

The Ebola virus spreads from patient zero to over 3,000

BY AIPERI IUSUPOVA
STAFF WRITER

Who is patient zero? In epidemiological investigations, doctors often use the term to refer to the first documented case. According to CNN Health and The New England Journal of Medicine, patient zero of the recent Ebola outbreak was a young villager from Guinea.

First identified in equatorial areas of Sudan and Zaire in 1976, the deadly Ebola virus has identified itself once again in a new location: Senegal, the epicenter for international transit.

Despite strict quarantines on Ebola outbreaks, research scientists across the world believe that it is impossible to prevent the spread of fever in such a short period of time. Scientists at Harvard University, in conjunction with the Centers for Disease Control and Prevention, were able to map out the genomes of infected patients.

An Al Jazeera article written by Digital News Producer Renee Lewis, "Scientists Map Ebola Virus Genome in Quest for Treatment" reported the analysis of over 99 Ebola virus genomes, which supported the understanding of how the virus was transmitted and evolved up until this time.

Ebola Hemorrhagic Fever, a zoonotic pathogen, is passed through various rodents and monkeys that carry the infection. Moreover, recent publications in peer-reviewed journal Emerging Infectious Diseases state that "3.5 percent of bats were positive for antibodies against Ebola Zaire and Reston viruses," which alludes to EHF wildlife reservoirs.

"Ebola viruses, members of the filovirus family, have been found mostly in Africa," said Daniel Christen, visiting assistant professor of chemistry, who specializes in Medicinal chemistry and history of diseases. "Among humans, the most common route of transmission is through direct contact with a symptomatic patient, bodily fluids from a patient or a diseased patient."

The Ebola virus is caused by filoviruses that encrypt their genome into single-stranded negative-sense RNA. The Ebola virus evolves with formation of virions, filamentous infectious viral particles, which consequently infuse into receptors of the cell's surface to release the virus into the cell. The result is evasion of the immune system.

"In order for viruses to infect and multiply, they need to gain entry into host cells," said Michele Malotky, department chair and associate professor of biology. "Once they have gained entry, they hijack the cell's machinery and reprogram the cells to become viral factories. There are currently a number of labs striving to identify these cellular receptors and generate antibodies that block the ability of the virus to bind and enter."

Meanwhile, EHF epidemiological studies have traced the Ebola virus back to patient zero of 2014 to suggest that it was a two-year-old boy from the village Gueckedou in Guinea who started the chain reaction of events that led to the spread of Ebola throughout the



Patient Zero,
Location Zero

The first Ebola case of the 2014 outbreak was in a young patient from the village of Gueckedou, Guinea.

Ebola fatalities:
2,097 dead
(out of 3,944
current cases)

region. After suffering for four days, the boy consequently infected his family, who then infected other villages in Guinea, which finally led to the spread of Ebola in the nations of Sierra Leone and Liberia.

With an unusual 2014 index case, the Ebola virus became unprecedented when the death toll in West Africa reached 2,097 out of 3,944 present cases. Since, the spread of EHF has prompted international airlines, border stations and ports to take measures to avoid possible contagion.

Scientists still do not understand how Ebola zoonotic pathogens were transmitted from animals to humans. As a result, the zoonotic pathogens now jump from human to human as they spread across the globe.

New endowment allows CPPS to continue providing unique opportunities

BY MOLLY SCHNEIDER
STAFF WRITER

"A practical liberal education applied to real world problems." Too big of a mouthful, right?

Well, if you were sitting in on the 7:30 a.m. brainstorming sessions with Kent Chabotar, professor of political science, this is how you came to understand the Center for Principled Problem Solving.

What came to be known as CPPS is an extensive program run by Director Mark Justad that focuses on equipping Guilford College students with the skills that enable them to work productively with each other. This will provide them with the necessary skills to make their communities more just and sustainable places.

Senior Sam Metzner was one of 16 Principled Problem Solving Scholars during 2013 - 2014.

"Some of the things that I learned that have proven to be useful was what I learned about leadership styles and working in a group," said Metzner. "From working with others at Guilford, to my experience post Guilford, I think it's important to have an idea of how well you work in groups and what your role will be, whether it be in the workplace or socially."

To assure the future of such a program, setting up an endowment is important. This can allow CPPS to sustain itself so that more students can get what Metzner received from participating in this program.

By the good graces of trustee Dan Mosca and his wife Beth Mosca, CPPS will receive an endowment of \$2.5 million. Due to the fact that this is a challenge gift, whatever Guilford raises the Moscas will match, dollar for dollar, making the total sum an outstanding \$5 million.

"As part of the Mosca family's generous challenge gift commitment of \$2.5 million, trustees are asked to name the Center for past president Kent Chabotar when a total of \$5 million is raised," said Ty Buckner, associate vice president for communications and marketing, in an email to The Guilfordian.

"According to our Advancement office, as of this date, the College needs approximately \$1 million in additional new gifts to complete the fund."

The Mosca family's altruistic dedication and commitment to CPPS has truly supported the Center and is helping to sustain the program, making the future look much more promising.

"Dan Mosca is a wonderful trustee and he is very involved in PPS," said David Hammond, chair and professor of

theatre studies.

Jack Zerbe, director of study abroad and international programs and professor of theatre studies, worked as a PPS faculty fellow with Chabotar in the early stages of CPPS and watched as he steered the program the whole way from the brainstorming committee to the creation of CPPS.

"He certainly was the person who articulated it and helped us understand that principled problem solving might be a way for us to uniquely brand practical liberal education at Guilford College," said Zerbe. "It seemed a pretty logical thing to do as a way of honoring one of the major players who dreamed it up in the first place."

Guilford students should take the opportunity to check out the Center, located in the rear of King Hall's first floor, to see all that they have to offer our community.

If you would like to donate money towards the CPPS endowment fund, please visit Guilford's giving page:

WWW.GUILFORD.EDU/SUPPORT/GIVING