

PRESS RELEASE

Photos and video can be found [here](#).

(Courtesy of Dr. Steven Alexander, LSU Health Shreveport)

LSU Health Shreveport Faculty Producing 3D-Printed Nasal Swabs for COVID-19 Testing

SHREVEPORT, La. (April 17, 2020) – The novel coronavirus (COVID-19) pandemic has produced many medical challenges, which LSU Health Shreveport has risen to meet. Among the most important goals for clinicians and scientists has been to determine whether a patient is infected with COVID-19. While the LSUHS COVID-19 Response Team very rapidly created the [Emerging Viral Threat \(EVT\) Lab](#) at the health sciences center, there have been national shortages for testing supplies, which have threatened the ability of such testing labs to perform tests. A crucial part of COVID-19 test kits are the nasal swabs, which have been in short supply as the demand for COVID-19 testing has increased around the United States and internationally. These swabs need to be prepared from specific materials and must have particular shapes to ensure accuracy of for specimen collection.

Fortunately, scientists at LSU Health Shreveport were able to utilize existing research and design facilities at the institution to 3D print resin polymer nasal swabs which can be used by the EVT Lab. As part of a national cooperative with the University of South Florida (USF) Health, Northwell Health, New York’s largest healthcare provider, and Formlabs, LSU Health Shreveport has obtained the printing files for a [patented swab design](#), **becoming the first in Louisiana to produce these patented 3D-printed swabs**. Steven Alexander, PhD, Professor in the Department of Molecular and Cellular Physiology, is leading the effort and started to produce these 3D-printed nasal swabs in large numbers using a technique called photopolymer laser printing. This light activated printing technique can produce medical devices which are chemically inert, sterile and compatible with accurate testing procedures. Dr. Alexander’s lab has started swab production with photoprinting occurring throughout the day and night. His lab has the capability to produce 324 of the swabs in one day and is planning to ramp up production significantly over the next couple of weeks. The printing of additional batches of swabs is already underway, and Dr. Alexander is working with LSU Health Shreveport’s EVT Lab to get the swabs into their COVID-19 test kits.

“This type of printing enables us to make even the most sophisticated testing tools available anywhere and the workflow is increasing so that hopefully soon we may not only meet our own needs, but perhaps other hospitals in the area,” said Dr. Alexander. “The COVID-19 pandemic has fundamentally challenged how we work, but 3D printing can really help overcome problems with the availability of medical supplies, shipping and delivery which help to ensure continuity of medical testing and care.”

“I want to commend Dr. Steven Alexander, an extremely bright and humble physiologist, for thinking outside the box and finding a solution to address the local and national rate-limiting factor for COVID-19 testing, which is lack of nasal swabs. This newest 3D printing development will revolutionize access to swabs, and our intent is to help increase testing capabilities, not only regionally, but throughout the United States,” stated LSU Health Shreveport Chancellor G. E. Ghali, DDS, MD, FACS, FRCS(Ed).

ABOUT LSU HEALTH SHREVEPORT

LSU Health Shreveport is one of two Health Sciences Centers of the Louisiana State University System and one of only 154 in the nation. LSU Health Shreveport is home to the School of Medicine, School of Graduate Studies and School of Allied Health Professions, and a robust research enterprise. Almost 900 students are enrolled in the degree programs at any one time. Additionally, over 500 residents and fellows are trained each year. The primary mission of the LSU Health Sciences Center at Shreveport is to teach, heal, and discover, in order to advance the well-being of the region and beyond. At the heart of the LSU Health Shreveport is a strong faculty that includes a number of nationally and internationally acclaimed physicians and scientists. More than 600 strong, they lead our research efforts, educate our students and provide primary and specialty care to patients throughout the region. LSU Health Shreveport has strong community support, fostering a culture of diversity and inclusion that promotes mutual respect for all. For more information, visit www.lsuhs.edu.

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