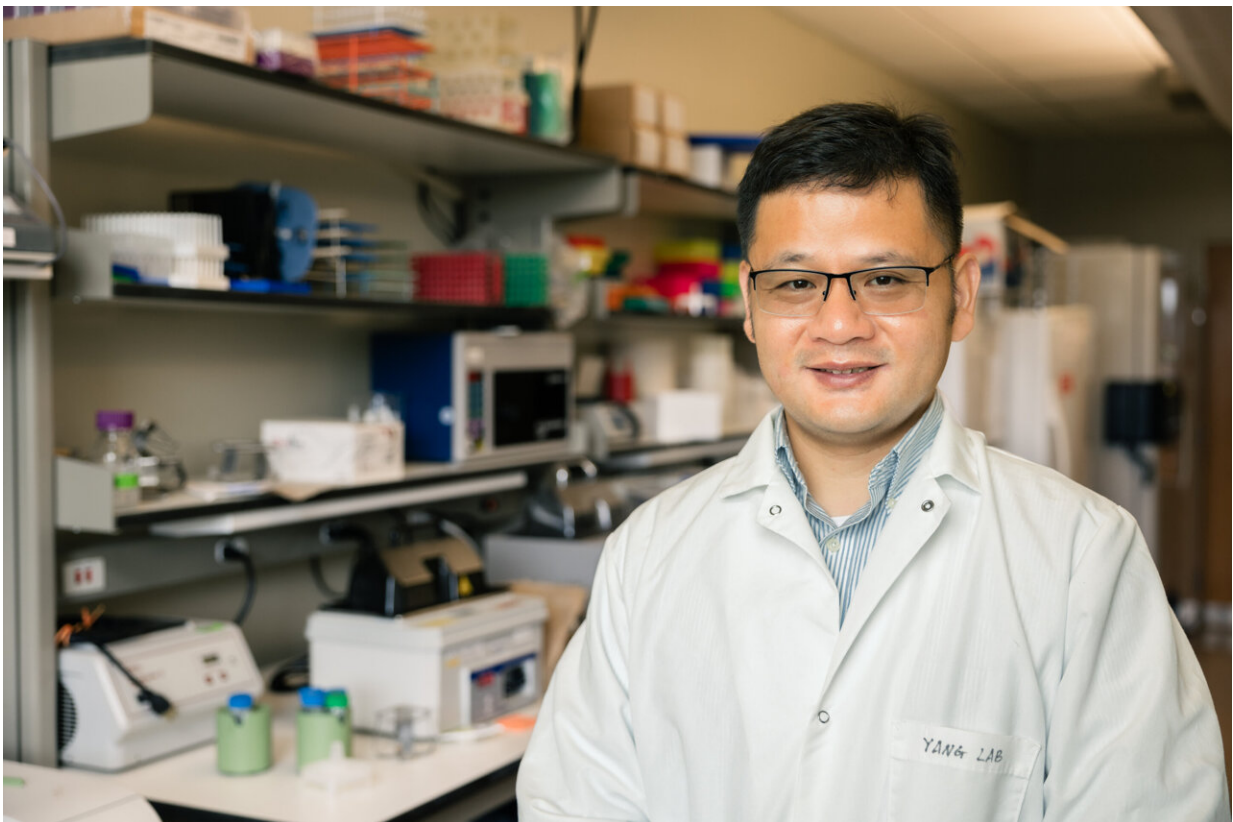


Is smallpox still a threat?

April 13 2024, by Courtney Price



Dr. Zhilong Yang, an associate professor in the Texas A&M School of Veterinary Medicine & Biomedical Sciences, served on a national committee that studied the threat of a new smallpox outbreak. Credit: Jason Nitsch/Texas A&M University

Smallpox, a disease that killed an estimated 500 million people in the 20th century alone, is the only human disease to be eradicated. However, [a new report](#), "Future State of Smallpox Medical Countermeasures," from the National Academies of Science, Engineering, and Medicine (NASEM) argues that the U.S. and the global community should prepare for smallpox to make a return.

Dr. Zhilong Yang, an associate professor in the Texas A&M School of Veterinary Medicine & Biomedical Sciences' Department of Veterinary Pathobiology, served on the committee that produced the report, which draws conclusions from the COVID-19 pandemic and mpox multi-country [outbreak](#) to assess the state of [smallpox](#) preparedness.

According to the report, smallpox could return through an accidental "leak," or even through an act of terrorism. It also states that preparing for the return of smallpox is key to preventing the spread of other diseases caused by viruses within the same family, like the mpox virus, which became a global outbreak in 2022 and continues to be a health concern.

"Smallpox vaccines and drugs also hold the promises and potentials to prevent and treat mpox and other viruses within the same family of smallpox virus, which is another important reason that we should continue to research poxviruses and develop smallpox medical countermeasures, including diagnostics, vaccines and therapeutics," Yang said.

Currently, only two laboratories—the U.S. Centers for Disease Control and Prevention in Atlanta, Georgia, and the Laboratory for Applied Microbiology at Koltsovo in Russia—have official collections of the virus that causes smallpox, making the chance of an accidental "leak"

low. However, there are enough publicly available genetic sequences of the smallpox virus to make it possible for the smallpox virus to be re-created, especially with the advance of synthetic biology and artificial intelligence .

"Even one case of smallpox outbreak would be a huge global issue, so we must stay vigilant," Yang said. "Scientists and [medical professionals](#) must also be aware that smallpox's symptoms are very similar to diseases like mpox that have been prevalent more recently. If there is a smallpox outbreak, we must be quick to recognize it."

Provided by Texas A&M University

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