

[<- Navigation document](#)

Hardware Projects

These are projects already being worked on.

THIS DOCUMENT IS DEFUNCT - checkout the AirTable of project [here](#)

Projects

Oxygen Concentrator

Iran is [running out of oxygen](#), which is necessary to provide basic oxygen therapy, often the first line of treatment for respiratory distress. Even if hospitals have enough oxygen, they will not have enough space to treat all patients. The goal of this project is to develop an open-source, scalable, and safe oxygen concentrator to be able to provide oxygen therapy to those who need it.

Project manager: Kenneth Yueng

Google drive: [Oxygen concentrator](#)

Recruitment document: [Oxygen Concentrator Recruitment Document](#)

Slack channel: #hardware-oxygen-concentrator

Ventilator

In Italy, [each ventilator is like gold](#). The US, which has an above average medical system, is likely also going to [run out of ventilators](#), let alone countries in the developing world. The goal of this project is to design an open-source, scalable, safe, and easy to use DIY ventilator for use in hospitals.

Project manager: Tim Howe

Google drive: [Ventilator](#)

Slack channel: [#hardware-ventilator](#)

Portugal specific: #hardware-ventilator-portugal

For a specific approach based on automating a bag valve mask, head to [#hardware-ambu-bag](#)

Project 4-Way-Ventilator

Google Drive: [4-way-ventilator Google Drive](#)

Github: <https://github.com/helpfuleengineering/project-4-way-ventilator>

Channel: #project-4-way-ventilator

Project manager: Jamie Waters

Project Proposal: [4-way-ventilator project proposal](#)

There is a severe lack of ventilators due to the rapidly increasing number of patients. Instead of designing new ventilators from scratch, project 4-way-ventilator seeks to modify existing ventilators to safely support multiple patients. The scope of this project involves designing and manufacturing “T”, “Y” and “H” shape connectors, incorporating flow and/or pressure sensors, PEEP valves, and adjustable flow restriction valves in order to control volume and pressure.

References:

<https://emcrit.org/pulmcrit/split-ventilators/>

<https://www.youtube.com/watch?v=uClq978oohY> (Video demonstration and proof of concept)

Project Tube Connectors

Google drive: [Project Tube Connectors](#)

Channel: [#project-tube-connectors](#)

Project manager: Stuart Cobbe

The issue has been narrowed to designing/producing a connector that needs to be able to deal with multiple size respiratory flexible tubings leading air from the respirator machine to the tracheal tubing inside the patient's throat

Personal Protective Equipment

During times of crisis, it is critical that doctors and nurses remain protected so that they are able to give patients the care that they need. Hospitals in the US are [running out of masks](#) and other such personal protective equipment (goggles, gloves, etc.). Civilians who want to purchase masks find stores out of stock or prices prohibitive. The goal of this project is to develop instructions that allow for civilians to make their own masks. Additionally, we want to be able to rapidly supply doctors and nurses with the equipment they need.

Google Drive: [Personal Protective Equipment](#)

Slack channel: #hardware-person-protective-equipment

Project Manager: Douglas Keith

Mask specific: #hardware-masks

Material specific: #hardware-n95-material

Project Face Shield

Slack channel: [#project-face-shield](#)

Project lead: Nick Moser

Project Mask Filter Platform

Slack channel: [#project-mask-filter-platform](#)

Design lead: Shahe Z DH

Admin/Proposals lead: Nick Moser

Hospital Beds

The US is going to [run out of hospital beds](#). Italy is constructing [makeshift hospitals](#). The goal of this project is to design a rapidly constructible, cheap hospital bed to meet this coming shortage. Additionally, many people will have to provide for family members at home - a full-feature hospital bed will make such care easier.

Google Drive: [Hospital Bed](#)

Slack channel: [#hardware-hospital-beds](#)

Project lead: Aaron Halddiman

Temperature Detection

One of the symptoms of COVID19 is a fever. In China and Singapore, workers with temperature guns are taking people's temperatures wherever they go to identify individuals with fevers. The goal of this project is to design an automated temperature detection system that is cheap and easy to manufacture.

Google Drive: [Temperature Detection](#)

Slack channel: [#hardware-temperature-detector](#)

Other Components

3D-printing

Interested in building some of the above products with 3d printing? Head over to [#hardware-3dprinting](#). Interested in building some of the above products with 3d printing? Head over to

Production

Obviously, once our products have been designed, they will have to be produced. Head to [#hardware-production](#) to talk about how this is going to be done.

Supply Chain

We will have to source materials to produce our products. Head to [#hardware-supply-chain](#) to talk about how this is going to be done.

Project Ideas

Anyone may suggest new Projects in the [Project Ideas](#) document