Tulane University launches new coronavirus research program to develop a vaccine and advanced diagnostics

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Tulane National Primate Research Center Director Jay Rappaport (right) and Skip Bohm, associate director and chief veterinary medical officer, are part of a team establishing a COVID-19 research program at Tulane to respond to the global public health emergency. Photo by Paula Burch-Celentano.

From working to develop one of the first nonhuman primate models for the 2019 novel coronavirus disease (COVID-19) to designing new therapeutic strategies and nanotechnology-based tests to rapidly diagnose infections, researchers at Tulane University are responding across disciplines to the emerging coronavirus epidemic.

Tulane National Primate Research Center (TNPRC) is establishing a COVID-19 research program to develop a vaccine and test treatments against the virus. First, researchers will create a nonhuman primate model to study the disease’s clinical progression, how it is transmitted through the air and how it specifically affects aging populations. Investigators hope to answer many of the unknowns...
Tulane researchers will also work to develop a rapid test for COVID-19 using advanced diagnostics developed by Tony Hu, PhD, Weatherhead Presidential Chair in Biotechnology Innovation. Hu will lead the project which will use highly sensitive blood or saliva tests that rely on nanotechnology-based strategies to find biomarkers of disease. Researchers at the Center of Cellular and Molecular Diagnosis of the Tulane School of Medicine will work with investigators at the TNPRC to validate
the tests using the nonhuman primate model.

“The goal of this technology is to aim for earliest disease detection, to provide better predictors of disease progression, rapid differentiation of coronavirus species, and real-time monitoring of how patients respond to treatments so we can improve outcomes,” Hu said. “This is especially urgent now since there have been reports that COVID-19 is spreading prior to people knowing that they are sick.”

Other researchers across Tulane are working on COVID-19 efforts. Virologist Bob Garry is part of a team decoding the genome of the coronavirus to determine its origins and how it possibly evolved from bats and pangolins. Leading disease modeling expert James “Mac” Hyman in Tulane School of Science and Engineering is creating mathematical models to track the spread of the coronavirus and the effectiveness of efforts to stop it.

Epidemiologist and disease ecologist Lina Moses, PhD, at Tulane School of Public Health and Tropical Medicine is in Geneva coordinating research efforts for WHO and the Global Outbreak Alert and Response Network as they work to prevent the outbreak from spreading into a global epidemic.