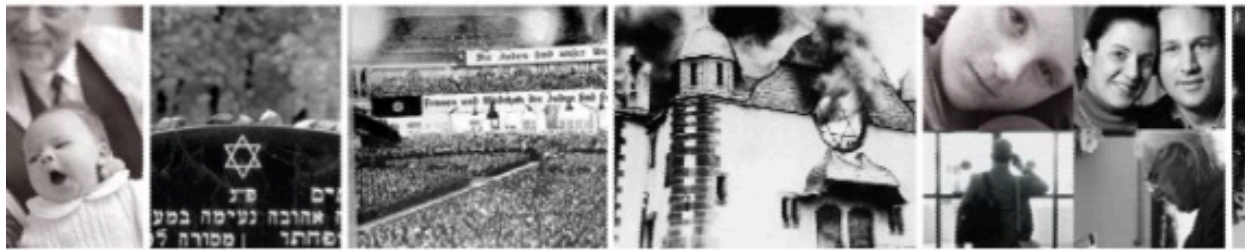


 View a sample of short clips on a wide range of topics from the Archive's nearly 52,000 testimonies.

# Survivors of the Shoah

- a student group project from RELI 207

## Survivors of the Shoah



Play Movie

Scene Selection

Special Features





# Digital Storytelling at Rice

- ∞ Digital storytelling is the practice of using computer based tools to tell stories.
- ∞ In the Summer 2007, Dr. Lisa Spiro, the former DMC director, introduced Digital Storytelling workshops to Rice.
- ∞ Starting Fall 2009, Digital Storytelling workshops have been offered to the classes such as COMM 103, COMM 321.
- ∞ Starting Fall 2012, Digital Storytelling workshops have been offered to the freshman writing intensive seminar (FWIS).

# Making a Short Video from Start to Finish

– a Variation of Digital Storytelling

- Overview of video making
- Shooting great video with DMC's video cameras
- Editing with iMovie
- Publishing

# Sample works

## **Digital Storytelling**

- [See you later, Alligator!](#) by Sara Trejo, 2007
- [Inside My Head](#) by Cristina Tortarolo, 2010

## **Making a Short Video from Start to Finish**

- [Jones College Video 2012](#) by Marissa Howat, Assistant Director of Wellness Center, RA of Jones College, 2012
- [Study Abroad Ambassadors](#) by Shelly Royer, International Programs Advisor, 2012

# Oral History Projects at Rice

- ∞ 1949-2009, Fondren Through the Years: An Oral History of the Library
- ∞ Houston Asian American Archives Oral History Project
- ∞ Vietnamese American Oral History Project

# Fondren Library's Oral History Project

- ∞ Fall 2009, in order to capture the oral history of library staff members, a video task force of the library interviewed 6 library retirees and 23 current employees.
- ∞ The finished movie is 42 minutes long and is available to view at <https://scholarship.rice.edu/handle/1911/36086> from Rice Institutional Repository and on YouTube via the following links:
  - [60<sup>th</sup> birthday part I](#)
  - [60<sup>th</sup> birthday part II](#)
  - [60<sup>th</sup> birthday part III](#)
  - [60<sup>th</sup> birthday part IV](#)
  - [60<sup>th</sup> birthday part V](#)

# Houston Asian American Archives Oral History Project

∞ Summer 2010, Oral History Project for Houston Asian American Archive <http://chaocenter.rice.edu/haaa/>

∞ The collection:

- 83 English audio interviews
- Includes audio recordings and transcripts of interviews
- URL from Rice Institutional Repository:  
<http://scholarship.rice.edu/handle/1911/36136>

# Vietnamese American Oral History Project

- ∞ In April 2012, HAAA collaborated with the 500 Oral Histories Project of the Vietnamese American Heritage Foundation (VAHF) and received 94 oral history video interviews donated by VAHF.
- ∞ The collection
  - 94 video interviews, most are in Vietnamese, some are in English.
  - 8 of them are available online now. No transcripts. Only brief abstract.
  - URL from Rice Institutional Repository:  
<http://scholarship.rice.edu/handle/1911/36136>

# Digitization of Rice University Archives: Audio Visual Materials 1920-2008 (UA 151)

- Summer 2012 Woodson Research Center Pilot Project

## ∞ Goal

Make important content available online or at least on a server in a managed environment.

## ∞ Formats

12" Vinyl Record LPs, films, VHS tapes, audio cassette tapes, reel-to-reel tapes, and more.

## ∞ Content

Rice events, speeches, news, "Golden Anniversary" film, and more.

## ∞ Starting point – VHS tapes







# Other Activities

- ∞ A submitted dissertation from Anthropology department in 2010 has a video component.  
URL from Rice Institutional Repository:  
<https://scholarship.rice.edu/handle/1911/35296>
- ∞ PowerPoint presentation
- ∞ OWL-Space course

[Rice Scholarship Home](#) ▶ [Rice University Electronic Theses and Dissertations](#) ▶ [Rice University Electronic Theses and Dissertations](#) ▶

Closets and Walls: Practices of Heterodoxy among Gay Mormons and Stencilistas in Santiago, Chile

## Files in this item

Files	Size	Format	View
<a href="#">Adair-Kriz Diss.pdf</a>	19.49Mb	application/pdf	
<a href="#">adair-kriz-diss-portfolio.pdf</a>	135.4Mb	application/pdf	
<a href="#">VTS_01_artist_tour.wmv</a>	44.40Mb	video/x-ms-wvx	
<a href="#">VTS_02_contra_golpe.wmv</a>	42.33Mb	video/x-ms-wvx	
<a href="#">VTS_03_50_fotos_and_a_poster.wmv</a>	4.204Mb	video/x-ms-wvx	

# Beyond Rice

## ☞ [Shoah Visual History Archive](#)

- A massive database of 52,000 video testimonies given by Holocaust survivors.

## ☞ [Oral Histories of the American South](#)

- A project containing 500 oral history interviews that cover topics such as civil rights, environmental transformations, southern politics, etc.
- Audio with transcript

## ☞ [National Archives on YouTube](#)

- An archive including more than 500 videos and 22 playlists featuring topics such as space exploration, World War II films, etc.

## ☞ [Philaplace: Sharing Stories from the City of Neighborhoods](#)

- An interactive web site that includes text, pictures, audio, and video clips, and podcasts that connects stories to places across time in Philadelphia's neighborhoods.

# Inside the projects

- ⌘ Audio and video recording
- ⌘ Digitization of analog materials
- ⌘ File format conversion
- ⌘ Editing
- ⌘ Audio transcribing
- ⌘ Archiving
- ⌘ Publishing/Distributing

# Media Creation

## ∞ Audio recording

- Example: HAAA oral history project – Audio only
  - [Ping Sun oral history interview part I](#)
- Audio recorders – Edirol R09
  - Portable
  - Very good built-in microphones
  - Recording formats: Wave or MP3
  - **Recommended settings for HAAA: Wave with 16bits/44.1 kHz**
  - **Recording time: 2GB memory card, 3 hours**
  - 2 AA batteries (4.5 hours continuous recording) or Power from the wall
  - Drag and drop the recording files from the SD memory card to computer









# An example: Y. Ping Sun, oral history interview and transcript

<http://scholarship.rice.edu/handle/1911/63604>

## Y. Ping Sun oral history interview and transcript

### Files in this item

Files	Size	Format	View	Description
<a href="#">wrc02594_001.mp3</a>	63.97Mb	audio/x-mp3	 -	Streaming audio
<a href="#">wrc02594_002.mp3</a>	63.97Mb	audio/x-mp3	 -	Streaming audio
<a href="#">wrc02594_003.mp3</a>	63.97Mb	audio/x-mp3	 -	Streaming audio
<a href="#">wrc02594_004.mp3</a>	63.94Mb	audio/x-mp3	 -	Streaming audio
<a href="#">wrc02594_photo.jpg</a>	103.8Kb	image/jpeg		Interviewee photo
<a href="#">wrc02594_xscript.pdf</a>	131.7Kb	application/pdf		Transcription of interview

# Media Creation

## ∞ Video recording

- Example: Fondren 60<sup>th</sup> oral history project
- Video: Sony HDV Z1U
- Audio:
  - Wireless microphone
  - Shotgun mic
  - Edirol audio recorder – for backup purpose

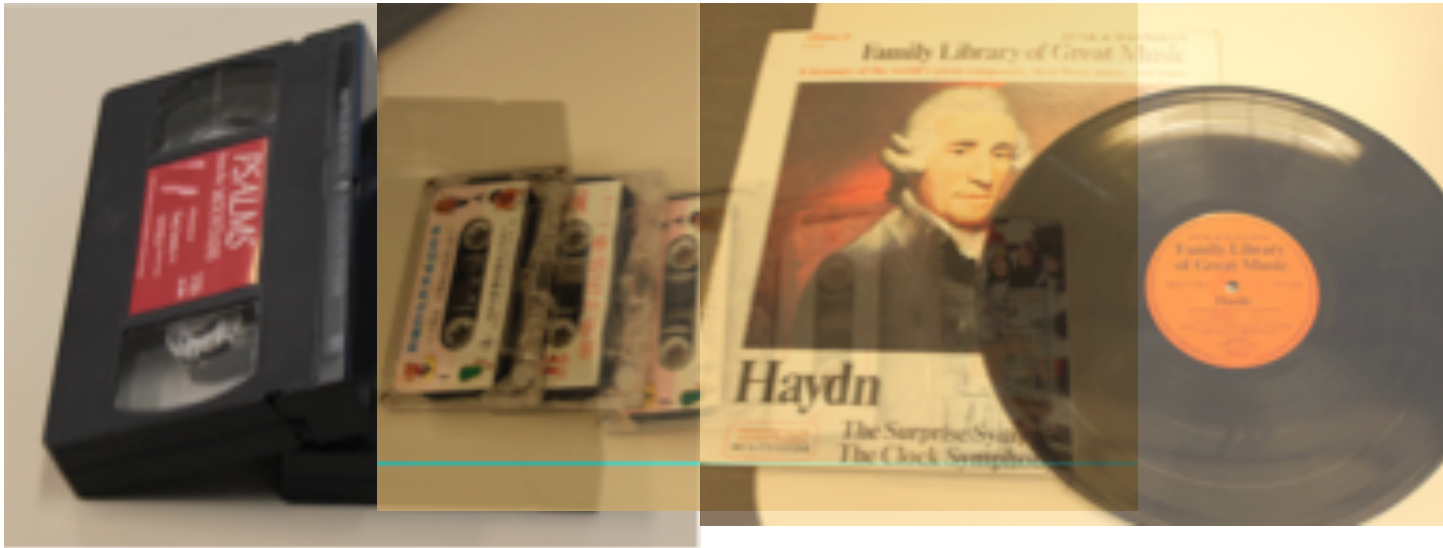


# Fondren Library's Oral History Project

- [60<sup>th</sup> birthday part I](#)
- [60<sup>th</sup> birthday part II](#)
- [60<sup>th</sup> birthday part III](#)
- [60<sup>th</sup> birthday part IV](#)
- [60<sup>th</sup> birthday part V](#)



# Digitization of Analog Materials





# Video Digitization

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- ∞ Dubbing VHS to DVD
- ∞ Capturing VHS to computer files

# VHS -> DVD

To back up your VHS tape or to play it in a DVD player, use a VHS/DVD dual deck to dub the content directly from VHS to DVD.



# VHS – Computer files

To use the digitized files online or in a PowerPoint presentation, capture the content to computer files.

Hardware setup:



# Archival Video Digitization Settings

## Software – digitization setup

for the example of Digitization of Rice Audio Visual Materials (1920-2008)

Application	Final Cut Pro 6
Preservation Video Codec Specifications	Uncompressed, 10-Bit, 4:2:2, YUV (YCbCr)
Preservation Audio Codec Specifications	48 kHz/16-bit
Captured QuickTime mov file size	100GB/hour

Challenges: how can we effectively store and maintain the huge size files?

# Video Digitization Settings for General Purpose

## Software – digitization setup

Example: Embedding to PowerPoint Presentation, Posting to YouTube

Application	Final Cut Pro (FCP), iMovie, Adobe Premiere
Video Codec Specifications	DV NTSC
Audio Codec Specifications	48 kHz/16-bit
Captured QuickTime mov file size	12GB/hour
Exporting mov to smaller mp4	FCP, iMovie, Premiere

# Audio Digitization



- ∞ Audio cassettes/LPs – computer files
- ∞ Applications: Audacity
- ∞ File formats: mp3, aiff, wave

# File Format Conversion

- ∞ Example: VAHF oral history project
- ∞ Source file formats: MTS, MPG, MP4
- ∞ Targeted file format:
  - Mp4 as access copy
  - Mov as master copy
- ∞ Tools
  - HandBrake: (MTS, MPG, MP4) -> MP4 for access copy
  - FFmpeg/ffmbc: (MTS, MPG, MP4) -> MOV for master copy



# HandBrake – Video Converter

- ∞ Free
- ∞ Multiplatform (PC and Mac)
- ∞ Input
  - most common multimedia files
  - DVD/Bluray that are not copyright protected
- ∞ Output
  - mp4 and mkv





# HandBrake – Video Converter

HandBrake

Source Stop Pause Add to Queue Show Queue Picture Settings Preview Window Activity Window Toggle Presets

Source: 2011.03.07\_VuKimYen/00001

Title: 00001 2 - 00h00m13s Angle: 1 Chapters 1 through 1 Duration: 00:00:13

Destination

File: /Volumes/converted/VAOF-ffmpeg-testing/handbrake-access-mp4s-12122012/00001.mp4 Browse...

Output Settings: Custom

Format: MP4 file ☐ Large file size ☐ Web optimized ☐ iPod 5G support

Video Audio Subtitles Advanced Chapters

Video Codec: H.264 (x264) Framerate (FPS): 15 ☐ Peak Framerate (VFR) ☒ Constant Framerate

Video Quality:

☐ Constant Quality RF: 20

☒ Average Bitrate (kbps): 280 ☒ 2-pass encoding ☐ Turbo first pass

Picture Size: Source: 1920x1080, Output: 480x272, Anamorphic: 487x272 Custom, Modulus: 16

Picture Cropping: Auto 0/0/0/0

Video Filters: - Detelecine () - Deinterlace (Slow)



# Audio/video Converter

- Free
- Multiplatform (PC and Mac)
- Convert and stream audio and video
- Command line program, run at the Terminal

A screenshot of a macOS Terminal window. The title bar at the top reads 'Terminal' and includes standard window controls (red, yellow, green buttons) and a menu bar with 'Shell', 'Edit', 'View', 'Window', and 'Help'. The main content area shows a command prompt for a user named 'dmcgquest' in a 'bash' shell. The prompt is 'Moving-Images-Test:~ dmcgquest\$'. The command entered is 'ffmpeg -y -i /Volumes/originals/item-2-test/2011.03.07\_VuKimYen/00001.MTS -vcodec copy -acodec pcm\_s16le /Volumes/converted/VA0F-ffmpeg-testing/ffmpeg-master-mov-h264-pcm16/00001.mov'. The cursor is at the end of the command line.

```
Terminal  Shell  Edit  View  Window  Help
dmcgquest — bash — 72x11
Moving-Images-Test:~ dmcgquest$ ffmpeg -y -i /Volumes/originals/item-2-test/2011.03.07_VuKimYen/00001.MTS -vcodec copy -acodec pcm_s16le /Volumes/converted/VA0F-ffmpeg-testing/ffmpeg-master-mov-h264-pcm16/00001.mov
```

# An example: Nguyễn Cong Anh Tuan video oral history interview

<https://scholarship.rice.edu/handle/1911/68492>

[Rice Scholarship Home](#) ► [Woodson Research Center](#) ► [Houston Asian American Archives oral histories](#) ►

## Nguyễn Cong Anh Tuan video oral history interview

### Files in this item

Files	Size	Format	View	Description
	69.37Mb	video/mp4	<a href="#">View/ Open</a>	video of interview



# Audio Editing

## ∞ Examples:

Reli 207 video project, Digital Storytelling project, Fondren 60<sup>th</sup> oral history project

## ∞ Audacity

- Free
- Multiplatform (PC and Mac)



# Video Editing

## ∞ Examples:

Reli 207 video project, Digital Storytelling project, Fondren 60<sup>th</sup> oral history project

## ∞ Free applications: **iMovie (mac only)**, Windows Movie Maker (PC only)

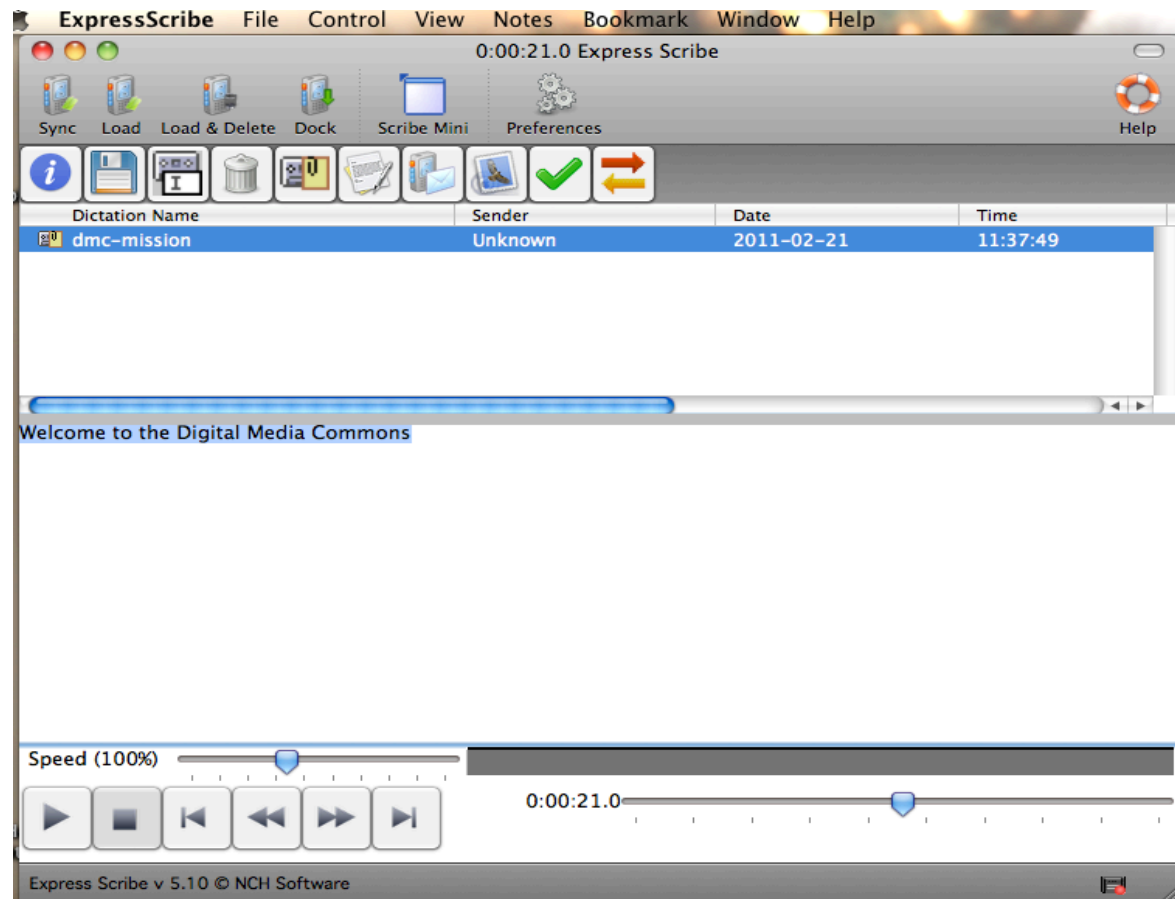
## ∞ \$ professional applications: Final Cut Pro, Adobe Premiere

# Transcribing

∞ Example: HAAA oral history project

∞ Express Scribe

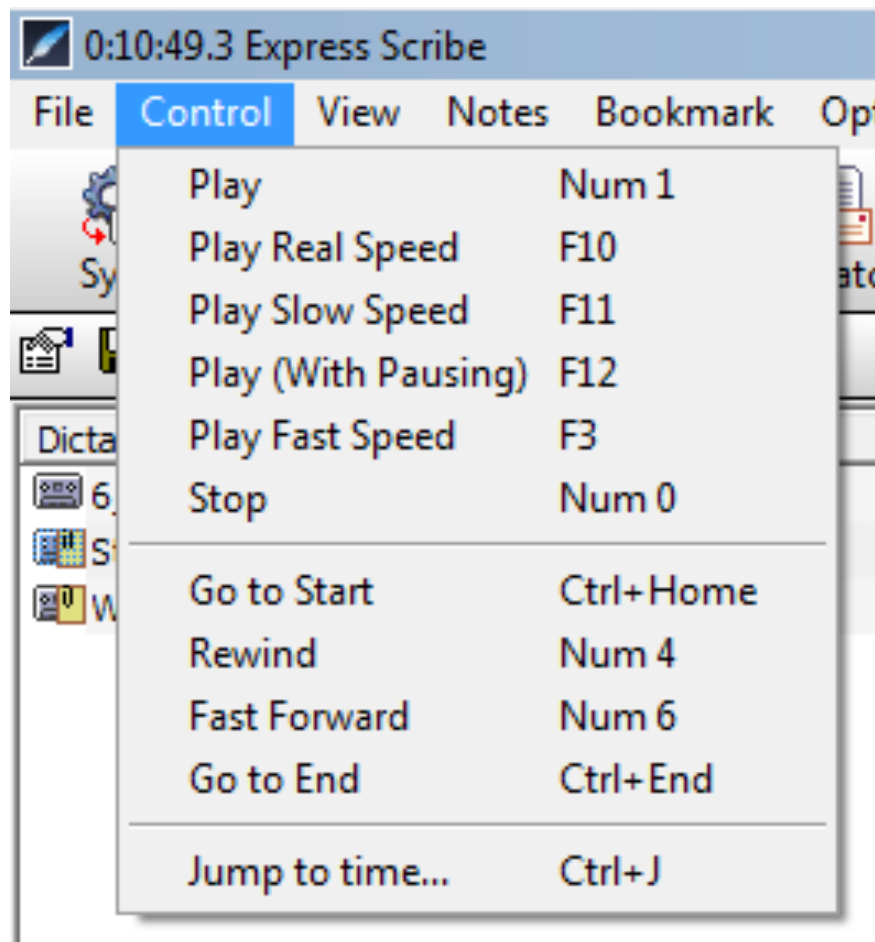
- Free
- Multiplatform (PC and Mac)





# Express Scribe

## Hot keys or foot pedal



# Preserving/Archiving

- ∞ Examples: oral history projects
- ∞ Where: [Rice Institutional Repository](#)
- ∞ What formats: downloading format, streaming formats, and preserving format
- ∞ What metadata
  - Descriptive metadata
  - Technical metadata
- ∞ [Y. Ping Sun's oral history interview](#) from [HAAA oral history project](#)



# Publishing/Distributing

## ☞ Examples:

Reli 207 video project, Digital Storytelling project

## ☞ Burning a DVD

less common nowadays. *Both iDVD and DVD Studio Pro have been discontinued.*

## ☞ Posting to YouTube

more common practice.

# Handy A/V Tools

- ⌘ Audio editing – [Audacity](#), Logic Express, SoundTrack Pro
- ⌘ Video editing – **iMovie**, [Windows Movie Maker](#), Final Cut Pro, Adobe Premiere
- ⌘ File conversion – [HandBrake](#), [MPEG StreamClip](#), [iTunes](#), [FFmpeg](#), [VLC](#), Toast
- ⌘ Media player – [Quicktime Media Player](#), [Windows Media Player](#), [VLC](#)

*Note: The tools in bold type face are free.*

# Demonstration of Audacity and iMovie



# DMC Resources

Free training short courses



**Walk-in assistance**



# DMC Resources

- [Checking out equipment for free](#)
- [Poster printing](#)
- [Document scanning](#)
- [Online guides](#)

Find out more at the DMC's website:

<http://dmc.rice.edu>

# Film and Video Digitization and Editing

Media creation	Edirol R09, Sony HDV camera, Canon Vixia camera
Digitization of analog materials	VHS->DVD dual deck, digitization diagram, digitization settings, FCP 6
File format conversion	HandBrake, FFmpeg, iTunes, Toast
Audio/Video Editing	Audacity, iMovie
Audio transcribing	Express Scribe
Preserving/archiving	Where, what format, what kind of metadata, Rice Institutional Repository
Publishing/Distributing	YouTube or DVD disc

**Come to the DMC to polish your multimedia skills!**