

More than a Coincidence?

Chance encounter leads to Lyme disease test

A chance airline encounter between TGen's Physician-in-Chief, Dr. Daniel Von Hoff, and the mother of a young woman with Lyme disease has led TGen's Pathogen Genomics Division to begin development of a new and exacting test for this debilitating illness that affects nearly 300,000 Americans each year.

After sharing family medical stories with Tammy Crawford – whose daughter, Jessica, was stricken with Lyme disease in 2012 – Dr. Von Hoff put Tammy in touch with TGen North Director Dr. Paul Keim.

"I felt like this was just meant to be," said Tammy, Executive Director of Focus On Lyme, a Gilbert, Ariz., organization that in July gave TGen \$75,000 to develop a new genetic-based test for Lyme that would be quick, affordable and – above all – accurate.

Current tests for Lyme disease are so unreliable that Tammy likens them to no better than a coin flip.

Instead, scientists at TGen North in Flagstaff, Ariz., will use the power of targeted DNA sequencing to develop and validate a test at the genomic level to measure the presence and severity of tick-borne Lyme.

By analyzing DNA from a patient's blood, the new test should be able



[L-R] TGen North Director Dr. Paul Keim, Jessica Crawford and her mother Tammy Crawford

to pinpoint Lyme disease, identify multiple Lyme strains, detect other tick-related infections, and show non-Lyme causes of disease.

"With recent advances at TGen and genomics overall, we can finally develop a diagnostic test that will put more actionable information into the hands of the physician than previously possible," said Dr. Keim, who also is Director of the Center for Microbial Genetics & Genomics at Northern Arizona University (NAU), which will help develop the test.

In addition to helping fund TGen's development of a new test, Focus On Lyme plans an inaugural Scientific Conference about Lyme disease Feb. 11-13, 2016. This invitation-only event will bring researchers and clinicians together to discuss diagnosis and treatment for Lyme patients.

Focus On Lyme will hold a public fundraising dinner on Feb. 12, 2016, at the Omni Scottsdale Resort & Spa at Montelucia. Proceeds will assist

clinical assessment leading to FDA approval of TGen's diagnostic tool.

The bacterium that causes Lyme disease occurs naturally in mice, squirrels and other small animals. The infection spreads as ticks feed on these animals and then bite humans.

This infection can manifest with a bulls-eye rash or a non-specific rash, but not always. Flu-like symptoms, such as fever, headache, body aches and fatigue can last a few days to a few weeks.

If detected early, most cases of Lyme disease can be successfully treated with antibiotics.

Undiagnosed and untreated cases can lead to fatigue, painful and swollen joints, memory loss, insomnia, heart palpitations, difficulty with concentration and other changes, including those that mimic other diseases, complicating a clinical diagnosis.

This is why an accurate diagnostic tool is essential.