AM / 3D Printing Programs Supporting COVID-19 Response

Dear AMUG community, thank you for reaching out to us and sharing the programs you are working on to help in the fight against COVID-19.

Many of you have asked how you can help, so we have compiled a limited list of programs that are actively using AM/3D Printing Technology to develop and print solutions to assist in the fight against COVID-19. The following provides resource links to global standards from ASTM, regulated government programs in the Americas, links to Asia, Europe and Oceania programs, state and university programs in the US, and global additive manufacturing OEM programs. This is not a comprehensive list and some programs may require additional fees, specific products and materials, prior government compliances or agreements, membership, or other requirements.

As always, we ask our AMUG community to tap into your AM network and participate in programs that are in line with your organizations capability and resources.

If you are part of a regulated (controlled) program in the Americas, Asia, Europe or Oceania region that is not listed on the following pages, please email the information to us at admin@amug.com. We will do our best to add the information but we can not guarantee all submissions will be published.

Stay safe and healthy!

The AMUG Team

STANDARDS (GLOBAL)	DESCRIPTION	WEBSITE/CONTACT
ASTM Standards and COVID-19 (Global Standards)	ASTM International is providing no-cost public access to important ASTM standards used in the production and testing of personal protective equipment - including face masks, medical gowns, gloves, and hand sanitizers - to support manufacturers, test labs, health care professionals, and the general public as they respond to the global COVID-19 public health emergency. Click "Access" on the website, register if you are a new user to their reading room and then access and download a PDF of the standards relevant to the global health pandemic. You will be asked to login at no cost to you.	https://amcoe.org/covid-19 UPDATE 3/30/20: ASTM International is providing no-cost public access to important ASTM standards used in the production and testing of personal protective equipment.
PROGRAM (AMERICAS)	**DESCRIPTION**	**WEBSITE/CONTACT**
America Makes	America Makes has partnered with its member, the Food and Drug Administration (FDA), the Department of Veterans' Affairs, and the National Institutes of Health (NIH) to help ensure the additive manufacturing industry can effectively and safely meet the needs of America's health care workers on the front lines of the coronavirus crisis. This effort will connect the capabilities of the additive manufacturing industry with specific needs of health care providers via an online repository. The site will record necessary information from both the additive manufacturing industry and health care providers, and it will eventually include a pathway for designs to be uploaded for review to ensure they meet medical standards and can be downloaded for use in production.	https://www.americamakes.us/statement-on-covid-19/
FEMA (Federal Emergency Management Agency, USA)	Under the direction of the White House Coronavirus Task Force, FEMA, HHS and our federal partners are working with state, local, tribal and territorial governments to execute a Whole-of-America response to fight the COVID-19 pandemic and protect the public.	For the latest updates and information on how to protect yourself and what to do if you think you are sick, visit www.coronavirus.gov. How to help: https://www.fema.gov/coronavirus/how-to-help If you are a private company that wants to produce a product related to the COVID response: email nbeoc@max.gov.
National Center for Manufacturing Sciences Joint Advanced Manufacturing Working Group COVID-19 Response Team	NCMS is assisting US government partners and the Federal Emergency Management Agency (FEMA) in preparing a list of companies with manufacturing capabilities that may play a role in solving critical supply shortages. There is a need to understand the current/future supply base to expedite potential future communications. Review the list of needs on the website and if you feel your company may be able to contribute, please complete the company profile form. DOD's COVID-19 Joint Acquisition Task Force (JATF) has prioritized ventilator and ventilator components as their highest priority items of interest at this point. Second priorities are masks and face shields. View the full list on the website.	https://www.ncms.org/covid19/assist/
National Institute of Health (NIH) U.S. Department of Health and Human Services	Curated by NIH/NIAID in collaboration with the U.S. Food and Drug Administration, the Veterans Healthcare Administration, and America Makes. March 25, 2020: This collection of designs was created to support the manufacturing of personal protective equipment (PPE) or other necessary medical devices that are in short supply due to the COVID-19 outbreak. While many can be printed with a 3D printer at home or your local Maker space, the NIH, FDA, VA, America Makes, and the contributing creators cannot ensure the quality, safety, and efficacy of these designs when manufactured without proper quality controls and processes.	https://3dprint.nih.gov/collections/covid-19-response Models will be added as the testing process continues. Please check their page for new entries daily. The collection represents a coordinated effort among the FDA, VA, and America Makes to connect healthcare providers and 3D printing organizations. More information about this collaboration can be found in the FDA announcement from March 27, 2020.

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PROGRAM (AMERICAS)	DESCRIPTION	WEBSITE/CONTACT
U.S. Food & Drug (FDA)	FDA recognizes that many stakeholders are interested in designing and producing 3D printed devices during the COVID-19 public health emergency. They are also aware that stakeholders often do not know what device designs to choose or how much to print. In light of this and as part of our effort to protect the public to the extent possible, FDA is facilitating information-sharing regarding the use of 3D printing and other advanced manufacturing technologies in the context of personal protective equipment (PPE) and other medical device parts.	https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/fda-efforts-connect-manufacturers-and-health-care-entities-fda-department-veterans-affairs-national
VA | VHA Innovation Ecosystem	FVHA 3D Printing Network COVID-19 Response VA has entered into an MOU with the FDA and NIH 3D Print Exchange, to share data and coordinate on open-source medical products for the COVID-19 response. They are also working closely with America Makes, to provide resources that will connect health care providers and 3D printing organizations. VHA facilities can submit a 3D printing need for consideration and tracking to the VA Office of Logistics.	https://www.va.gov/INNOVATIONECOSYSTEM/3d-print-covid19.html
PROGRAM (ASIA)	DESCRIPTION	WEBSITE/CONTACT
If you have information, please send to admin@amug.com.		
PROGRAM (EUROPE)	DESCRIPTION	WEBSITE/CONTACT
European Commission	Sources of updated information on COVID-19 in the EU/EEA and the UK	https://ec.europa.eu/info/eu-eea-and-uk_en
European Commission	Coronavirus: Commission issues questions and answers to help increase production of safe medical supplies	https://ec.europa.eu/commission/presscorner/detail/en/ip_20_558
U.K.	Offer coronavirus (COVID-19) support from your business	https://www.gov.uk/coronavirus-support-from-business
If you have country-specific regulated programs, please email admin@amug.com.		
PROGRAM (OCEANIA)	DESCRIPTION	WEBSITE/CONTACT
If you have information, please send to admin@amug.com.		

STATE AND UNIVERSITY PROGRAMS (USA)		WEBSITE/CONTACT
Ohio Manufacturing Alliance	The Ohio Manufacturers' Association (OMA), Ohio Hospital Association (OHA), Ohio Manufacturing Extension Program (Ohio MEP), nursing homes and JobsOhio have joined forces through the Ohio Manufacturing Alliance to Fight COVID-19. This collaborative effort will engage manufacturers to see which companies have interest in repurposing their manufacturing operations to produce some of the most in-demand products in the fight against COVID-19, especially products for the health care industry. The Ohio Manufacturing Alliance is guiding manufacturers to help them learn what types of equipment are most needed and how to adapt current products, operations and personnel to meet the need. Ohio MEP, with its partner organization MAGNET in a lead role, is providing engineering capabilities and technical support to make PPE alternatives when possible. OMA is managing outreach to manufacturers, and OHA and nursing homes are providing insights on the products most needed. JobsOhio is providing regional support and financial assistance, where appropriate, to accelerate production.	https://repurposingproject.com/#what-you-can-do
University of Louisville	University of Louisville is providing gap medical PPE and offers assistance to programs outside of Kentucky. Ed Tackett is the point of contact for the State of Kentucky and coordinating efforts outside of Kentucky.	Ed Tackett, Director Workforce Development Additive Manufacturing Institute of Science and Technology J B Speed School of Engineering, University of Louisville ed.tackett@louisville.edu

Note: The programs listed are not an endorsement by AMUG. AMUG is not responsible for additional costs incurred by participating in any programs. Subject to change.

As of 17 April 2020

AM / 3D Printing Programs Supporting COVID-19 Response

AM PROGRAMS OFFERED THROUGH OEMS (alphabetical order)		
3D SYSTEMS	The rapid spread of COVID-19 has put many healthcare providers under great strain as they provide treatment and care to affected patients. 3D Systems is offering its services and looking for our customers and partners to join in sharing resources to help overcome this pandemic. If you are able to offer your engineering team's time and expertise, or access to 3D printers, 3D Systems would greatly appreciate your support. Conversely, if you are a medical device manufacturer, hospital, or healthcare provider that needs help to bridge a supply chain gap, please let 3D Systems know of your needs. They will do everything possible to fulfill your request.	https://www.3dsystems.com/covid-19-response
3YOURMIND	3YOURMIND offers a platform with 3 key parts; a digital inventory of 3D parts that have been culled and minimize risk for doctor who choose to use them, a submission system for new parts that will be evaluated for potential use and an ordering platform to match hospitals, clinics, suppliers of medical equipment with 3D printing services and additive manufacturing departments in OEMs who have offered to allocate their production for medical goods.	https://www.3yourmind.com/covid-response or email: covid-response@3yourmind.com They have several people monitoring the email address to give quick replies.
BIGREP	BigRep is donating face shields to local organizations to provide protection from the novel coronavirus, and they would like you to join. With the face shield design found on their website, you can help provide some desperately needed equipment in your community. On a BigRep ONE, users can print up to 24 of the masks at once, so they're asking their network of partners and customers to get involved. To help, they're offering a complementary 2.3kg spool of PLA in exchange for video footage of you producing the equipment on your BigRep 3D printers. They'll use that footage to continue their call for action, getting more and more people involved in this movement.	https://bigrep.com/posts/covid-19-face-shield-design/
CARBON	Carbon is responding rapidly with government leaders and its global Carbon network of customers and partners to help meet this unprecedented demand, specifically by designing, validating, and producing personal protective equipment (PPE) face shields and patient sampling swabs. Carbon will be updating their website page regularly as new information becomes available.	https://www.carbon3d.com/covid19/
DSM ADDITIVE MANUFACTURING	COVID-19 is disrupting supply chains and causing shortages for hospitals and healthcare workers worldwide. DSM's webpage brings together designs and resources for people looking to help alleviate the supply issues using 3D printing technology. DSM is sharing application and material knowledge with the 3D printing community to support various initiatives that help relieve the need for medical supplies, equipment and replacement parts.	https://www.dsm.com/solutions/additive-manufacturing/en_US/coronavirus-let-s-do-our-part.html
EOS	EOS knows 3D printing is not accessible to everyone – especially industrial grade additive manufacturing technologies. To make sure you received safe and valuable content that meets medical standards, their medical experts screened all the material beforehand. Let's do what our technology teaches us to do: think differently. Let's push the boundaries of what is possible. Let's join forces to provide treatment and care for everyone.	https://3dagainstcorona.eos.info/how-3d-printing-helps-with-corona
EXONE	ExOne has five global facilities that regularly produces mission-critical parts for the aerospace, defense, energy and other critical infrastructure industries. In support of this crisis, ExOne is producing many critical parts and have the capacity to produce more: • valves and pump castings • ceramic metal filtration components • injection mold tooling for rapid production of plastic parts • other metallic and ceramic components of many shapes and sizes Even if you do not have a critical parts need directly related to the crisis, ExOne encourages manufacturers to think ahead about how to prepare for a supply chain disruption using 3D printing. Contact ExOne for assistance preparing design files for 3D printing and qualifying parts in advance of a crisis.	https://www.exone.com/en-US/covid-19_response_rapid_3D_printed_parts
FORMLABS	Formlabs is dedicated to helping the medical community address the COVID-19 epidemic and associated supply chain shortages with 3D printing technology. They have many customers in the healthcare space already using Formlabs' products to test applications for COVID-19 related projects, and recently launched the Formlabs Support Network for COVID-19 Response. This is an initiative to match healthcare organizations and providers with Formlabs customers who are willing to use their printers and volunteer their time to help address critical supply chain shortages and other healthcare needs. They are working closely with health systems, government agencies, and their network of over 3000 volunteers to help design, prototype, and produce parts to be tested and potentially adopted by clinicians. In the US, they are ramping up production of 3D printed NP swabs and have an order form on their website so they can contact you once we have parts ready to ship.	https://formlabs.com/covid-19-response/
GE	GE is working directly with industrial and medical organizations.	Marni Rutkofsky Marni.Rutkofsky@ge.com

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HP	3D printing in support of COVID-19 containment efforts. Producing critical parts to help meet urgent needs. Together with their global digital manufacturing community, they are mobilizing their technology, experience, and production capacity to help deliver critical parts in the effort to battle the COVID-19 pandemic.	https://enable.hp.com/us-en-3dprint-COVID-19-containment-applications Find an HP 3D printing partner to expedite production of medical supplies, equipment or devices. https://enable.hp.com/us-en-3dprint-digitalmanufacturing
MARKFORGED	Markforged is committed to doing everything they can to assist the medical community in the fight against COVID-19. Customers and partners combined, they have more than 10,000 globally distributed, cloud-connected industrial printers. They are seeking the highest-impact medical applications they can put into production across their fleet. Right now Markforged is focused on: Nasal Swabs. Accurate and widespread testing is the first step in fighting the virus. They currently have two swab designs. The FiberFlex Rayon swab has passed IRB at UC San Diego and is in mass production (10k/day with plan to scale to 100k/day). Face Shields. Markforged has engineered a reusable face shield. Over 200 of our customers and partners have already made and donated more than 2500 shields.	Markforged initiatives can be found here (updated daily with status & new projects): https://markforged.com/covid-19/
MATERIALISE	Certified Manufacturing for MedTech No matter where you are in the process or how much you would like to produce, Materialise is here for you. During this time, they are giving priority to and scaling up manufacturing of medical devices to help in the fight against COVID-19.	https://www.materialise.com/en/3d-printing-response-to-covid-19
STRATASYS	Stratasys started a coalition for face shield production in response to the overwhelming need in the industry. They now have over 150 other organizations helping with the effort.	https://www.stratasys.com/ Website includes the print files and instructions for creating the shields in a DIY model.
ULTIMAKER	Ultimaker has two programs being offered: 1) Find 3D printing support near you and 2) Get design support or offer your help.	https://ultimaker.com

SUBMIT YOUR REGULATED OR OEM PROGRAM
email: admin@amug.com

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