



# DESIGN AND EPIDEMICS: INNOVATION IN THE FACE OF CRISIS

**COOPER  
HEWITT**



Smithsonian Design Museum


Bottom center: *GHESKIO Cholera Treatment Center*, MASS Design Group, Port-au-Prince, Haiti



## INTRODUCTION

As the nation's design museum, Cooper Hewitt was already planning for an exhibition exploring the intersection of health care and design before COVID-19 struck. The pandemic now offers a specific, urgent lens through which we examine the application of design methods to human health.

In Fall 2021, Cooper Hewitt will present *Design and Epidemics: Innovation in the Face of Crisis*. This project tells an unfolding story with enormous consequences for all people. **Thank you for considering your support.**

A woman with curly hair is wearing a transparent, form-fitting Leaf HEPA Mask. She is also wearing white earbuds and a grey zip-up hoodie over an orange top. The background is a blurred outdoor scene with a body of water and distant buildings.

“Individual designers, doctors, engineers, inventors, entrepreneurs, and activists have led a design revolution since the outbreak of COVID-19.”

– MASS Design Group

# DESIGN AND EPIDEMICS: INNOVATION IN THE FACE OF CRISIS

OPENING FALL 2021

Epidemics trigger the discovery of new ways to treat and prevent disease, leading to lasting changes in hospitals, homes, workplaces, and cities. *Design and Epidemics: Innovation in the Face of Crisis* explores designs that have had a profound impact on human health over the course of history and examines how designers, doctors, engineers, and others have worked with astonishing speed to develop new products in response to COVID-19. Through an experiential exhibition, public programs, and an online public platform, we will invite audiences everywhere to engage in dialogue and imagine how we might design for a post-COVID world, together.

*StoDistante*, Caret Studio, Piazza Giotto, Vicchio, Italy;  
White squares were painted in the central town square, enabling  
people to gather for events while maintaining social distance



## EXHIBITION

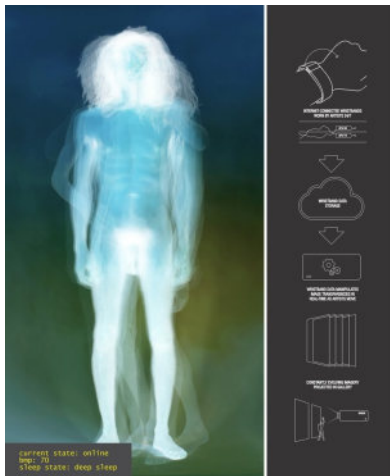
The exhibition is designed and co-curated by 2017 National Design Award winner MASS Design Group, which has designed hospitals and health care facilities around the world, in collaboration with Ellen Lupton, Senior Curator of Contemporary Design. Presented on the first floor of the Carnegie Mansion and spanning four galleries, the exhibition features innovative designs for disease prevention and treatment. From practical solutions to experimental prototypes and new products under development, the object stories illustrate the creativity and collaboration involved in health design, and how it can help address pandemics today and in the future.



## THEME 1

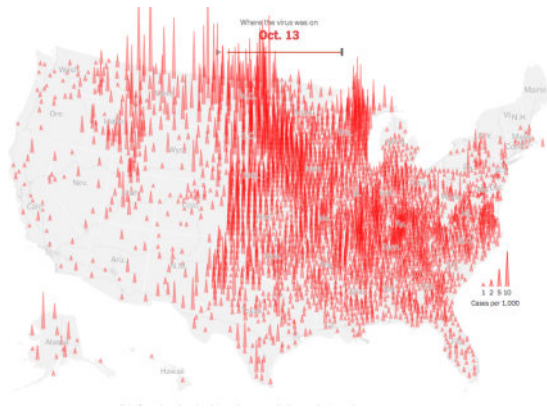
# MONITORING

The opening gallery features an experiential installation as well as artifacts and graphics that analyze and visualize the COVID-19 pandemic. These monitoring tools help us understand the spread of disease, its social impact, and how epidemics exploit racial injustice.



### Biometrics Installation

Artist Sam Stubblefield will create a video projection that engages visitors in a touchless experience. The piece will visualize health data collected from a Unicorn Brain Interface cap—a wearable device used to collect EEG data from subjects—and reflect on the growing trend to monitor human health digitally, from consumer products like the FitBit or Apple Watch to specialized medical devices.



### New York Times Virus Tracker

The Graphics Desk at the New York Times has been at the frontline of the pandemic—gathering, publishing, and analyzing data daily, and providing essential knowledge to health care workers, local governments, and citizens. In other nations around the world, this work is done by government agencies. The virus cannot be fought if we don't know where it is and what it is doing.



### Kinsa Thermometer

The Kinsa digital thermometer collects anonymous data about the temperature of its users. Kinsa sees illness earlier—before it is reported to medical establishment, or not reported at all—and networking this data through the Health Weather Map creates an early warning system for disease outbreaks, including COVID-19.

## THEME 2

# THE ELEMENTS

The next gallery is organized into four elemental categories connected to disease: *light*, *air*, *water*, and *insects*. Visitors will understand how these elements have inspired treatment and prevention solutions, from disinfecting lights and ventilation systems to mosquito nets and modern sewage systems.

### LIGHT



### WATER



Clockwise from top left:

#### **Model 41 Armchair, ca. 1935–40**

Sunlight was used in the early 20th century to treat tuberculosis, inspiring modern architects to create sunny rooms with outdoor access and furniture such as this chair by Alvar Aalto designed to help patients breathe more easily.

#### **GHESKIO Cholera Treatment Center, Haiti**

Clean water is essential to health. Designed by MASS Design Group following the 2010 earthquake in Haiti, this cholera treatment center has its own water and sanitation infrastructure.

### AIR



### INSECTS



#### **The Magoda Project, Tanzania**

Screen doors and mosquito nets, designed to prevent malaria and other insect-borne diseases, have influenced the design of homes, such as this prototype by Ingvartsen Architects.

#### **Essential Mask Brace**

Designers and companies around the world have responded to shortages of PPE with new products. The Essential Mask Brace, designed by Sabrina Paseman, adapts low-cost surgical masks to form a tight seal, providing a safe, well-fitting, and affordable alternative to N95 respirators.

## THEME 3

# MACHINE ENVIRONMENTS

COVID-19 created unprecedented demand for ventilators and other devices to enhance breathing. The following gallery looks at the rapid creation of new technologies and products that mechanize or enhance human breathing and protect caregivers from contaminated air.

### ASSISTED BREATHING



#### **Spiro Wave Automated Resuscitator**

Brooklyn-based industrial design firm 10xBeta worked with researchers and engineers at MIT to rapidly develop an emergency ventilator to serve as a backup supply for New York City, in partnership with the Mayor's Office. The device had to meet FDA guidelines and be locally manufactured in one building.

### ISOLATION



#### **BioVYZR Personal Air Purifying Shield**

BioVYZR is a lower-cost, consumer-grade PAPR (powered air-purifying respirator), used by clinicians to prevent infection during high-risk situations. Designed by VYZR Technologies, this product provides a 360-degree sealed environment as well as positive-pressure air purifying technology, and reversible gloves allow the user to safely touch their face.

### HOSPITAL AS MACHINE



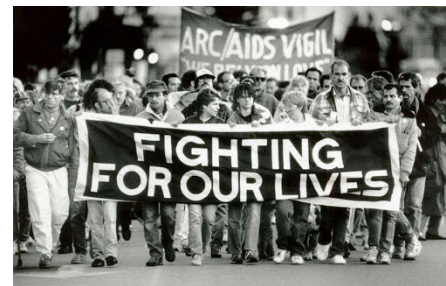
#### **Connected Units for Respiratory Ailments**

**(CURA)** When Italy was hit by COVID-19, CRA-Carlo Ratti Associati assembled an international task force to create a working prototype for an intensive care unit utilizing a shipping container. Open-source plans for CURA have enabled health systems in UAE and Canada to download the design and adapt it for local manufacturing.

#### THEME 4

## FUTURE-PROOFING HEALTH CARE

Visitors conclude the exhibition in the light-filled conservatory of Cooper Hewitt's historic mansion home. This area offers an opportunity to heal and reflect. What does the future hold? What can be learned from recent experiences?



The conservatory provides a space for visitors to imagine a post-COVID world for the better. Graphic panels will provide inspiration from the history of health care demands, and encourage people to contribute their own memories, ideas, or reflections.

## VIRTUAL EXPERIENCES

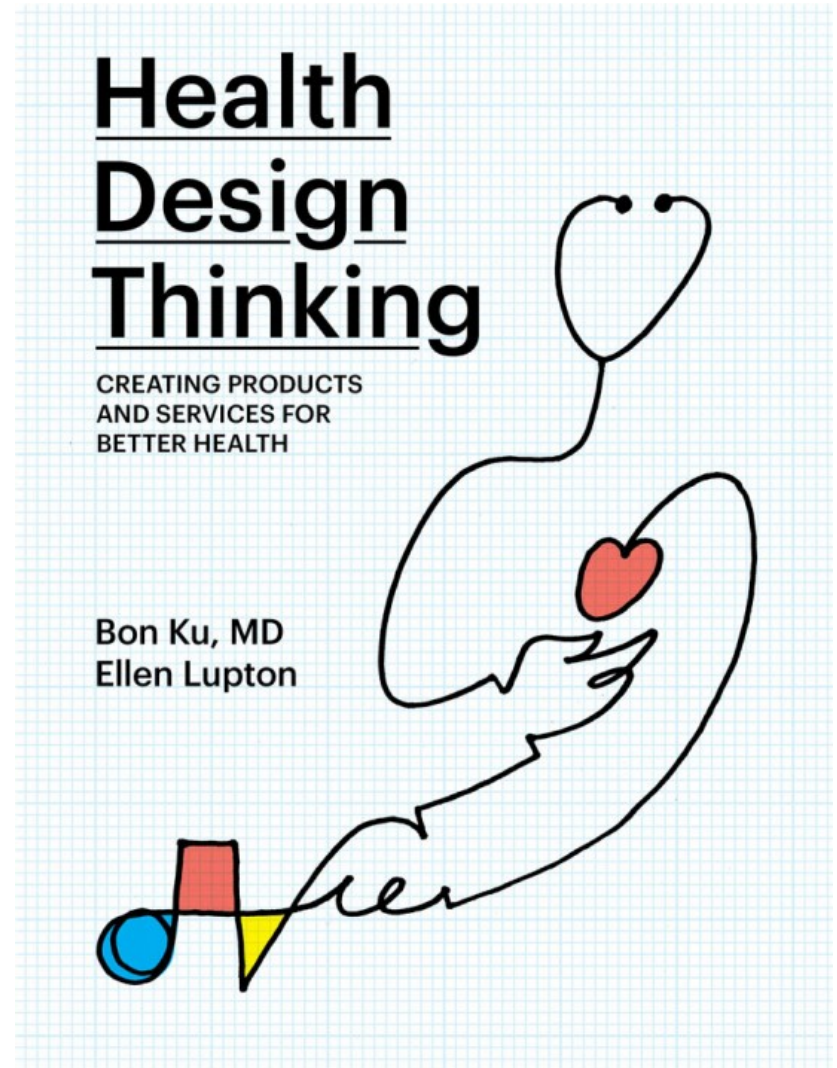
In May 2020, Cooper Hewitt began co-hosting *Designing on the Front Lines*—a weekly online series exploring the intersection of design and medical practice—in partnership with the Health Design Lab at Jefferson University School of Medicine. The exhibition will provide opportunities to further expand this dialogue, bringing together designers, medical professionals, and members of the public to examine lessons from the past and design new solutions for the future. Virtual tours, workshops, and an online public platform will provide students, educators, and professionals everywhere with additional learning and discussion opportunities.



## PUBLICATIONS

In March 2020, Cooper Hewitt published the book *Health Design Thinking: Creating Products and Services for Better Health*, with MIT Press. A second edition of this manual for health care practitioners and designers, forthcoming in 2021, will contain the most current design projects born from the frontlines of the COVID-19 pandemic.

The museum will also publish *Architecture of Health: Epidemics and Design* (2021), a manifesto for hospital design authored by MASS Design Group. By exploring the various ways in which infrastructure facilitates healing, this book challenges architects, hospital administrators, policy makers, and health care professionals to more holistically evaluate how they perceive and understand the value of architecture in public health.



## REACH & IMPACT

The social, economic, and environmental crises of our time underscore the ability—and the need—for design to offer solutions. While our campus is closed for now, we remain steadfast in our mission to educate, inspire, and empower through design.

As the nation's design museum, we continue our commitment to serving all audiences. We are increasing our virtual education programming and expanding our offering of online and offline design resources for distance learning; we produce relevant and meaningful content that feature diverse voices; we develop partnerships to reach underserved communities; and we provide Spanish translations and accessibility services where possible. We will continue to make design more inclusive and accessible for all, because design is a tool for everyone to design a better tomorrow.

**1,173,777** unique visitors  
to the Cooper Hewitt website

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**25,941** participants  
in Cooper Hewitt education programs  
both in person and online

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**33,850** free activity books  
distributed through community  
partners across the country

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**23,496** unique users  
of Cooper Hewitt lesson materials  
on the Smithsonian Learning Lab

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**1.3 million** video views

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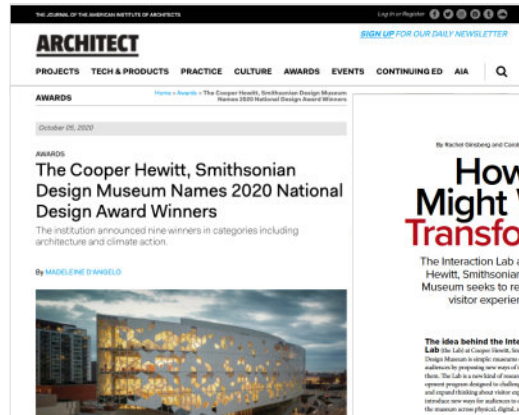
**209,000** Instagram followers

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**185** countries represented  
among web visitors

# RECENT PRESS

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WWD





Cooper Hewitt is located at the historic Carnegie Mansion on Museum Mile in NYC.

**Cooper Hewitt is the design museum of the Smithsonian Institution, the world's largest museum, education, and research complex.**

From our home base in New York City to around the world, we champion the importance of design for our shared future by bringing to life its power to solve problems and improve lives. Cooper Hewitt's collection is one of the most diverse and comprehensive in existence—more than 215,000 designs spanning 30 centuries—and inspires a broad range of exhibitions, education programs, digital content, and events for audiences everywhere.

## THANK YOU

To discuss support and recognition opportunities  
please contact:

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