

# NJIT's

# RESPONSE TO

# COVID-19

**THE NJIT COMMUNITY IS NIMBLE, STRATEGIC AND UNITED IN THE FACE OF A CHALLENGE.** The university's response to the COVID-19 pandemic demonstrates our technical acumen, organizational skills, entrepreneurial drive and generosity as we mobilize as groups and individuals to address an unprecedented global crisis. From the moment our campus turned virtual in mid-March, Highlanders got to work. Here's how:

- Students and faculty with 3D printers and other fabrication technology designed and produced thousands of pieces of personal protective equipment such as masks and face shields.
- Researchers in remote labs began creating innovative methods and devices to track, test and neutralize the virus.
- Health care experts from NJIT's New Jersey Innovation Institute are key advisors to hospitals and practitioners in this turbulent environment *and* to companies looking to make timely use of their technologies and manufacturing capabilities.
- Graduates working in hospitals and on emergency crews reached out to us for help, while generous alumni thousands of miles away provided equipment and funds to support us.
- Industrial partners donated vital learning technology to enhance our online instruction.



## SUPPORTING FRONTLINE WORKERS

Students, faculty and staff have designed and fabricated more than **3,000 face shields** to supply to frontline health care workers and emergency responders in Northern New Jersey.

- Responding to a design challenge issued by Albert Dorman Honors College, the engineering student who won the contest's award has, with the assistance of friends, so far produced **1,400 face shields**. A Dorman architecture student is personally en route to producing **1,000 masks** for hospitals, emergency rooms and community organizations in the New York-metro region, including Mount Sinai West Medical Center in New York City.
- A team of teachers in Morris and Essex counties, led by NJIT alumna Jessica Liatys '10, has produced almost **500 face masks, 700 face shields** and **1,400 ear guards**.
- NJIT students and their collaborators have formed **CommonHealthProject**, a startup organization with a face shield design and a plan to produce it through a crowdsourced assembly model.
- The university has received **\$28,000** in pledges and gifts to support the fabrication of personal protective equipment in the Makerspace at NJIT.
- Concerned alumni, some living thousands of miles away, have sent the university **13,000 face masks** as the region arms itself at the peak of the outbreak.

## PROTECTING VULNERABLE POPULATIONS

A team in the Makerspace at NJIT, which designed and manufactured a face shield made of cut and injection-molded polymer plastics for use by health care and emergency workers, has so far produced **1,600 shields** that are being distributed by the Essex County Office of Emergency Management and other organizations. Cleanable, the shields can be reused many times, increasing their value to frontline workers.

NJIT's New Jersey Innovation Institute (NJII) works with hospitals and health care practitioners in the state to modernize and improve their systems for delivering evidence-based care, safely sharing patient information and providing critical data on diagnoses, admissions and discharges to the New Jersey Department of Health (NJDOH). NJII operates the state's New Jersey Health Information Network, which enables the electronic exchange of patient health information among health care stakeholders, including the NJDOH. During the COVID-19 pandemic, NJII has played a key role in these areas:

- Ensuring that all **71 hospitals** in the state report COVID-related data as completely and accurately as possible to track and validate the spread of the disease and assess its impact on the population.
- Advising hospitals and practitioners on everything from how to apply for funding in order to keep their facilities open, understand changes in the regulatory environment and shift to telemedicine.
- Connecting hospitals in need of supplies, from masks and shields, to mobile devices, to clinical equipment, with

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manufacturers and distributors. NJII identified providers of N95 masks and face shields and portable, trailer-based negative pressure isolation wards for the New Jersey Economic Development Authority, University Hospital and Hackensack Meridian.

## INNOVATION AND LIFE SCIENCES

NJIT researchers are designing novel devices to track, test and inactivate SARS-CoV-2.

- Low-cost, disposable, paper-based biosensors and molecular genetic tools that will detect and inactivate the virus.
- New strategies for tracking the spread of the virus that combine advanced statistical methods with models that incorporate environmental conditions, such as wind speed, temperature and social distancing (with funding from a National Science Foundation RAPID grant).
- High-efficiency nanowire deep ultraviolet light-emitting diodes (LEDs) with III-nitride semiconductors for use in disinfectant systems that destroy the virus.
- A versatile pharyngeal swab with novel features that can be 3D printed anywhere in the world for use during this pandemic and future disease outbreaks.

**NJII** is providing guidance to both startups and established companies in industries looking to make innovative uses of their technologies and manufacturing capabilities to meet the challenge and their clients' changing needs.

**VentureLink @ NJIT**, the university's startup co-working and incubation space, is helping companies thrive in a difficult economic climate by:

- Providing tenants with rent abatements, discounts or deferrals as available and appropriate.
- Adjusting pricing to make office space more affordable for small and innovative businesses impacted by COVID-19.
- Offering free virtual incubation services for startups including coaching sessions, workshops, virtual office hours with subject matter experts and networking.

## SUPPORTING STUDENTS

- Successfully converted **100% of Spring courses to remote/online learning** using more than **27,000 Webex sessions** and approximately **3,000 recordings**.
- **NJIT's Food Pantry** has given out scores of pre-packed bags of food to students living on or near campus, while residence halls are stocked with quick meals and snacks for students still on campus. Community members are making bulk food donations to the pantry via NJIT's Amazon wish list.
- Panasonic has made available **25 webcams** for students for videoconferencing, among other uses.
- The university has received **144 gifts totaling \$62,702** designated for the Highlander Student Emergency Fund.

*\* Information current as of April 24, 2020, but NJIT's efforts are ongoing and expanding daily.*



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