

# The Daily Warrior

Growing in Science daily

June 18, 2015

## What the Heck is Chikungunya?

by: Michael Adam

First of all, it's pronounced chick-en-gun-yuh.

Now that the first locally-acquired cases of the mosquito-borne virus have been reported in Florida, you're probably wondering what is and why you should care. So we broke it down.

Why you might not have heard of it

The chikungunya virus is new to the Americas, though it has long been found in Asia, Africa, and Europe. It was discovered in the Caribbean islands late last year, and has since made its way to the continental United States by way of mosquito-bitten travelers returning from vacation.

Before July 15, there were 357 reported cases of chikungunya in the United States, including 121 in Puerto Rico, according to the Centers for Disease Control and Prevention. Though the Puerto Ricans contracted chikungunya locally, every other case was acquired outside the U.S.

The Florida Department of Health reported Wednesday that 81 residents had contracted chikungunya while traveling to the Caribbean. And Thursday, two people who hadn't traveled were diagnosed with the illness. This means that local mosquitos are spreading the virus.

Chikungunya is not spread person-to-person, but rather person-to-mosquito-to-person.

Ashley Manning, one of a dozen people in Georgia who contracted the virus while traveling, called the symptoms "fiercely unpleasant." She said her fever reached 103 degrees and her joint pain was excruciating.

"I just thought I wasn't going to be able to walk, like I was going to constantly going to have these pains," Manning told ABC affiliate WFTV in Atlanta. "My joints were hurting really bad and I was like getting really out of breath and like having a fever."

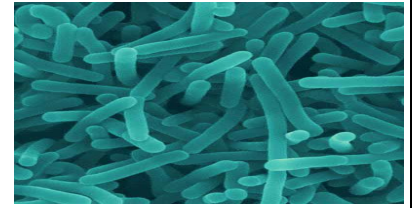
Chikungunya's most common symptoms are fever and joint pain, according to the U.S. Centers for Disease Control and Prevention. But it can also cause headaches, muscle pain and a rash. It isn't fatal, but it can resemble dengue fever, another mosquito-borne virus.

It takes up to a week for symptoms to appear after a person has been bitten, according to the CDC. Most people feel better in about a week, but some experience joint pain for several months.



## Blue Bell Blues

By: Jennifer Clark



This outbreak investigation is over. Information gathered as part of the investigation indicated that various Blue Bell brand products were the source of this outbreak of listeriosis. Listeriosis is a life-threatening infection caused by eating food contaminated with the bacterium (germ) *Listeria monocytogenes* (*Listeria*). People at high risk for listeriosis include pregnant women and their newborns, adults 65 and older, and people with weakened immune systems.

A total of 10 people with listeriosis related to this outbreak were reported from 4 states: Arizona (1), Kansas (5), Oklahoma (1), and Texas (3). All ill people were hospitalized. Three deaths were reported from Kansas (3). On April 20, 2015, Blue Bell Creameries voluntarily recalled all of its products currently on the market made at all of its facilities, including ice cream, frozen yogurt, sherbet, and frozen snacks. Consumers should not eat any recalled Blue Bell brand products, and (Continued on Page 2)

institutions and retailers should not serve or sell them. This is especially important for people at higher risk for listeriosis. These products are frozen, so consumers, institutions, and retailers should check their freezers. On May 7, 2015, the U.S. Food and Drug Administration released the findings from recent inspections at the Blue Bell production facilities in Brenham, Texas.

#### Final Case Count Update

As of June 18, 2015, a total of 10 people infected with several strains of *Listeria monocytogenes* were reported from 4 states: Arizona (1), Kansas (5), Oklahoma (1), and Texas (3). There were no changes to the case count since the last update on April 21. Illness onset dates ranged from January 2010 through January 2015. The people with illness onsets during 2010-2014 were identified through a retrospective review of the PulseNet database for DNA fingerprints matching isolates collected from Blue Bell ice cream samples. All 10 (100%) people were hospitalized. Three deaths were reported from Kansas.

### **Bird Flu: Should you be worried?**

by Trevia Brownlee

The outbreak of the bird flu in the Midwest has caused a significant increase in the price of eggs. Despite the increase in eggs, the price of chicken and roasting turkeys has decreased.



## **Electronic Nose Could Make Early Detection of Stomach Cancer Possible**

by: Danielle Kelly-Williams

Researchers have developed a quick, simple and accurate breath test for the early detection of stomach cancer – one of the most lethal forms of cancer and for identifying people at risk for developing the disease. The non-invasive and inexpensive method is described in this week's issue of the journal.

Developed by Prof. Hossam Haick of the Technion Faculty of Chemical Engineering and the Technion's Russell Berrie Nanotechnology Institute, the technology can be used to detect premalignant lesions at the earliest stage, when healthy cells start becoming cancerous. This is significant because although stomach cancer develops in a series of well-defined steps, there is currently no reliable screening test for early detection. Additionally, all current methods for diagnosing the disease involve an invasive endoscopy. Together with a team from the University of Latvia, the researchers collected two breath samples from 484 people – 99 of whom had been diagnosed with stomach cancer but had not yet had chemotherapy or radiation treatments. The patients were asked about their smoking and drinking habits and tested for infection with *Helicobacter pylori*, which is a risk factor for stomach cancer. The first breath sample was analyzed using a technique that measures the various organic compounds in exhaled breath.

The second sample was analyzed using nano-array analysis (developed by Prof. Haick), which accurately distinguished the different precancerous stages, identifying

patients at low and high risk for developing stomach cancer. The findings did not change when the researchers took into account age, alcohol use and the use of antacid drugs. Graphic showing how the team's innovative stomach cancer detecting technology works (credit: Technion-Israel Institute of Technology) A wide-scale clinical trial is now under way in Europe, with thousands of participants who have cancerous or precancerous tumors. According to the American Cancer Society, "...one reason the overall survival rate for stomach cancer is poor in the United States is that most stomach cancers are diagnosed at an advanced rather than an early stage. The stage of the cancer has a major effect on a patient's prognosis (outlook for survival)." Prof. Haick is recognized in the scientific and academic world for his "electronic nose" research. He has received more than 40 prestigious awards and honors, including the Marie Curie Excellence Award, the ERC (European Research Council) Award, the Discovery Award of the Bill & Melinda Gates Foundation, and the Halevy Award for Innovative Applied Engineering.

He was made a Knight of the Order of Academic Palms by the French government, and has been chosen for numerous "best of" lists including the MIT Technology Review's TR35 (listing the world's top 35 young scientists). The Technion-Israel Institute of Technology is a major source of the innovation and brainpower that drives the



Israeli economy, and a key to Israel's renowned as the world's "Start-Up Nation." Its three Nobel Prize winners exemplify academic excellence. Technion people, ideas and inventions made immeasurable contributions to the world including life-saving medicine, sustainable energy, computer science, water conservation and nanotechnology. The Joan and Irwin Jacobs Technion-Cornell Institute is a vital component of Cornell NYC Tech, and a model for graduate applied science education that is expected to transform New York City's economy. American Technion Society (ATS) donors provide critical support for the Technion—more than \$2 billion since its inception in 1940. Based in New York City, the ATS and its network of chapters across the U.S. provide funds for scholarships, fellowships, faculty recruitment and chairs, research, buildings, laboratories, classrooms and dormitories, and more.



