EMPORIA STATE UNIVERSITY

Lightboard: Doing it Live!

Tom Mahoney
tmahoney@emporia.edu

August 4, 2017

Outline

- ☐ Lightboard
  - ☐ What is it?
  - ☐ Benefits
  - ☐ Design and build
- ☐ Open Broadcaster Software (OBS)
  - ☐ What is it?
 - ☐ Benefits
  - ☐ Usage

What is a Lightboard?

Instructional Benefits

☐ Face-to-face conveys emotion

☐ Integrates the instructor with the content

☐ Extensible: slides, images, videos can be added as overlays

☐ Bright text on black background is easier to read

☐ Looks professionally produced

Design Decisions

- Dimensions: Board (6'x4') and floor (10'x6')
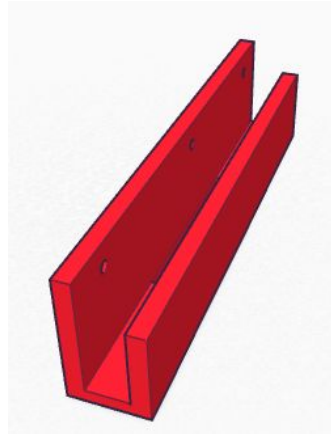- Type of glass: Standard, Starphire (low iron), or Plexiglass
- Mounting: Wood or metal
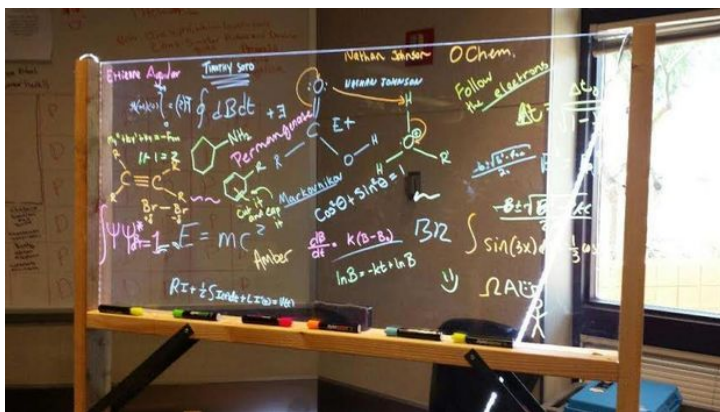
Estrella Mountain Community College

Emporia State University

Design Decisions
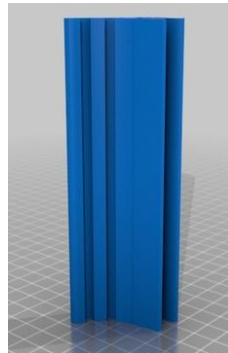
☐ Glass lighting: Tape, 3D printed clips, carved channels

Tinkercad - acatters

Estrella Mountain Community College

☐ Presenter lighting: LED strands, Softbox continuous lighting

Tinkercad
- acatters

Photography
Lights

Design Decisions

- [ ] Other features: dimmers for lights, height adjustable table, wheels

- [ ] Camera: Webcam, camcorder, DSLR

- [ ] Microphone: Boom mounted, clip-on, headset

- [ ] Number and positioning of monitors

Getting Help

- ☐ lightboard.info

- ☐ Emporia State University (Anna Catterson)

- ☐ Instructables

- ☐ Flipped Learning

- ☐ Slides from talk at KC Math Tech EXPO

- ☐ Also consider searching for "Learning Glass"

Learning Curve

- ☐ Writing backwards (just kidding!)

- ☐ What to wear

- ☐ Standing in front of text

- ☐ "Weatherperson wave"

- ☐ Limited writing space (compared to classrooms)

- ☐ Erasing takes time/effort

- ☐ Keeping videos short

Making Videos

☐ How long does it take to make a 5-, 10-, or 30-minute video?

☐ How long *should* it take?

☐ Post-production is a time-sink, even with practice.

☐ The longer and more difficult it is to make a video,

the fewer I will make.

☐ **Goal:** Eliminate post-production. Do it live!

EMPORIA STATE
U N I V E R S I T Y

Demo

Open Broadcaster Software (OBS)

- obsproject.com
- Free, cross-platform, and open source
- Flips the image in real time
- Incorporates webpages, videos, images
- Overlays transparent slides or pdfs
- Rearrange or hide elements on-the-fly
- One-touch recording
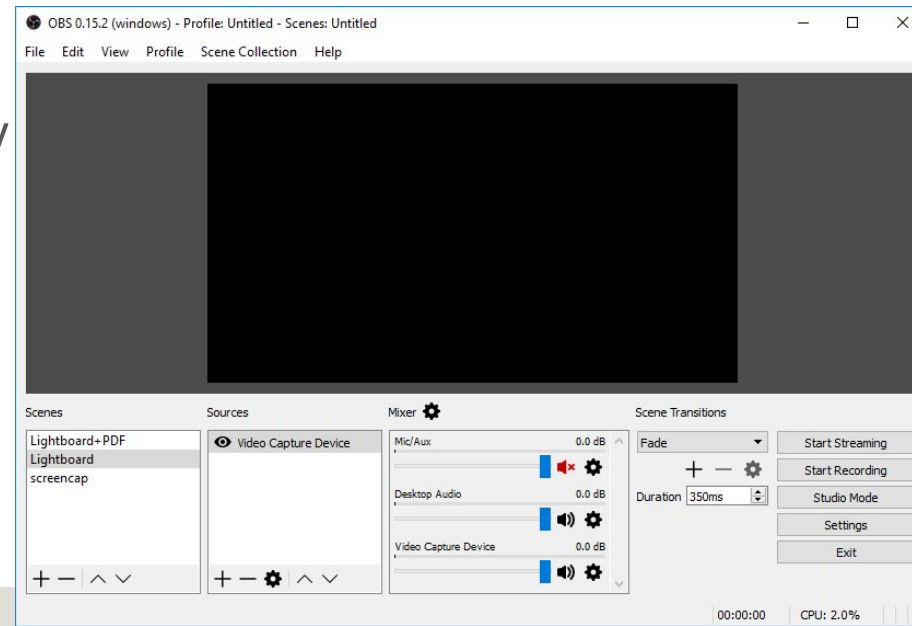
OBS Guide
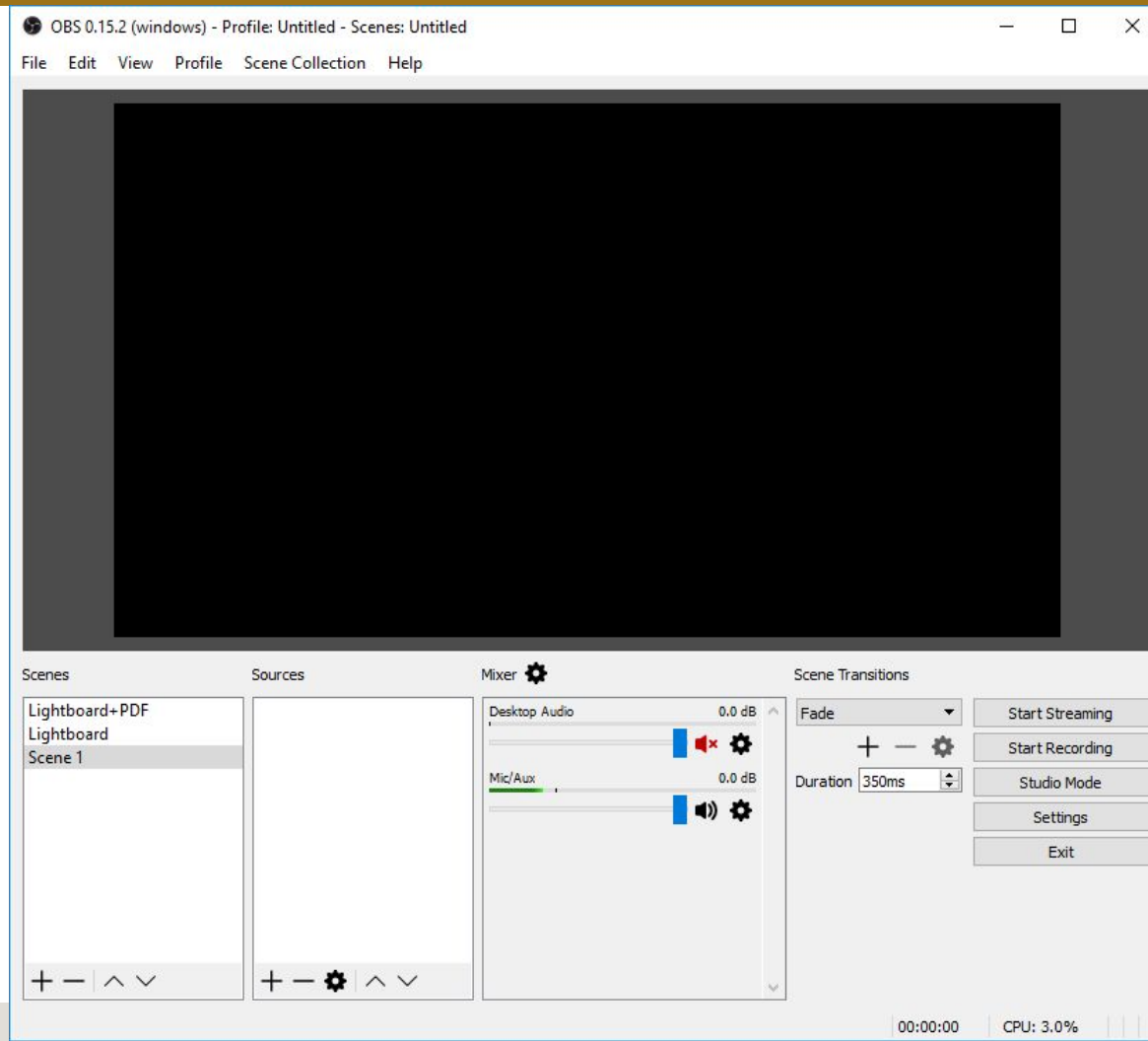
OBS Basics

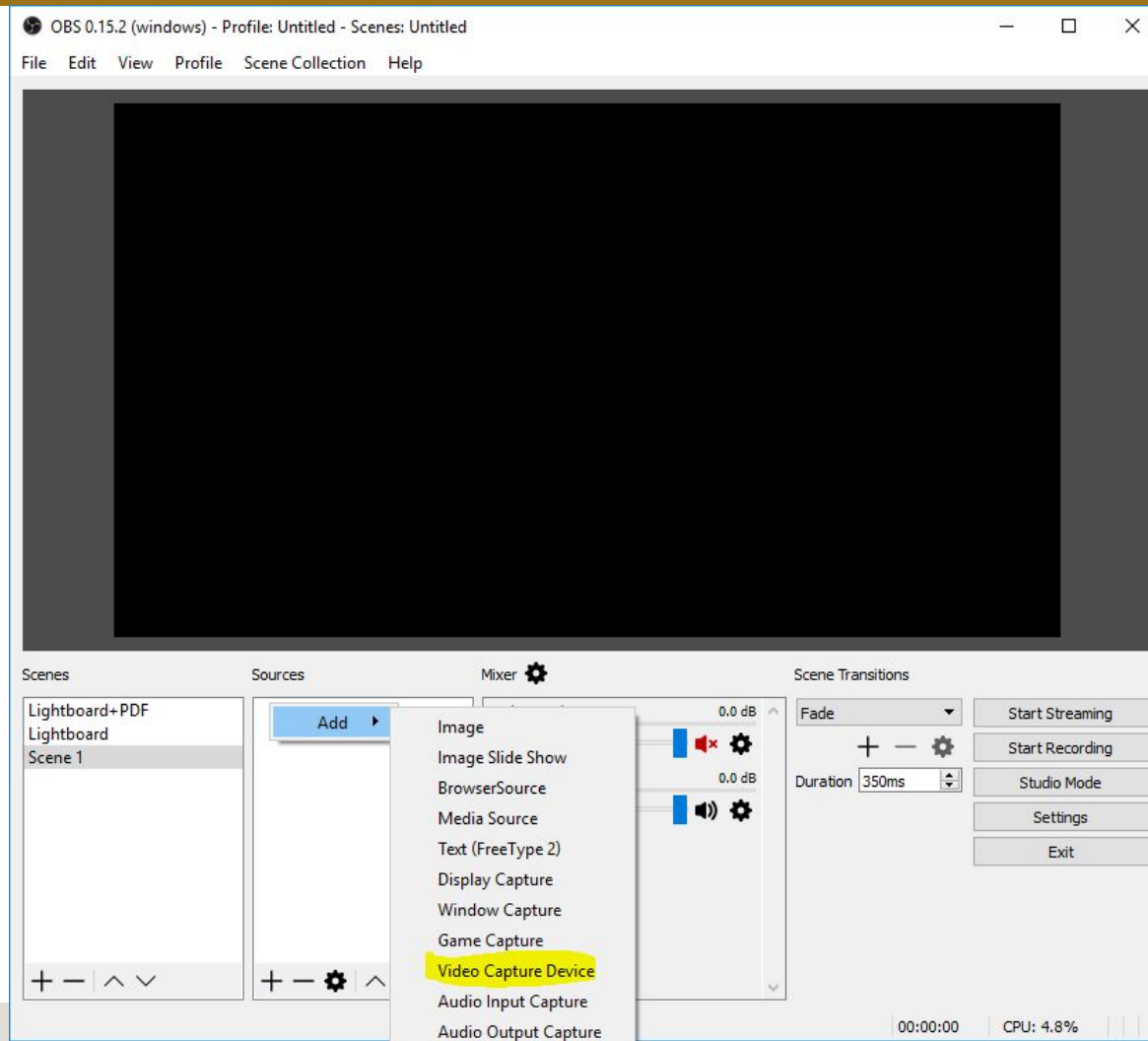**Sources:** webcams, monitors, windows, images. Right-click to add.

Scenes: Saved arrangements of sources. Right-click to add. Left-click to switch.

Canvas: Arrange sources

More options: Right-click on any source
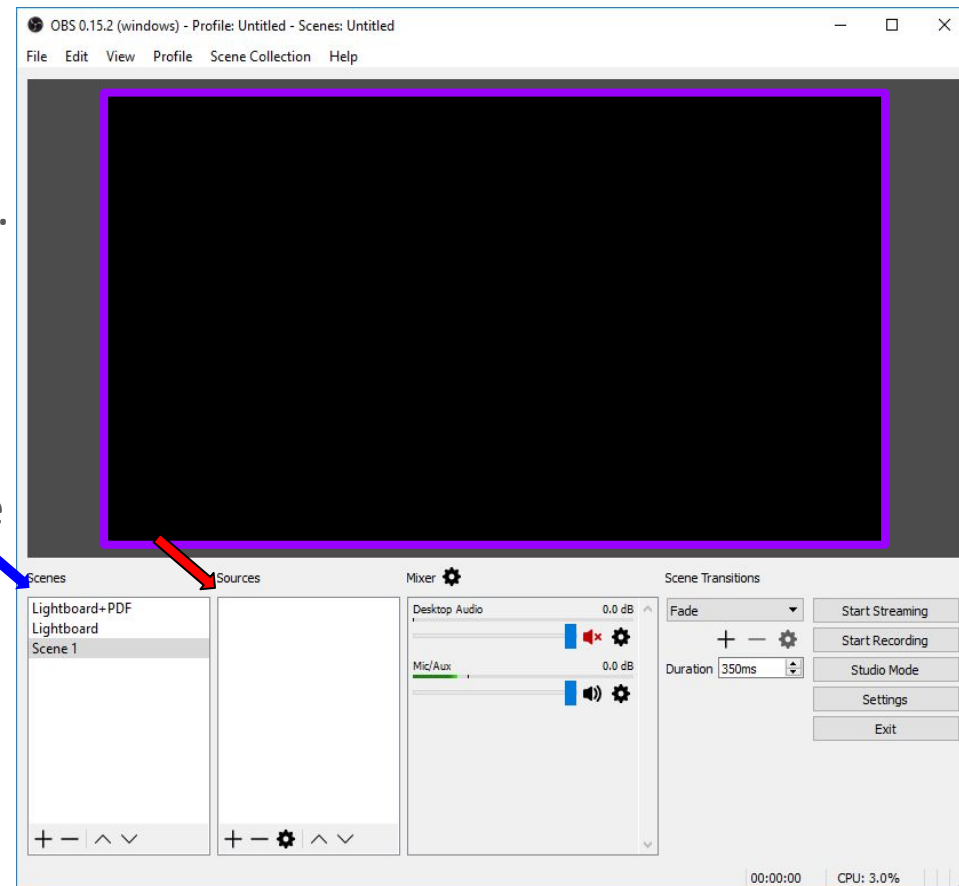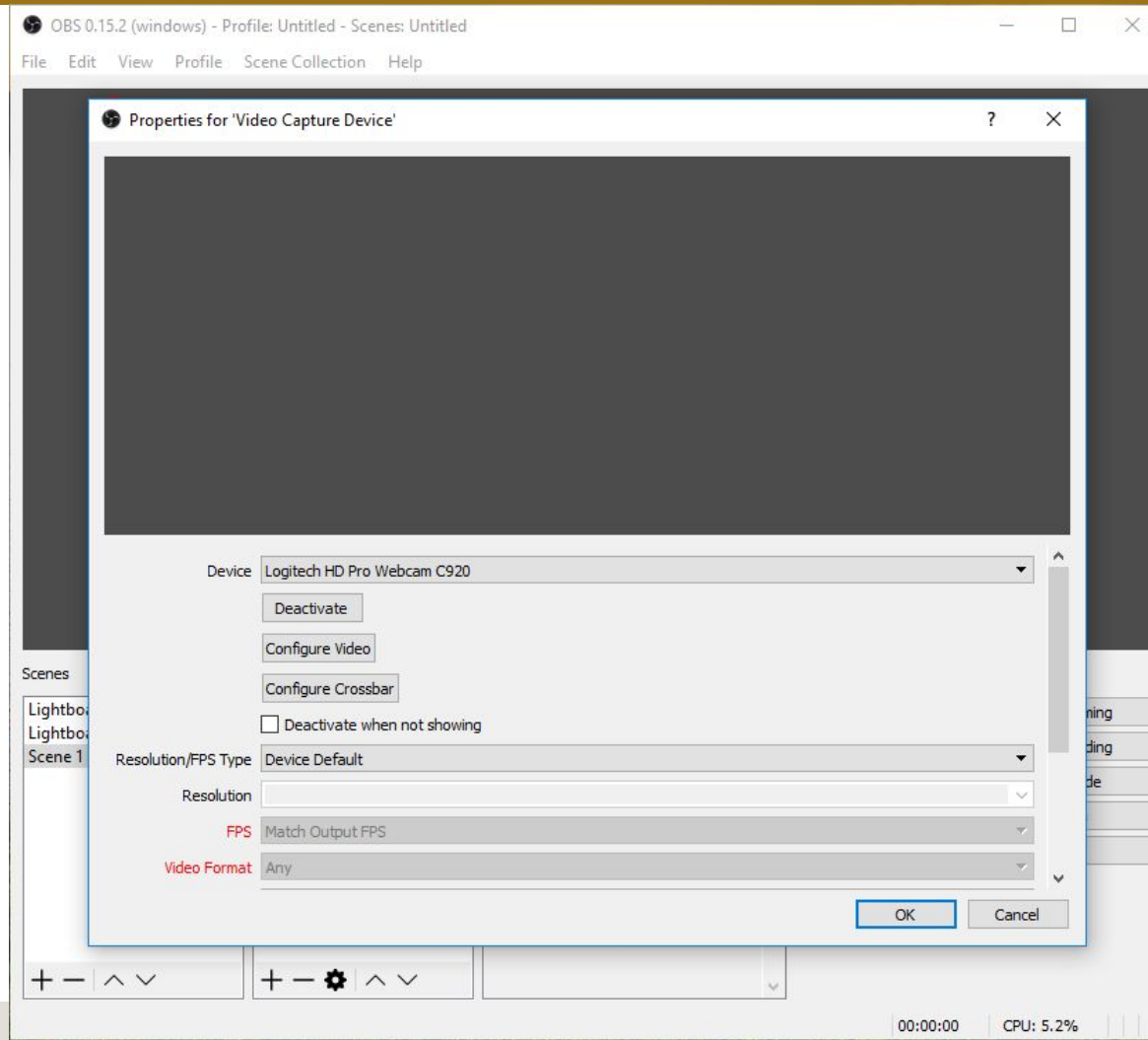
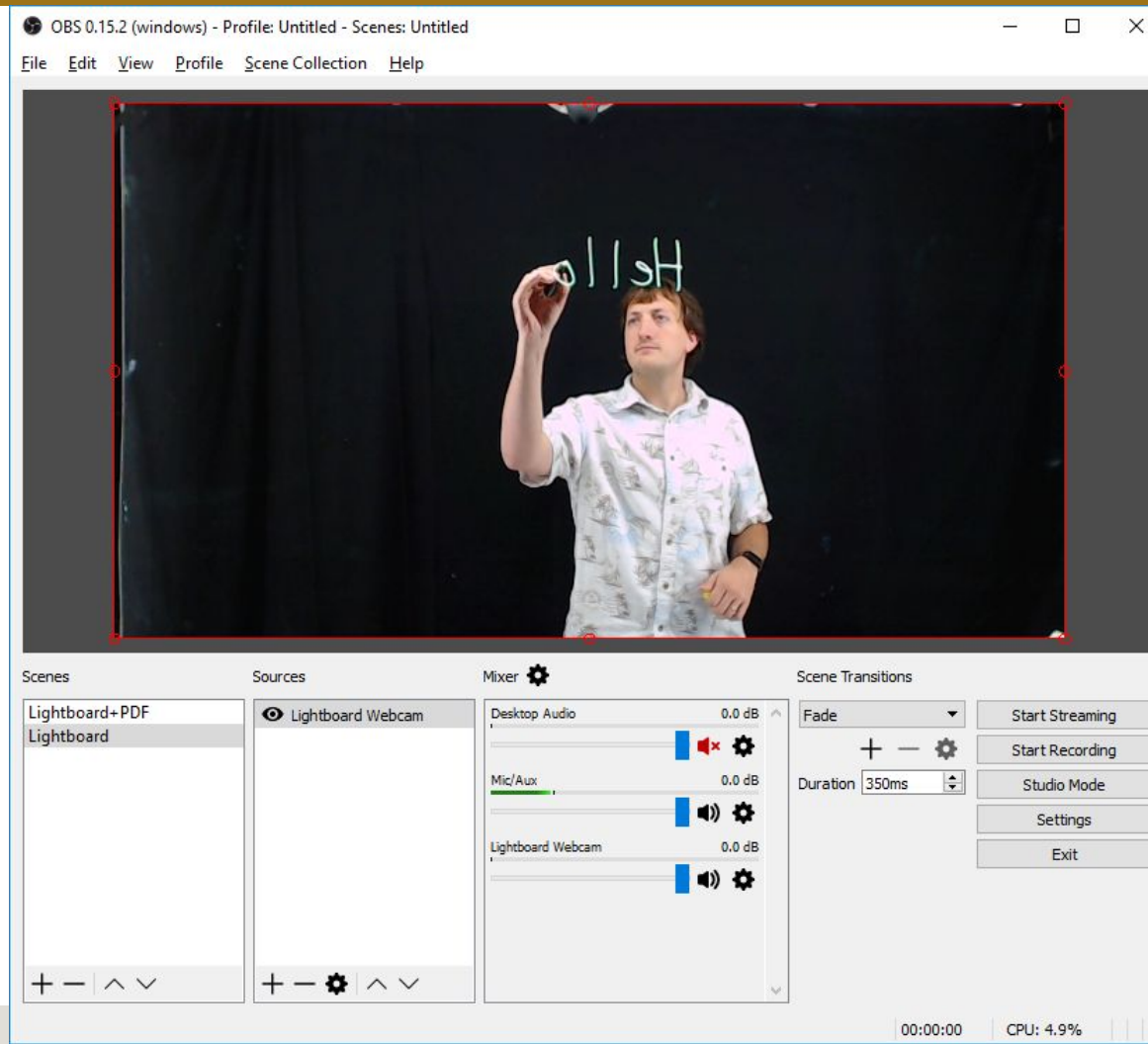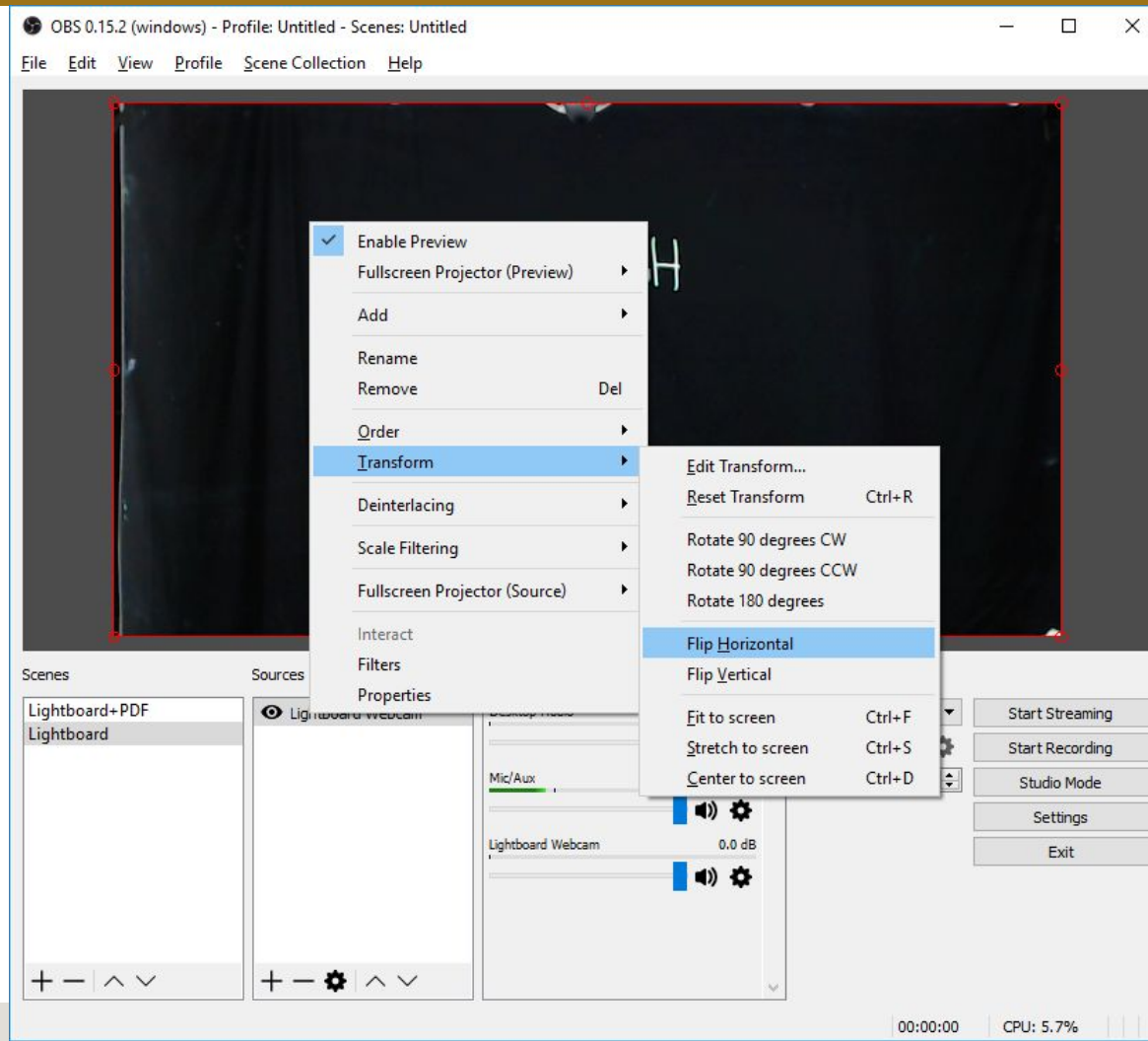# OBS Guide - Add a Webcam Source

OBS Guide - Add a Webcam Source
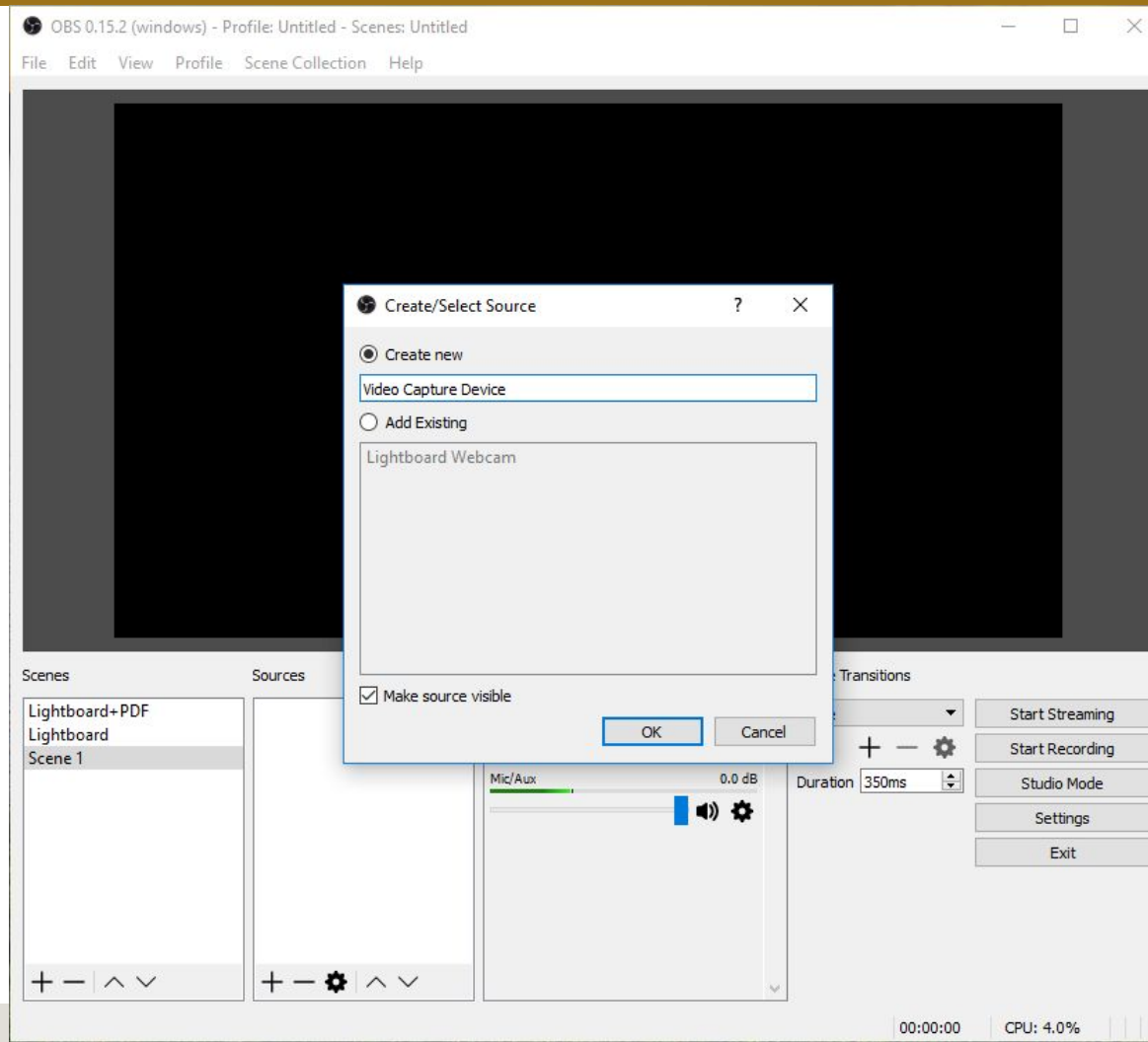
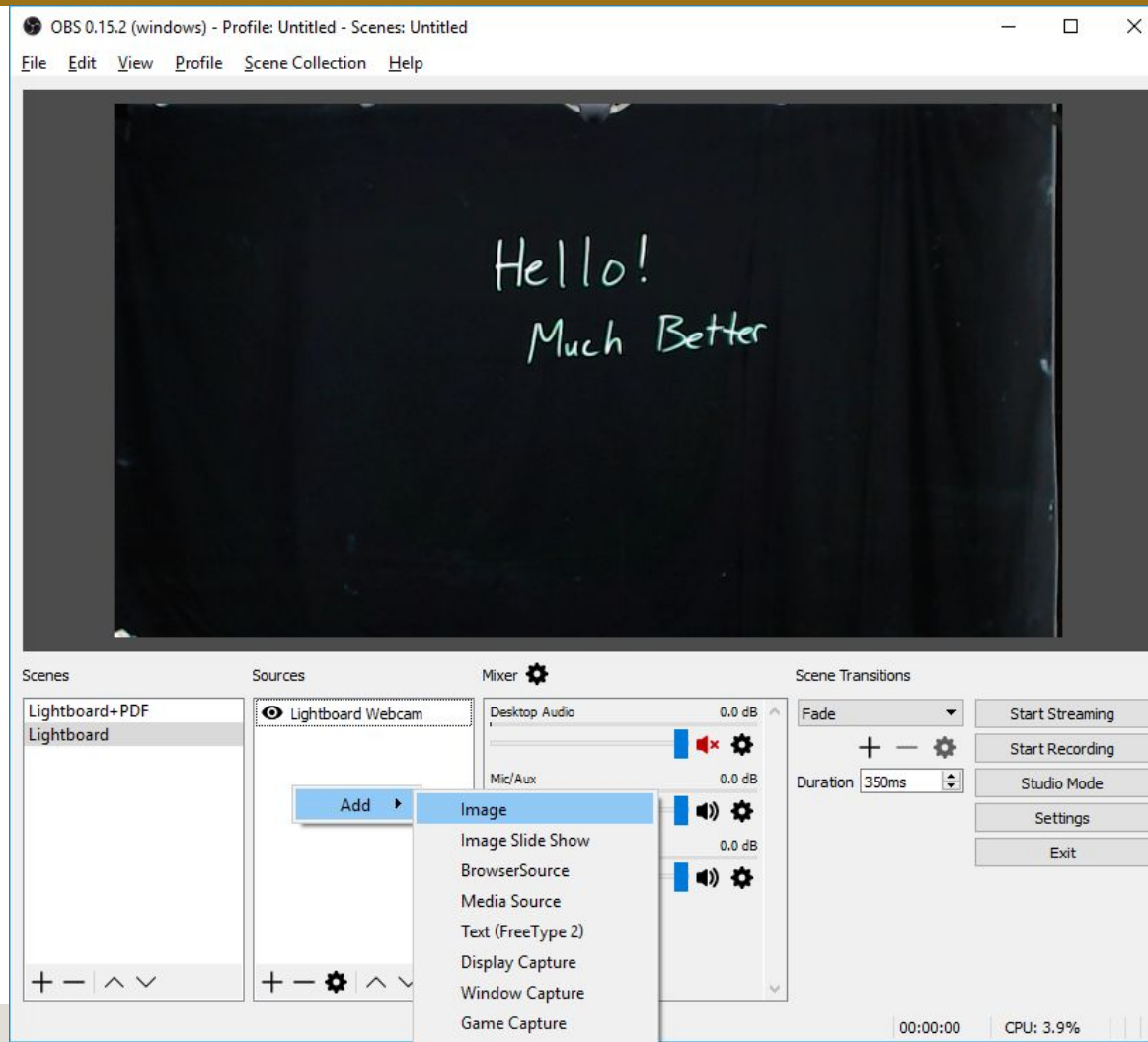# OBS Guide - Webcam Source Settings

OBS Guide - Backwards Webcam

OBS Guide - Fixing Backwards Webcam
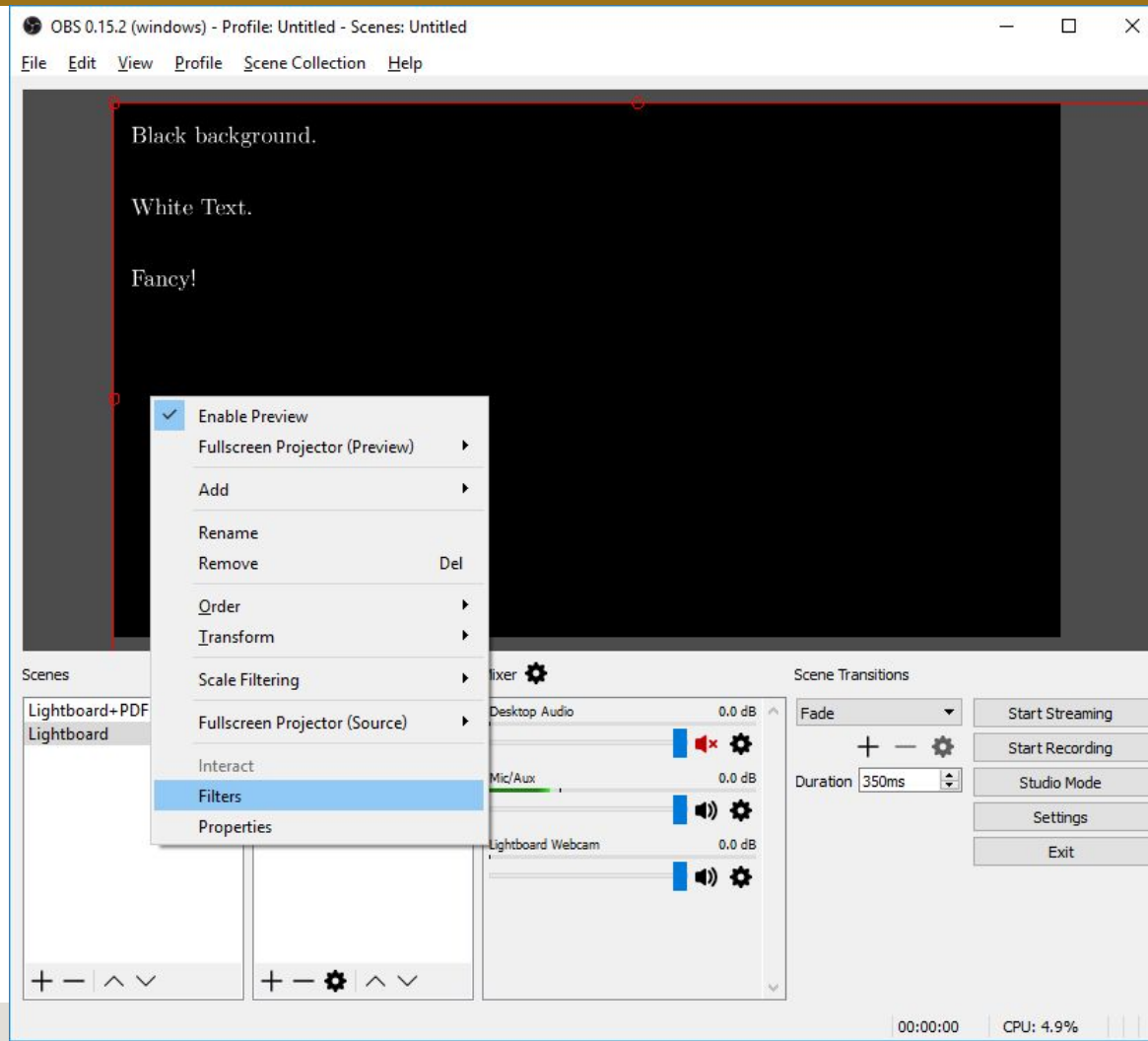
OBS Guide - Add Transparent Overlay
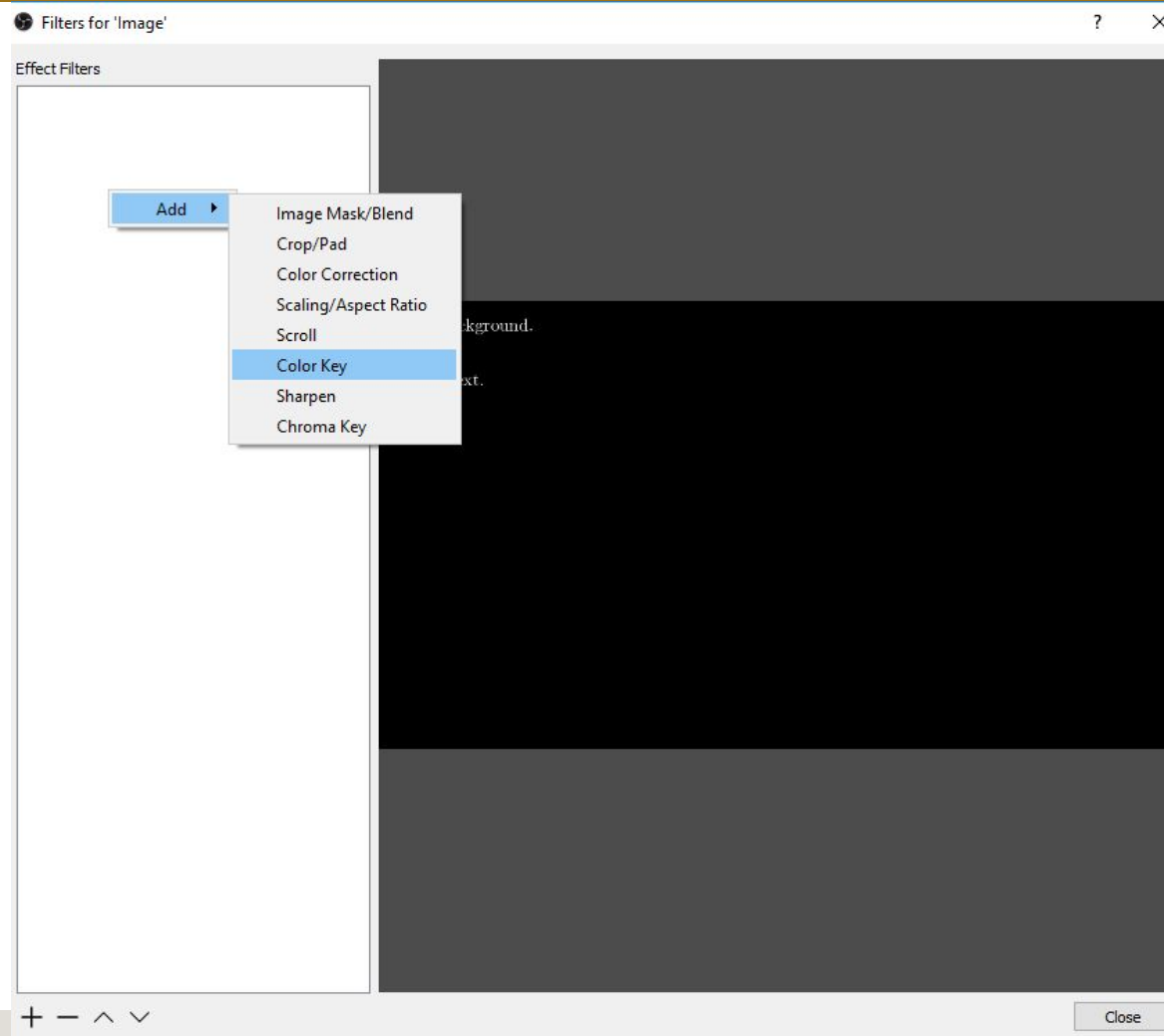
OBS Guide - Overlay Image

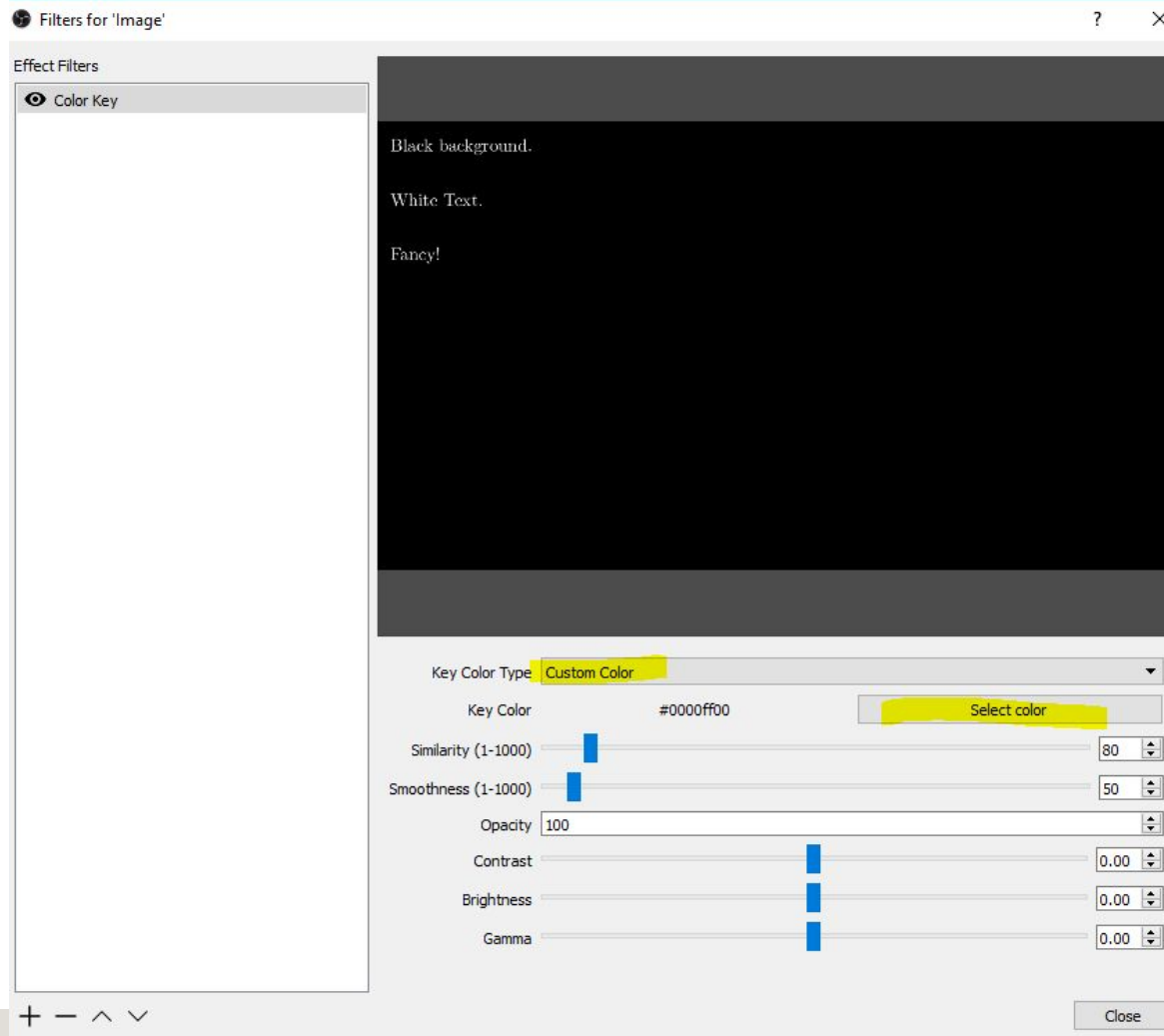Black background.

White Text.

Fancy!

OBS Guide - Make BG Transparent

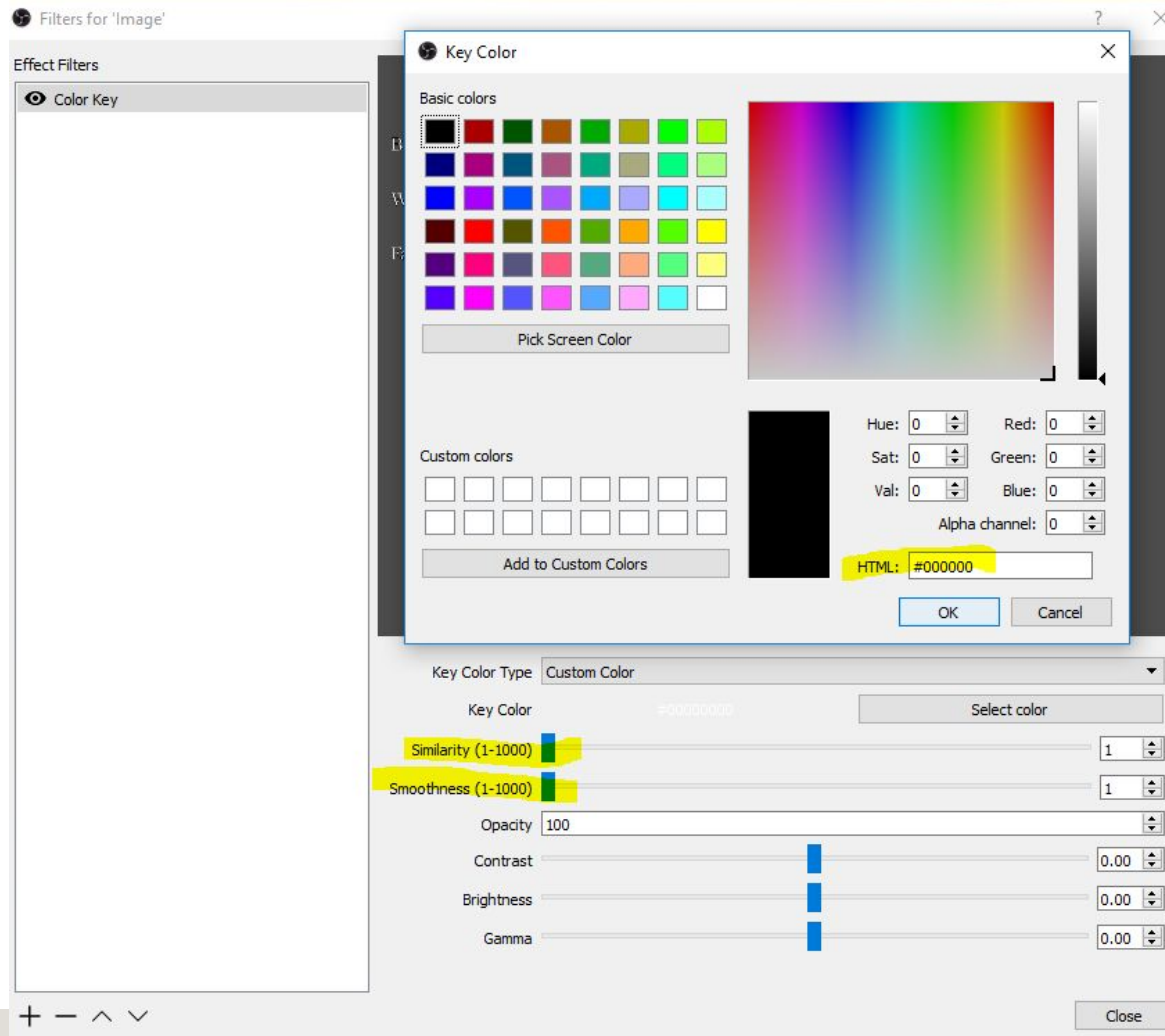# OBS Guide - Set Transparency (Key)
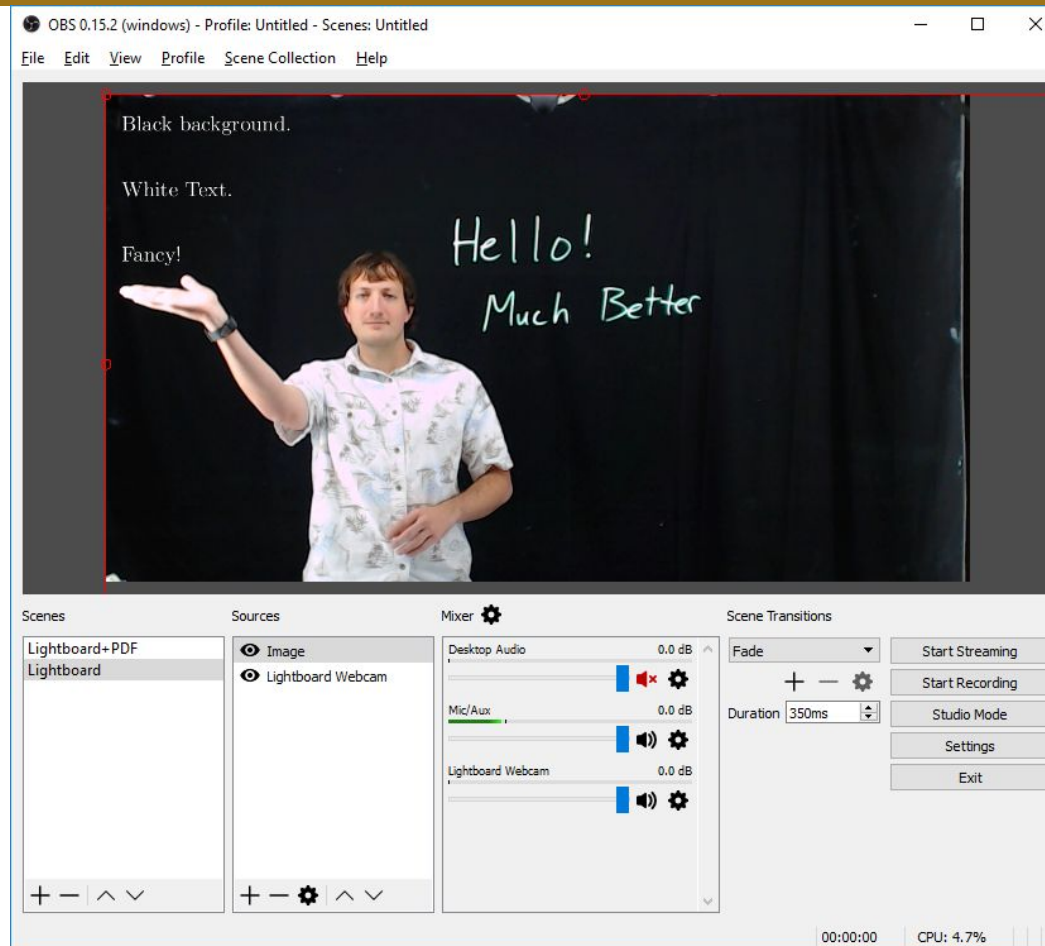
OBS Guide - Setting "Black" Color Key

OBS Guide - Setting "Black" Color Key

OBS Guide - Final Result

Saved "scenes" eliminate pre- and post-production for future videos.

Applications

- ☐ 100+ videos so far! (2-5 per week)

- ☐ Short after-class videos

- ☐ Solution videos

- ☐ Recorded conferences

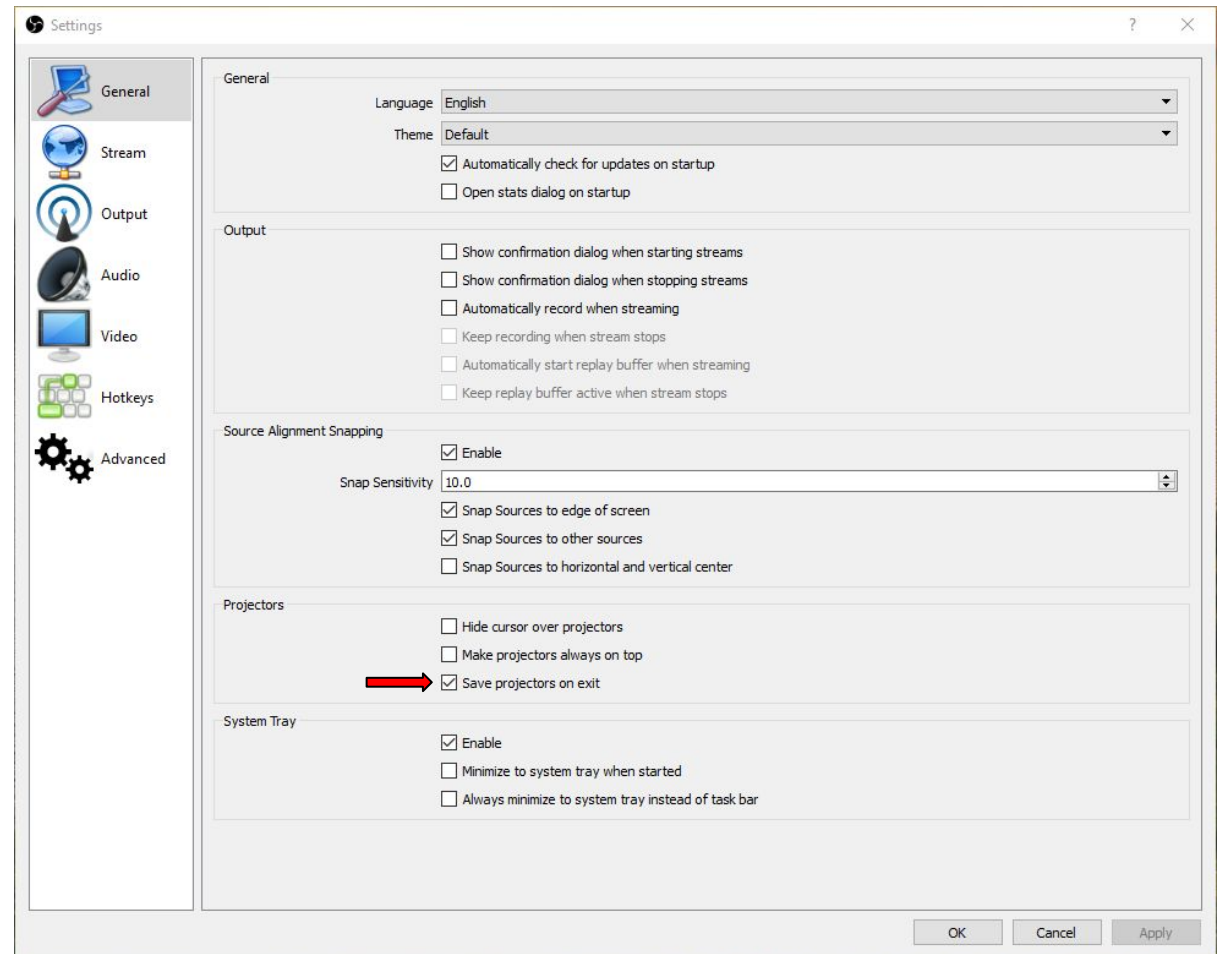- ☐ Overwhelmingly positive student responses

Thank you!

Tom Mahoney
tmahoney@emporia.edu

OBS Settings - General
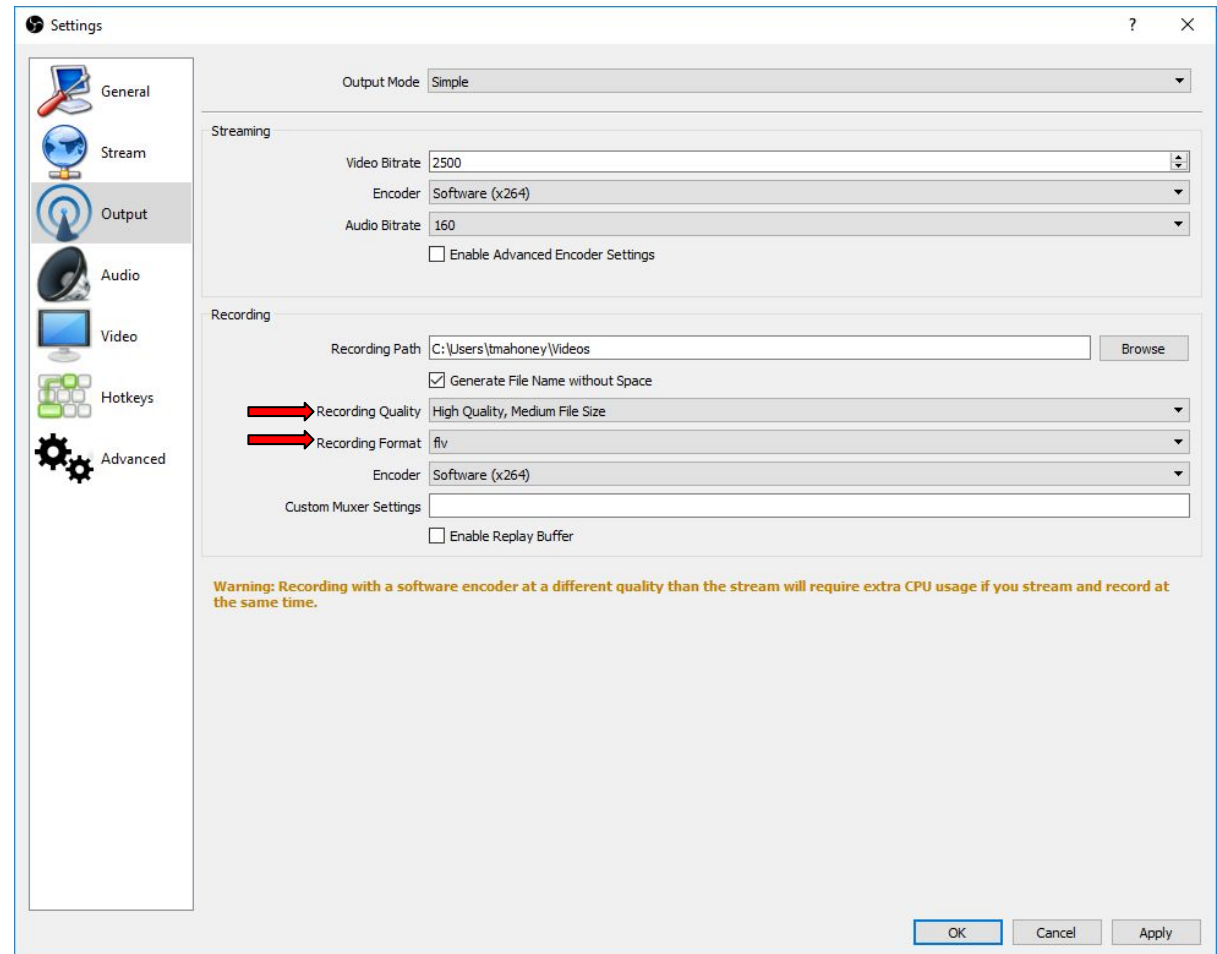
Check "Save projectors
   on exit"

OBS Settings - Output

Recording quality:
"Same as stream" - large files, slower computers
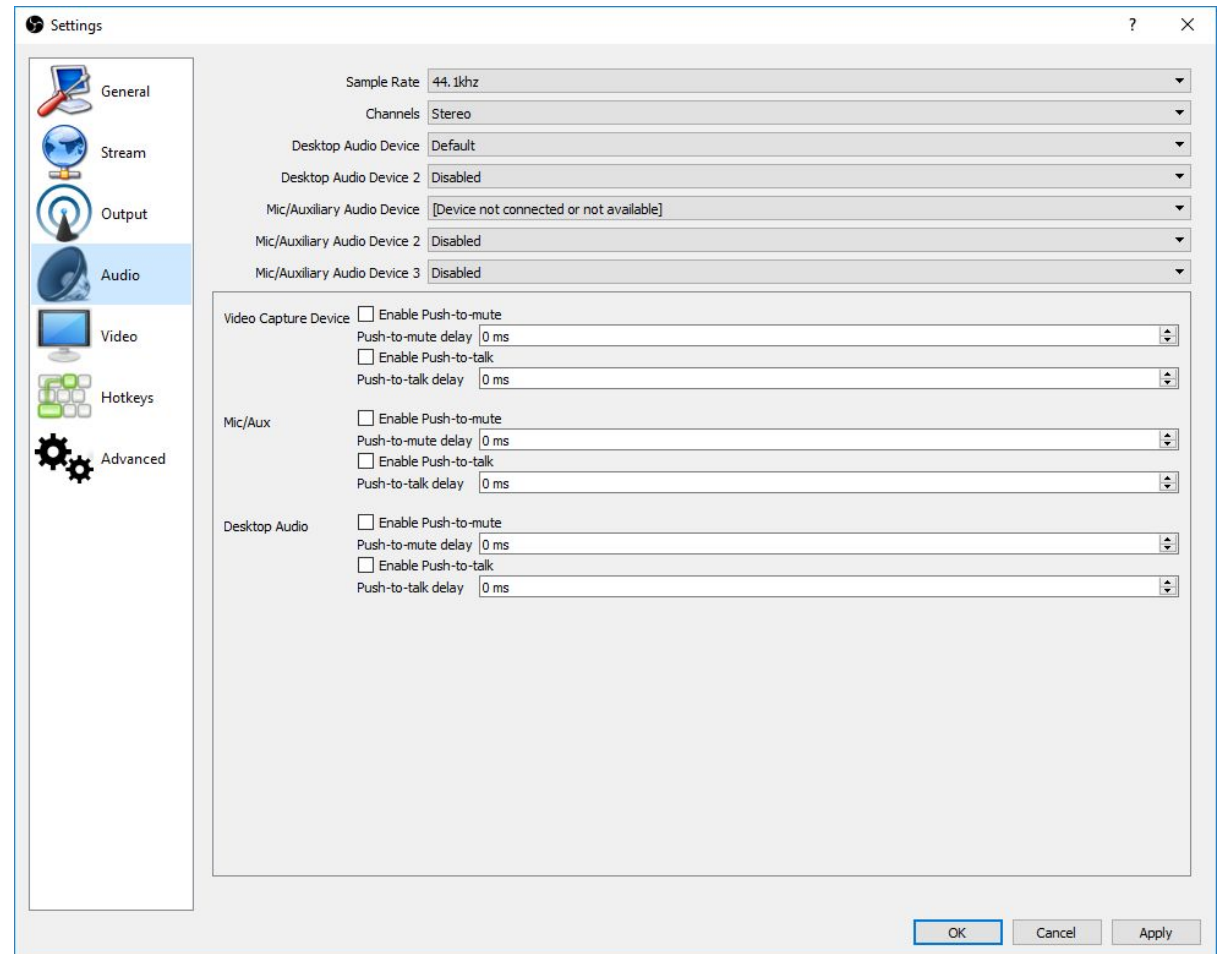"High Quality" - smaller files, more CPU intensive

Recording format:
"flv" - download VLC to view
"mp4" - more standard format

OBS Settings - Audio

May need to specify
desired microphone in
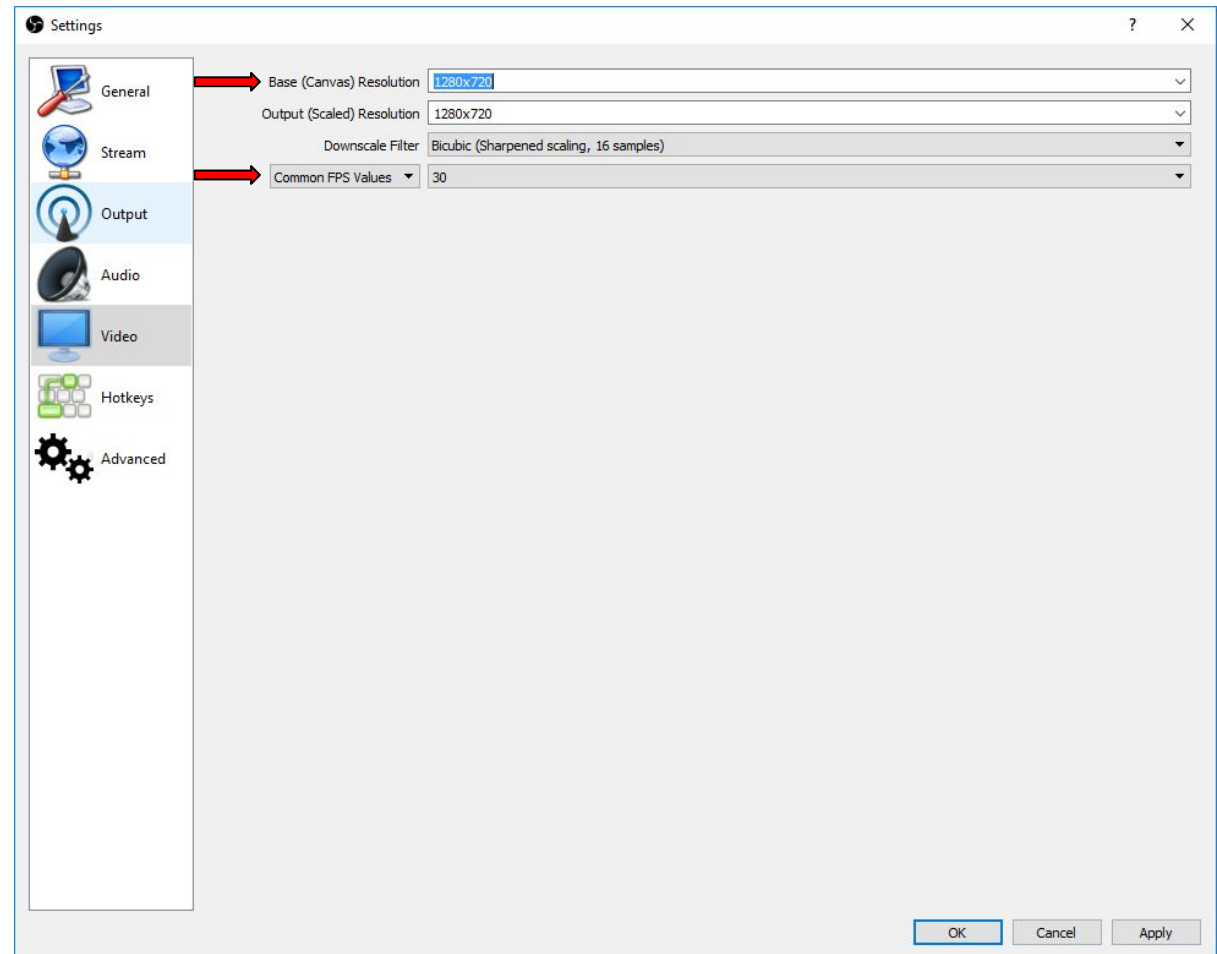dropdown menus

OBS Settings - Video

Keep Base and Output resolutions the same

1920x1080 for full HD (better computers)

1280x720 for smaller files (slower computers)
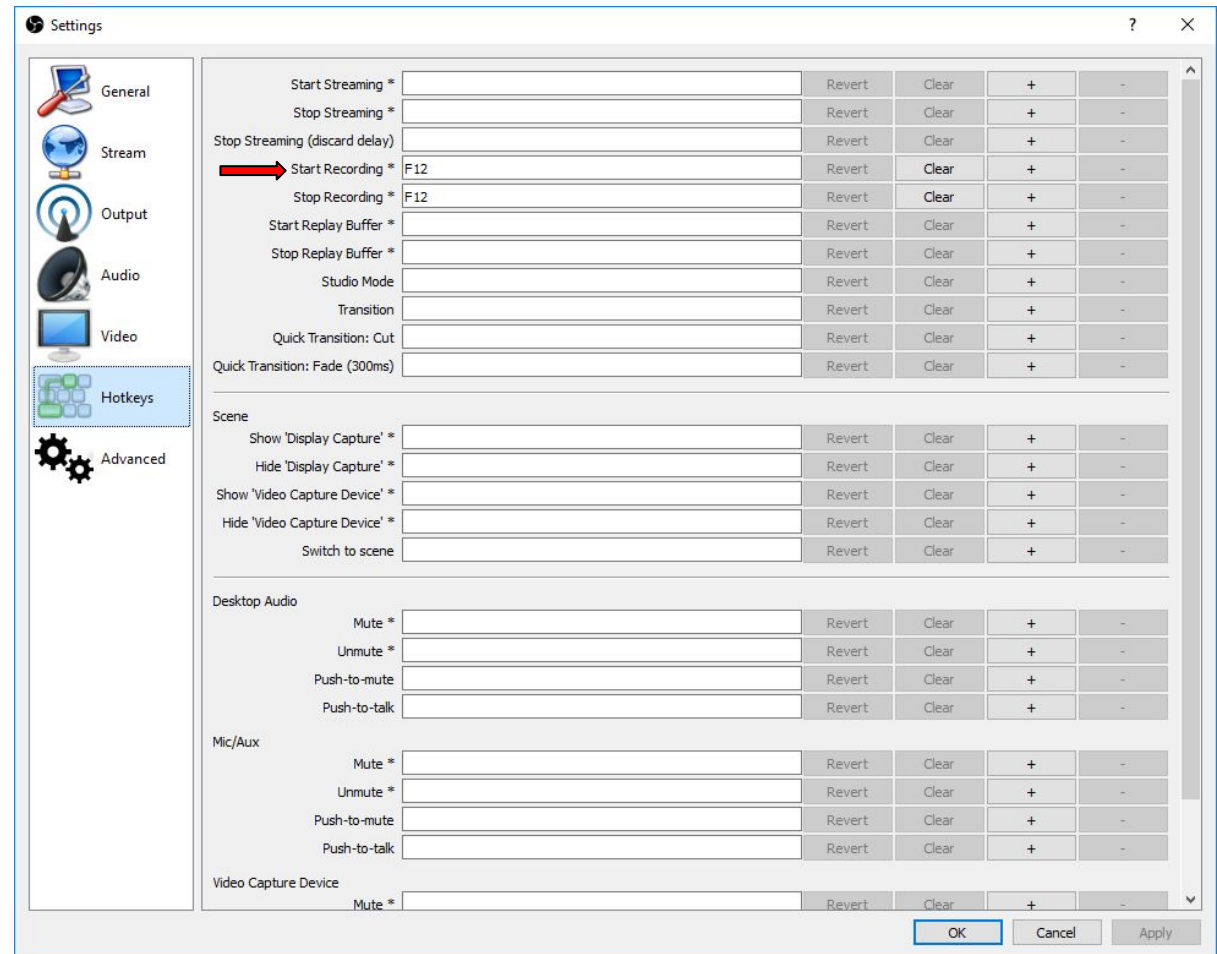
30 or 60 fps recommended

20fps for slower computers

OBS Settings - Hotkeys

Set start/stop recording key
  (may be the same)

OBS Settings

☐ I don't change any settings in "Stream" or "Advanced"