



**Capital
Community
Media**
[Your voice]



Studio Class

Training Manual

Revised August 2020

Intro to Studio Production

In studio class, we will go over the basic functions of CC:Media's lighting equipment, camera set up, tripods, audio, and the control room. These materials are meant to be an overview of the studio; staff are available to help you learn more in-depth functions if you are interested.

Studio Roles (pages 1 - 3)

We will go over various studio production roles including producer, director, floor director, tech director, sound engineer, and talent (host/guest).

Lighting (page 4)

We will learn how to adjust the lighting and how to properly light the set, and we will talk briefly about other lighting available and how to use it.

Camera & Tripod Settings (pages 5 - 7)

We will go over camera settings, the rule of thirds, camera angles, and various suggested camera shots, as well as learn how to move and adjust each tripod.

Audio (pages 8 - 9)

We will go over the various microphones we have available including lavalier, handheld, shotgun, and concert mics. We will also learn the necessary setup for a talk show setting, and we will talk briefly about more complex audio.

Audio/Video Capture (pages 10 - 11)

We will learn how to make sure that we are recording your program's audio and video to your hard drive, and recording a backup.

Control Room/Tricaster (page 12)

Here we will learn how to switch camera angles during your program, choose between cuts and transitions, and communicate to camera operators.

Titles, Graphics & Green Screen (pages 13 - 17)

We will learn how to create graphics and titles, as well as use the green screen and virtual sets.

Reminders (page 18)

Once you learn the basics of studio production, you will need to provide your proof of Salem residency, purchase a hard drive, schedule follow up studio labs, and schedule studio time. Read through these reminders as you go forward!

Studio Roles

1) Talent

The talent are the people in front of the camera! The performers, hosts, guests, etc.

2) Producer

The manager of the production. Responsible for program concept, structure, content, script, and for arranging for talent, crew, equipment, playback times, and getting the production started and finished.

3) Director

The person responsible for the technical production of the show. Before recording, the director works with crew members to discuss lighting needs, camera placement, etc. During the show, gives instructions via intercom to each crew member concerning composition of shots, when to switch between cameras, when to display graphics, etc.

4) Technical Director

The person who pushes the buttons to control what the viewer sees – switching between sources, creating the final program – at the command of the Director. Sometimes, the Technical Director (TD) and the Director are the same person.

5) Floor Director

The Floor Director works in the studio to communicate information from the Director to the talent. Relays instructions verbally or by hand signals.

6) Camera Operator

Each camera operator is responsible for correctly composing images in their camera to use during the production. The camera operator needs to be comfortable with the zoom and focus controls on the camera. The Director instructs the camera operators during the production.

7) Audio Operator

Selects and places microphones in the studio and tests all sound sources before recording. During the production the Audio Operator runs the audio board and brings in audio sources as instructed by the Director. Controls volume levels and monitors sound quality.

8) Graphics

For some programs, including LIVE shows, the Director or TD creates pages on the computer of titles, credits, and other written information to be superimposed over camera shots. During the show the TD is responsible for calling up these pages as instructed by the Director. Not all programs require graphics to be created ahead of time; many Producers choose to edit in all graphics later.

Listening to the director

Wear your headset to hear the director. The volume control is on the “belt pack”, which is connected to the tripod. Look for the TALK button, which will turn on your microphone so you can talk to the director and control room.

Never talk out loud during recording! Your director may ask you yes or no questions; answer them by “nodding” your camera. Speaking out loud not only distracts the talent but is picked up by the microphones, resulting in an unprofessional-sounding program.

Taking direction

The director will usually tell you what shots they want for your camera. Make sure you know which camera number you are, because that’s how they’ll address you. Be mindful of the directions you’re given and respond immediately.

Here are some examples of things you’ll hear from the director:

“Ready camera 1.. take 1”

“Camera 2, you’re offline now, could you check your focus, please?”

“Camera 3, tilt down a little. Okay, now pan a little to the left.”

“Much better camera 2; ready 2, take 2. 2 is online.”

“1, looking good, be ready for the talent to stand up”

“Ready 3, take 3”

“Ready 1, take 1 ... there he goes, follow him, 1!”

A director should always be respectful, but you should also expect them to tell you what to do and when to do it without “sugar-coating”. A director should be direct, and some people aren’t used to having orders barked at them. Don’t take it personally when a director is abrupt.

Floor directing

It’s the floor director’s job to relay communication between the studio (talent) and the control room (director). The director will ask the floor director to communicate when to be quiet on the set, when to start the show, and when to wrap up the show. They are also responsible for taking care of talent needs, like water.

The floor director may also be responsible for operating a camera, depending on the size of the crew. If they are not on a camera, they can use the separate “floor director headset”. Attach the belt pack to your belt or pocket; it operates the same as the one on the cameras.

Equipment powered up

CC:Media staff is responsible for turning on equipment and getting it in a "ready" state. If any of the equipment is turned off, please let them know.

Being the director

It's the director's job to tell everybody on the crew when to act, and how. The director decides when recording is to begin and gives the countdown for the start of the show. They tell the camera operators exactly what shots to get, and may tell the audio operator to make adjustments they deem necessary.

As we learn from being a camera operator, a director must be respectful but should also be able to quickly direct orders to camera operators. Sometimes this means being very direct, even abrupt. A good director knows how to combine confident, direct orders with positive reinforcement. A director should NEVER be rude or condescending, nor use off-color language.

Cuts and transitions

Cut between cameras using the switcher. You can click directly on the "virtual switcher" on-screen or use the physical switcher. The Program (or Live) buttons determine what camera (1, 2, or 3) is "on-line", or the one being recorded. The Preview buttons allow you to look at a camera on the preview monitor and use the waveform to adjust iris (brightness).

Use the Program and Preview buttons together to achieve a transition. Select a transition (usually CrossFade) and choose the speed (Slow, Medium, Fast). Select the camera you want to transition to on the Preview buttons. Press the Auto button to perform the transition. You may also use the fader bar instead of the Auto button for direct control over the speed of the transition.

Lighting

Studio Light Grid

Each light in the grid has a number on it that corresponds with the sliders (faders) on the lighting panel by the studio door. There is also a grand master slider that controls all the lights at once. See the below breakdown of studio lights.

1 - 12	Interview Lights
13 - 17	Front Lights
18 - 22	Green Screen Lights
23 - 24	Back Green Screen Lights
25 - 26	Spotlights



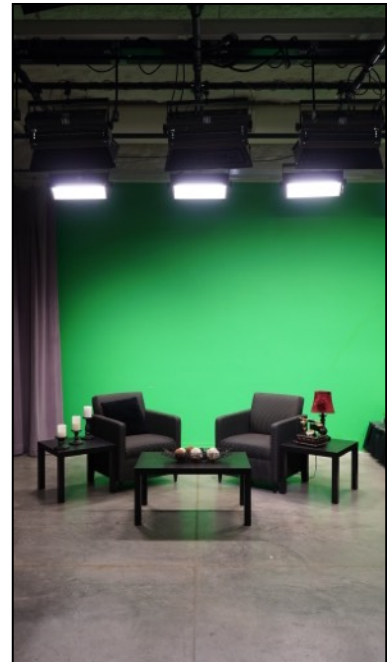
Interview Lights

You can fade the lights up or down depending on the mood you want to create (brighter for higher energy, dimmer for more dramatic look). You will adjust the lights to your liking, and CC:Media staff can help you determine the best look for your program.



Green Screen Lights

In addition to the interview and front lights, there is another set of lights that illuminates the green screen wall. Try different combinations of strength to give shape to your subject using key and fill lighting.

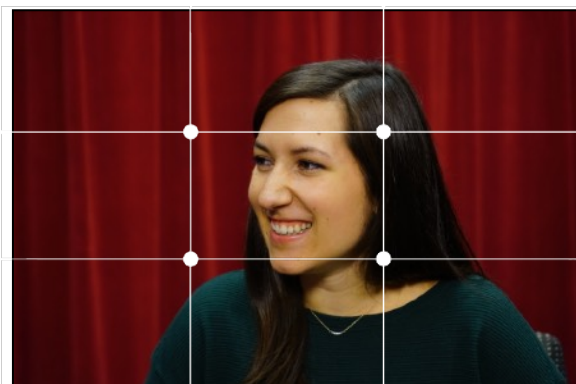
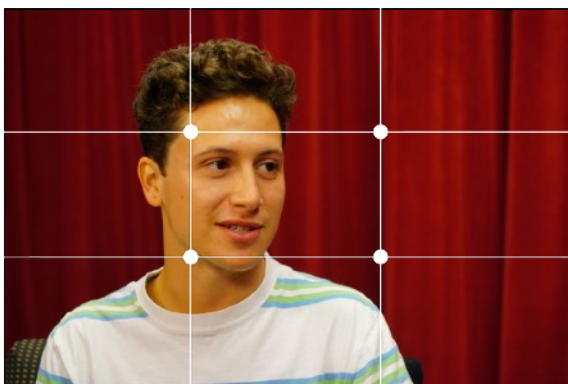


Camera

Rule of Thirds

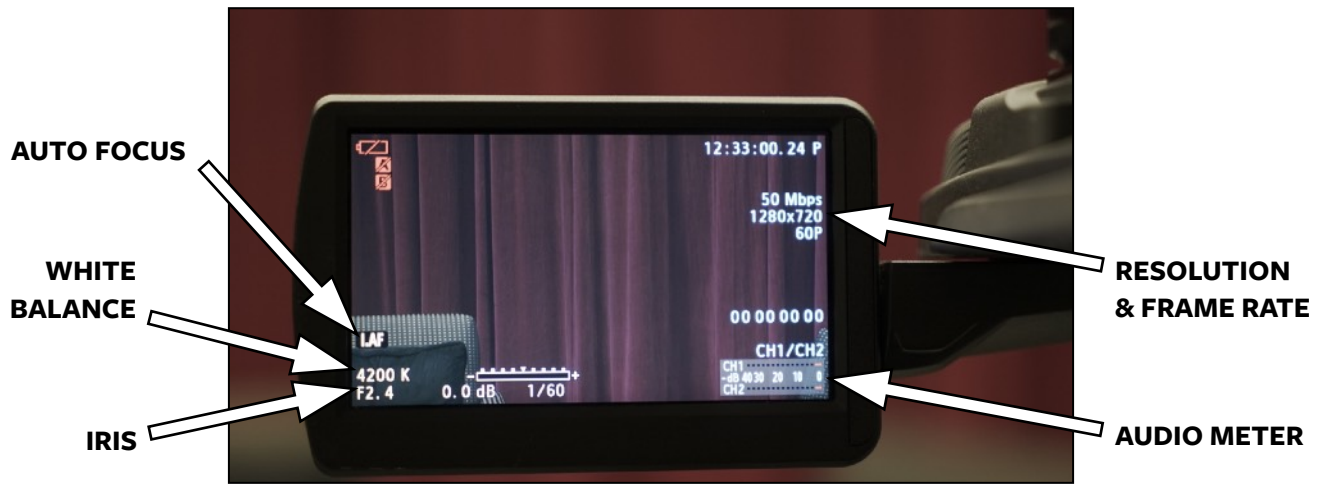
The rule of thirds is a concept in video production in which the frame (what you see in the camera viewfinder) is divided into nine imaginary sections, as illustrated below. This creates reference points which act as guides for framing your image.

In most interview or talk show situations, the main line of interest is the line going through the eyes. Eyes should be placed approximately $\frac{1}{3}$ of the way down the frame. Also be aware of how much headroom you create when positioning your subject vertically. Headroom refers to the amount of space between the top of a person's head and the top of your frame. Too much headroom makes the person appear to be sinking. Lastly, be sure to leave extra space in the direction your subject is looking (referred to as "lead room"). See examples of how to position your subject below.



Camera settings

The studio camera is the Canon XF305. First, let's go over the basic settings on the camera. On the preview screen, you can set the resolution, frame rate, focus, iris and white balance.



Focus

Auto Focus is recommended, though you may choose to use Manual Focus.

Iris

It's best to set all three cameras to f2.4, then adjust each as needed. Auto iris is not recommended.

White Balance

All three cameras should produce colors that match. The easiest way to do this is to set all three to the same white balance preset. For the studio, the preferred setting is 4200k.

Audio

Before you begin your program, make sure each camera is recognizing audio.

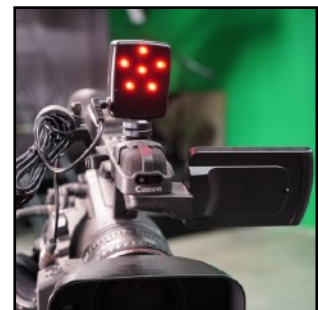


Zoom Control

Zoom control is on the right control arm of the camera. Use the rocker to zoom in and out. It's pressure-sensitive, so the harder you push, the faster the zoom. You can switch between manual and autofocus and iris, as well as start and stop recording from the zoom control.

Tally Light

There is a red light on the top of each camera to signal to the talent and the camera operator which camera is live and capturing video during production.

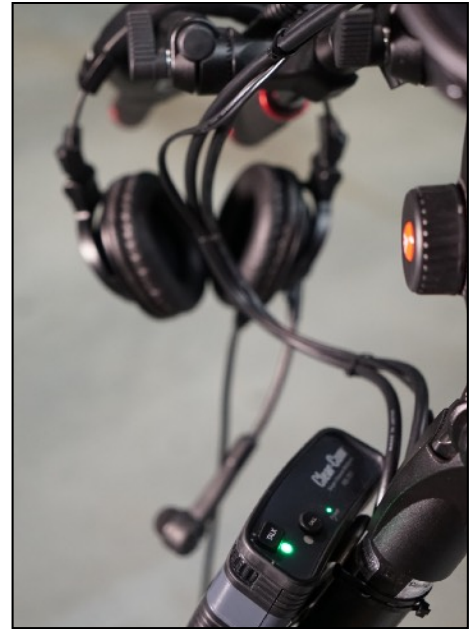


Intercom headset

The director can give each camera operator instructions by using the intercom system in the studio. Each camera operator can hear the director's instructions when wearing the headset. Camera operators can respond to the director by pressing and holding the "talk" button on the intercom pack. The volume can be controlled by adjusting the wheel on the intercom pack.

Tripods + Pan/Tilt

Each camera is mounted on a Manfrotto tripod. The head of the tripod includes both a lock and a tension control. Use the lock for safety when stepping away from the camera. Use the tension control to adjust the drag when tilting the camera up and down. Don't use the lock to adjust tension. The camera's pan lock can usually be left loose for a smoother pan.



You can adjust the height of the tripod by first adjusting the top set of locks (on the legs), being careful not to let go of the tripod while adjusting. Adjust the bottom locks of the tripod legs if you need the camera to be even further elevated. Once the tripod has been set to the desired height (hint: eye level for interviews), you will need to level the tripod. Twist the center handle beneath the camera and, using the green level bubble, adjust the camera until it is level. Lock the center handle by twisting it back the other direction.

Lastly, make sure to lock the wheels of each tripod once you've placed the camera in the correct spot.



Audio

There are a variety of microphones available to use in the studio, and we will go over the basic setup for each. We may have other microphones available if these do not meet your needs.

1) Lavalier Microphone:

This is a small mic that is clipped on to clothing, and it usually used for talk shows. It can be easily hidden from the camera and means that the talent does not have to hold a mic.

2) Concert Microphone:

This mic is mounted on a stand and is placed over a big group to capture sound from multiple people.

3) Shotgun Microphone:

This is a directional microphone, meaning it picks up what it's aimed at. It can be mounted on a camera or a separate stand.

4) Wireless Microphone:

This microphone is similar to a lavalier however it does not have a wire, which makes it easy for talent to move around.

5) Audio Snake

There is an audio snake in each studio (a box to connect and power wired microphones). Each input (where a microphone is plugged in) is numbered and corresponds with an audio channel in the control room. Plug your first microphone into input #1, then #2, and so on.

1

2

3

4

5



Audio Mixer

The console in the control room is the PreSonus Studio Live 32-channel digital audio mixer. The number of channels you use on the mixer will depend on the number of microphones you have set up in the studio. There are only four things you have to remember about the mixer.

- 1) The level of the “Main” fader should be set at “U”.
- 2) Do the same for each audio channel you are using.
- 3) Be sure to unmute each channel (when the light is off, the channel is unmuted).
- 4) Set the Mic/Line (Trim Control) for each input to 3:00 to begin with, and adjust during sound check



Capturing your Program

Most producers switch their program live and capture the finished video onto a hard drive in the control room. If you would prefer to multi-clip your production in the editing room, you will need to have a CF card for each camera you operate. CF cards are different from standard SD cards, and CC:Media staff can make recommendations on where to purchase them.

First, connect your hard drive to the capture computer (middle of the control room). Next, make sure you have enough space on your hard drive (1 GB per minute). To check your hard drive space, right click on your drive and choose “Get Info”. A window will open and show you your drive’s capacity, as well as the current available space.

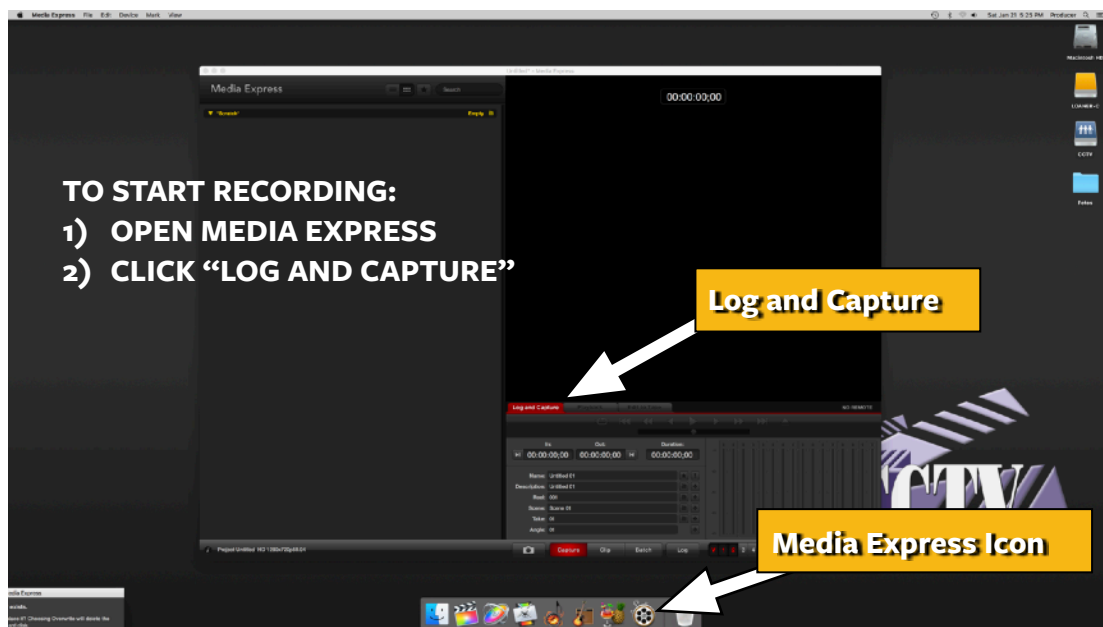


After you have confirmed that you have enough space, you will need to create a folder for today’s program. Double click on your drive, right click inside the window, and select “New folder”. Give the file a name for today’s recording (program name + date is recommended).

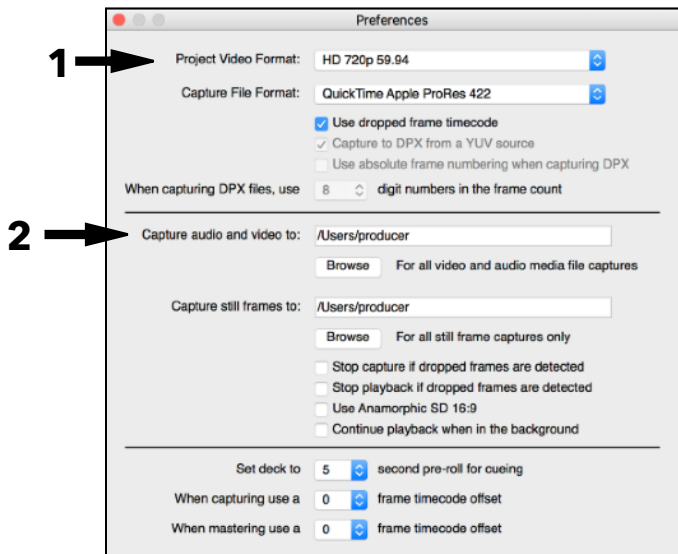
Next, open Blackmagic Media Express from the dock.



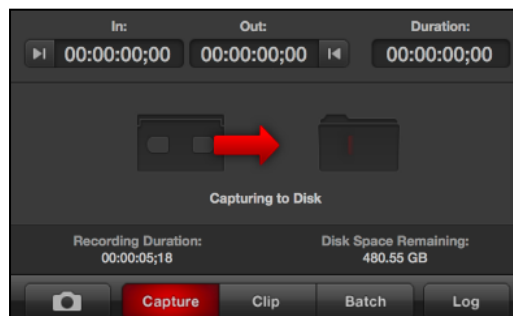
Click “Log and Capture”, located to the left of the green “playback” tab toward the middle of the screen.



Click “Media Express” from the very top left corner of the screen. Then select Preferences. Make sure the video format is HD 720p 59.94 **(1)**. Make sure the capture file format is QuickTime Apple ProRes 422. In the second portion of the window, click the “Browse” button **(2)** and locate your hard drive. Navigate to the folder you created for today’s program and click “choose”. Close the preference window (red button in top left corner).



When you’re ready to record, click “Capture” along the bottom of the Media Express window. You will then begin to see red arrows moving along the bottom of the screen, which means you are capturing your audio and video. To stop, click “Capture” again.

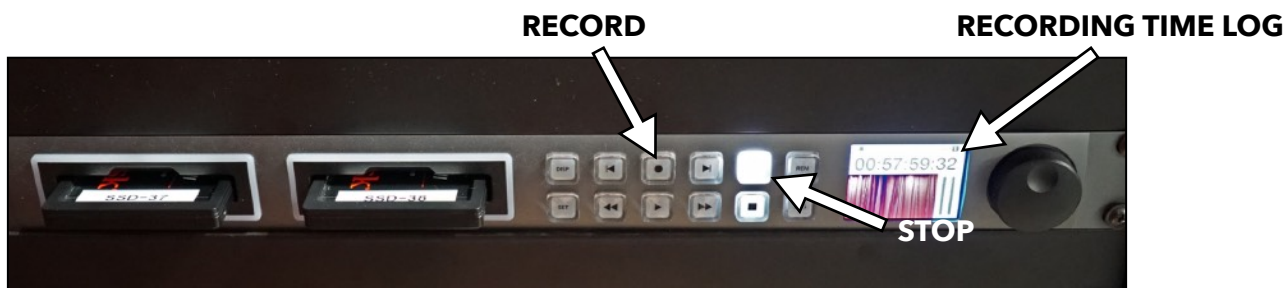


Don’t forget!

- 5) Before you begin your program, make sure each camera is recognizing audio.
- 6) Start recording at least five minutes before you begin your show!

Recording a Backup

At the back of the control room, there will be empty SSD drives ready for you to record your backup. In the top right corner of the screen you will find the available record time for that SSD. Make sure that you have enough time on the backup SSD for today’s program. When you’re ready to record, click the record button (round circle). As long as you see the numbers counting, you are running your backup. Start recording at least five minutes before you start your show!



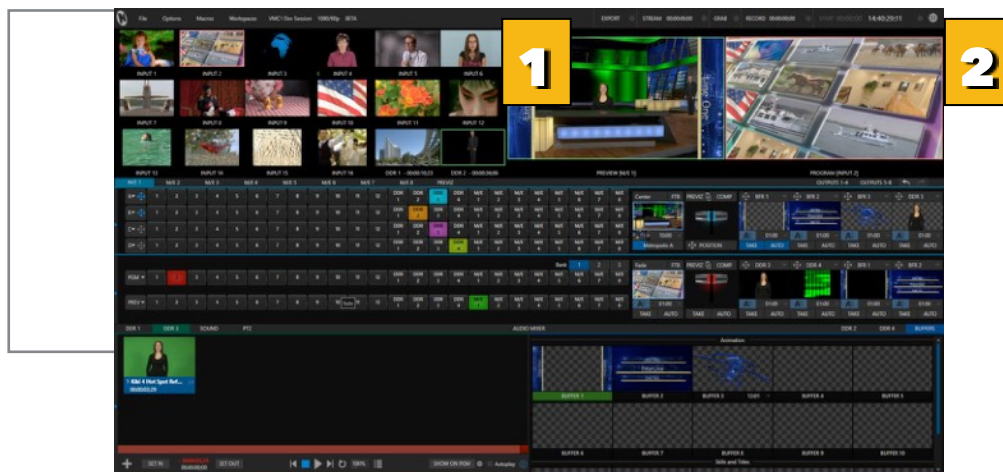
Upon completion of your show, double check to make sure that your footage was capture in its entirety on your hard drive. Backup drives are erased at the end of each day, so it’s your responsibility to make sure you have a copy!

Tricaster - TC1

You will use the Tricaster to switch camera angles during your program. You will see a “**preview**” window **(1)**, which allows you to see each camera angle before choosing one to take, and the “**program**” window **(2)**, which is what you are capturing to your hard drive and backup.

The “LiveControl” keyboard on the countertop will allow you to **preview** and **program** your camera angles. The middle row (**LIVE**) will allow you to change camera angles with the touch of a button. The bottom row (**PREVIEW**) will allow you to preview angles before making them live.

There are different ways of cutting to a new angle: you can do straight cuts, or you can use a fade transition. If you prefer a fade, you will select your new camera angle on PREVIEW, and then move the fader lever to add a transition. The faster you pull the lever, the faster the transition. The slower you pull the lever, the longer the fade.



Intercom

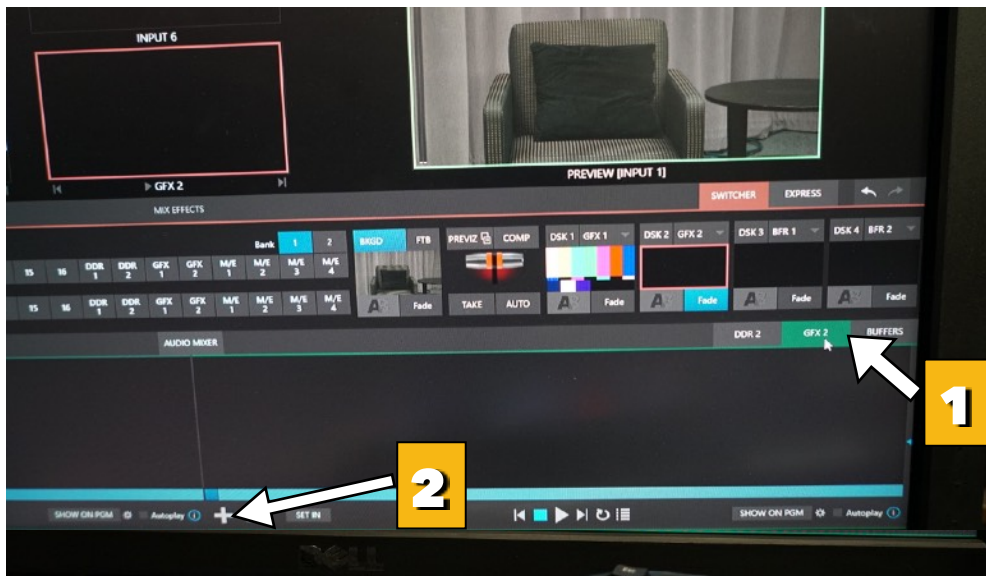


First, make sure that audio channel **(A)** is on (orange is on, blue is off). Now you can speak to all your camera operators and directors at once. To talk to everyone in the studio (including guests), press and hold the “**Announce**” button.

Titles and Graphics

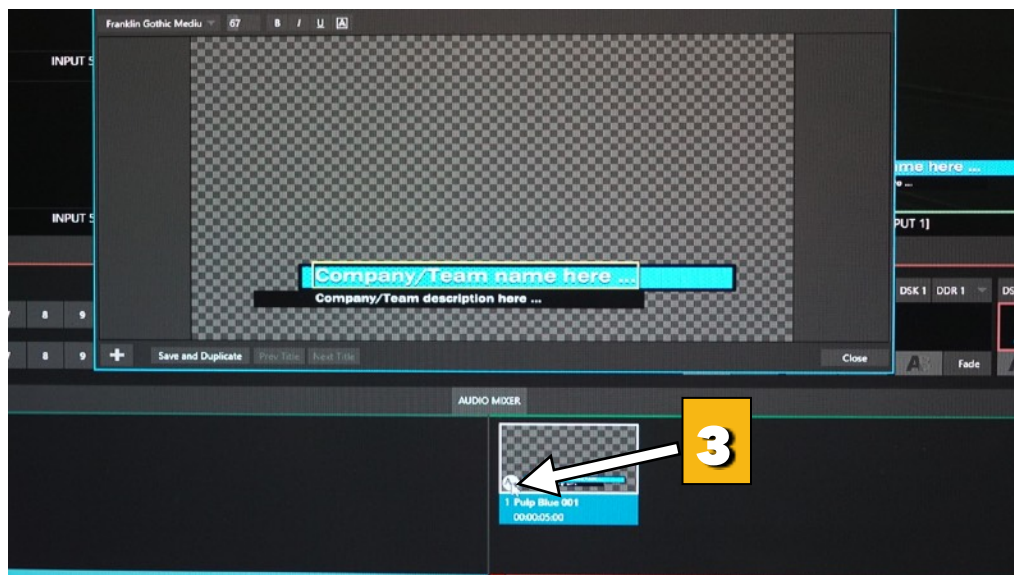
Titles

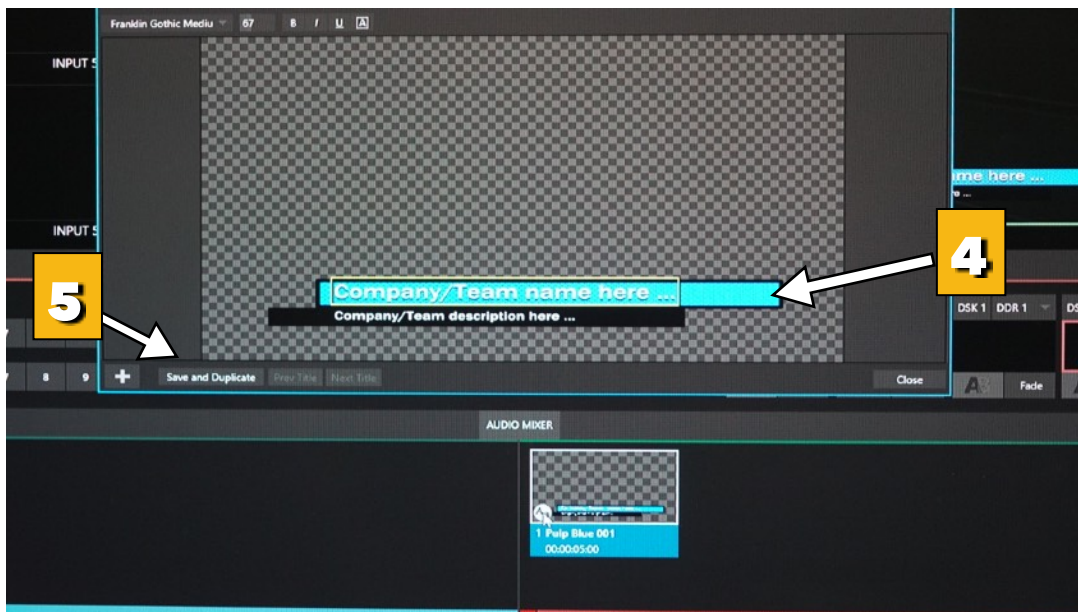
Titles are used to identify your host and their guests, and display information on-screen. To access the pre-made templates that Tricaster offers, select the **(1)** “GFX2” tab, along the Lower right side of the screen.



(2) Move your cursor to the lower left side of the screen, and click on (+) bottom a window will pop up with title templates. When you find the template you want to use, select it and click “ok”. You should now see the title in the bottom right window.

(3) To edit the text of your graphic, click on the (Aa) icon in the middle left portion of the title.





(4) A window will open and allow you to change the text, as well as adjust the font settings. Click “close” when you are finished.

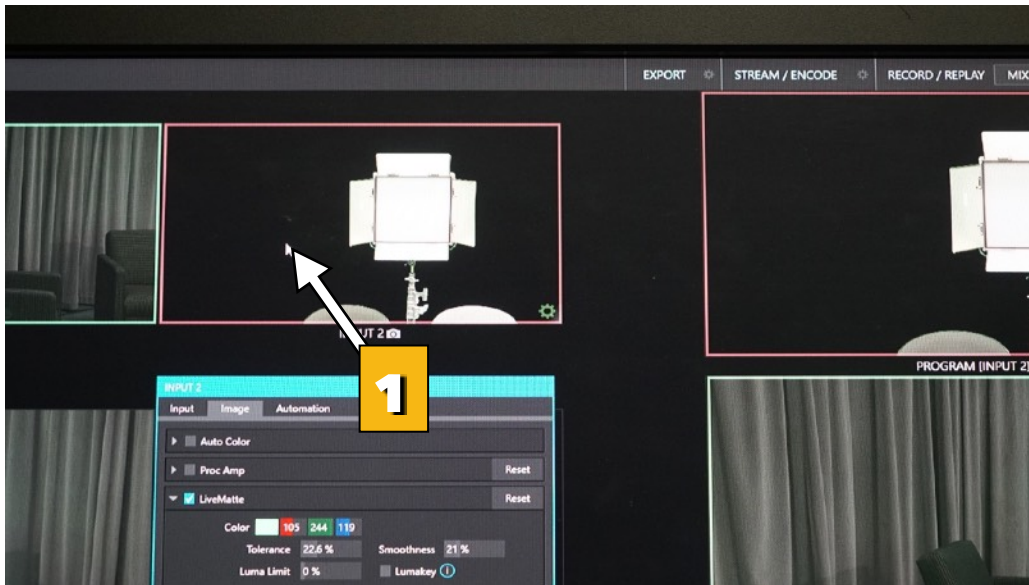
(5) To create other titles using the same template, click the “Save and Duplicate” Icon. Remember to change the text for each cloned title you create.

(6) Once your titles are ready, you can use them in your program by clicking “Fade” (automatically displays the title). Click again to remove the title. Titles are usually left on screen for about 10-15 seconds, but you can display them for any length of time.

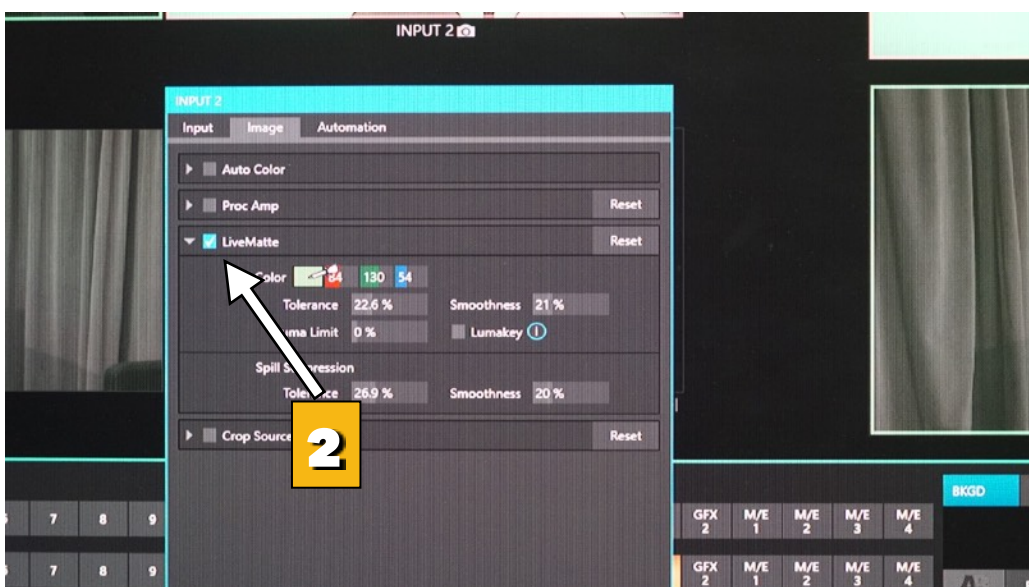


Green screen

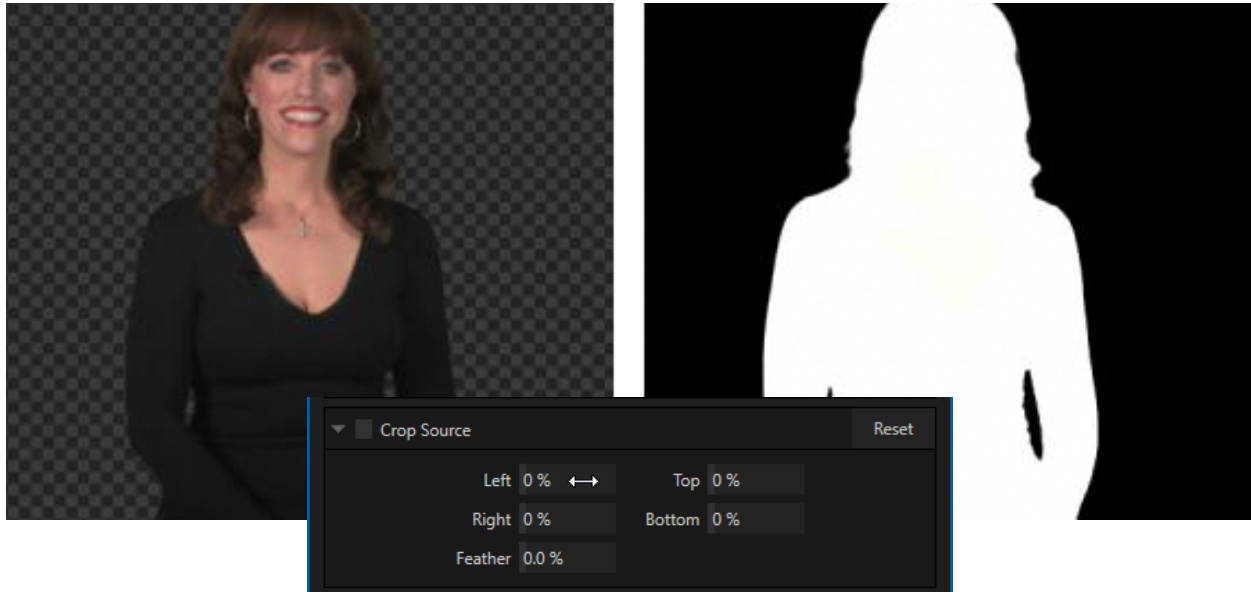
(1) Select Camera (INPUT) you are going to use for green screen double click on it, a window will open.



(2) Click on LiveMatte, once the next tab is open, the camera you are using will turn black. Keying is a popular and powerful method of compositing multiples images, whether photos, video clips or live camera streams.

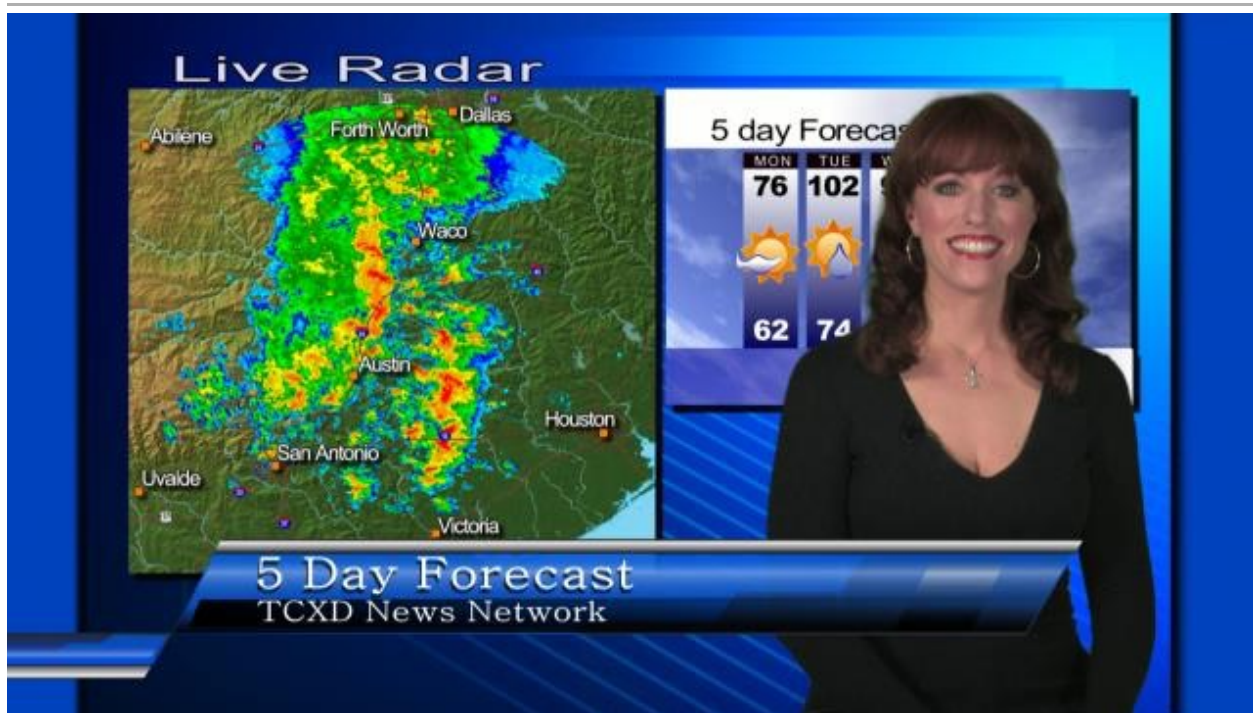


(3) The Crop Source process involves eliminating a portion of the image (effectively cutting a digital ‘keyhole’ in it) to reveal a user-defined background scene. LiveMatte’s controls are deceptively simple, making a great deal of complex digital manipulations easy to use.



Hint: Chromakeying has become an essential tool in video and film production. Typically, foreground footage is shot in front of a blue or green screen, and then that background color – the key color – is treated as transparent, allowing another image to be inserted.

For example, when you see a tv meteorologist in front of a weather map, that person is almost certainly posed in front of a green screen. The background is ‘keyed out’, to be replaced by computer generated imagery.



To use the green screen, you will first work with staff to turn on the appropriate lights to light up the green screen.

Graphics can be used in combination with green screen in a couple different ways. One, you can incorporate an image or piece of video into a portion of your virtual set. Two, you could choose to replace the entire background with an image or piece of video.

Submitting proof of Salem residency

As you learned in orientation, you will need to provide your proof of Salem residency before making your first studio reservation (this includes studio labs). Proof of residency consists of a current photo ID, and a current piece of mail (not junk mail) with your physical Salem address (not a P.O. box). This information is updated annually.

Scheduling follow up Studio Labs

Once you have submitted your proof of residency, work with Luis Mendoza to schedule your first studio lab. He will help you determine how much studio time to reserve.

Scheduling studio time

Once you are certified to use the studios, you can reserve time as it works with your schedule! To reserve a studio, call the front desk at (503) 588-2288, ext. 0.

Purchasing a hard drive

In order to use the studios, you will need to purchase your own personal hard drive. We recommend a terabyte or more of space. If you're unsure where to purchase a drive, ask staff for help.

Arranging studio crew

When you work in the studio, you will want to bring at least one person to help you in the control room. The size of your crew can be scaled, depending on what you are trying to accomplish. Talk with Luis Mendoza if you are unsure how many volunteers you'll need for your crew.

Questions?

Don't hesitate to reach out to Luis Mendoza, CCTV's Community Facilitator, with any questions related to studio production. Hang on to these class materials and refer back to them often!

