



# Global Pandemic in Florida Weather

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## Manufactured products

There are a lot of companies and individuals that have come together to create innovative things to help fight global pandemic. Here are some of the inventions or redesigns that have stand out to me.

### Immutouch

In Seattle, brothers Joseph and Matthew Toles and their friend Justin Ith, who own a young company called Slightly Robot, developed a wristband after college aimed at reducing compulsive skin-picking, nail-biting, and hair-pulling. These two brothers last month came up with an innovating redesign for their product after at their hometown the first deaths from the virus happened, they adapted the design to create a new smart band, the Immutouch.

This new type of wristband has a gravimeter that uses a personalized algorithm to produce vibrations when the person's hand goes near their face. It has a really smart design because it is in the form of a wristband and it looks like a fit bit band. It has an aluminum looking hard case on the top that



has nylon straps that function like the ones on a watch. These materials you can find pretty easily and also cheap. Its metal design is pretty simple to model and manufacture because of the simple shape and no complicated cuts.

This product can really help a lot of people around the world to not just avoid touching your face when you have the bracelet on, but also to create a healthy habit that will help for future pandemics.

## Battelle CCDS

Battelle CCDS stands for Critical Care Decontamination System; the company Battelle is an Ohio-based science and technology company that has invented a new device which is capable of disinfect used masks or medical protective equipment.



This new invention consists of a metal container which has an air recirculation system that uses concentrated Vapor Phase Hydrogen Peroxide (VPHP) in order to disinfect the medical equipment. The design of this new invention is

very easy to manufacture given the fact that they recycle used containers and prepare them to withhold the disinfection process with their fluid

circulation system. It allows the hospitals, that are the main costumers, to place their equipment at the end of the day and run the machine without having to just throw the medical equipment away. It is

recommendable to be used 20 times per equipment and that helps with the medical equipment shortage that the world in general is going through.

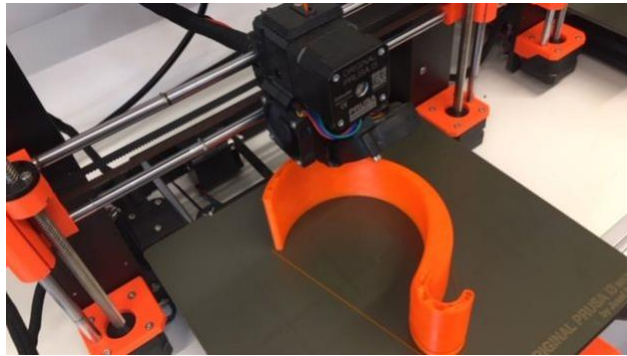


## The Hands-Free Door Handle

This new invention is self-explanatory, Wyn Griffiths came up with an idea after he had to go to the hospital and open all the doors after disinfecting his hands. He made a 3D model of a hands-free door handle that could be printed out. Once he had designed, he decided to upload the model online for people that have 3D printers to use and maybe help nearby hospitals or other people.

His invention is a great idea not for the best design or the best materials, just because he designed something that it is easy to

download and build. For a person that has a 3D printer at home and wants to be more protected when he has to go anywhere that needs to open doors, he just needs to get the model available online and use a pretty



cheap plastic to print it. It is accessible to a lot of people, and the design is small enough that can be carried around.

## Redesign

In order to make a product more manufacturable, there is a lot of aspects to consider like size, materials, shapes, etc. I think that the hands-free door handle could have a little improvement in order to make easier to use.

I would redesign the model online to only have kind of a T shape with a hook at the bottom of the T. By doing this we can reduce the amount of material used for the device given that the structure has less fragile points as the curve that the previous model has. Also, I think it would be able to fit better in your pocket. The only con that I see is that it might get stuck in your pocket, but with a design adjustment or just trial and error can be solved.

## Hurricane Season

The Atlantic hurricane season is a time when most tropical cyclones are expected to develop across the northern Atlantic Ocean. It is currently defined as the time frame from June 1 through November 30. The state of Florida is one of the most vulnerable places in the US for this kind of disasters. This is because its location between the Atlantic Ocean, the Caribbean Sea and the Gulf of Mexico.

Besides the normal hurricane season hitting the coasts of Florida, this year we also have in our hands a global pandemic. This global pandemic is caused by the Covid-19, and it is an airborne pathogen that is very contagious. Also, this year Florida and the rest of the East Coast could be headed into a brutal hurricane season just after the novel coronavirus outbreak peaks, forecasters say. The combination of these two kinds of disasters arise new kind of problems when it comes to getting prepared for them together, surviving the wave, or fighting the aftermath that they cause.

There is going to be a lot of problems that are going to arise because of the combination of these two major disasters. For me one of the main problems is going to be able to keep social distancing once the buildings, houses, infrastructures get damaged or destroyed during the hurricane. Once all these people have lost their homes, they are going to have to be taken to public buildings like gymnasiums or stadiums. In these places it is going to be really hard to keep the social distancing because you are going to have a lot of people compiled in a closed space.

In Florida, as in the rest of the country, there is a bunch of food and supplies donations by big companies to satisfy the necessity around the states. This is necessary for the people that don't have the necessary money to pay for all these necessities because they lost their job because of the pandemic. The problem arises when the hurricane passes through and destroys roads, parks and leaves those people with no way for the donators to go to a place and start giving out food or medical supplies. When the roads are flooded or destroyed from the hurricane neither people nor donators are going to be able to go to a single place to give out those supplies.

Finally, as I mentioned before Florida probably is going to have a lot of people living together in places that would be set up by our government. Those people already have to deal with having a hard time respecting the social distancing recommendations. Also, they are going to need somewhere to sterilize their clothes. If only one person carries the virus on their clothes or protection supplies from the Covid-19, it is going to be pretty easy to pass around and infect the people that are sheltering there.

## Solutions

Keeping social distancing has proven to be the most effective measure that we have in order to prevent the spread and flattening the curve of the pandemic. For this reason, I think that when we need a place to shelter from a hurricane because there is no other place to go, we should be able to keep the distance with the other person in need.

In order to make this possible, we should create like a personal room from a material that is easy to produce and also cheap. For this case I was thinking of a tent look like structure that would be sealed so if there is someone in there that is infected, there is less chances for them to spread the disease to the rest of the people in the shelter. Inside this “tent” we would have enough space to place a portable bed and also would have the capacity for two in case that there are children that need to sleep with their parents. One of the



problems this presents is that when you seal the “tent”, the people inside run out of oxygen. Here



is where we will install a ventilator system that helps filter the air on the way out. This filter should be small and not too powerful and using UV light to filter the air the best possible.

In order to make this possible I think that we should use aluminum tubing for the structure of the “tent”. By doing this we can still keep the weight down

for the whole structure and at the same time we are using a material that is easy to find, easy to mold to the shape we need and strong enough to hold the structure. In order to get these tubes manufactured, I think we could use a company that has a base in Florida to reduce transportations by trucks. One of the ones that come to my mind is *Continental Steel & Tube Company*, they have a variety of options and designs that could be used for the project.

For the sealing of the structure I would use a material that they use for camping tents but with no respiratory holes to ensure the sealing of the whole structure. The goal of this material is that it makes the production super-fast, it is very light and it is also cheaper than plywood or other materials that are used for structures like this. For this material I would choose a manufacturer in the US as well because of the facilitation in logistics. For the last part of the design I would use an existing air filter that could be in storage places all around the united states and modify the way it connects to the “tent”.

With all the things taken into consideration, I think that there are a lot of possibilities to have this product ready in an estimated time of two months. These materials make it easy to find and the only problem would be adapting the filter for the air. If this becomes true is going to help a lot of families that are stuck in those shelters survive this pandemic. Also, it will lower the stress of hospital workers with less patients from Covid-19 and more space for people that have been injured because of a natural disaster like a hurricane.



## Work Cited

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