

Video Archiving: Best Practices & Recommendations

A Report for the American Folklore Society,

Prepared by Media Folk¹

Table of Contents

[Background](#)

[General concepts and principles](#)

[Setting up the workflow](#)

[Hardware](#)

[Software](#)

[The Metadata Spreadsheet](#)

[Ingesting media](#)

[Folder Structure & Naming Protocols](#)

[MOV, MPEG, and MP4 files](#)

[AVCHD](#)

[Guide to Adobe Prelude](#)

[Alternatives to Adobe Prelude](#)

[Editing/public use](#)

[Basic Editing](#)

[Online Video Platforms](#)

[Reflections](#)

[Additional Resources](#)

¹ mediafolk.org

Background

Folklorist Lynne Williamson approached Media Folk, Anna and Christopher Mulé, to consult on best practices for building her video archive. She had a common scenario in the folklore world—a mobile folklorist capturing lots of digital materials, working on more than one computer, without time or resources to process the collected data into shareable content for peers, the broader public, and traditional communities. Like many of us, these materials were being collected and stacked on a shelf. While the 20th-century folklorist would glance woefully at a stack of unprocessed cassette or VHS tapes, the 21st century folklorist now stares at unprocessed SD cards. Luckily, with Lynne, we also had an intelligent and creative community scholar, extremely patient woman, and folklorist committed to processing materials while following best practices.

Our goal in this project was to establish a video archive that had long-term stability, but that also could be easily shared with artists and even re-purposed in creative ways in future programming.

General concepts and principles

Folklorists have long been excellent documentarians of traditional arts and culture. As technology improves, folklorists have moved from tape to digital means of documentation, and their archives have expanded to store a wide range of media types. However, a lot of this media is locked up in archives and is not digitally accessible for public sharing or wider dissemination. Even if material is captured digitally, it is often not attached to contextual metadata and is not edited or shared.

We are missing out on using multimedia material as a cultural reservoir of information for existing and new audiences. This “reservoir” is not a one-way stream, but can stimulate important feedback on social media and websites. This process can allow community members to be active participants in building the public representation of their communities and their cultural resources, widening and improving the ways that they are remembered, experienced, and shared. We are missing a rich opportunity for innovative outreach and public programming, community involvement, and greater accessibility to local culture.

In this project and report, we outline a workflow to help folklorists actively use their archival and documentary materials. We focus on documentation that has been captured with digital video cameras. **First**, we look at setting up your workflow — how do you develop plans for organizing, inventorying, and storing video materials? How can you navigate the current state of video and the different formats available to you? What’s the best equipment and software to handle all these files? **Second**, we discuss metadata in detail — how do you set up a system to inventory your material and add contextual details that will help others understand the content of your material? **Third**, we dive into ingesting media, or how to actually get those files from your camera onto your computer. **Fourth**, we look at taking that raw footage and producing material that can be published and shared. What are some platforms you can use to get your content online? Throughout this report, we focus on PC platforms and use of the Adobe Creative Cloud².

An important note: with the rise of consumer video cameras, we often hear people asking for a video solution that is quick, cheap and easy. To us, professional video is not any of these things. We don’t mean to discourage you, but rather to encourage a realistic perspective on video and to consider committing significant resources to this important form of documentation. *It is possible* for a novice to understand and use the concepts and processes described here, so that archiving and sharing one’s video documentation becomes part of our activities as folklorists. This is what our project set out to do in training Lynne.

Setting up the workflow

The process of turning raw video files into a product that is consumable is often underestimated. The truth is, capturing video on a camera is only half the battle. Actually, it is the easiest part of the whole process. The most important part of dealing with video is making sure that your CPU or laptop has the power to process these materials successfully. Having equipment with enough processing power is vital to setting up a sustainable workflow (and minimizing frustration!). Video files are large and require much more power than programs like Microsoft Word or Powerpoint.

² <http://www.adobe.com/creativecloud.html>

Hardware

In order to successfully create a workflow for organizing, inventorying, and storing video, it is necessary to do a full assessment of the computer that is processing these materials. The CPU, or Central Processing Unit, determines how much data a computer can handle at one time and how quickly it can handle that data. The good news is, no matter what computer you own, it can probably be upgraded to accommodate more powerful software. The following are important features to consider when purchasing or upgrading a computer/CPU:

- Integrated Graphics Processing Units, also referred to as video card.
- Chip and Frequency: Also referred to as processor speed (i.e. Intel i7 2.6ghz)
- RAM (Random Access Memory): This is often referred to as “memory.” Most computers come equipped with 2gb of RAM or more. Many of the video programs mentioned in this report require a minimum of 4gb of RAM. The more RAM your computer has, the faster it will process data on your computer.
- Speed of external hard drive ports: USB2, USB3, Firewire 400, Firewire 800, Thunderbolt, eSata (in speed order from slow to fast).

There is a company called Crucial³ that can help you find compatible upgrades to your computer. We highly recommend contacting them as their prices tend to be the most affordable and the quality is excellent. Many of the upgrades can be done on your own or with the help of an IT professional.

Prior to our first meeting, we worked with Lynne to assess her computer equipment and processing power. Here is what she had inside her HP ProBook 6570b (B6P88EA) Notebook computer:

- Graphics Card: NVIDIA GeForce 7900 GTX
- RAM: 2gb
- Ports: Usb2 and eSata
- Intel Core i5-3320M 2.6 GHz

We recommend that Lynne upgrade the max amount of RAM allowed on her computer to 16gb from the original 2gb, purchase a 3tb external drive, and maximize the speed by connecting it

³ crucial.com

through the eSATA port on her notebook. As an aside, Lynne could further upgrade her notebook by upgrading her internal hard drive to a solid state drive and upgrade the video card.

Software

There are many options for video editing software for both PC and Mac. There are programs that are very simple and user friendly such as Premiere Elements (PC/Mac compatible), iMovie (Mac compatible), and Windows Movie Maker (PC). However, these programs cater to the average consumer. These programs might work as a solution for many folklorists but the limitations of these programs can be frustrating, particularly when dealing with high-quality video formats such as AVCHD. Due to the complexity of this file format, many programs have trouble decoding the files.

We recommended that Lynne subscribe to Adobe Creative Cloud. Within this set of interoperable software is a powerful video editing program called Adobe Premiere Pro. Adobe Premiere Pro is equivalent to Apple's Final Cut Pro. There are also important encoding programs called Adobe Prelude and Adobe Media Encoder that transcode AVCHD files from SD cards into editing and internet friendly formats.

The Adobe Creative Cloud⁴ is a subscription service that allows a user to download any or all of the applications in the suite. As of 2014, Adobe moved to a subscription platform rather than standalone software. This has drawbacks, but it guarantees that you will always be using the latest version of software. The current price of the Creative Cloud monthly subscription is \$49/mo. However, Adobe does have plans for educational and nonprofit institutions. We have highlighted the programs that deal with video below:

- Adobe Prelude: Metadata ingest, logging, and rough cuts.
- Adobe Media Encoder: Quickly output video files for virtually any screen. Works with Adobe Prelude and Premiere Pro.
- Adobe Premiere Pro: Video production and editing.
- Adobe Bridge is an organizational program. Its primary purpose is to centralize your creative assets.

⁴ creative.adobe.com/plans

- Adobe Audition: Audio recording, mixing, and restoration.
- Adobe After Effects: Cinematic visual effects and motion graphics. It is often used in film and video post-production.

The Adobe Creative Cloud is an industry standard and works on both Mac and PC computers. Due to the complexity of Lynne’s video files, we focused on Adobe Premiere Pro and Prelude programs to assist with ingesting and editing digital assets.

An easier and simpler version of Premiere Pro is Premiere Elements⁵, which can be purchased as a standalone app. This program is a stripped-down version of Premiere Pro but has most of the essential features.

The Metadata Spreadsheet

Before dealing with the actual video files, it’s essential to set up a system to record metadata — the contextual information that surrounds the video files and describes what they are. Without this information, videos lose much of their meaning and make it difficult for future researchers or community members to understand the significance of the footage. While this information is not physically attached to the video files, we created an “archive identifier” that corresponds to the folder names that hold the video media files. After discussing what types of fields and content were most important to Lynne and the mission of her work in Connecticut, we created a [form in google drive](#)⁶ for her to fill out metadata fields for each set of video clips.

We pre-populated the drop down menus to correspond to the communities and languages with which Lynne works. All information entered is captured in a separate [Google spreadsheet](#)⁷ and new keywords can be added through the form editor (or the “meta” tab at the bottom of an Excel document). Here are the fields we created:

- Archive Id (this identifier is the same as the folder naming scheme Lynne created for each video project, eg “20150521_Guyanese_KweKwe_Brooklyn” — see p. 9)
- Date
- Cultural Protocols (refers to access: public or private)

⁵ adobe.com/products/premiere-elements.html

⁶ <http://j.mp/archive-form>

⁷ <http://j.mp/archive-spreadsheet>

- Activity (fieldwork, public program, workshop)
 - Community (corresponds to particular communities Lynne works with)
 - Project/Initiative (if video is part of a larger program, grant, etc.)
 - Title
 - Media (this could be the media filename or URL)
 - Contributors (refers to artists who are involved in the program)
 - Creator (refers to the organization/folklorists responsible for creating the information)
 - Format
 - Category
 - Description
 - Cultural Narrative (the cultural and broader contextual description about this piece of content. You can add cultural narrative to your content as you see fit. This field is an open field to provide you with maximum flexibility to express your knowledge in the most appropriate form.)
 - Language
 - Art form (top-level terms from the Ethnographic Thesaurus⁸)
 - Publisher
 - Rights
 - Standard and Creative Commons Licensing
 - Standard and Creative Commons Licensing URL
 - Subject (topic of the content, usually keywords or classification codes that describe the topic of the resource. Library of Congress subject headings are one standard and recognized option you may want to use.)
 - Keywords
 - Location Description
 - Neighborhood
-

⁸ <http://www.openfolklore.org/et/index.htm>

Ingesting media

Ingesting media is the process of taking footage from your camera and getting it onto your computer. The goal here is to maintain the highest quality of footage, and not to compress or downgrade your video in the process. A card reader, either built into your computer or purchased separately⁹, can be very helpful here. It will allow you to remove the card (either SD or CF card) from your camera and connect it directly to your computer, instead of connecting your camera to your computer. Of course, this will only be helpful if you are recording your footage to a card and not to your camera's internal storage.

Folder Structure & Naming Protocols

Before you copy any files, it's important to establish a folder structure and naming protocols for your archive. You'll want to think carefully about this structure before you begin importing content so that you can keep consistent. Be sure to consider the following:

1. What kind of content do you have? Does it make more sense to organize everything by date, by genre, by researcher, or by some other identifier?
2. How are you recording the locations of your files in your metadata spreadsheet? Your folder structure should be easy to navigate.
3. Is the structure clear enough so that a stranger can understand and find content?
4. Is the naming protocol both consistent and descriptive? For dates, use YYYYMMDD, so that you can sort the folders or files chronologically. Avoid special characters and spaces in your naming. This file name also becomes your archive ID (see p. 7 for the discussion of metadata).

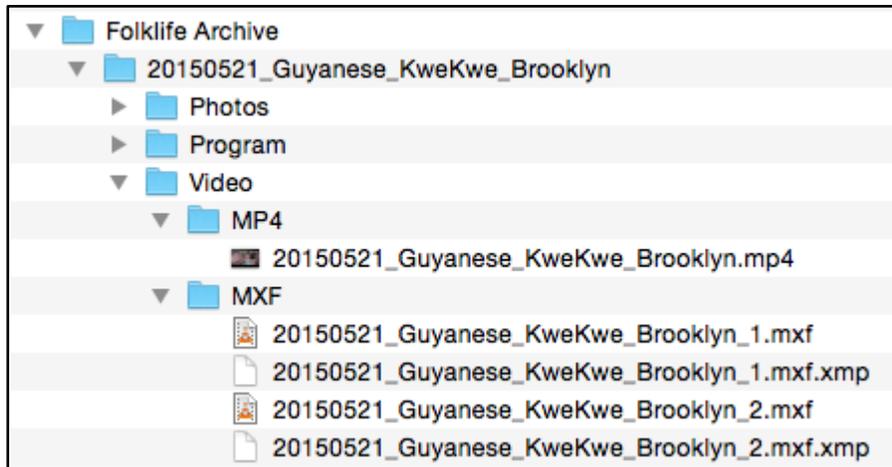
Here's a sample structure for what we recommend:

Folklife Archive (name of primary folder)

20150521_Guyanese_KweKwe_Brooklyn (date_ethnicity_program_location)

Photos — Program — Video (or folders for other types of content you have)

⁹ Sample card reader: <http://j.mp/card-reader>

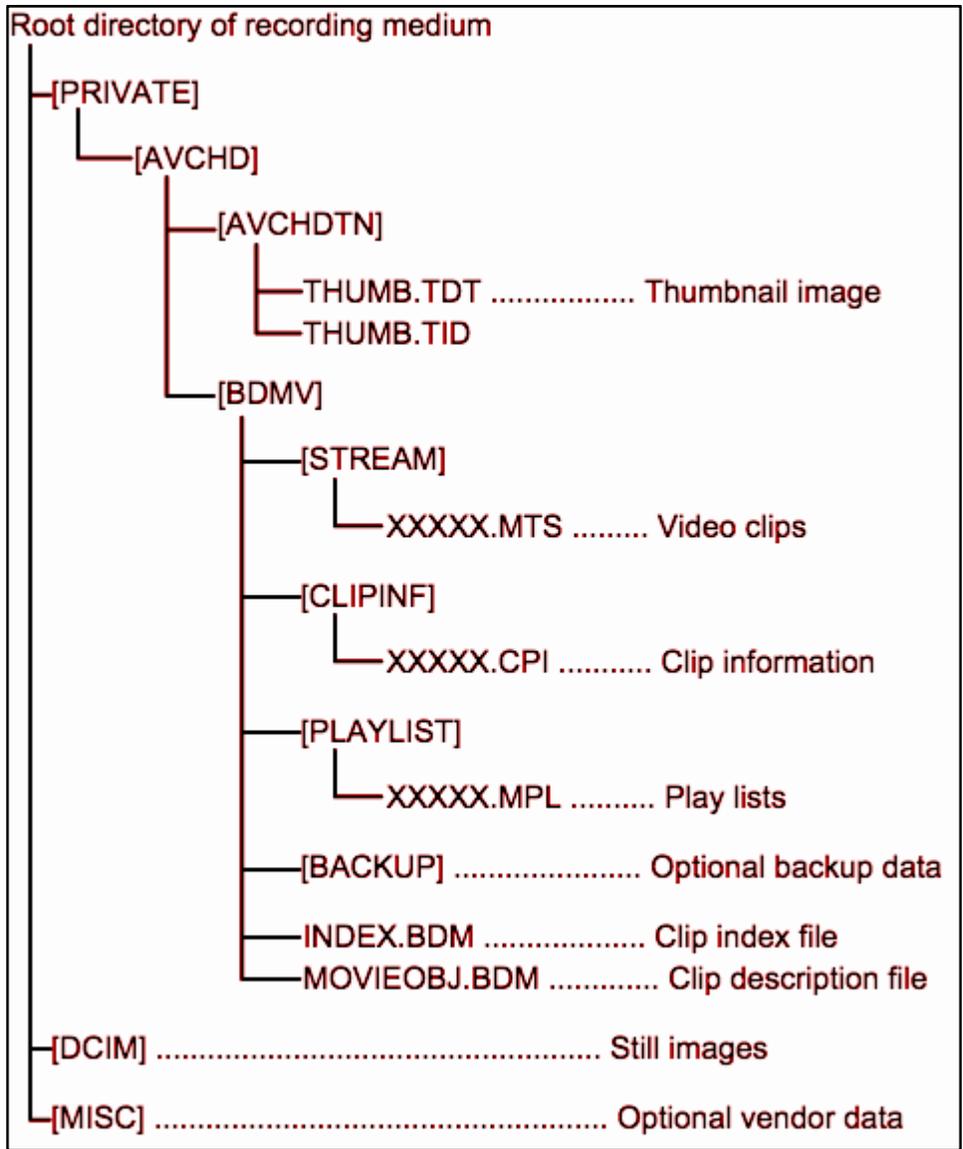


MOV, MPEG, and MP4 files

If your camera saves footage as a .mov, .mpeg or .mp4 file, then all you need to do is connect the card or camera to your computer and copy those files into your archive, in the folder that you have designated for video content.

AVCHD

Many professional video cameras record **Advanced Video Coding High Definition (AVCHD)**. This format records high-quality video and is widely used in the video industry, but the footage can be difficult to unpack and requires powerful machines to edit. When you view the folders on the SD card, you'll see a complicated file structure:



For your archive, you need to ingest the footage, found in the “XXXXX.MTS” video clips, into a different format for long-term storage. This process will also allow you to divide the video clips into different folders so they are organized according to your metadata schema.

For this process, we recommend using the software Adobe Prelude¹⁰. This programs lets you combine multiple video clips, transcode the file format from AVCHD to something more accessible and archive-ready, and add metadata to the video files. You have many options for exactly how to transcode the video clips, including the following:

¹⁰ <https://creative.adobe.com/products/prelude>

- **P2 or MXF:** an uncompressed file that will retain the quality of your original AVCHD file. This format is a standard in archives and video production and is compatible with popular non-linear editing (NLE) programs such as Premiere Pro, Final Cut Pro, and Avid. However, the files are very large and are not playable on standard video players like Windows Media Player, QuickTime, or the VLC player¹¹. You can, however, upload MXF files directly to YouTube.
- **AVI:** acceptable for archival use, but a Windows-only file type.
- **MP4:** a relatively small file and easy to edit and/or share online with other people, but not considered archival quality. It works well on both Mac and PC platforms.
- **MPEG2:** the format to use if you need to burn a DVD.

After considering Lynne's video needs, which may be similar to many folklorists, we recommend transcoding AVCHD files to *both* MXF for archival storage *and* MP4 for quick editing and sharing. What follows is a step-by-step guide on how to do this using Adobe Prelude.

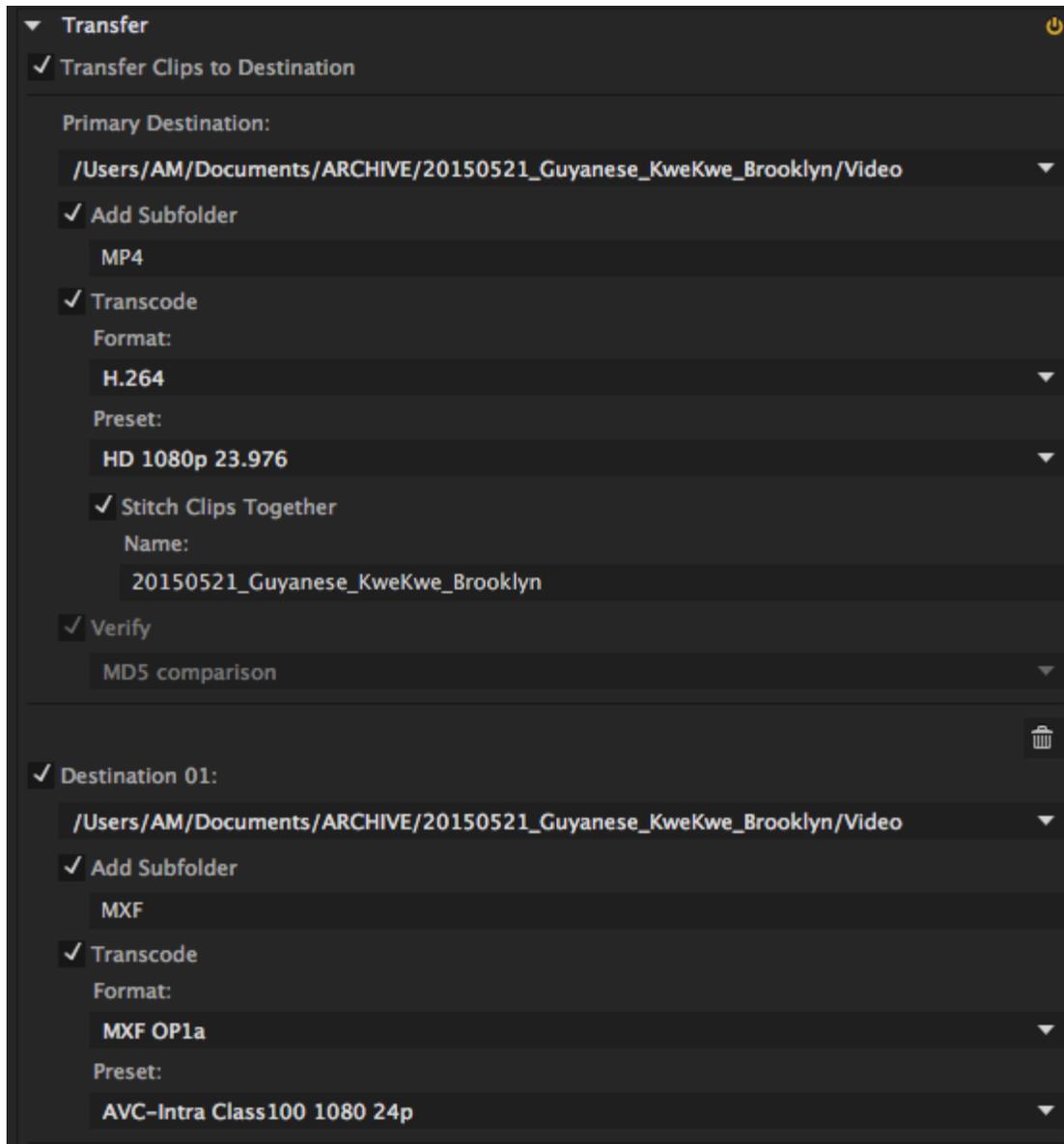
Guide to Adobe Prelude

Ingest your videos:

1. Connect your video camera (or SD card) to your computer and make sure it is powered on.
2. Open Prelude and create a new project. Although it doesn't really matter where you save this project, since you are just using it to move files, you can put it in your archive folder. It will create a .plproj file. You can use the same .plproj file every time you ingest new video files.
3. Click "ingest" in the top right.
4. On the left side of the new window, navigate to your camera or SD card and click the correct folder to view all your clips. Your clips are probably in PRIVATE > AVCHD.
5. Select the clips that you want to ingest at a time. Since you can combine clips, you may want to select all clips from one program, and do each program at a time.

¹¹ <http://www.videolan.org>

6. On the right, check “Transfer clips to destination” and select your video folder (see p. 9 for how to organize your folders).
7. Check “transcode.” This is where you need to decide what format is best suited for your purposes. See p. 11 for some considerations to make in this decision. Some specific recommendations:
 - a. Primary destination (your small, shareable file): Format = “H.264.” Preset=“HD 1080p 23.976” (or whatever matches your camera’s frame rate). Stitch clips together and give that file a name that matches your file naming schema.
 - b. Add destination 01 (your high-quality archival file): Format: “MXF OP1a.” Preset: “AVC-Intra Class100 1080 24p” (to match your camera’s frame rate).



8. Click “Ingest.” The Adobe Media Encoder software will open and process your files. You can continue to work in Prelude while Media Encoder works in the background. Ingesting can take a long time, so don’t be alarmed!

Some helpful tips:

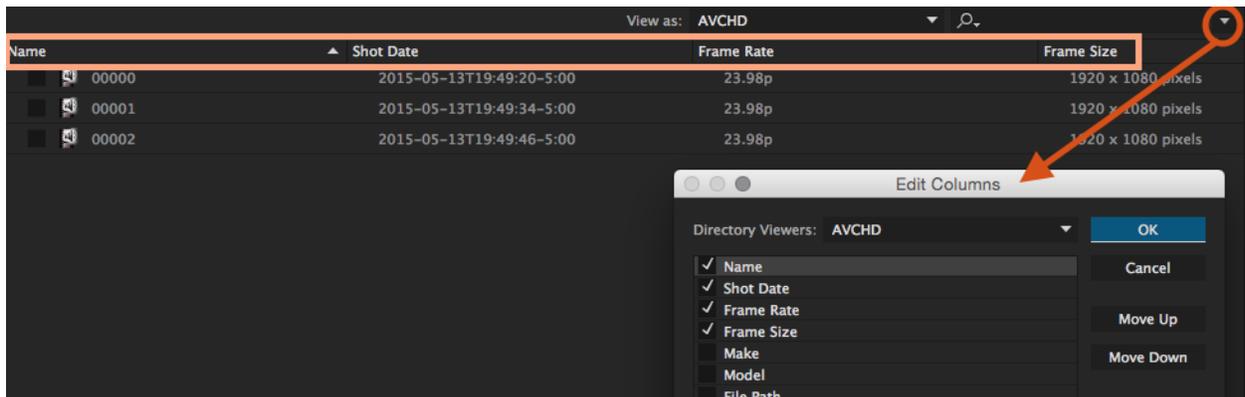
1. In Prelude, go to Preferences > Audio. *Uncheck* “Automatic conforming and peak file generation on ingest.”
2. If you find the text hard to read, you can lighten the background color under Preferences > Appearance.

- When reviewing your video clips, you can view the clips as thumbnails or as a list. With thumbnails, you can scrub your mouse over the thumbnail and view the video content.

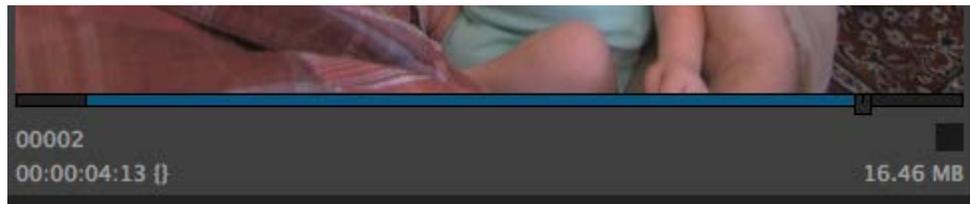


You can also zoom in to see a larger thumbnail with the little mountain icon:

With the list view, you can edit the columns to view the video frame rate, frame size, date, or other fields. This is helpful when it comes to choosing the correct presets:



- If you want to ingest a section of a given clip, and not the entire clip, view the clips as thumbnails, then click on that clip. You'll see a blue bar at the bottom of the clip and a playhead. Find the desired beginning and type "I" on your keyboard to set the in point (start), then find the desired end and type "O" to set the out point (end). The blue line will indicate the section that will be ingested.



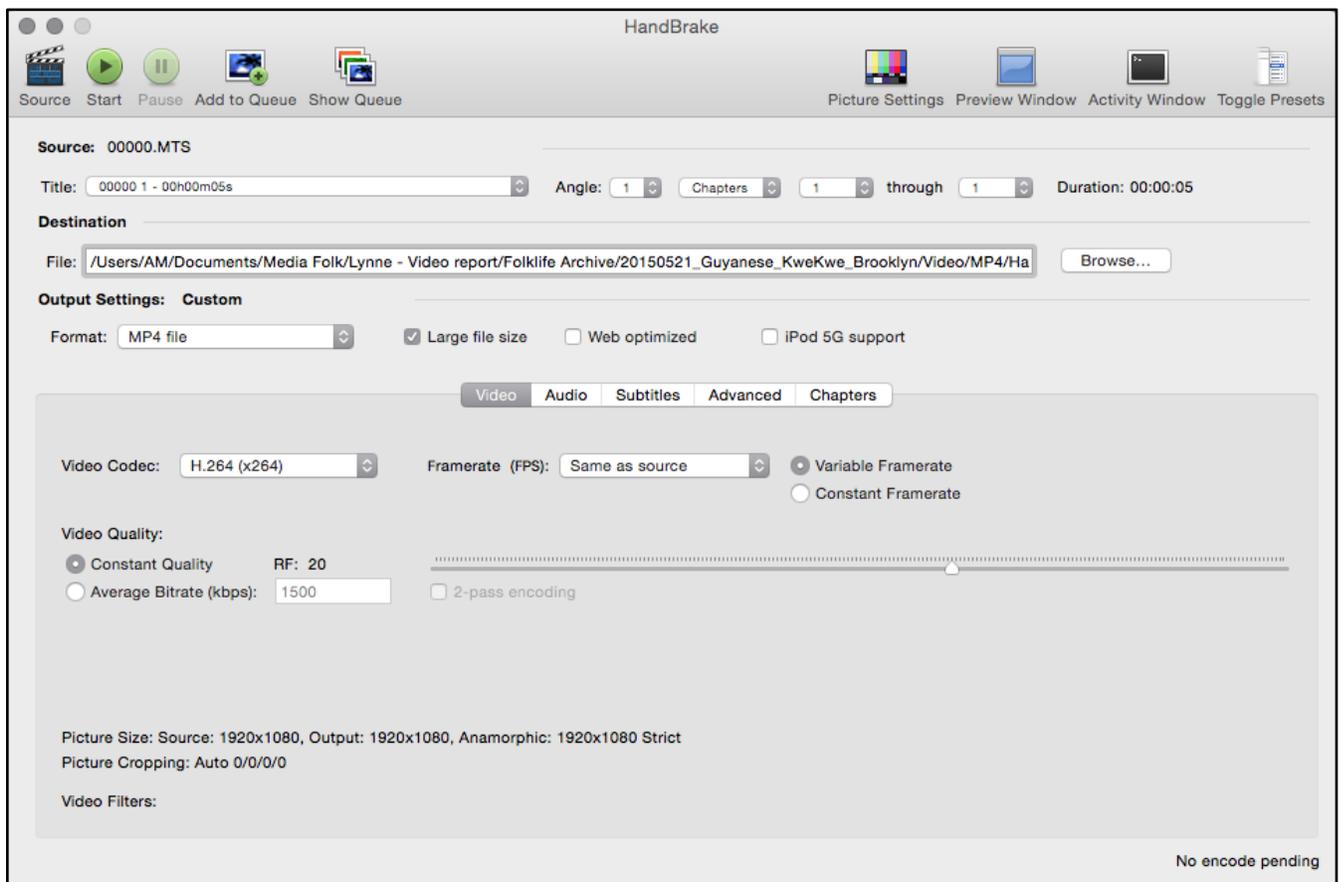
Alternatives to Adobe Prelude

If you don't have access to Adobe Prelude, there are several alternatives to convert video clips in the AVCHD file.

QuickTime: On a Mac, open the main AVCHD file on your camera’s SD card with QuickTime. Select the clip(s) that you want to ingest, and click Open. Go to File > Export > 1080p. Rename the file and save it in your video folder.

The problem with this approach is that you have to save each clip individually, and can only save as an MOV file.

Handbrake: On a Mac or PC, download HandBrake¹², an open source video transcoder. Click “source” and find the .MTS files on your SD card. [Tip: on a Mac, you may have to right-click on the AVCHD file and select “show package contents,” and repeat this on the BDMV file you’ll see next. The MTS files will be in the “STREAM” folder. Copy those files and paste them into a different folder temporarily.] Make sure “format” is set to MP4 file, and “large file size” is checked. The “video codec” should be set to H.264. Click “start” and the file will convert.



¹² <https://handbrake.fr/>

The problem with this approach is that MP4 files are quite compressed and you'll lose video quality. You also have to convert one file at a time, which is time consuming.

Editing/public use

Basic Editing

Most folklorists want to not only archive video footage, but also share it online or with their constituents. However, raw video footage from your archive is not the ideal way to share your hard work. At the least, some basic editing should happen — trimming the beginning and end, adding some contextual titles (artist name, location, some basic explanations), and cutting out extraneous content.

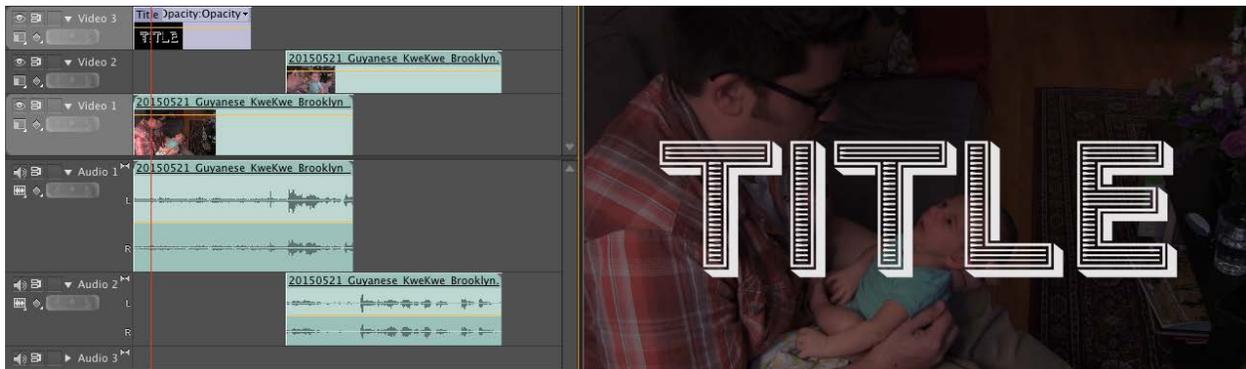
We recommend using Adobe Premiere Pro or Adobe Premiere Elements for video editing (see p. 5 for more information on these programs and other options). These are both non-linear editing (NLE) programs and will work on either Mac or PC platforms. They allow you to edit based on a timeline and stack different types of content on top of each other. They are also non-destructive editing systems, meaning that the edits you make are not permanent; if you crop part of a video, you can recover the cut portion at a later point. Here is a basic guide to editing with Premiere Pro (PP) — this is not meant to be a comprehensive how-to¹³, but rather an introduction to the steps:

1. Create a new project, saving this file in a production folder. When it prompts you for a new sequence, choose the settings that match your video content. For example, AVCHD > 1080p > AVCHD 1080p24.
2. Import your video content into the “project” window box.
3. Drag the video clips you want onto the timeline. Video will be on the top and audio on the bottom. Rearrange the blocks of content as desired.
4. Use the “Selection Tool” (pointer on left) to crop or trim the beginning or end of each clip on your timeline, or to move the clips around the timeline. Use the “Razor Tool” (middle) to slice a clip in the middle, so you can manipulate each section separately.



¹³ There are many video tutorials online. We recommend Adobe's tutorials: <https://helpx.adobe.com/premiere-pro/tutorials.html>

5. Create a new title by going to Title > New Title > Default Still... This will bring you to a blank titler, where you can add text, add background colors, add shapes, and much more. Once you close out of the titler, drag your title from the project window to the timeline.
6. If you have photos or other audio (like a music soundtrack), you can also import them into the project window and drag them onto your timeline. Keep in mind that you are creating layers from the top down, so whatever video/photo/title block is on top is the one that will appear on the top of your final video.



7. Normalize your audio track to bring all your levels to a standard level (generally -0.1 dB).
8. Once you're finished making all adjustments, render the video (Sequence > Render Entire Work Area).
9. Export your video (File > Export > Media...). For online use, select Format "H.264" and Preset "YouTube 1080p."

Some helpful tips:

1. When you import content into Premiere Pro, you are simply pointing PP to the location of those files on your computer. You are not actually *moving* content into the PP project. This means that if you move the location of your original video files, PP is not going to be able to find them, and will give you an error. It's best to set up the folder structure of your production and video files before you begin a new PP project.

2. If you record video and audio separately, or have multiple video angles of the same shot, and need to sync the audio to the video, Plural Eyes¹⁴ is a fantastic software tool. It will sync your audio and video and export the tracks to Premiere Pro.
3. You can zoom in with the same little mountain icons as Prelude. You can also make the video or audio tracks higher vertically by clicking and dragging on the left side.

Online Video Platforms

Once you have your final edited video to upload, there are several options¹⁵ for where to share that content. While you can upload video directly to your website, we prefer to upload it to a video-specific platform, then embed the video from that platform onto your website. This way, people can find your content in multiple places. Ideally, though, you'll always want to point people back to your website where they can understand your video in the wider context of your organization.

- **YouTube:** the largest video platform, YouTube is an obvious choice if you're looking for visibility and social interaction. You'll need a Google account to start your channel, but everything is free. Beyond the basic upload, YouTube also allows you to add annotations or cards on top of your video with hyperlinks that go back to your own website, closed captioning, live streaming, video analytics, and much more. You can also do some very basic editing (trim, color corrections, filters) on YouTube.
- **Vimeo:** a great alternative to YouTube, Vimeo lets you customize some features of the video player, is better at video privacy (you can set a password), and tends to host video content that is more carefully produced. The free version is limited, but Vimeo Plus and Vimeo Pro are not prohibitively expensive. We use Vimeo for our portfolio and supplemental content for grants, but YouTube for sharing videos with a wider public.
- **Facebook:** the benefit of uploading video content directly to Facebook is that it will enable autoplay on users' Facebook feed. They will not have to click a play button to see the video. Facebook is working to improve its video interface, and may be a better option in the future.

¹⁴ <https://www.redgiant.com/products/pluraleyes/>

¹⁵ These options are current as of May 2015. We recognize that online platforms change rapidly, and some of these features may not be accurate in the near future.

Reflections from Lynne Williamson

As the “trainee” in this project to develop a process for archiving, cataloguing, and sharing the video collections of the CT Cultural Heritage Arts Program, I wish to thank Media Folk for their effective methods of teaching and advising. I now feel able to handle the hundreds of hours of digital video documentation gathered over the last 10 years, and have useful tools for sharing this material on internet platforms and with artists/communities. Before this consultancy, the task seemed overwhelming and was not being accomplished; now it is part of my regular work flow. I am a novice at video transcoding and rendering, so if I can manage it after learning the ropes, anyone can!

I found Media Folk’s procedure and tools very useful and easy to employ. In particular, the excel metadata spreadsheet enables me to record basic information on the event documented, with scope for additional notes. It is possible to add data options within the categories on the form through the “meta” tab at the bottom. On the form, the number I assign to each piece of video documentation, is the same number/name of the folder into which the transcoded material and edited video are placed. An example is 2014-08-02_Mas_TasteoftheCaribbeanFestival; “Mas” is my program’s Caribbean carnival costume training program for West Indian teens in Hartford and there are multiple events (and years) for this ongoing initiative.

Speaking of the folders and naming conventions, I found it best to establish and name a new folder for each video selection before beginning the transcoding process. This way, when opening a new transcode project in Prelude, the name of the folder can be found easily and all the material can be placed there. All the folders housing the video material are stored on the 2 TB external hard drive. We bought two of these drives, to back up the original storage. Media Folk guided me on the equipment purchase, and upgraded the laptop used for this project.

One step in the process I didn’t anticipate, but which proved to be essential, was the basic listing of everything documented on the SDHC cards I use in the camcorder. If the card is 16 or 32 GB then there can be multiple events recorded on it. It is important to know what is on the card, and list that (I did this by date and then event name) before beginning to transcode, because when Prelude shows you what is on the card as it is being read, then you see a long list of dates of all the clips and it’s necessary to know and select which of these you want to transcode. Currently I have 16 cards full of video material covering several years, so I made an inventory of each with lists of dates/events. This list is stored with the original cards.

I won’t lie – Prelude and Premiere Pro are daunting for the novice! The terminology and the clicks are not intuitive, for me, and while there can be similarities to the process of photograph editing, PL and PP have so many more options and applications. Media Folk’s day-long visit to establish the equipment and create a step-by-step for me, and our subsequent screen-share online conferences, helped to de-mystify the process. Practice is the key to becoming familiar with

these two excellent programs that can treat our folklore documentation with the respect it deserves. I also found the Adobe Premiere pro online tutorials very helpful. As I continue to transcode my AVCHD video material and begin to render it for sharing through DVD and online, the archive of my program – the documentation of unique events and artists and communities across Connecticut - becomes more secure as a resource for the future.

Additional Resources

Here are some of our favorite sites for video tutorials, stock audio tracks, video equipment, and more.

- lynda.com
- vimeo.com/videoschool
- helpx.adobe.com/premiere-pro/tutorials.html
- helpx.adobe.com/premiere-pro/how-to/create-video-story.html
- youtube.com/audiolibrary
- audiojungle.net
- bhphotovideo.com