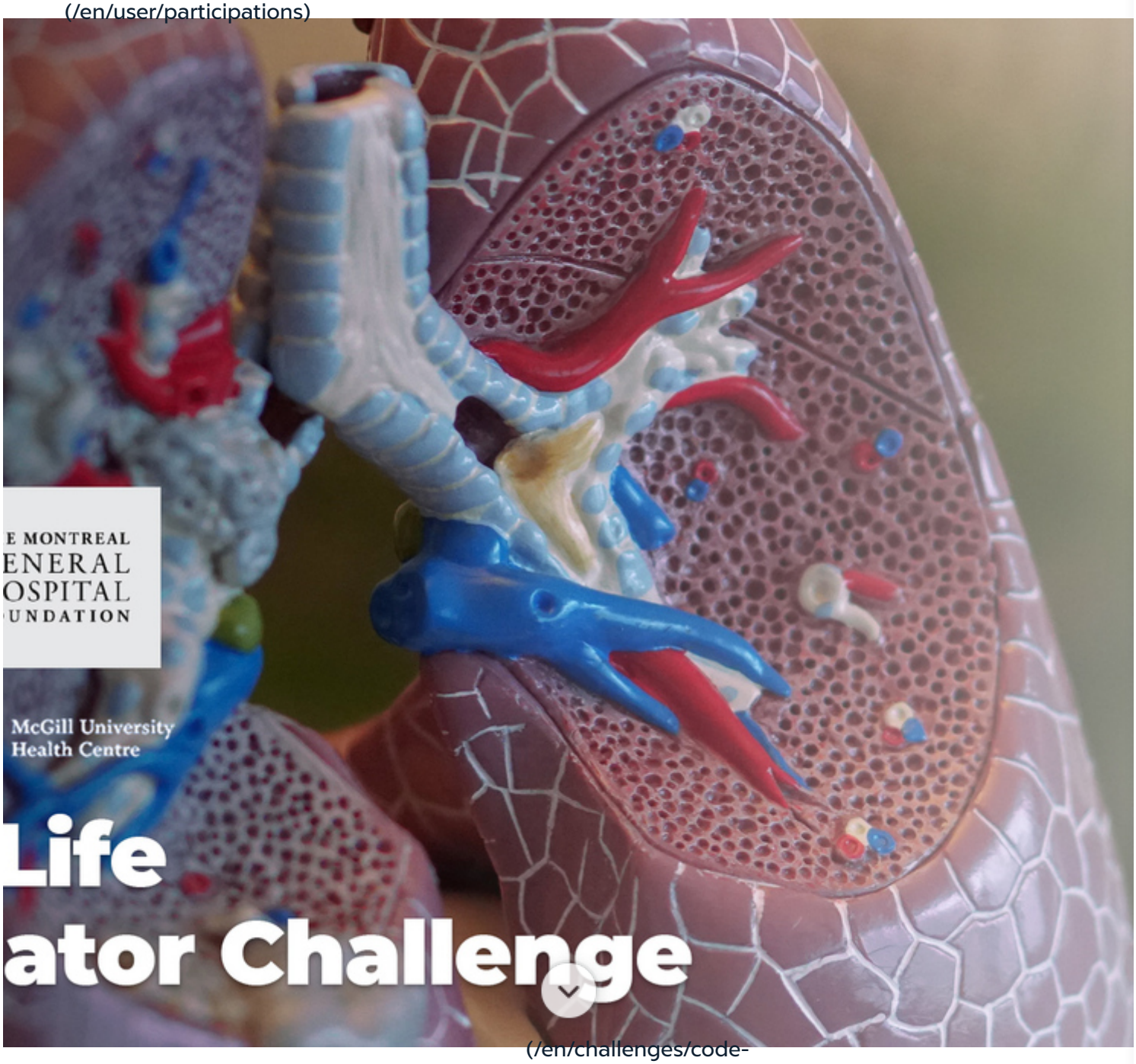

(/en/challenges/code-life-challenge)

Code Life Ventilator Challenge

To design a low-cost, simple, easy-to-use and easy-to-build ventilator that can serve the COVID patients, in an emergency timeframe.

8 days left

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Brief (/en/challenges/code-life-challenge?lang=en)

The Challenge

With potentially 70% of the population on the brink of being infected by COVID-19, our worldwide health care systems will be strained beyond their limits. Even now, there aren't enough ventilators to save everyone who needs respiratory support, and doctors are having to make agonizing decisions about who to save. Our modern world provides the means to produce these life-saving ventilators thanks to widespread rapid manufacturing tools—3D printers, CNC machines—combined with low-cost computers (i.e. smartphones, Arduinos, etc.), but what we're missing is a design.

We need YOU to design a simple, maintainable, easy-to-manufacture ventilator to provide life support to COVID patients anywhere in the world.

The top three designs will be available for free download to anyone who needs them, saving lives immediately. Start now, we have no time to lose!

The Goal

To design a low-cost, simple, easy to use and easy to build ventilator that can serve COVID patients, in an emergency timeframe. It should be easy to build locally, must be easy to verify its functionality, and must meet the design requirements specified here. Three finalists will be selected and their designs will be available to download for free.

To motivate participation from local manufacturers, we encourage participants to submit provisional patents prior to the announcement of final designs, while granting license to local builders to manufacture their designs during the COVID crisis.

The Montreal General Hospital Foundation (https://www.mghfoundation.com/), in collaboration with the Research Institute (https://muhc.ca/research) of the McGill University Health Centre (https://muhc.ca/research) (MUHC), is launching a global innovation challenge, backed by a $200,000 CAD prize, calling for teams to design a simple, low-cost, easy-to-manufacture and easy-to-maintain ventilator which could be deployed anywhere needed to save lives.

The coronavirus known as COVID-19, could infect up to 70% of the population, with as many as about 10% of positive cases need ventilation.

There is an acknowledged shortage of medical ventilators worldwide [CBS News () https://www.cbsnews.com/news/coronavirus-infection-outbreak-worldwide-virus-expert-warning-today-2020-03-02/), IBCC (https://emcrit.org/ibcc/covid19/), FT, Fortune, Boston Globe (https://www.bostonglobe.com/2020/03/13/opinion/coronavirus-cautionary-tale-italy-dont-do-what-we-did/), ...] to treat such a large volume of patients and, even in developed economies, there may be a shortage to treat large numbers of patients during outbreak peaks, as has been seen in Italy. The case will likely be direr still in countries with more limited resources and less resilient healthcare systems.

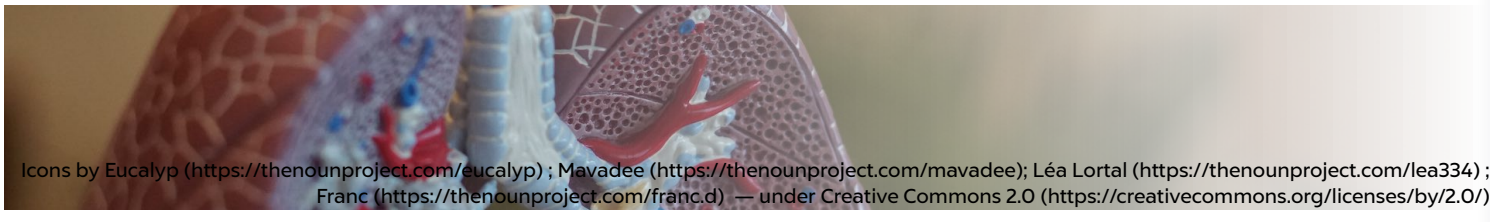
Yet, the wide availability of rapid manufacturing—3D printers, CNC machines—combined with low-cost computers (i.e., your smartphone, Arduino, raspberry pi, etc), offer the possibility of a simple, broadly available ventilator with sufficient performance to get through the COVID-19 crisis.

Leading researchers and medical staff at the Montreal General Hospital have assembled a committee of expert advisors (ICU physicians, engineers etc.) who have defined precise specifications for this ventilator challenge and who will be judging submissions. Final submissions will be tested in the Clinical Innovation Platform at the Montreal General Hospital. The winning design will then be made available for download and production, anywhere in the world.

JOIN THE TECHNICAL EXPERTISE PANEL (HTTPS://FORMS.OFFICE.COM/PAGES/RESPONSEPAGE.ASPX?ID=CZYXZEDSAEQVQFZ4-J8J6UR3R8OPMTVHL_PP-XJLJMRUN05TQ1DXTFJYNZJHMUE1RDNDUE8ORKHLNY4U)

GIVE TO THE FOUNDATION (HTTPS://WWW.MGHFOUNDATION.COM/EN/DONATE-NOW/GIVE-TODAY/#DONATIONFORM)

The finalist designs will need to be validated and guided to create guidance for manufacturers and builders. If you have expertise in material, safety, manufacturing methods, manufacture and build processes, relevant regulatory guidance.



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New participation (/en/challenges/code-life-challenge/teams/new)