

USF Develops 3D Printed Swab For COVID Tests

University of South Florida



The University of South Florida-designed 3D-printed nasal swab is now being used by hospitals, academic medical centers, state governments, and international agencies and health care facilities. Created in March when medical supplies were a significant challenge, the innovative swab allowed entities around the world fight the spread of COVID-19 through widespread testing.

The USF Health Department of Radiology team of Dr. Summer Decker, Dr. Todd Hazelton and Dr. Jonathan Ford worked round-the-clock for a week with Northwell Health, New York's leading healthcare provider, to create the initial design and prototype. The team collaborated with Formlabs to optimize the design and maximize the number of swabs that could be printed.

Dr. Michael Teng and Dr. Kami Kim of USF Health's Department of Internal Medicine worked with colleagues at Northwell to conduct scientific testing on the swabs to prove they were as effective as the traditional swabs. In all, a process that normally takes years was completed in just two weeks, producing a swab that cost less than 30 cents each.

“Knowing it was critical to quickly replenish swab stocks, the USF Technology Transfer Office made the patent-pending design files available to hospitals and universities free for the first year. Additionally, Formlabs and its affiliates were allowed to distribute the swabs royalty free, and no license or patent fee was charged. USF’s Technology Transfer office connected federal agencies without medical-grade 3D printing capabilities or who needed large quantities of swabs to Formlabs.

In Tampa alone, 3,000 swabs a day were printed for USF Health and Tampa General and soon other labs on campus joined in printing thousands more for providers like Moffitt Cancer Center. Ohio Gov. Mike DeWine credited the swabs with helping his state in the fight against the disease, and the White House took notice of the innovation, [CNBC reported](#).

"We are grateful that we were able to work as a team to get this solution out so quickly in order to hopefully help many people. The response has been overwhelming," Dr. Decker said. "It's been very rewarding to speak to so many hospitals across the world to hear their experiences and see how we can help. This situation has stripped away many of the barriers between us so we can work together for the common goal of saving lives."

This story was originally published in 2020.

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