

\$1.4M FOR LYME DISEASE LAB

Bacteria killed winery founder

Is it Lyme disease or not? That's one of the questions the University of Guelph hopes to be better able to answer with a new research lab dedicated to improving testing — and eventually treatment — for the tickborne bacteria that is increasingly affecting Canadians country-wide.



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On Wednesday, the Ontario university announced it will be setting up the lab with a \$1.4-million grant from the G. Magnotta Foundation for Vector-Borne Diseases, named for Magnotta Winery co-founder Gabe Magnotta.

Magnotta, an avid outdoorsman, died in 2009 at age 60 from complications of Lyme disease after suffering increasingly debilitating symptoms for almost seven years. His wife and business partner Rossana Magnotta, CEO of the Vaughan, Ont.-based winery, created the non-profit foundation in 2012 in his memory.

"It's been a long road, and it's been a dream of mine to make it happen," she said in an interview prior to the announcement. "I'm so excited that we're going to be able to be that beacon of hope for so many Lyme patients."

Lyme disease, first identified in Lyme, Conn., in 1975, is caused by the bacteria *Borrelia burgdorferi*, which infects birds, small rodents and deer. Ticks — most commonly the blacklegged and western blacklegged species — pick up the bacteria by biting infected animals, then pass it on to other animals and humans.

Some, but not all, people develop a bull's-eye rash at the site of the bite. Initial symptoms are flu-like, including fever, headache, nausea, light sensitivity and muscle aches. But left untreated, the infection can spread within the body, leading to skin rashes, arthritis-like pain, cognitive impairment, and vision and hearing problems.

Lyme disease is often misdiagnosed, as symptoms can mimic neurological disorders like multiple sclerosis, amyotrophic lateral sclerosis (ALS), Alzheimer's or Parkinson's disease.

Even when the disease is diagnosed in its early stages, patients can develop new symptoms after treatment.

Health Canada recently earmarked \$4 million to establish a Lyme disease research network in conjunction with its Federal Framework on Lyme Disease.

"Lyme disease is increasingly recognized as a substantial threat across the country and there is a profound need for high-quality science that can improve the lives of afflicted Canadians," said Melanie Wills, a research associate in the university's department of molecular and cellular biology, who will direct the new lab.

"We want to uncover the molecular mechanisms that are driving the infections, that are driving persistent symptoms and causing different manifestations in different subpopulations of people who suffer from Lyme disease," she said.

The Public Health Agency of Canada (PHAC) estimates that 987 Canadians were newly infected with Lyme in 2016, up from 682 new cases in 2013 and 144 cases in 2009.

But Dr. Ralph Hawkins, an internal medicine specialist at the University of Calgary whose practice includes patients with Lyme disease, believes the actual number of those who have contracted the infection is likely five times higher.

"Lyme disease in Canada is probably under-reported, under-diagnosed and as a result it's under-treated," said Hawkins.

Rossana Magnotta can attest to that: about five years after symptoms began, her husband was unable to walk unassisted, had severe pain and could no longer write or communicate verbally.

Though Magnotta, a former medical lab technician, suspected Lyme from the outset of her husband's illness, she couldn't convince neurologists they consulted to consider that possibility.

"When I was suffering with him every step of the way, we were like in a black hole."