# Tutorials for Enhanced Zoom Setup

## -David Mach

### *Part one (Mac and PC): Zoom Tweaks*

❖ **Open Zoom**

❖ **Click the Home tab in the icons at the top of Zoom**

Home

❖ **Click the gear icon in the upper right-hand corner**

❖ **Click on the audio tab**

General

Video

**Audio**

Share Screen

Chat

Virtual Background

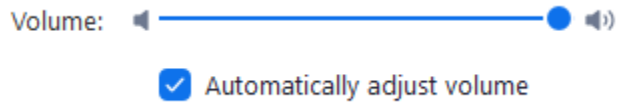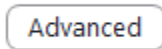Recording

Profile

Statistics

Feedback

Keyboard Shortcuts

Accessibility

❖ In the middle of the screen, make sure that "Automatically adjust volume" is checked

Volume: 🔈 ●━━━━━━━━● 🔊
☑ Automatically adjust volume

❖ In the lower right side of the screen, click on the advanced button to reveal a few more settings.

Advanced

❖ Change the following settings:
  ➢ Show in-meeting option to "Enable Original Sound" from microphone
    *Check*
  ➢ Suppress Persistent Background Noise
    *Disable*
  ➢ Suppress Intermittent Background Noise
    *Disable*
  ➢ Echo cancellation
    *Auto*

❖ Go back to the general settings tab and click "View More Settings" in the lower middle of the screen.

| ⚙ **General** |
| 🎥 Video |
| 🎧 Audio |
| ⬆ Share Screen |
| 💬 Chat |
| 🖼 Virtual Background |
| ◉ Recording |
| 👤 Profile |
| 📊 Statistics |
| 🙂 Feedback |
| ⌨ Keyboard Shortcuts |
| ♿ Accessibility             View More Settings ⧉ |
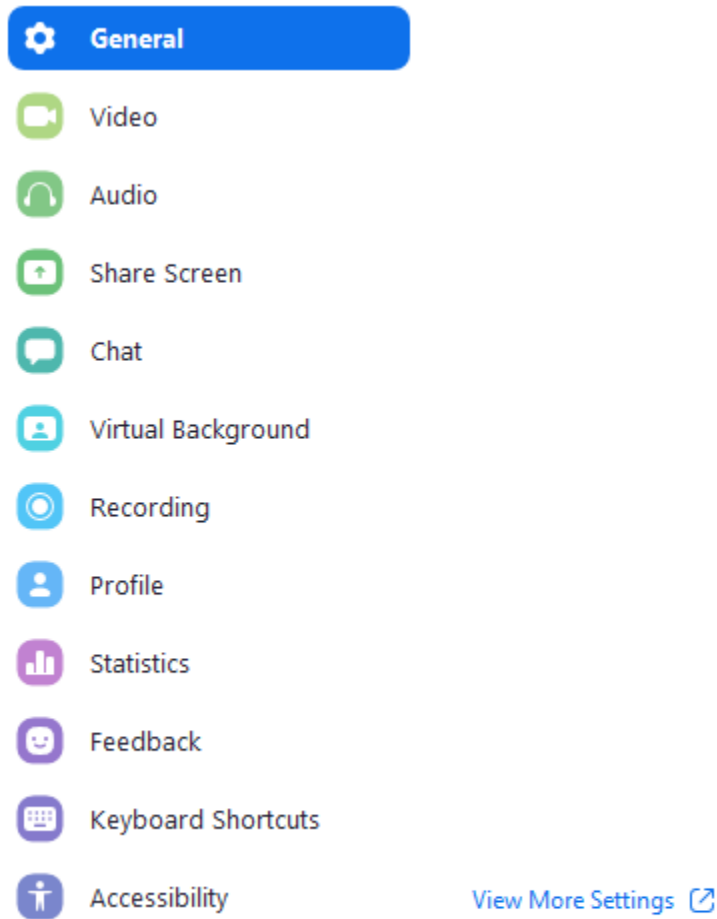
➢ This will open a browser with several more settings.
➢ Scroll down about 2/3's of the way until you find a setting called: "Allow users to select original sound in their client settings"
  ◦ *Check*

## *Part 2 (Mac and PC): Multi-camera setup (OBS Studio)*

❖ **Plug in and install your Web Cameras**

❖ **Download and install OBS Studio at**
   ➢ **https://obsproject.com/download**

❖ **Download and install VirtualCam plugin for OBS Studio.**
   ➢ **For Mac use:**
      ▪ **https://github.com/johnboiles/obs-mac-virtualcam/releases**
      ▪ **Under the tab called Assets 3 download and install the file called obs-mac-virtualcam-3ca8f62-v1.2.0.pkg**

   ▾ Assets 3

   | ⬡ obs-mac-virtualcam-3ca8f62-v1.2.0.pkg | 111 KB |
   |---|---|
   | ⬙ Source code (zip) | |
   | ⬙ Source code (tar.gz) | |

   ➢ **For PC use:**
      ▪ **https://github.com/Fenrirthviti/obs-virtual-cam/releases**
      ▪ **Under the tab called Assets 4 download and install the file called obs-virtualcam-2.0.5-Windows-installer.exe**

   ▾ Assets 4

   | ⬡ obs-virtualcam-2.0.5-Windows-installer.exe | 844 KB |
   |---|---|
   | ⬡ OBS-Virtualcam-2.0.5-Windows.zip | 879 KB |
   | ⬙ Source code (zip) | |
   | ⬙ Source code (tar.gz) | |

**\*You do not have to manually install VirtualCam unless your Mac/PC needs to run an older version of OBS. All new versions of OBS have VirtualCam built in automatically.**

❖ **Open OBS Studio**



❖ **Find Sources Box**
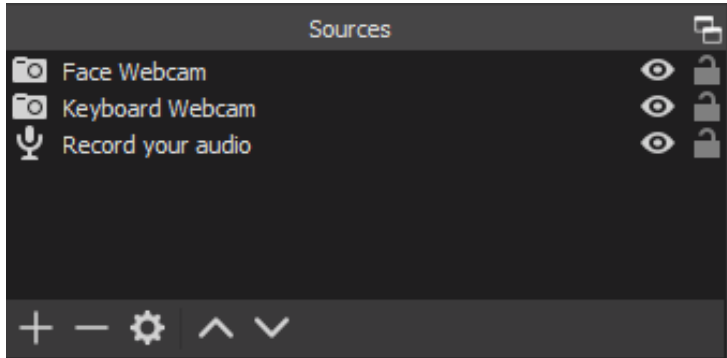


➢ **To add webcameras**
  ▪ **Click the + sign**
  ▪ **Video Capture Device**
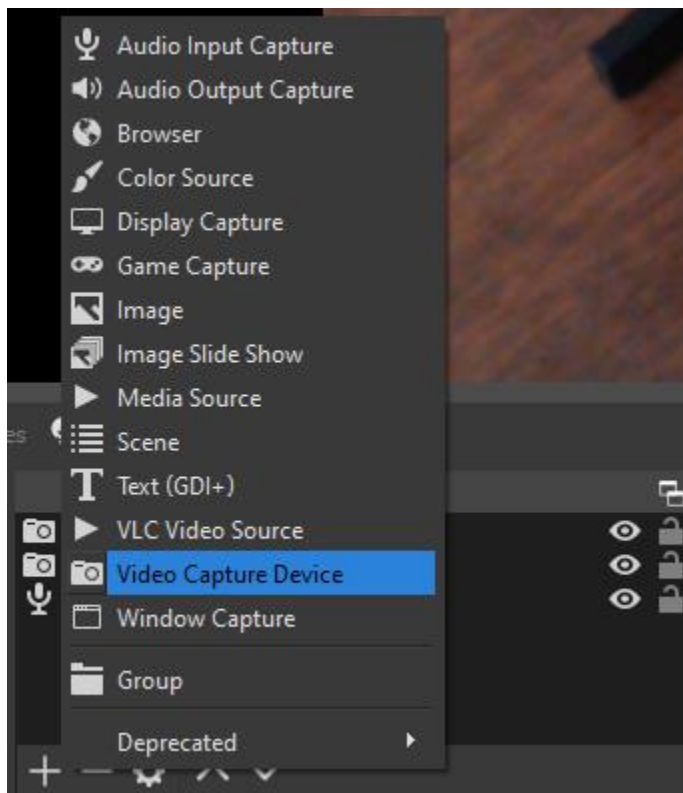
❖ **Rename camera if preferred and click OK**
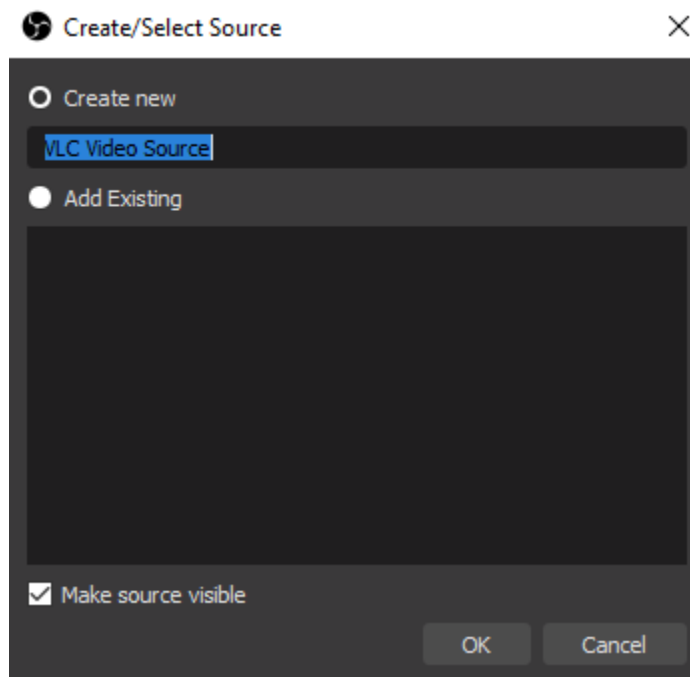


❖ **Click properties of the new Video Capture Device**
❖ **Select webcam of your choice under devices tab**



❖ **Activate it**
❖ **Web camera view will appear on the OBS Screen as a red box (when you highlight your devices name in the sources box.**
❖ **While it is highlighted red, you drag the corners to your preference.**
❖ **Repeat this process to add additional cameras.**

❖ **How do we use this as our camera in Zoom?**

➢ **In OBS Studio click Tools > VirtualCam**
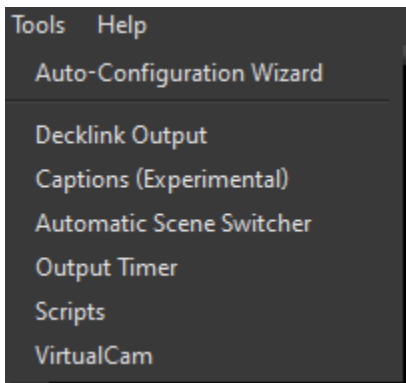


➢ **Click Start**
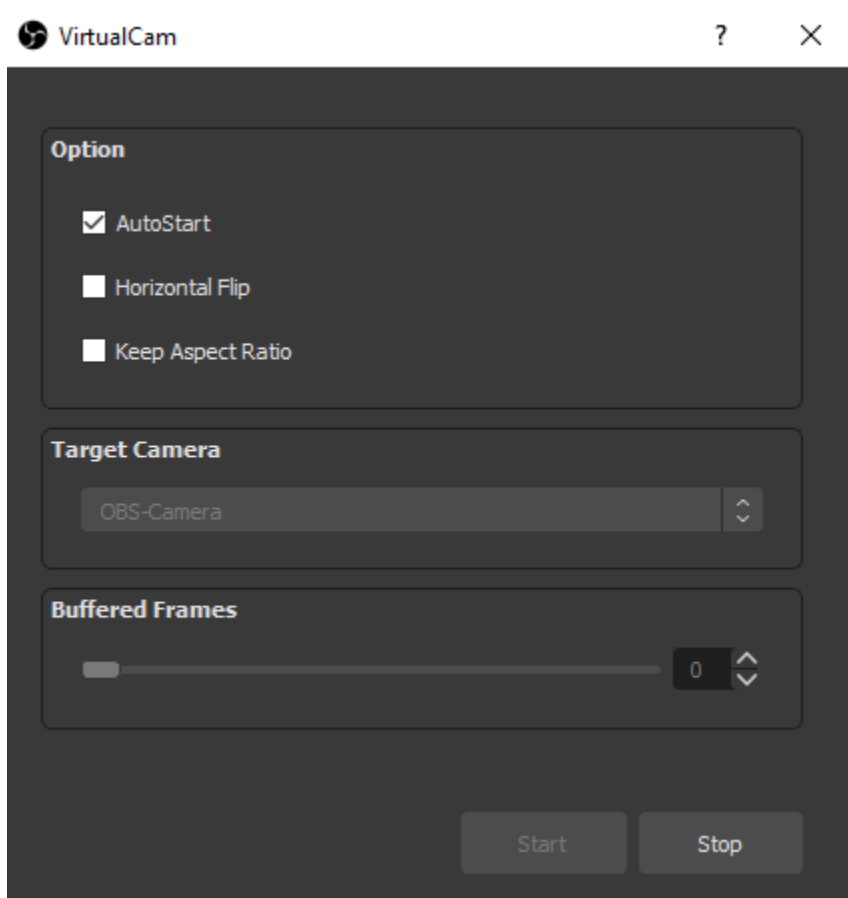


➢ **On Windows, check AutoStart. On Mac, you must manually click start each session.**

*Make sure to plug in your cameras and/or USB hub into the same USB slots each session!

➢ **Open Zoom**

➢ **Click the Home tab in the icons at the top of Zoom**
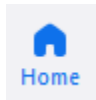


➢ **Click the gear icon in the upper right-hand corner**



➢ **Click on the video tab**



| | |
|---|---|
| ⚙ | General |
| ■◄ | **Video** |
| 🎧 | Audio |
| ⬆ | Share Screen |
| 💬 | Chat |
| 👤 | Virtual Background |
| ◎ | Recording |
| 👤 | Profile |
| 📊 | Statistics |
| 🙂 | Feedback |
| ⌨ | Keyboard Shortcuts |
| 🧍 | Accessibility |
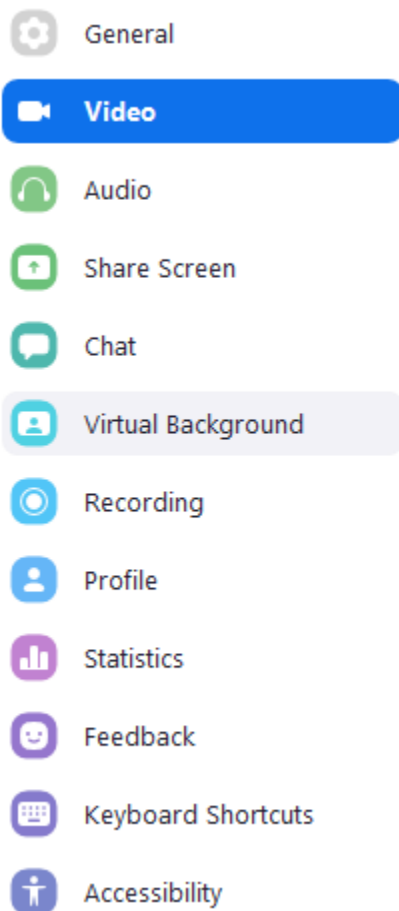
➢ **Under Camera, select OBS-Camera.**

**Camera:** OBS-Camera ⌄

⦿ 16:9 (Widescreen)   ◯ Original Ratio
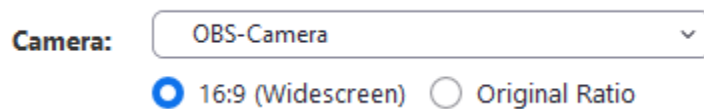
❖ **Now your Zoom camera should be your new multi-camera setup**

## *Part 4 (Both Mac and PC): Audio Routing (for clarity)*

❖ To attain clarity in online piano lessons, you need to separate audio from your voice and the piano.
❖ If using a *Digital Piano*, you can *greatly enhance audio* for you and your students by using an Audio Interface.
  ➢ You can purchase a **Behringer U-Phoria UM2 USB Audio Interface** for around $48.
  ➢ Perfect Audio Interface for students on a budget with a Digital Piano.
  ➢ Use a 1/4" cable to connect your digital piano to the Audio Interface (which connects to your Mac or PC)
❖ If using an upright piano, place mic behind the piano toward the center, or mounted about a foot above the piano.
❖ If using grand pianos, place mic pointed into the bow of the piano about a foot off the strings (using a boom stand)


## *Part 4 (Mac): Audio Routing*

❖ For your voice, USB Microphones are easiest to setup for Macs as they have much less delay than on PC. These include:

  ➢ **Blue Yeti USB**

  ➢ **AT2020 USB**

❖ If using a *Digital Piano,* and you have decided to purchase an audio interface such as the **Behringer U-Phoria UM2,** you can either use your built-in microphone for your voice or purchase a XLR microphone such as a **Behringer C1** or an **Audio-Technica AT2020** for an optional upgrade in voice quality.
❖ To use your keyboard audio and your microphones at the same time, do the following:
  ➢ Search for and open Audio/Midi Devices in Spotlight Search
  ➢ Click + sign
  ➢ Create Aggregate Device
  ➢ Under the column for use, check the box next to your microphone that you are using for your *voice*
    ▪ E.g. Built-in Microphone, your USB Microphone, or your Audio Interface (**Behringer U-Phoria UM2** or **Focusrite Scarlett 2i4**)
  ➢ Also, check the box next to your Audio Interface or the USB microphone that you are using for your *piano*
    ▪ E.g. **Behringer U-Phoria UM2** or the **Blue Yeti USB**
  ➢ Under clock source, select your Audio interface, or internal microphone if you do not have an audio interface.
  ➢ Lastly command click on Aggregate Device and click the option for "Use this Device for Sound Output" and "Use this device for sound output."
  ➢ In Zoom, open audio settings.

- ➢ Under microphone, select the Aggregate device under Microphone.
- ➢ Under speaker, select your Audio Interface or internal speakers if you do not have an audio interface.
- ➢ The audio from both your keyboard and your voice should now be completely clear in Zoom.
- ➢ Mac will automatically adjust settings when your remove your peripherals.

- ❖ **You need an audio router if:**
  - ➢ using your internal microphone *and* an Audio Interface (for students who have not purchased an external mic) *this option is much more complicated than simply buying an external mic.
- ❖ On Macs use BlackHole as your audio router (Soundflower is now outdated)
  - ➢ Download and install **BlackHole 16ch**
    - ▪ https://existential.audio/blackhole/
  - ➢ Search for Audio/Midi Devices in Spotlight Search
  - ➢ Click + sign
  - ➢ Create Aggregate Device
  - ➢ Under the use column, select Built-in Microphone, your Audio Interface and BlackHole 16ch *IN THAT ORDER.*
  - ➢ Click + sign
  - ➢ Create Multi-Output Device
  - ➢ Under the use column, select your Audio Interface and BlackHole 16ch
  - ➢ Open GarageBand or Ableton Lite (which comes with Focusrite Audio Interfaces)
  - ➢ Select Aggregate Device Input 1 as your Input Device
  - ➢ Select **BlackHole 16ch** as your Output Device.
  - ➢ In Zoom, open audio settings.
  - ➢ Select either Built-in Output, or your Audio Interface as your Speaker
  - ➢ Select BlackHole 16ch (BlackHole 16ch) as your microphone.
  - ➢ These steps are also included on BlackHole's website at the following link:
    - ▪ http://existential.audio/blackhole/support/#system

## *Part 4 (PC): Audio Routing*

- ❖ On PC, you **will** need an audio router
- ❖ On PC, use VoiceMeeter as your audio router
  - ➢ Download and install VoiceMeeter and VirtualCables
    - ▪ https://vb-audio.com/Voicemeeter/
    - ▪ https://vb-audio.com/Cable/VirtualCables.html
  - ➢ Search for Sound Settings in the toolbar
  - ➢ Select VoiceMeeter as playback device
  - ➢ Open VoiceMeeter
  - ➢ Select Hardware input as your Audio Interface
    - ▪ E.g. **Focusrite Scarlett 2i4**
  - ➢ Select Virtual Input as VB-Audio VoiceMeeter VAIO
  - ➢ Under Hardware Out A1 Select WDM: Speakers
  - ➢ Under Hardware Out A2 Select WDM: Focusrite USB (or your Audio Interface)
  - ➢ In Zoom Audio Settings, select VoiceMeeter output as your Microphone.
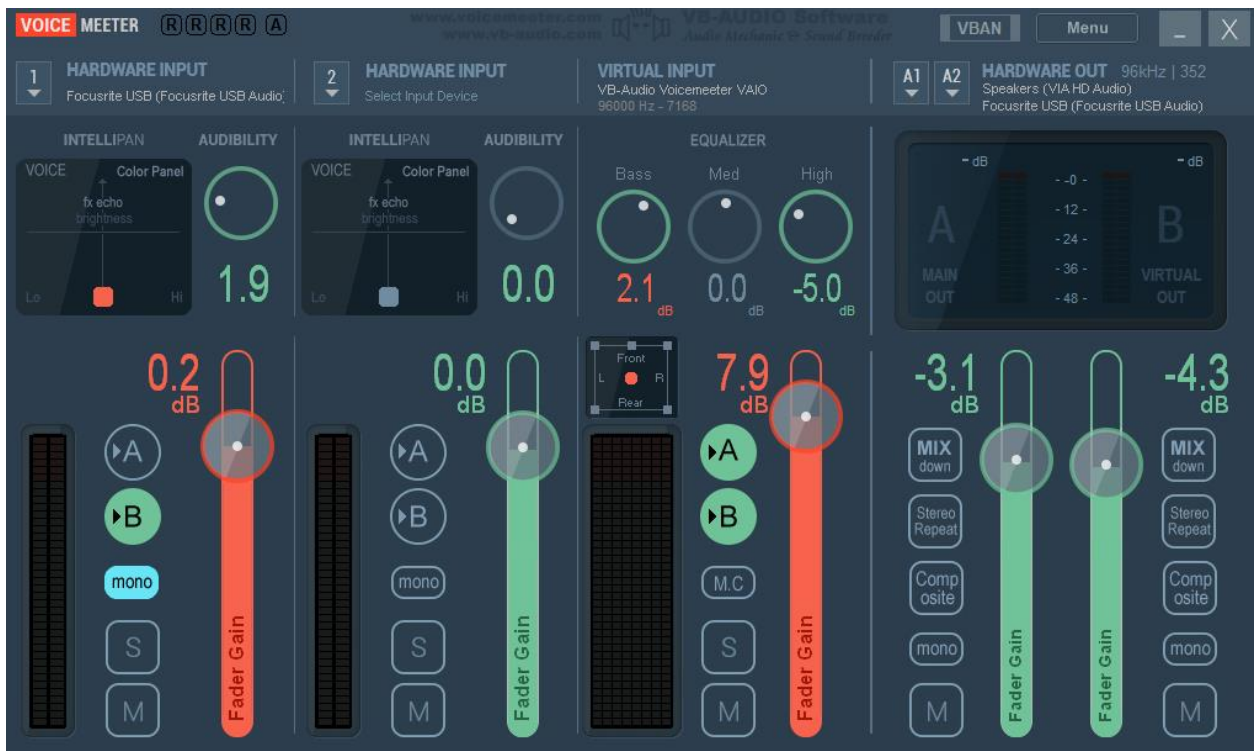
- ▶ Virtual Studio Technology (VST's)

    - ▶ Virtual instruments to be played with a midi keyboard

- ▶ Free piano sound software (VST's)

    - ▶ **Addictive Keys**

        - ▶ **Free with all Focusrite Audio Interfaces**

    - ▶ **Monastery Grand**

        - ▶ **https://www.meldaproduction.com/MonasteryGrand**

- ▶ Paid piano sound software (VST's)

    - ▶ **Synthology Ivory II American Concert D**

        - ▶ **sweetwater.com**

    - ▶ **Ravenscroft 275**

        - ▶ **https://www.vilabsaudio.com/Ravenscroft-By-VI-Labs**