Introdution to XR Technologies

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What is the VR Initiative?

XR, AR, MR, VR- What's the Difference?

XR is a blanket term used to discuss all AR, VR, and MR technologies. You can consider the X a place holder for one of the other descriptors.

XR

AR uses various sensors and cameras to overlay digital items onto our world. There is limited interactivity between the digital and the physical.

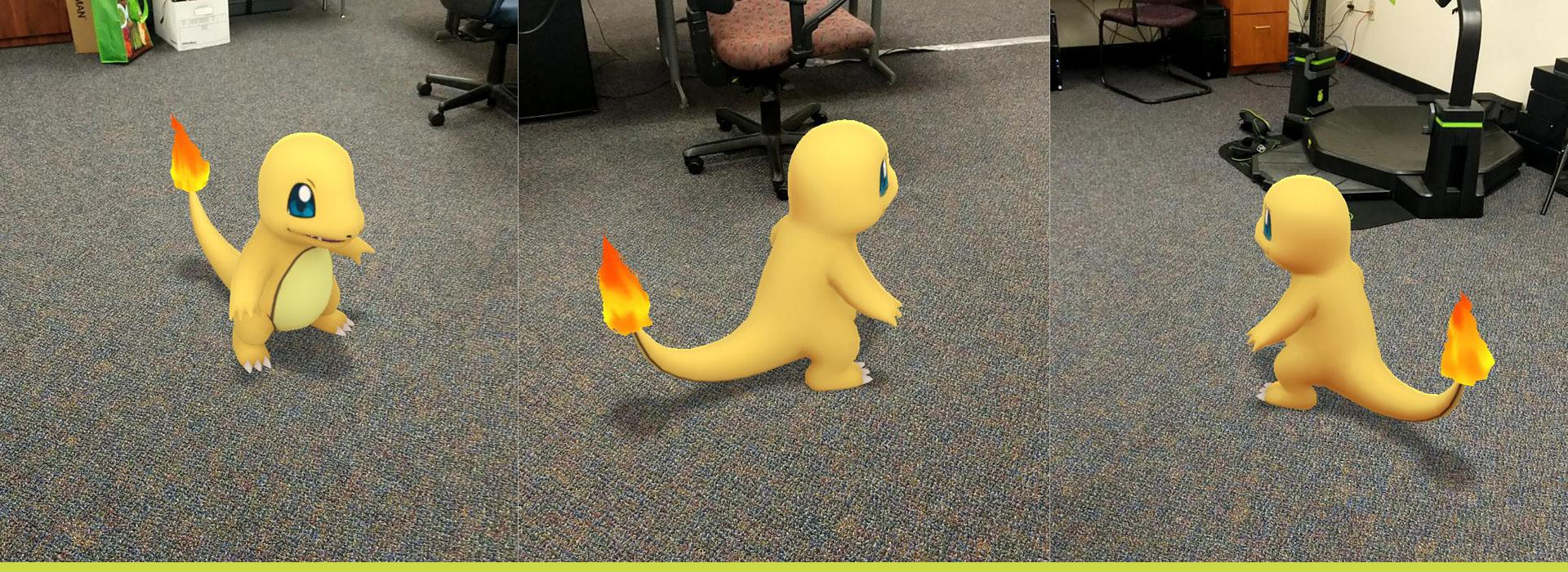
AR- Augmented Reality

MR can be considered the next step in AR technologies, where the digital items interact with and are influenced by our real world.

MR- Mixed Reality

VR uses computing technology to render a simluated world. Here there are little to no interactions with the real world.

VR- Virtual Reality



How Do XR Technologies Work?

Mobile AR is the most accessible form, and is already seeing widespread use.

AR- Mobile

AR headsets use holographic projections to display images onto clear lenses.

AR- Headset

Mobile VR can either be a low power headset, or a mobile phone. What they lack in power they make up for in portability.

VR- Mobile

Oculus Quest & Vive Focus

Standalone VR platforms bridge the gap between Mobile and PC powered VR

VR- Standalone

Oculus Rift S & Valve Index

PC powered VR headsets come in many varieties, but offer the most features and power.

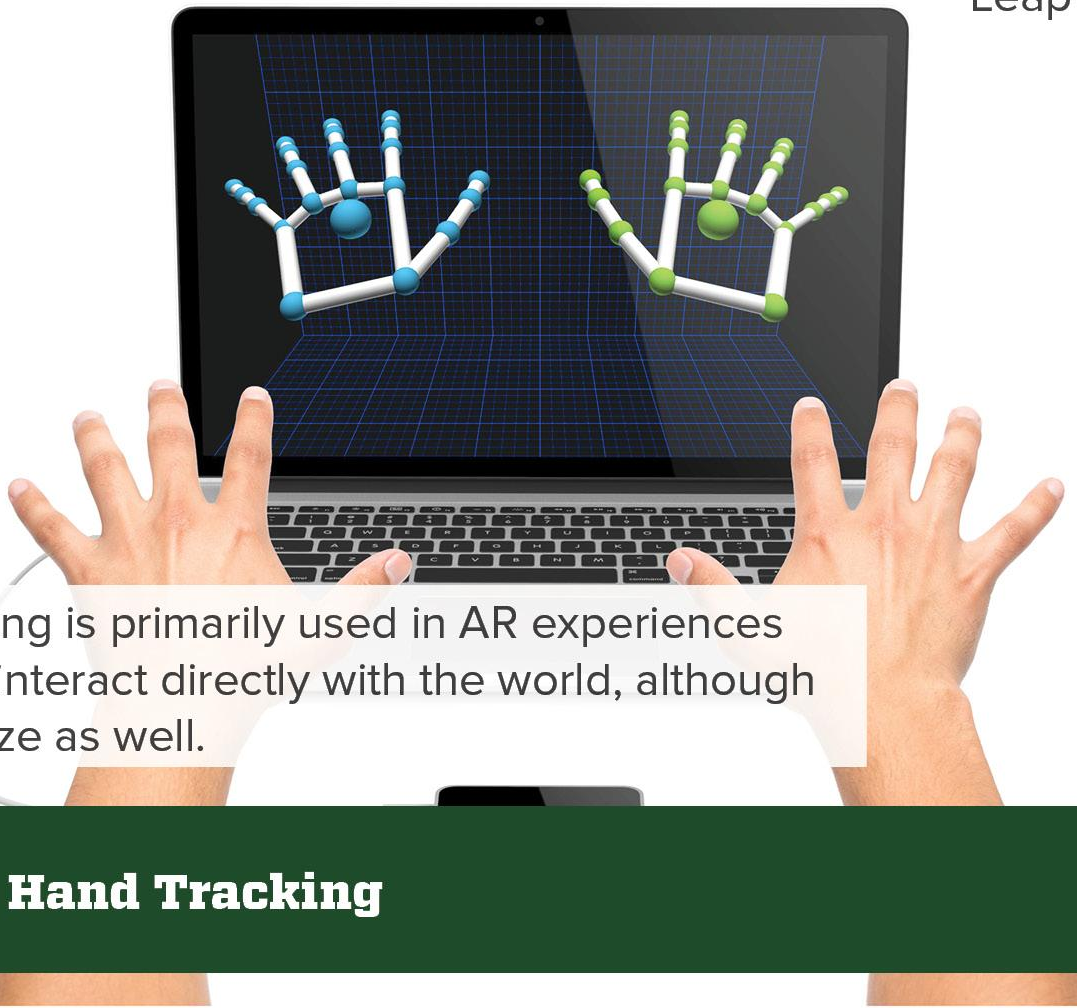
VR- PC Powered

Oculus Touch

Many VR headsets utilize motion controllers, while they all look different they function very similarly.

Controllers

Leap Motion



Hand tracking is primarily used in AR experiences where you interact directly with the world, although VR can utilize as well.

Hand Tracking

Samsung Gear 360

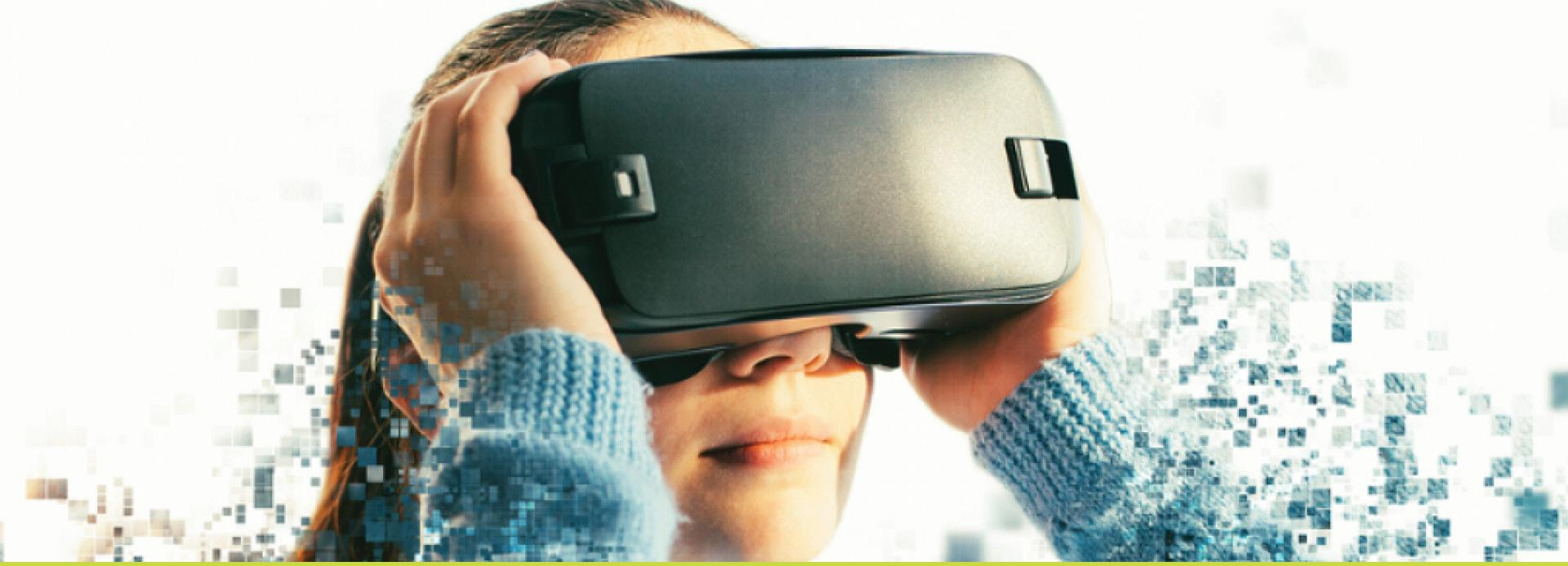
360 Camera use multiple lenses to capture many different angles, then stitch the footage together.

360 Degree Cameras

Vive Tracker Tennis Racket

Apart from headsets and controllers, many other devices have been made to expand upon XR experiences.

Peripherals



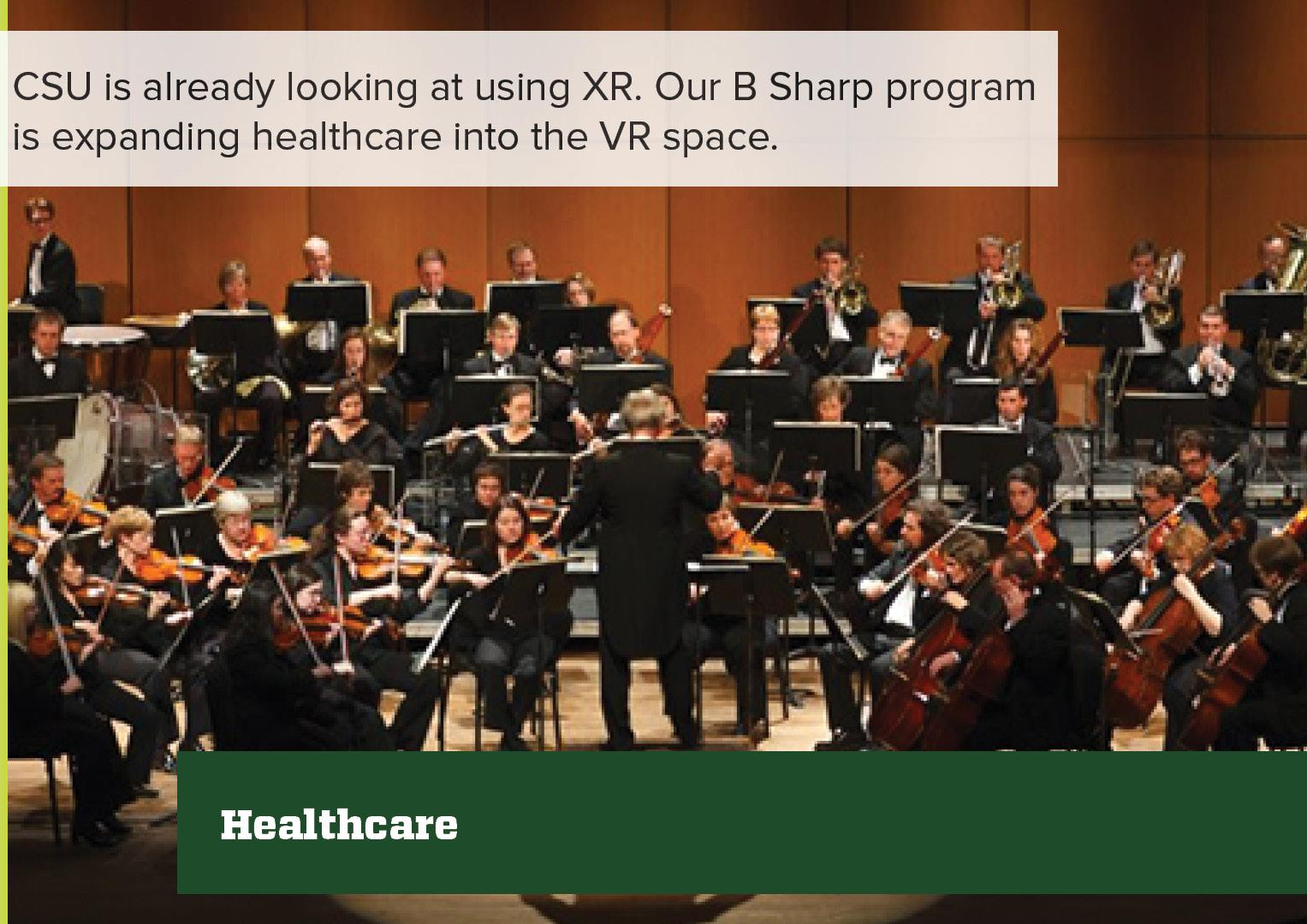
How is XR Used?

Gaming and Entertainment is one of the largest uses of XR technology

Gaming & Entertainment

Large Scale Entertainment

CSU is already looking at using XR. Our B Sharp program is expanding healthcare into the VR space.

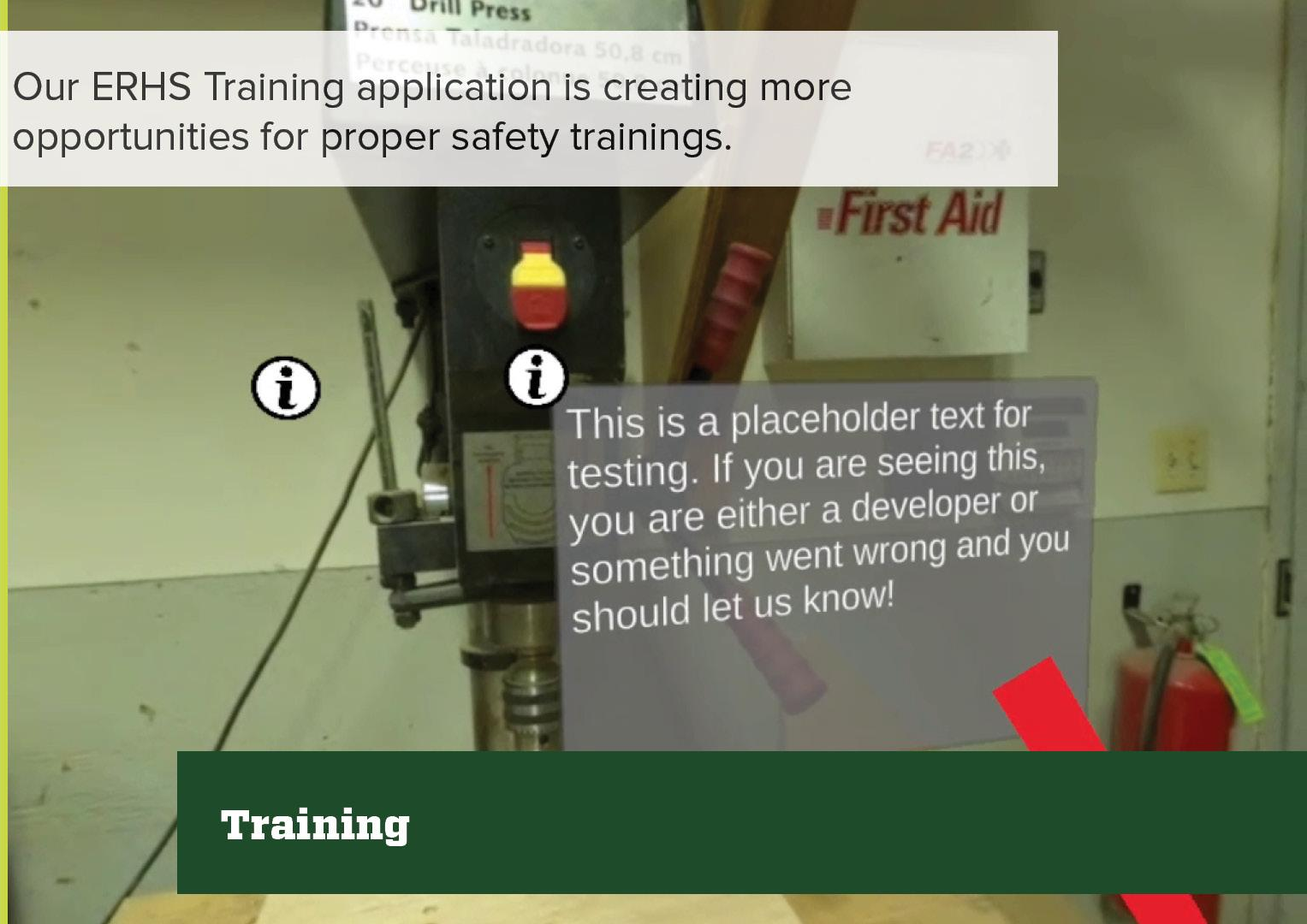


Healthcare

Applications like CSU Biomedical Science VR are changing the educational experience.

Education

Our ERHS Training application is creating more opportunities for proper safety trainings.



Training

Want To See More?

HIFF AR/VR/Dome Films & Gala | SEPT 6, 2019

XR RamReality Symposium | OCT 18, 2019

XR RamHack | OCT 18-20, 2019

Upcoming Events

Virtual Reality Lab | Johnson Hall 120A | Mon-Thurs 10AM-2PM

CSU AR/VR Club | Meeting times TBD

Planning for XR | SEPT 12th, OCT 10th 5:30-6:30PM

Introduction to Unity | SEPT 19th, OCT 17th 5:30-6:30PM

Implementing XR into Unity | SEPT 26th, OCT 24th 5:30-6:30PM

FCMoD Dome Lab | facebook.com/groups/DomeLab/

On Campus Resources

Questions?

Live Demos