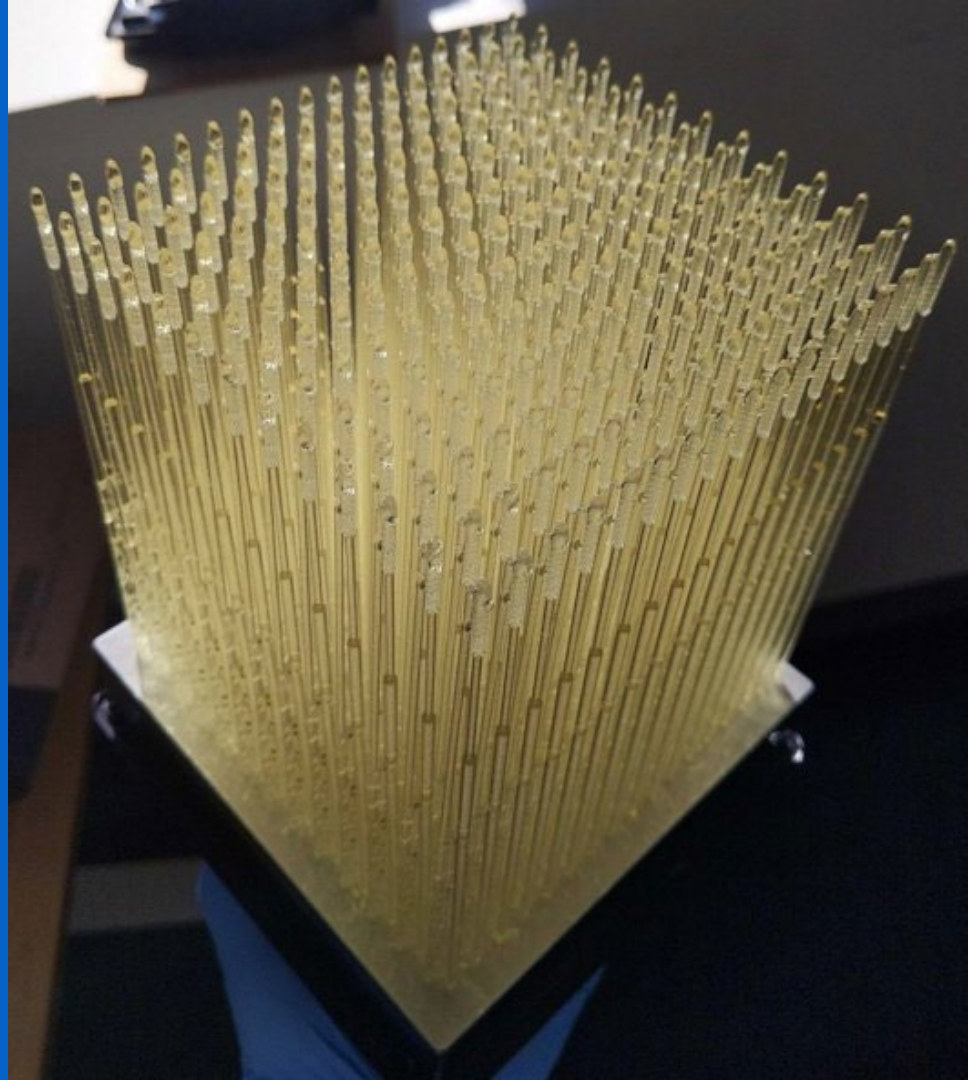




# Lessons for the Automotive Industry from Formlabs' Response to COVID-19

<https://formlabs.com/covid-19-response/>

Dan Recht, Global Business Development Lead



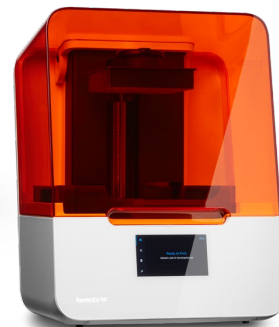
# Agenda

1. Introduction to Formlabs
2. Formlabs' COVID-19 response
3. Recommendations for the automotive industry



Formlabs is expanding access  
to digital fabrication,  
so anyone can make anything.





FORM 1

FORM 1+

FORM 2

FORM 3 / 3L

FORM 3B

2012

2014

2015

2019

The background of the image is a repeating pattern of small printer icons. Each icon is a stylized representation of a printer, featuring a grey base, a yellow top section, and a circular orange element in the center. The icons are arranged in a grid-like pattern across the entire image.

**60,000**  
**PRINTERS**



**50,000,000**  
**PARTS**

# The Agile Future of Digital Manufacturing

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Just as mainframes gave way to blade servers,  
additive manufacturing will transition to **modular production** .

Formlabs Ohio  
in March:  
5k samples/week



250 Form 2s

11 FTEs



**Pick a material from the menu below.** Samples of all materials printed on the Form 3 are coming soon. Sample parts printed on the Form 2 may be used for comparing some basic material properties of each of our resins, though you can expect variation in surface finish and other properties when printed on the Form 3.

Filter by Application ▾

## FORM 3 - STANDARD

**Grey**  
Butterfly




**White**  
Architectural Model

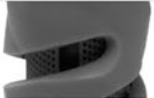


## FORM 2 - STANDARD


**Clear**  
Anatomical Heart



**Grey**  
Hidden Butterfly



**White**  
Character Model



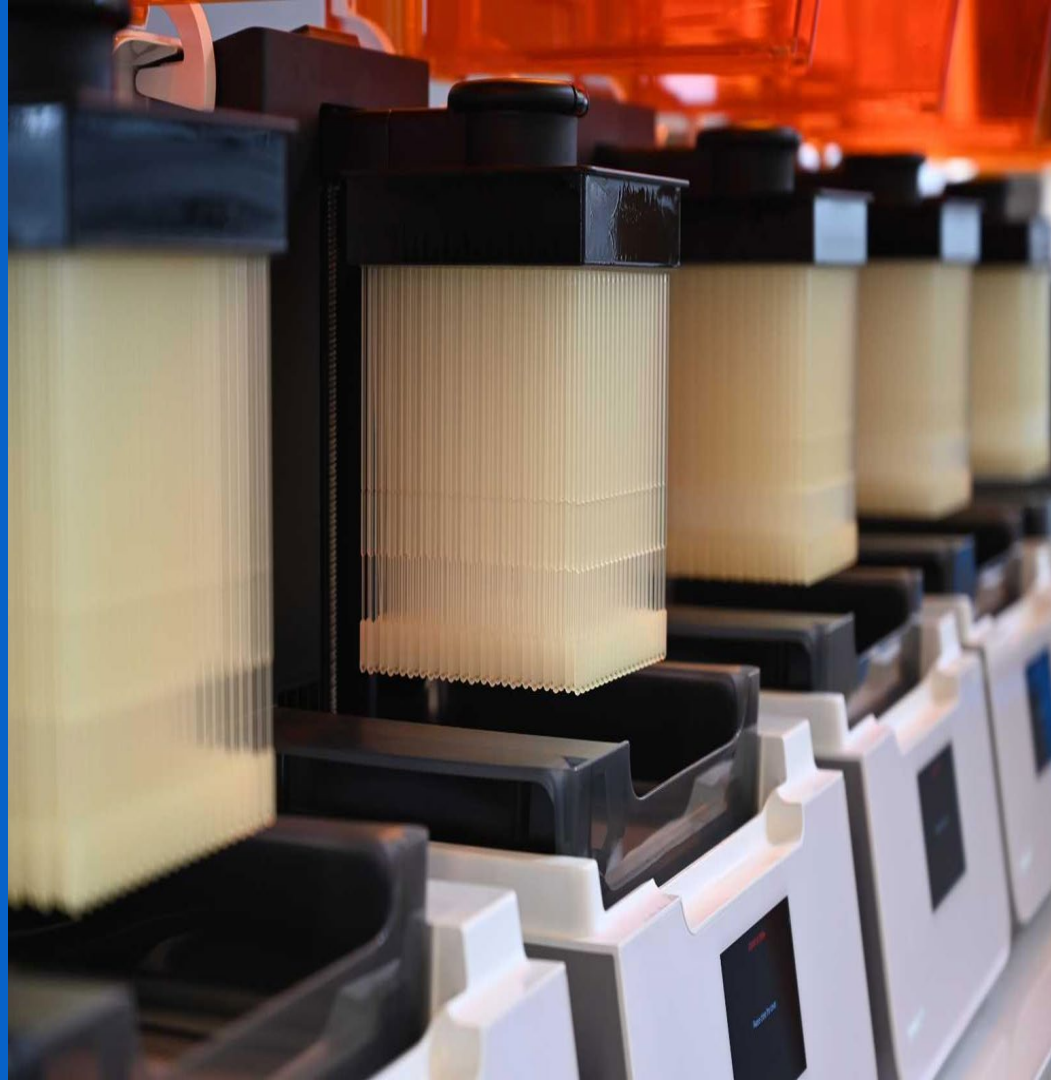
# Grey

Butterfly



# Formlabs Ohio in April: COVID-19 Test Swabs

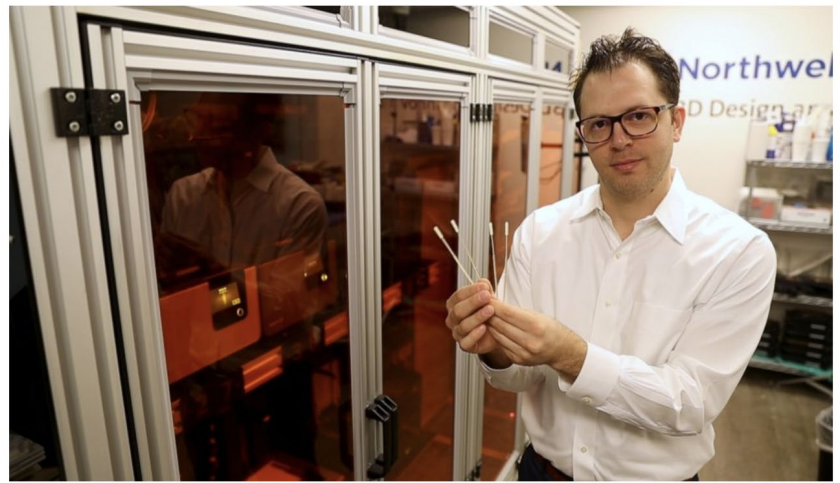
- Retool to Ramp: 2 weeks  
Capacity: 100K Test Swabs/day  
Test Swab - FDA Exempt Class  
1 Medical Device



# Partnered with Northwell Health and USF

- Prototype & optimize design
- Validation Testing
- Rapid Clinical Testing

Results: Performed equally to  
standard swabs used in  
COVID-19 Testing



📷 Dr. Todd Goldstein holds 3D-printed nasal swabs made at Northwell Health.



Faculty across USF Health are prepared  
to produce 3,000 swabs per day.



Formlabs' customers now combine for more swab production capacity than we have ourselves

# BiPAP ADAPTERS



**Mount  
Sinai**

1 Gustave L. Levy Pl  
New York, NY 10029  
T 212-241-6500  
mountsinai.org

**Repurposing bi-level ventilators for use with intubated patients while minimizing risk to health care workers during insufficient supply of conventional ventilation for patients with COVID-19**

 **Feinstein Institutes for Medical Research**  
Northwell Health\*

[Institutes & researchers](#) [Clinical trials](#) [Education](#) [Events](#) [For professionals](#) [Journals](#) [About us](#)  [Give now](#)

The latest

Northwell converts BiPAP machines into ventilators for hospitalized COVID-19 patients, uses 3D printed adapter

March 31st, 2020 | [Matthew Libassi](#)



**Join Extra Crunch**

[Login](#)

[Search Q](#)

**Formlabs gets FDA emergency use authorization for a 3D-printed ventilator conversion part**

# Formlabs Covid Community Library

[bit.ly/3b92ghG](https://bit.ly/3b92ghG)

# Formlabs Support Network for COVID -19

Formlabs is drawing on our community to connect those in need with those who have engineering, clinical and 3D printing resources. Please reach out to us if:

- You or your organization is working on COVID-19 related projects and need access to 3D printed parts, or  
You or your team have access to Formlabs manufactured 3D printers and are willing to volunteer your time and equipment in the fight against COVID-19.

**3,000+ volunteers** and counting


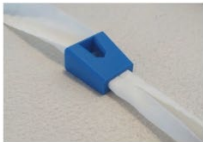




# STL Library on Formlabs Website

Formlabs curated library of non-medical device COVID-19 solutions

Ready for our user community to print and source to first responders in urgent need of PPE

Contributors from

- Bellus3D
- Yale School of Medicine
- Materialise
- Formlabs Community

 <p><b>Face Mask Fitter</b> Partner: Bellus 3D Material: Standard <a href="#">Download on Pinshape</a></p>	 <p><b>Bias Tape Maker</b> Material: Standard <a href="#">Download on Pinshape</a></p>	 <p><b>Oxyframe Face Shield</b> Partner: Yale Material: SG <a href="#">Download on Pinshape</a></p>	 <p><b>Door Handle</b> Partner: Materialise Material: SG <a href="#">Download on Pinshape</a></p>
 <p><b>Facemask Clips</b> Material: SG <a href="#">Facemask Clip</a></p>	 <p><b>Face Mask Buckle</b> Material: Tough 1500 <a href="#">Download on Pinshape</a></p>		



Our designers and engineers are maintaining productivity by bringing printers home



# Lessons for the automotive industry

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↑	Redundancy	High uptime by hot-swapping units
↑	Scalability	Adding printers as demand increases
↑	Flexibility	Changing products as situation evolves
↑	Lean Enablement	Printers across the globe producing for local demand
↑	Ease & Convenience	Printers in homes and hospitals

It is possible to go from zero to a **global digital factory** in weeks