

# Students design and produce gowns for local hospitals

## Undergrads partner with M Health Fairview to address PPE shortage

May 12, 2020—Just a few weeks ago, M Health Fairview contacted College of Science and Engineering professor Steven Saliterman asking for help designing disposable gowns for health workers. Saliterman then assembled 18 of his biomedical engineering students.

Within two weeks, they had created a safe, functional gown design that could be rapidly manufactured for use in Minnesota hospitals. Now, local companies Red Fox Innovations and Polar Plastics are rapidly producing the gowns—at a rate of 5,000 to 10,000 per day—and shipping them to M Health Fairview clinics.

The feat was profiled in a *Star Tribune* story describing [how students "saved local hospitals from running out of PPE."](https://www.startribune.com/a-gown-for-u-university-of-minnesota-students-saved-local-hospitals-from-running-out-of-ppe/570342121/) (<https://www.startribune.com/a-gown-for-u-university-of-minnesota-students-saved-local-hospitals-from-running-out-of-ppe/570342121/>)

## Solving real-world challenges

Students led the entire process from start to finish. They created drawings and prototypes, sourced a Food and Drug Administration-certified material, visited plants, and found local manufacturers. The team's goal is to produce 350,000 gowns over the next month or two, ultimately providing Personal Protective Equipment (PPE) for 35,000 employees in the M Health Fairview system.



**Photo credit:** Steven Saliterman

Biomedical engineering student Anna Karos models one of the protective gowns she designed and produced with her classmates in just two weeks. Photo credit: Steven Saliterman

### News coverage

#### Star Tribune

[A Gown for U: University of Minnesota students saved local hospitals from running out of PPE](https://www.startribune.com/a-gown-for-u-university-of-minnesota-students-saved-local-hospitals-from-running-out-of-ppe/570342121/)  
(<https://www.startribune.com/a-gown-for-u-university-of-minnesota-students-saved-local-hospitals-from-running-out-of-ppe/570342121/>)

### Videos

[Production Line Setup at Red Fox Innovations](https://youtu.be/8hCNOJMV-p0)  
(<https://youtu.be/8hCNOJMV-p0>)

[Polyethylene Film Production at Polar Plastics](https://youtu.be/03G5xDimRcU)  
(<https://youtu.be/03G5xDimRcU>)



CSE student Sam Newell working with Red Fox Innovations President Jon Boor Boor to coordinate manufacturing of the student-designed gowns. Photo credit: Steven Saliterman

Biomedical engineering senior Sam Newell was in charge of the manufacturing side of the project. He said one of their biggest challenges was finding a company that could produce gowns quickly and at a low price, especially since many local businesses are already hard at work producing masks and other PPE.

"I found this experience rewarding because of the interdisciplinary lessons it taught me," Newell said. "I was able to gain insight into all aspects of taking a project from day one to the finish line. The exposure I gained in this project was as valuable as any course work I've done here at the University."

## **Local partners, local impact**

The project also gave students valuable experience collaborating with local industry and researchers from other colleges. They worked with M Health doctors and nurses, professors in the University of Minnesota's College of Design, and 3M to finalize the design.

Plus, it gave them a taste of what it's like to work in a time crunch.

“I learned as much or more than [I did] in my senior design class,” said James Kerber, another BME senior involved in the project. “However, this was done in [only] three weeks. This was one of the most rewarding projects I have been on. And, it’s a valuable experience that I can talk about in nearly any interview for many years to come.”

Kerber and Newell said they hope more and more organizations nationwide will step up to address PPE shortages in the future. But for now, they’re focusing on making a local impact. The next step for their team is ramping up production to meet their goal of 350,000 gowns in the coming months.

[Read a day-by-day breakdown of the gown design process \(https://saliterman.umn.edu/\).](https://saliterman.umn.edu/)



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