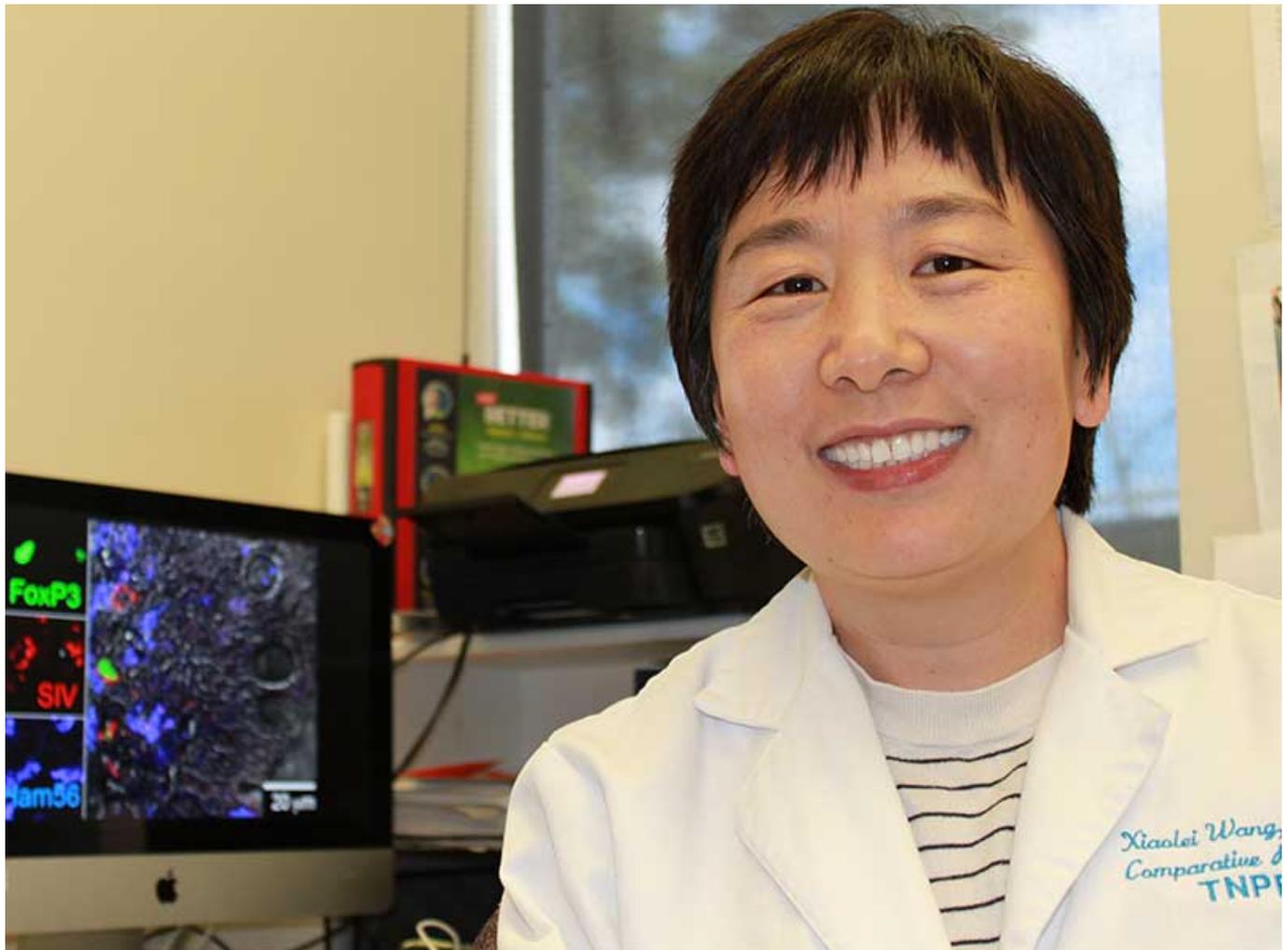


Tulane University

Tulane University awarded \$6.1 million to study HIV, tuberculosis in infants

April 30, 2019 10:30 AM

Keith Brannon
kbrannon@tulane.edu
(504) 862-8789



Lead investigator Xiaolei Wang is an assistant professor of pathology and laboratory medicine at Tulane National Primate Research Center.

Tuberculosis, the world's leading infectious disease killer, is also the leading cause of death in infants with HIV. Researchers at Tulane National Primate Research Center will use a new \$6.1 million grant from the National Institutes of Health to better understand how the developing immune system responds to these two diseases so that doctors can improve outcomes for infants and children across the globe.

According to UNAIDS, 1.8 million children are currently living with HIV/AIDS. HIV is usually transmitted to infants at birth, and the untreated disease leaves their immune systems particularly

vulnerable to developing active tuberculosis. Tuberculosis and HIV often work synergistically, each accelerating the progression of the other in a disarmed immune system. This is of particular concern in low-resource countries, where lack of treatment for HIV among pregnant mothers leaves their unborn particularly vulnerable to developing both diseases upon birth.

While the progression of tuberculosis in HIV-infected adults has been previously studied, the unique immune response in infants is largely unknown.

“Our previous studies have provided us tremendous insight into understanding how HIV progresses in infants,” said lead investigator Xiaolei Wang, assistant professor of pathology and laboratory medicine. “We have learned that the immune system of infants is highly specialized and that there is great potential for developing targeted treatment strategies that specifically benefit them.”

Using a nonhuman primate model of HIV infection, Wang and her team plan to study immune response to tuberculosis upon receiving antiretroviral therapy. Antiretroviral therapy is the current gold standard for controlling HIV by interfering with the virus’s replication process. This suppresses the disease enough that an individual’s immune system can continue to fight off other infections.

“Our hope is that by understanding how certain therapies boost immune function, we will be able to control the development of tuberculosis,” Wang said. “This could have a profound effect on improving the health of infants and children that are co-infected with HIV and tuberculosis worldwide.”

According to the World Health Organization, there were 10.4 million cases of tuberculosis worldwide in 2015, including 1.2 million cases among people living with HIV. Nearly 60% of those co-infected with both HIV and tuberculosis were untreated, resulting in 390,000 deaths.