



Laboratory Training: Virtual Reality (VR)

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Benefits of VR Training

Built-in Instructor

- One-on-one attention from a digital instructor who responds to individual actions and gives specific feedback, teaching constantly across every learner experience

Mobility

- Headsets can be stored and transported to any location and are small enough to fit into a backpack. All you need is an initial WiFi connection and a small space to be able to learn from anywhere.

Knowledge Retention

- VR training delivers 3-4x higher information retention compared to traditional learning methods such as lectures, videos, or reading. Learners build confidence that translates over to real job skills.

Accuracy of Content

- VR training is built in collaboration with SMEs, giving learners a true sense of the tasks and ensuring they're ready to work on day one.

Cost Effective

- Perform real-world training without an expensive physical facility or purchasing supplies for a training lab. CDC training simulations are updated with the latest equipment, regulations, and processes that are used on-the-job.



Timeline of DLS VR Training Development

2019

- Began developing VR training
- Pilot-tested VR training with internal staff

2020

- Released CDC's first VR laboratory training course, LabTrainingVR: Biosafety Cabinet Edition

2021

- Released new VR training course focused on PPE
- Developed multiplayer VR programming
- Created proof-of-concept for LabTrainingVR: OneLab Edition - a virtual, multiplayer environment

2022

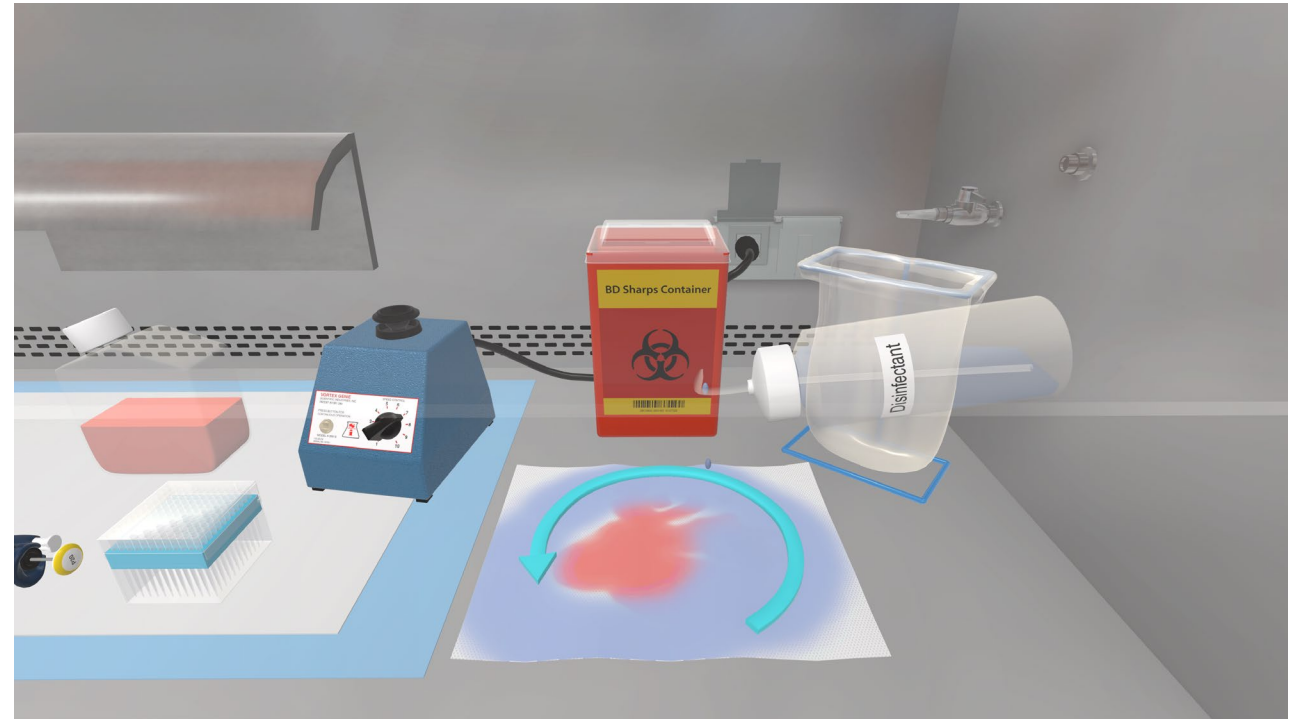
- Ported and released LabTrainingVR: Biosafety Cabinet Edition on OculusQuest
- VR-ready laboratories ("pushpack" program)
- Topic-specific, multiplayer laboratory training



Lab Training VR: Biosafety Cabinet Edition



https://www.cdc.gov/labtraining/training-courses/vr/labtrainingVR_BSC.html



<https://www.youtube.com/watch?v=m92OQCAvQcs>

LabTrainingVR: Biosafety Cabinet Edition

A demo of the LabTrainingVR: Biosafety Cabinet Edition was provided during the CLIAC November 2022 meeting.

Lab Training VR: PPE Edition



https://www.cdc.gov/labtraining/training-courses/vr/labtrainingVR_PPE.html



https://www.youtube.com/watch?v=FuX9_cNrZ0w

LabTrainingVR: PPE Edition

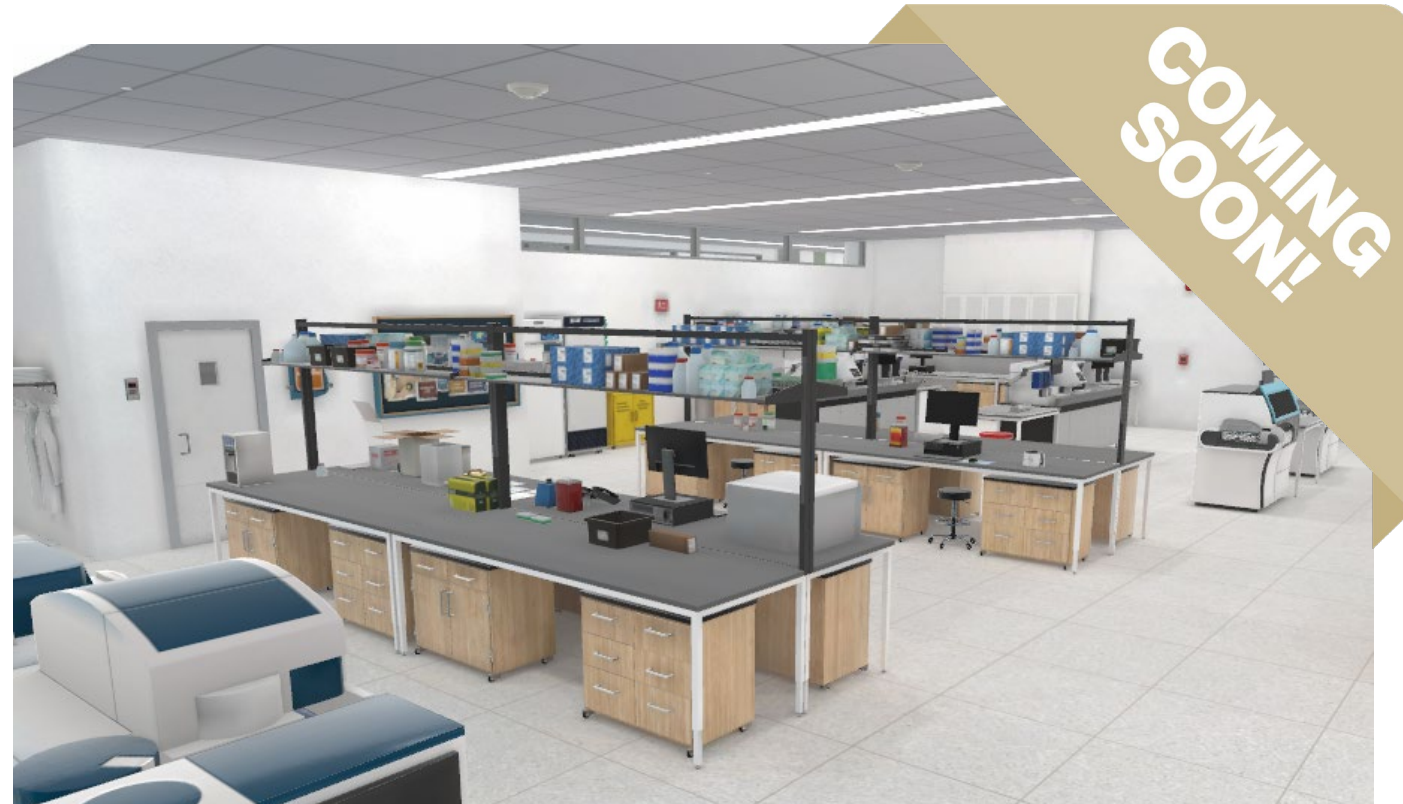
A demo of the LabTrainingVR: PPE Edition was provided during the CLIAC November 2022 meeting.

OneLabVR



50,000+ square feet of laboratory space with 100+ custom-built pieces of laboratory equipment including:

- Rotary microtome, tissue processor
- Dark field microscope
- Incubators, refrigerators, freezers
- Real-Time PCR machines
- Centrifuges, microfuges
- Biosafety cabinets / fume hoods
- Chemistry analyzers
- Microbial identification systems



Sneak Peek



CDC VR Laboratory Training Website



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Virtual Reality Laboratory Training

Public health emergencies demand the availability of diverse and effective distance-based education and training options for public health and clinical laboratory professionals. To keep pace with the evolving training needs, DLS has blended innovative technology and instructional design principles by adding Virtual Reality, or VR, to its laboratory training and workforce development toolbox.

VR offers laboratory professionals the opportunity to apply, assess, and improve their skills in a safe and controlled learning environment. In other words, VR simulations allow learners to make costly mistakes while learning new skills with no real-world consequences.



[View Transcript](#) [Low Resolution Video](#)

www.cdc.gov/labtraining/VR.html

Questions?

VR@CDC.GOV



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

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