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For Immediate Release

TIME FOR LYME FUNDS THE FIGHT TO END LYME DISEASE EPIDEMIC
Two Time for Lyme funded studies published and providing provocative insights into Lyme

Greenwich, CT, August 2010 - "It's all in your head" is what some Lyme disease patients hear when they tell doctors about their persistent fatigue, pain, and cognitive problems. "Lyme disease can present in myriad ways," says Dr. Harriet Kotsoris, neurologist and medical advisor to Time for Lyme, a Greenwich, CT-based research, education and advocacy group. "The result is that it can go undiagnosed or be misdiagnosed as psychiatric disorders, fibromyalgia, MS, Parkinson's, or arthritis," Dr. Kotsoris adds.

"Some medical experts dispute the existence of chronic Lyme disease," says Dr. Kotsoris. The consequence of this controversy? Anemic funding for research that can offer answers and solutions to the burgeoning numbers of Lyme disease sufferers. According to recent statistics from the Centers for Disease Control, 35,000 new cases are reported annually while many probable cases are unreported.

Time for Lyme is committed to fighting this epidemic by funding studies on all aspects of the disease. Along with the Lyme Disease Association, it endowed the first Lyme and Tick-Borne Diseases Research Center at Columbia University Medical Center in New York City. The organization also regularly provides research grants to leading experts.

Two Time for Lyme funded studies were recently completed: one focused on the immune system's role in chronic Lyme disease while the other examined how another tick-borne disease is spread.

Dr. Armin Alaedini, Assistant Professor of Neuroscience at the Weill Medical College of Cornell University, spearheaded the first study. Dr. Alaedini and his colleagues analyzed blood and spinal fluid of patients whose symptoms persist after antibiotic treatment with asymptomatic post-treatment patients. Dr. Alaedini demonstrated that patients with persistent symptoms had elevated levels of anti-neuronal antibodies compared to those who were no longer symptomatic. His findings on "Anti-neural antibody reactivity in patients with a history of Lyme borreliosis and persistent symptoms" were published in a March 2010 issue of *Brain, Behavior, and Immunity*.

The results demonstrated that the infection can trigger an ongoing abnormally activated immune response in some patients, offering new clues about the cause and development of the disease that may prove useful in devising more effective treatment strategies. Being able to distinguish Lyme from other diseases that can cause cognitive problems is crucial in differential diagnosis and treatment planning. This validation of an autoimmune response benefits patients whose doctors and insurance providers may refute their chronic symptoms were caused by Lyme disease. "Dr. Alaedini's research has uncovered some of the responses of the immune system in persistent disease, and perhaps, persistent infection," says Dr. Kotsoris.

On the preventative front, Time for Lyme awarded a grant to Dr. Robert Thach, Professor of Biology at Washington University in St. Louis, MO. His study titled "*Blood Meal Analysis to Identify Reservoir Hosts for *Amblyomma americanum* Ticks*" was described in the March 2010 issue of *Emerging Infectious Diseases*.

Dr. Thach's investigation focused on the human pathogen, Ehrlichia. Dr. Thach researched the carriers of the infected ticks to facilitate methods to reduce human exposure to them and consequently, tick-borne diseases. Dr. Thach and his colleagues developed a sophisticated DNA assay that allows them to identify which animal hosts are transmitting pathogens to ticks. Lone star ticks need blood meals to power their metamorphoses (they undergo three stages: larva, nymph, and adult) and egg laying. However, before their DNA assay, it was extremely difficult to identify tick blood meals.

The technology for identifying mosquito blood meals already existed because they take many blood meals over a short period of time, so the blood is usually fresh when they are captured. And since they keep returning for another meal, it's very easy to capture mosquitoes. But it's extremely challenging to extract blood from a tick,

which usually takes only one blood meal per life stage. Eight months to a year may have elapsed by the time one is caught: With so much time to digest that blood, only a minute amount of DNA may remain, if any.

This DNA technology was crucial to understanding the transmission of diseases from wildlife to humans by ticks. Their study yielded unanticipated results: grey squirrels and a type of rabbit proved to be secondary reservoirs for the ticks; as expected, white-tailed deer were the primary reservoir. In general, the results suggested that ticks that bit deer stood only a small chance of picking up one of the pathogens; however, deer have huge “reservoir potential” because there are so many of them.

Some experts speculate that tick-borne diseases are exploding because of measures to protect the white tail deer, which has resulted in excessive numbers of them: It is estimated that there are between 8 to 30 million deer nationwide. Some agencies plant food plots for deer and nearly all of the deer’s predators have been removed. Authorities are researching how to keep the population from exploding using environmental modification; Dr. Thach subsequently received a grant from the Environmental Protection Agency to investigate such modification, with hopes of stemming the proliferation of Lyme disease.

About Time for Lyme: *Time for Lyme’s mission is to fund innovative Lyme and tick-borne disease research, and to combat and prevent those diseases through education, outreach, public policy initiatives, information sharing and support. (203) 969-1333. www.timeforlyme.org*

Save the Date: *Time for Lyme Gala Fundraiser, April 2, 2011: Time for Lyme will host its bi-annual Gala Fundraiser, an Evening of Illusion, at the Hilton Hotel in Stamford, CT, Saturday, April 2, 2011 from 7:00 pm to 11:30 pm.*