VIRTUAL REALITY APPLICATIONS

3D Organon VR Anatomy
Virtual reality anatomy atlas. Learn human anatomy with over 4000 realistic anatomical models/structures sided with quality text descriptions per body structure.

Calcflow
Manipulate vectors with your hands, explore vector addition and cross product. See and feel a double integral of a sinusoidal graph in 3D, a Mobius strip and it's normal, and spherical coordinates! Create your own parametrized function and vector field!

Google Earth VR
Google Earth VR lets you explore the world from totally new perspectives in virtual reality.

GoPro VR Player 2.2
360 Degree Video Player.

Kingspray Graffiti
Graffiti painting simulator.

Nano-one
Molecular visualization and modeling tool.

Sketchfab VR
Curated VR experiences showing creatures, locations, and more.

Sketchfab through Chromium
Sketchfab can also be opened via the Chromium web browser. The browser version has model browsing.

Storyboard VR
A prototyping and visualization tool that helps content creators, artists and designers use their existing skills to imagine and visualize VR experiences, in VR.

The Lab
Welcome to The Lab, a compilation of Valve's room-scale VR experiments set in a pocket universe within Aperture Science.

Tilt Brush
Tilt Brush lets you paint in 3D space with virtual reality. Unleash your creativity with three-dimensional brush strokes, stars, light, and even fire. (Play music to watch your art come to life!)

Universe Sandbox²
A space simulator that merges real-time gravity, climate, collision, and material interactions to reveal the beauty of our universe and the fragility of our planet.

Feel free to ask an STC employee for more information on the VR applications

Intro to Virtual Reality

GETTING STARTED

Virtual Reality (VR) is a relatively new technology that helps bring creativity and imagination to life. We use the HTC Vive at the STC. This workshop will teach the fundamentals of VR; how it works, what's possible, and what you can create/design with it.

Hardware

Headset
The headset is the main component of the HTC Vive. It has two screens per eye, each at a display resolution of 1080x1200. The headset also contains the sensors needed for VR, such as a gyroscope and a accelerometer. There is also straps and PID adjustments to fit your personal needs, see ***Adjusting The Headset.***

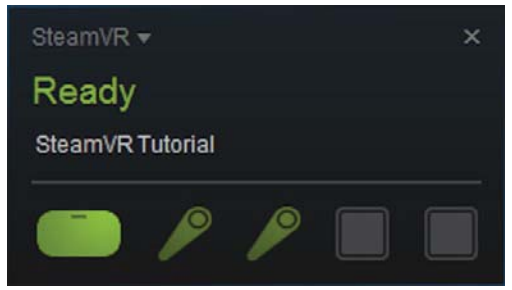
Controllers
There are two controllers included with the Vive. Like the headset, these too contain various sensors for motion tracking. On the sides of the controllers are the **Grip Buttons**. On the back of the controller is a **Trigger**. On the front is a **Trackpad** that can operate as a thumbstick or also as 4 face buttons (each side of the trackpad is a button). Finally, there are two small buttons on the top and bottom of the trackpad, these are the the **Menu/ Shoulder** and **System** buttons respectively.

Lighthouses
Lighthouses is the main equipment that tracks the the headset and controllers. Like the name suggests, they flash lights and sweep lasers across the room. The controllers and headset detect these lights and feeds back the information to the computer which is used to determines the position of the headset and controllers.

Link Box
The linkbox connects the computers to the headset. Input wise, it takes in a powersupply, USB 3.0 connection, and an HDMI Input. It outputs to the headset the HDMI connection and receives tracking information from the USB connection.

Computer
Virtual Reality is difficult to run on most computers, however at the STC we have a Alienware Aurora with a i7-7700 processor, 16gb DDR4 2400MHz, and a GTX 1080 video card. This gives us the power needed to run the HTC Vive at its fullest potential.

Getting Started



1) Turn on the computer, login into STC_01_User / STC_02_User, and launch Steam VR (If not already launched)

2) Disconnect the controllers from their charging ports and click the System button on each controller to connect them to the lighthouses.

3) Assure all hardware appear green on the SteamVR application. If not, see ***Troubleshooting.***

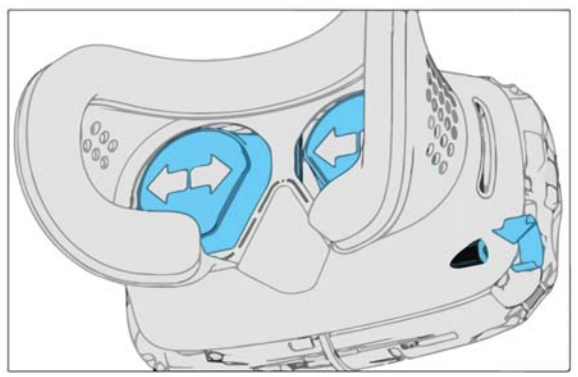
4) Launch Steam, it should automatically login with STC_01_User/STC_02_User. If not, login with the given password or ask an STC employee.

5) Put on the headset and adjust the straps and IPD to your fitting. See ***Adjusting The Headset.***

6) In VR, you should now see a waiting room, if so, congrats!

7) You can launch applications for VR directly from Steam via **Library > VR.** After selecting an application, click **LAUNCH IN VR** to launch the application. You can also launch steam applications while using the headset by selecting the system button. See ***Applications*** to see what applications are available.

Adjusting The Headset



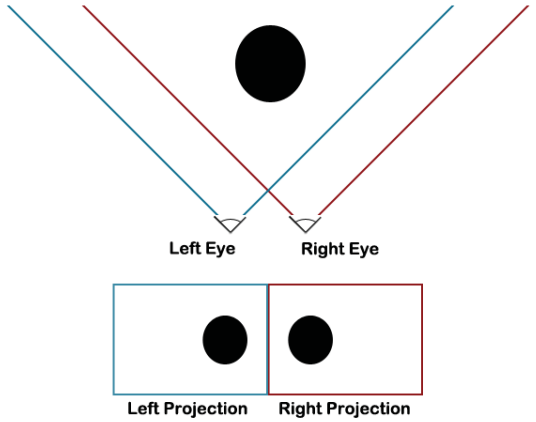
1) Loosen the side and back straps to the loosest settings.

2) Put the headset on from back to front, making sure the rear strap sits around the back of your head.

3) Hold the front of the headset with one hand and adjust the side straps a little at a time until the face cushion fits snug against your face but isn't digging in.

4) Tighten the top strap until it rests against your head. You want the weight to be distributed on the top and back straps, not on your face.

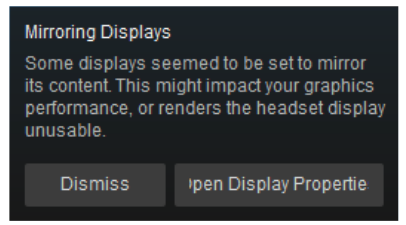
Adjusting The Headset Cont.



5) For the best experience, find your Inter-pupilary distance (IPD). IPD is the horizontal distance between your two eyes. To do this there is an app on the STC's iPads that can take a photo of you to determine your IPD. Ask an STC employee for assistance.

6) Use the knob on the bottom right side of the headset to adjust the IPD. While wearing the headset, you should see the IPD value appear.

Troubleshooting / FAQ



SteamVR Is Giving 'Mirroring Display Warning'

This message is due to both the monitor and the TV displaying. It shouldn't cause any issues so it can be dismissed or left alone.

'Headset Not Tracking' Error

This error is due to the headset not being visible to the light houses. It most scenarios this occurs when first starting SteamVR due to the headset being obscured from the lighthouses. Move the headset to the play area and the issue should be resolved.

The Walls of the Room Are Located Incorrectly and/or the Floor Is Too High or Too Low

You may want to run the room setup program through SteamVR. Steam will walk you through the correct steps to recalibrate the system.

Lighthouses Are Not Green In SteamVR

Make sure both lighthouses are facing each other and angled down between 35 and 40 degrees. It may take some time for them to resync and display as working correctly in SteamVR again.