

GRAD BRIDGES UNDERSTANDING OF WEST NILE VIRUS

BY ADAM GILES

Goudarz Molaei doesn't waste any time. It has only been a year since he graduated from UTM with a PhD, but his research on West Nile Virus is already changing the way scientists and health officials understand the disease.

Molaei, a post-doctoral scientist with the Connecticut Agricultural Experiment Station in New Haven, played a vital role in discovering that public health agencies have been targeting the wrong breed of mosquito in attempts to curb transmission of the potentially deadly virus between birds and humans. It was his independent research that identified the primary culprit — a species called *Culex salinarius* that breeds in salt marshes and swamps.

Since the 1999 outbreak of West Nile Virus in New York, mosquito control agencies have largely incriminated *Culex pipiens* mosquitoes — a species that breeds in urban storm sewers, ponds and birdbaths — even though there were limited studies indicating this species might be one of the perpetrators.

“Our research finding enables public health officials to target *Culex salinarius* mosquitoes in their breeding habitats at the right time during the transmission season,” says Molaei, who made the discovery in May.

Molaei examined the stomach contents of hundreds of mosquitoes from several different species using molecular biology techniques and found that a relatively large fraction of the *Culex salinarius* population readily feeds on both birds and mammals, including humans. *Culex pipiens* mosquitoes, on the other hand, show a very strong preference for feeding on birds with little inclination for mammalian blood.

“We therefore concluded that while *Culex pipiens* may occasionally feed on humans, it is not likely to be the major cause of humans contracting West Nile Virus,” he says.

Molaei, who studied insect molecular biology and physiology at UTM under Professor Angela Lange until 2004, acknowledges that this research finding has been a very important and exciting event.

“I worked very hard and was pleasantly surprised that this discovery happened in a relatively short time,” he says.

As a result of this breakthrough, the New York Health Department and the University of Texas have approached Molaei for collaboration on other research initiatives.