



# A positive pressure testing booth for sample collection

**Design files for a portable testing booth that facilitates safe practice of sample collection procedures on patients with infectious pathogens.**



## Applications

- Diagnostic testing sites at hospitals and drive-up testing locations
- Booths for workers (e.g. ticket takers) in areas of high air pollution.

## Overview

Researchers at the University of Minnesota have designed a portable isolation system for facilitating safe practice of sample collection procedures on patients with infectious diseases such as COVID-19. This testing booth is made of polycarbonate, with glove ports, operated under positive pressure with a HEPA filter. The HEPA-filtered positive pressure environment keeps the healthcare worker safe from infectious aerosol droplets inside the booth while maintaining access to a patient outside. Fitted with glove ports, this booth allows healthcare workers to perform multiple sample collection procedures, while the exterior of the booth can be sanitized quickly using typical procedures between patients. In addition, the material and design of this booth allows for easy manufacturing and deployment, making it a realistic approach to rapidly build life-saving protective barrier enclosures for healthcare providers.

## Key Benefits & Differentiators

- Reduces exposure of infectious aerosols and droplets from patients to care providers
- Facilitates safe practice of sample collection - nasal and oral swabs, nasal wash, etc.
- Easy to manufacture with commercially available parts
- Portable and easy deployment in outdoor locations
- Increases throughput and may significantly reduce the usage of PPEs

## Technology ID

2020-359

## Category

Express License  
Engineering & Physical Sciences/Design Specifications  
Engineering & Physical Sciences/Instrumentation, Sensors & Controls  
Life Sciences/Human Health  
Life Sciences/Medical Devices  
COVID-19

## Learn more



## **Phase of Development**

Booth tested in an operational environment. Several booths are [in use](#) at healthcare services for testing COVID-19 patients. Design files available for download.

## **Researchers**

Christopher Hogan, PhD

*Professor and Director of Graduate Studies, Mechanical Engineering*

[External Link](#) (cse.umn.edu)

## **Ready for Licensing**

The design files are now available for download at no cost upon execution of the license agreement (provided on the right column of this page). Please contact us to share your business' needs and your licensing interests in this technology.