The University *of* Texas
Medical Branch *at* Galveston

Battling Disease

Threats to Global Health Expedite Vaccine Development

Professor Scott Weaver holds five patents in vaccine development and continues to work on vaccines for many diseases, including chikungunya.

In the quest to bring vaccines to market to combat viruses like Ebola and chikungunya, researchers' most valuable allies are resources and time.

Five years ago, Professor Scott Weaver began work on a vaccine that protects people from chikungunya, a viral disease transmitted to humans by infected mosquitoes. Weaver, a world renowned virologist and vector biologist at The University of Texas Medical Branch at Galveston (UTMB), credits endowed faculty awards for providing him with the critical support he needed to ready the vaccine for delivery to a commercial partner who is now conducting further tests. After those tests are finished, the vaccine will be ready for clinical trials and, eventually, for licensure.

"The reason we get these projects off the ground quickly is because of endowment funding," said Weaver, who holds a PhD in molecular biology and virology and is the scientific director of the Galveston National Laboratory, one of two labs funded by the National Institutes of Health designed to conduct research on viruses that require the highest level of biocontainment.

In 2010, Weaver was appointed the holder of the John Sealy Distinguished University Chair in Human Infections and Immunity. The Sealy Chair was established in 2004 by The Sealy & Smith Foundation, one of UTMB's oldest and most ardent philanthropic partners.

"Through these endowments, we have the resources to conduct preliminary experiments," said Weaver, who holds five patents in vaccine development and continues to work on vaccines for many diseases, including chikungunya.

"We don't have to wait for a grant to be reviewed and then maybe eventually receive funding. Instead, we are able to get research moving more quickly and ultimately generate a compelling argument for further funding."

While rarely fatal, chikungunya causes fever and severe joint pain that is often chronic. Other symptoms include muscle pain, headache, nausea, fatigue and rash. Outbreaks have occurred in Africa, Southern Europe, Southeast Asia and islands in the Indian and Pacific oceans, according to the Centers for Disease Control and Prevention. Late last year, chikungunya was found for the first time in St. Martin, and the outbreak has spread to other islands in the Caribbean and beyond to North, Central and South America.

Chikungunya has been casually referred to as the "vacation virus" because of the cases primarily reported in the Caribbean, but the level of concern has increased with the arrival of infected travelers into the U.S. Chikungunya should be taken seriously. The disease carries the potential to cause long-term joint pain as well as an economic impact caused by lost hours on the job.

"People in other parts of the world are taking it seriously. And most people who have chikungunya will tell you they would have paid a significant amount of money to have been vaccinated," said Weaver, adding that many people with the disease have contacted him, frustrated with futile efforts to control the swelling or the pain. "They ask me if there's something that can be done, but there's no specific treatment available for them."

Weaver predicts that the process to move vaccines forward will likely occur more quickly as the number of cases of chikungunya increases and as a result of the recent Ebola scare.

"I think if you asked four or five months ago about the chance for a licensed Ebola vaccine some would have been skeptical," he said. "That's no longer the case."

If you would like more information about how to start an endowment, please contact: Betsy B. Clardy, CFRE | bbclardy@utmb.edu | (409) 772-1991