3D Scanning / Photogrammetry Tutorial

3D Scanning Room as Library Resource:

The 3D Scanning Room, located in the Dimensions Lab, within the WSU Libraries is available to students, staff, and faculty during staffed hours. A staff schedule can be found on the Dimensions Lab website. In the future we hope to acquire a method of checking out the room that does not require staff to be present.

3D Scanning Setup:

The room is equipped with lighting, interchangeable backdrops (white, black, green), and a turntable for rotating the object (ideal for objects up to 20" X 20" X 20" in size). Digicam is used to control the 3 DSLR cameras to take photos of the object you'd like to scan. These can then be stitched together in RealityCapture.

Using Digicam v2.1.6

The first step is to set path to save files. You can do this under Session or on the right-hand side of the screen using the gear icon. We recommend you save images in a folder you create within the Documents folder. When you are satisfied with the results of your images it is recommended you back them up to disk.
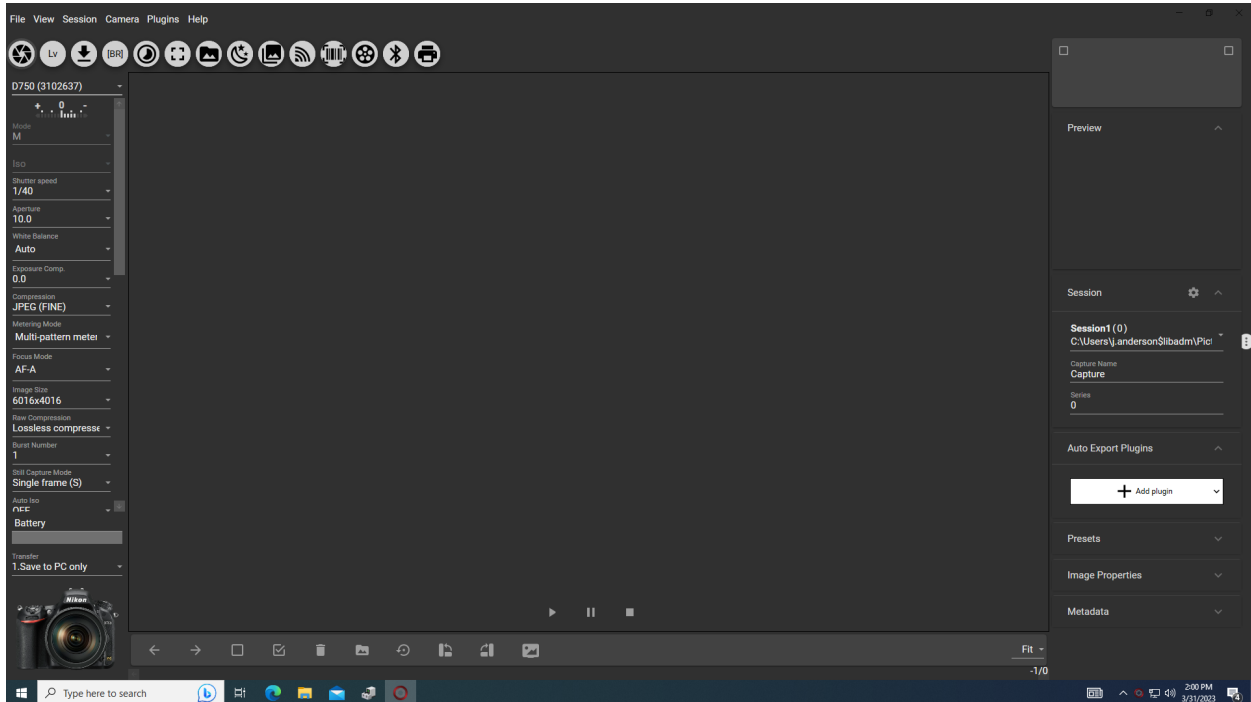

To begin, click the downward arrow/carrot to expand. You should see 3 cameras listed. In this case you see a D750 (Nikon), followed by a number identifier in parenthesis. If not, turn on the camera sliding the switch to On, press OK through any onscreen message on the camera and check again.
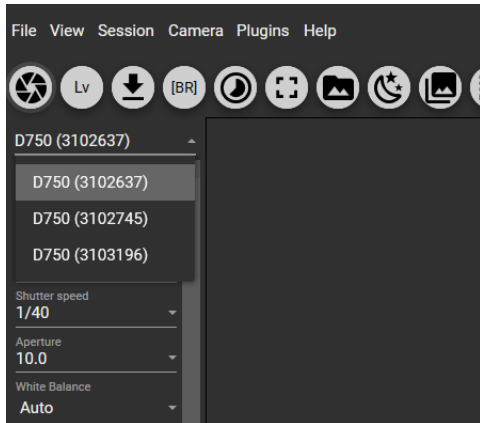
On occasion the computer will lose sync of the USB devices and they won't show up. To make the computer see the cameras you may need to unplug the blue extension cables and reseat them for each camera. This usually resolves potential issues with cameras not showing up.
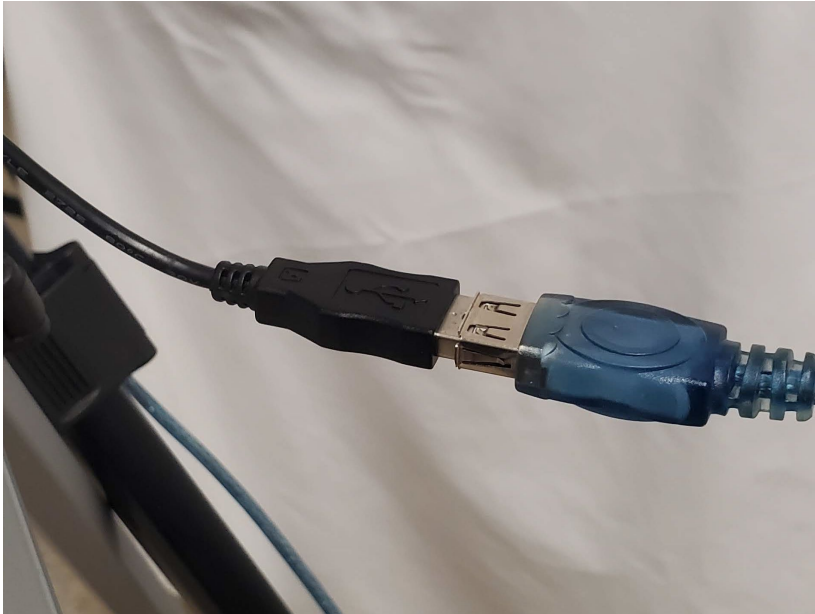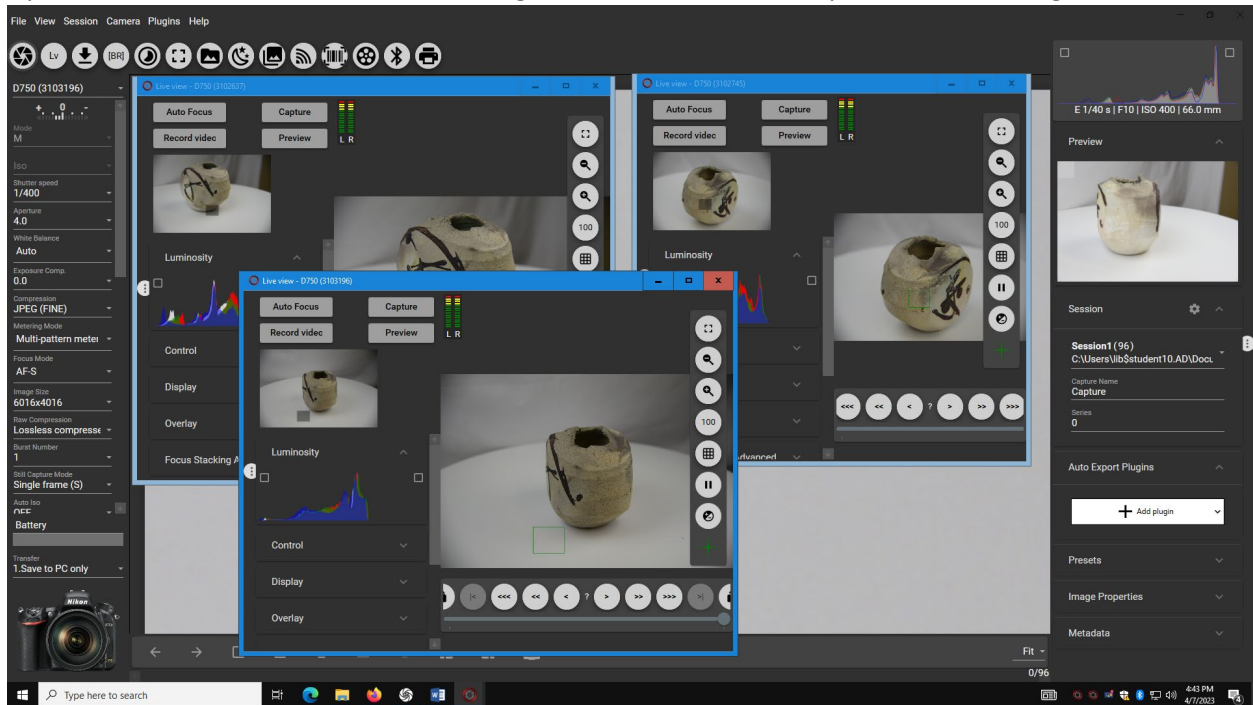
Select one camera from the drop down and click on Lv, or Live view
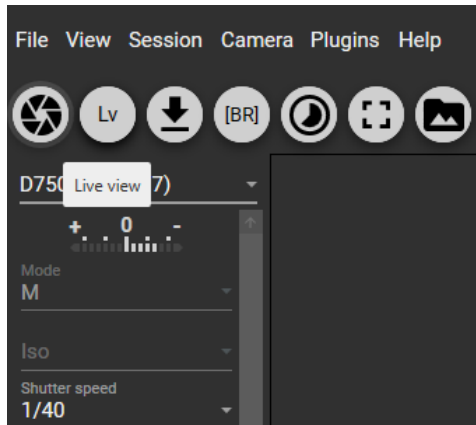
Live view opens a control window for the selected camera.
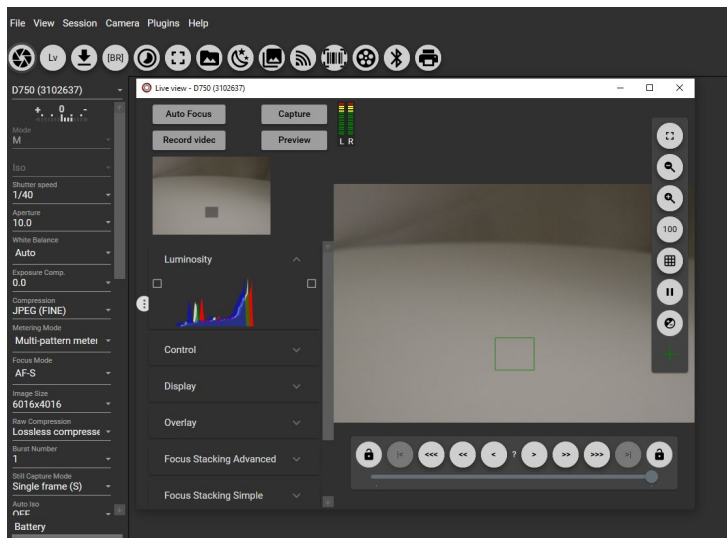
Open a Live view for each camera, selecting the camera from the drop down and clicking Lv.


Each camera's settings should be configured to capture the best quality photo possible. Press Preview to verify the quality of the image prior to saving an image. For best results, set each of the cameras heights to different perspectives and angles of your object. It is recommended you use the lighting and adjust camera settings as needed – specifically Shutter speed and Aperture. You might also adjust the image size to match the detail required, just keep in mind a larger the file size will require more processing.

When ready, turn on the turntable. The switch is located near the rear right side.

Press the Auto Focus button on each camera.

Then expand the Control section as shown to set Capture delay and Capture Count. Here you will set the delay between each photo and how many pictures you want each camera to take. This allows you to use the turntable to spin the object, while taking photos.
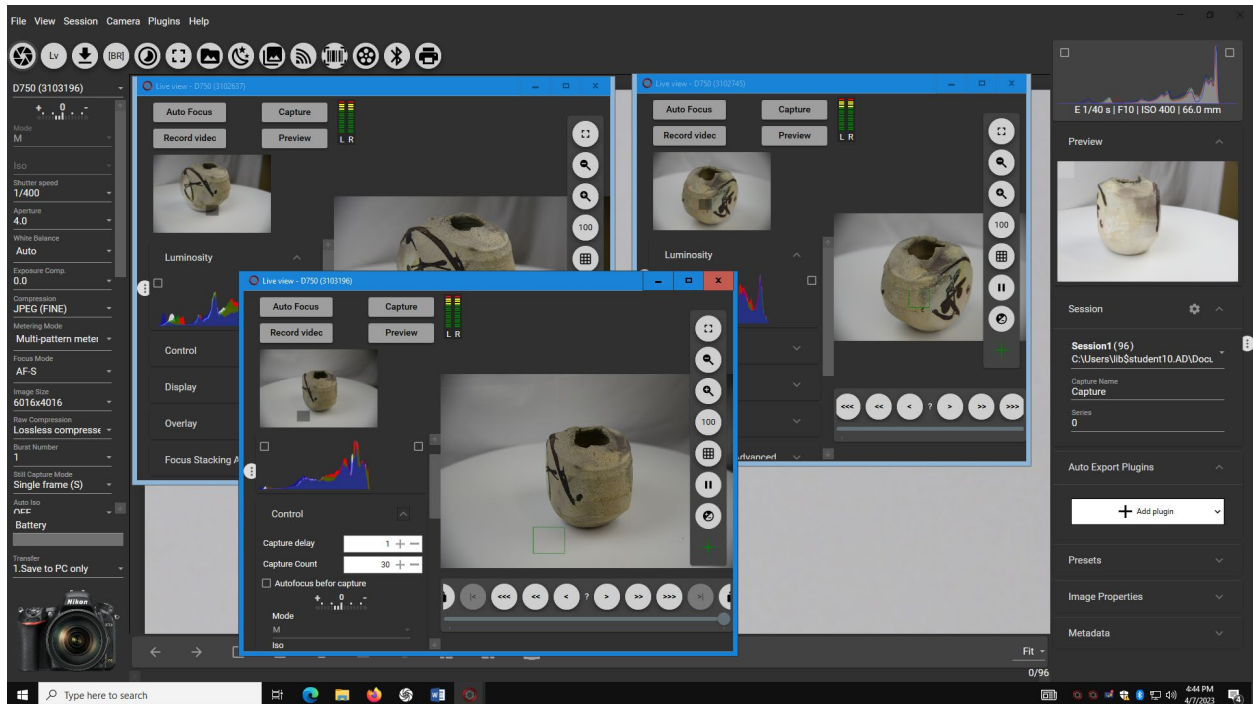

When ready, click Capture for each Live preview window. This should generate a steady stream of photos that will save to the desired location.

When finished, browse to the location of your saved images and make sure all the images in this folder are what you'd like use for the 3D Scan. Back up the images to disk.

Using RealityCapture

RealityCapture is software that Epic Games acquired. We acquired academic licenses for it after learning about from staff located in the Spark. It is installed it on all of our Dimensions Lab Windows 10 machines (not on Macs). RealityCapture can do some very advanced things, but here we will run you through a very simplified way of using it. This should allow you to get results easily. There are many online resources to learn the deeper features of this app, but that is outside the scope of this simplified tutorial.

Select Folder of images you'd like to 'stitch together'. The images in the folder should be the ones you want included, so remember to discard bad or unwanted photos prior to this step.
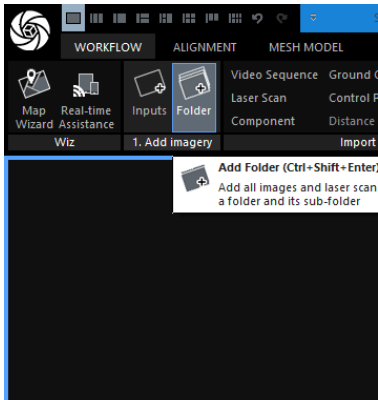
Select Start.
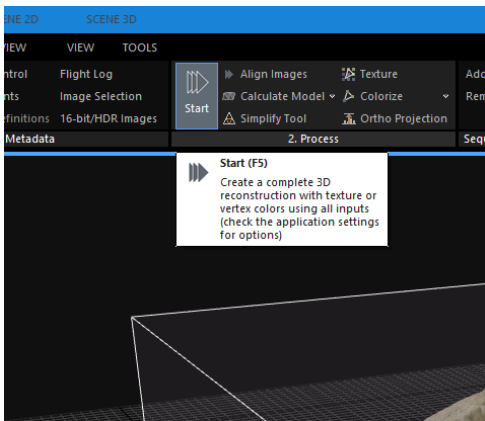
This process will take some time, which is dependent on the size of the images and the quantity of images.

After this, Export to the desired format and save to disk!