

# A/V Booth Badge: IdeaSpace Studio

Age: Grades 9 and Up

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## **Objectives:**

- *To learn the basic functions of the Focusrite Clarett 8PreX Audio Interface.*
  - *To learn the basics of the AG-UX90 4k Camcorder*
  - *To learn the basics of our studio microphones and lights.*
  - *To learn how to make your first recording in Audacity.*
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## **1. Identify A/V Booth Equipment and their Functions**



### **Apollo X4 Interface-**

This 8 channel interface converts your audio into a digital recording via microphone or line inputs.



### **Mackie CR3 Studio Monitors-**

Powerful speakers that can be used to playback your recording.



### **Microphone Stands-**

A reflection filter absorbs sounds behind the mic, producing a clearer sound.



### **Panasonic AGUX90**

**4k/HD Camcorder-** A 4k resolution studio camera mounted to a tripod dolly.



### **Blue Yeti Microphone-**

A simple USB microphone perfect for podcast recording.



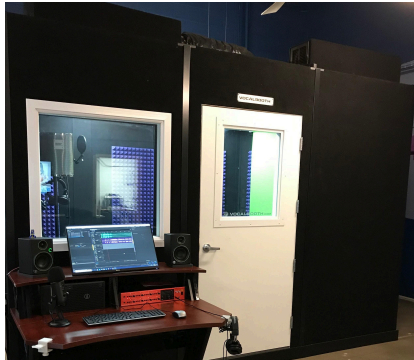
### **Green Screen-**

Filming against a green screen allows you to add background effects in post production.

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## 2. A/V Studio Overview



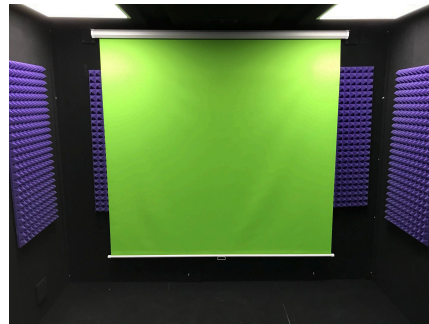
IdeaSpace's A/V Studio is a 10x12 soundproof pre-built VocalBooth. A handicap ramp is available if needed, just ask a staff member.

### 2a. Studio Computer



The VocalBooth runs a windows 10 computer which is prewired. If you'd like to rearrange any wiring, please ask a staff member.

## 2b. A/V Studio Interior



The interior of the A/V Studio is 10x12 with 11 foam panels.

### 2c. Light Controls



The A/V Studio has four studio lights which are controlled by the switch to the right of the door.

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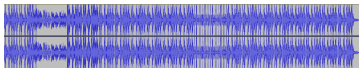
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## 3. A/V Booth Guidelines

- Only enter the studio after checking in with IdeaSpace staff.
- Do not enter the studio if another group is using the space.
- Keep the studio door closed at all times.
- Immediately notify IdeaSpace staff of any problems with the studio equipment.
- Return all studio equipment back to its starting position after use.
- The lights are controlled with the remote control velcroed to the door.
- Keep the lights on at all times.

## 4. Audio Recording Terms

- **DAW**- DAW stands for Digital Audio Workstation and refers to computer software such as Audacity, Audition, Pro Tools, and FL Studio.
- **Gain**- Gain refers to the input level of the audio. The higher the gain the greater the sensitivity of the microphone.
- **Audio Interface**- An audio interface takes the audio input from microphones and instruments and inputs them into a computer.
- **Channel (Bus)**- Pathway that audio takes through the audio interface and into the computer.
- **Track**- A digital channel for recording in a DAW.



- **Waveform**- A visual graph of recorded audio.
- **Mixer**- A mixer combines multiple inputs into a single channel.
- **Stereo**- Stereo recording uses two or more inputs to record a sound.
- **Mono**- Uses one microphone to record a single channel.
- **Decibel (Db)**- A unit of measurement that measures how loud the sound is.



- **XLR**- An XLR cable is a three pronged cable type commonly used for microphones.



- **Line Input**- A 1/4" jack for instruments.

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## 5. Apollo X4 Audio Interface



The Focusrite Clarett 8 PreX Audio Interface is an eight channel interface that plugs into

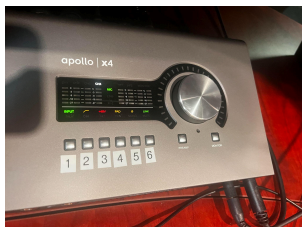
the studio computer. Most recording studio functions are handled by the audio interface.

### 5a. Audio Channel Controls

On the right side of the interface are two switchable buttons.

- Left is a pre-amp scroll-through for four channels
- Right is a monitor scroll-through for two headphone inputs and a monitor input.

### Pre-Amp Controls



- **1.** - Switches between mic and line input for vocals or instruments.
- **2. - High Pass Filter-** A highpass filter automatically filters out low frequencies.
- **3. - The 48V Phantom Power Switch-** Powers the microphone. Make sure it's pushed to record.

- **4. - Pad Button -**
  - Prevents clipping
- This is particularly helpful when recording very loud sources that could easily overload the preamp and cause distortion.
- **5. - Phase Reverse-** Reverses the waveform of your recording.
- **6. - Stereo pairing:**
- It primarily functions to create stereo pairs by linking the settings of two adjacent channels together
- **Gain Controls** - Turn the big dial on the right to raise or lower the gain.

### Monitor Controls

- **1. - Talk Button** - Not In Use On Our Setup At This Moment
- **2. - Dim-** Dims audio for a more audible conversation in and out of the booth.
- **3. - No Use**
- **4. - No Use**
- **5. - Mono Button** - Mono" button functions to sum the left and right channels of your stereo monitor mix into a single mono signal
- **6. - Mute** - Mutes audio all together.
- **Headphone Volume Controls-** Turn the big dial on the right to raise or lower monitor controls.

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## 6. Microphone Stands

The AV Studio has two microphone stands which are connected to channel 1 and channel 8 of the Focusrite Audio Interface.



### 6a. Microphone Stand Components



**Auray Reflection Filter-** A reflection filter absorbs sounds behind the mic, producing a clearer sound.



**Rode Condenser Microphone-** A condenser microphone is a powerful but sensitive microphone. Best used when trying to capture a broad range of sound.



**Audio-Technica Monitor Headphones-** Monitor headphones let you hear the microphone and DAW simultaneously through the Focusrite Audio Interface.

## 7. Mackie CR3 Studio Monitors



### 7a. Overview

The CR3 studio monitors allow you to listen to and playback your recording. The CR3 Studio Monitors are connected to the Focusrite Audio Interface directly, but should be turned off when not in use.

### 7b. Controls



**Volume/On Switch-** If the switch is dim, turn it up to Turn the volume knob up to increase the volume of the studio monitor. Be cautious turning the volume up too far, as this can create a loud audio loop through

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the microphone. If this happens, either turn the volume down on the monitor, or lower the gain on the microphone.

## 8. Blue Yeti USB Microphone



### 8a. Overview

The Blue Yeti Microphone is a USB mic that's perfect for recording podcasts and simple vocals. The Yeti mic also features a pattern switch for recording from different sound sources. **The Yeti mic conflicts with the audio interface, so leave it unplugged unless you plan to use it.**

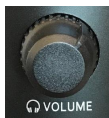
### 8b. Important Buttons



**Gain-** Adjust the gain dial to control the microphone's sensitivity.



**Mute-** Press the mute button to mute the Yeti mic. If the red light's flashing, that means that the mic is muted.







**Volume-** The headphone jack is located on the bottom of the microphone.

Turn the volume dial to adjust the volume output to the headphones.



**Patterns-** Pattern refers to the Yeti mic's directional sensitivity. By adjusting the pattern dial, you can control the direction of the sound input.

-  **Stereo Mode-** Uses the left and right audio channels to capture a wide range of sound.
-  **Omnidirectional Mode-** This mode will record audio evenly from all around the Yeti microphone.
-  **Cardioid Mode-** Use this mode to only record directly in front of the microphone.
-  **Bidirectional-** Bidirectional mode will record in the front and back of the microphone simultaneously.

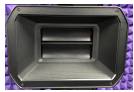
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## 9. Panasonic AG-UX90 Camcorder



### 9a. Identify parts of the Camcorder and their functions



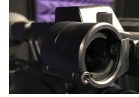
**Lens Cover-** Protects the lens when not in use. Make sure that the lens cover is open when you're filming and closed when you're done filming.



**Lens-** The Camcorder has 25.4 to 367.5mm lens. **Do not touch the lens.**



**Battery-** Located on the back of the camcorder. Press check to check the battery percentage. If it needs to be charged, alert a staff member.



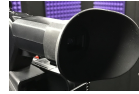
**Microphone Mount-** Can be used to mount an optional microphone to the front of the camera.



**Built-in Microphone-** The AG-UX90 has a stereo microphone built into the front of the camcorder.



**LCD Screen-** Slides out to display the current shot. Also includes a touchscreen menu.



**Viewfinder-** The AG-UX90 has a viewfinder that can be activated by pressing the LCD/EVF button.



**Tripod Dolly-** Can be used to move the camcorder around the studio. **The AG-UX90 should remain on the tripod dolly at all times.**

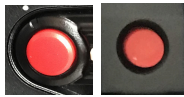
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## 9b. Important Buttons



**On/Off Switch-** Located on the right side of the camcorder. Push the white button and turn the switch clockwise to power the camcorder on. Push the white button and turn the switch counter-clockwise to power the camcorder off.



**Record Buttons-** There are two record buttons. The first is located in the center of the power switch. The second is located on top of the AG-UX90. Press once to begin recording. Press twice to stop recording.



**Zoom Levers-** There are two zoom levers on the AG-UX90. The first is on the right side of the camcorder, and the second is on the top by the second record button. The zoom feature has an optical zoom of x15. Press the T side for close up recording. Press the W for wide angle recording.



**O.I.S. (Optical Image Stabiliser)-** Press the O.I.S. button to toggle the auto stabiliser on or off.



**Thumbnail-** Press to switch between recording and playback mode. You can select which video you'd like to playback



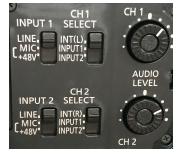
**Lens Cover Lever-** Push the lens cover lever up to open the lens. Push it down to close the lens. The lens cover should be open when you're filming.



**LCD/EVF-** Switches between the LCD display and the Electronic Viewfinder display. If the LCD display is closed, the viewfinder will automatically activate.



**XLR Audio Inputs-** Can be used to attach a microphone that can be mounted to the microphone mount.



**Microphone Channel Controls-** Located on the left side of the camcorder, the channel controls control the settings of any attached microphones.

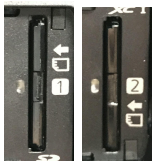


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## 9c. Saving Your Video

There are three ways to save your video.



1. Remove the SD Card from the camcorder, and insert it into the studio computer. Then copy your files from the SD Card to a flash drive or cloud storage. Delete your files when finished.



2. Attach a flash drive to the USB port located on the top of the camcorder. Then press the Thumbnail button to open playback mode. You'll then be able to copy your videos over. **This only works with a flash drive over 32GB.**



3. Ask an IdeaSpace staff member at the front desk for the micro-USB cable, which can be attached from the camera to the studio computer to copy your videos over.

## 10. Green Screen

Filming in front of a green screen allows you to later alter your background using a process called chroma keying. Chroma keying involves digitally compositing an image or video onto the greenscreen.



### 10a. Using the Green Screen

- Gently pull the green screen down using the handle.
- Stand in front of the green screen, and film so that the green fills the background of your shot.
- Gently put up the green screen by pulling the handle forward, and lifting the screen until it returns to the start position.


### 10b. Lighting


- No additional lighting is needed for keying with the green screen.
- Setting the lights to 100% is recommended for lighting the green screen.


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## 11. Your First Recording

-  Open Audacity from the Studio Computer Desktop.
- Check to see that the input and output settings visible at the top of the user interface are correct. They should match the following.
  - MME
  - Input: Focusrite Thunderbolt
  - 1 (Mono) Recording Channel
  - Output: Focusrite Thunderbolt


-  Press the record button to begin recording, and enter the A/V Booth. Speak into Mic Stand 1 for channel 1, or Mic Stand 2 for channel 8. The gain and setting are adjusted on the Focusrite Audio Interface.

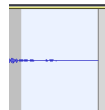
-  Press stop when you're done recording.

-  Press play or spacebar to play back your recording through the studio CR3 Monitors or headphones.

## 11a. Editing Your Recording

### Deleting a Section

 Make sure the selection tool is selected then click and drag to highlight a section of the track.




Then press the delete button on the keyboard.

### Split a Track

To split a track, press **Ctrl+I** on the keyboard. This will divide your tracks into clips which can then be moved using the time shift tool.



### Move a selection

 Press the time shift tool, then click and drag your track to the desired time spot.

## 11b. Adding a Track

You can record on multiple tracks in Audacity. To add a track, navigate to the following in the user interface.

- Tracks
- Add New
- MonoTrack

This will add a track to Audacity. You can also add a track by simply dragging and dropping an audio file into Audacity.

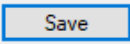
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## 11c. Exporting your Recording



You'll need to export your file to take it with you when you leave the studio. To export your file, navigate to the following.

1. File
2. Export
  - a. **Export MP3**- MP3 files are one of the most common file formats, and are compressed to a small file size.
  - b. **Export WAV**- WAV files preserve the Waveform data.
  - c. **Export Audio**- Will open additional export options and file types.
  - d. **Export Multiple**- Will export your tracks as separate files for later use.
3.  Choose where you want to export your file to and then press save.
4. **Add Metadata**- Metadata is data contained in the file, and adding it is optional.
5. Your file will then export. Be sure to take your file with you by saving it to a flash drive, emailing it to yourself, or store it in cloud storage.

## 12. Software

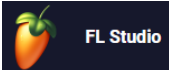
### 12a. Freeware

These free programs can be downloaded on your home computer with no cost.

1.  **Audacity** **Audacity**- The basic starter DAW we covered today.
2.  **LWKS** **Lightworks**- A versatile video editing software with an easy learning curve.

### 12b. IdeaSpace Only Software




These software programs require a subscription or one time purchase for advanced users, but are also available for public use at CRRL's IdeaSpace.

1.  **FL Studio** **FL Studio**- FL Studio is a powerful beat making software with a huge variety of plugins.

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2.  **Audition** **Adobe Audition-** A recording focused DAW with more built in features than Audacity.
3.  **Premiere Pro** **Adobe Premiere Pro-** Premiere Pro is a professional grade video editing software.
4.  **After Effects** **Adobe After Effects-** After Effects is a digital compositing and effects software, commonly used when making greenscreen videos.

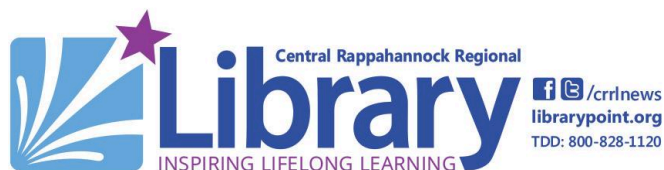
## 13. Tech on the Go Video and Recording Kits

If you're interested in filming or recording at home, CRRL's IdeaSpace offers camcorders, audio equipment and accessories as part of the Tech on the Go program. Customers must be 18 years or older to check out the Kits. Ask a staff member or check out our website for more information.



## 14. Sign the MakerLab Agreement

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## Learn More on Your Own

### AUDIO SOFTWARE

- Audacity: <https://www.audacityteam.org/>
- [Audition Essential Training](#)
- [Learning FL Studio](#)

### VIDEO SOFTWARE

- Lightworks: <https://lwks.com/>
- [Premiere Pro 2020 Essential Training](#)
- [After Effects 2022 Essential Training](#)

