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# UConn School of Engineering and aerospace manufacturer partner to make ventilators during coronavirus pandemic

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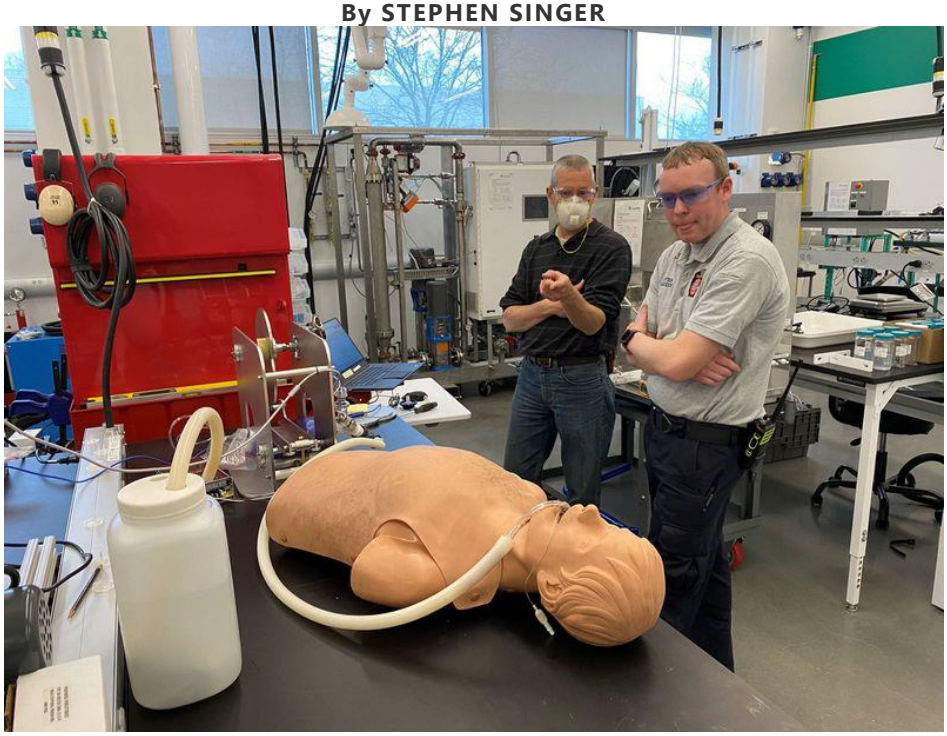
By STEPHEN SINGER



*Ed Wazer, a researcher at the UConn School of Engineering, left, and Capt. Robert C. Babcock of the university's fire department, stand over an emergency ventilator used in a mannequin. (UConn photo)*

Ed Wazer, a mechanical engineer at jet engine manufacturer Pratt & Whitney for 20 years, has applied his knowledge of pressures and flows to a new and critical task: making ventilators to battle COVID-19.

Wazer, who is now director of the Fraunhofer USA Center for Energy Innovation at the University of Connecticut, used an open source ventilator developed in Spain to make a prototype that will be made by an aerospace manufacturer in Eastford.

After seeing the coronavirus spread in Italy and Spain, he worked with a machinist to fabricate the first version of a ventilator. He's since been revising the design to meet specifications of the UConn Health Center.

They built two prototypes and are making some revisions, he said. They're in touch daily with Whitcraft LLC, an aerospace manufacturer, that will make the ventilators.

Whitcraft's chief executive officer, Doug Folsom, said with specifications from UConn, the company is creating a prototype ventilator that will be used as the basis for a new manufacturing project. After the prototype is reviewed, Whitcraft expects to manufacture a dozen or two in the first week.

After that, "we will keep making them as needed, as fast as we can." said Steve Ruggiero, chief operating officer of Whitcraft.

Jeffrey McCutcheon, a professor at the UConn School of Engineering's department of chemical and biomedical engineering, said the design by the UConn team uses a windshield washer motor to replace manual squeezing of an Ambu bag to provide ventilation.

The windshield wiper motor is "relatively low-cost and resilient and robust," he said.

The drive for ventilators, masks, surgical gowns and other personal protective equipment began several weeks ago as the coronavirus began to spread across Connecticut. State economic development officials and manufacturers established a network to connect hospitals that needed equipment and factories that manufactured a range of items.

Ruggiero and McCutcheon credited Colin Cooper, the state's chief manufacturing officer, for bringing the two together. Cooper is a former chief executive officer of Whitcraft.

"We got a call from Colin Cooper on Good Friday, we went to UConn on Tuesday to get the design information and now we are completing a prototype which should be complete within about a day," Ruggiero said.

UConn engineering school researchers began by testing masks and respirators purchased by the state. It was then that Wazer researched prototypes of ventilators.