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LJI Instructor Annie Elong Ngono, Ph.D., wins GVN support to advance infectious disease research

Elong Ngono, Ph.D., accepted to Global Virus Network Rising Star Mentorship Program

LA JOLLA—As an infectious disease researcher at La Jolla Institute for Immunology (LJI) Instructor Annie Elong Ngono, Ph.D., has spearheaded important studies into the human body's response to deadly pathogens such as dengue virus. Now, this dedication to global health and virology has earned her acceptance to the Global Virus Network's ([GVN](#)) highly selective [Rising Star Mentorship Program](#).



LJI Instructor Annie Elong Ngono, Ph.D., is investigating immune responses to dengue virus and other mosquito-borne flaviviruses. (Credit: La Jolla Institute for Immunology)

GVN is a coalition of human and animal virologists from 68 Centers of Excellence and 11 Affiliates in 39 countries. Elong Ngono is the first LJI scientist to be accepted into the GVN Rising Star Mentorship Program, which offers early career virologists unique opportunities for close collaboration with senior GVN scientists and clinicians. Through the program, Elong Ngono will also get to participate in exclusive GVN meetings and other professional development opportunities in virology.

"It's an honor," says Elong Ngono. "Collaboration is critical for answering questions in emerging disease research, so I really appreciate this opportunity."

Elong Ngono was nominated for the program by LJI President and CEO Erica Ollmann Saphire, Ph.D., a member of the GVN. "Annie's research highlights the fascinating dynamics between viruses and host cells, to explain how we can get immune cells to ramp up their protection," says Saphire. "Annie is also a strong supporter for international collaboration in the field of emerging disease, so I know she'll make important advances through the GVN."

Elong Ngono studies how immune cells respond to flaviviruses, a family of viruses that includes dengue virus, Zika virus, yellow fever virus, and Japanese encephalitis virus (JEV). These mosquito-borne viruses infect an estimated 400 million people each year. According to the World Health Organisation dengue virus alone kills around 21,000 people every year, and these victims are mostly children.

Designing effective flavivirus vaccines has proven difficult. Part of the problem is that infection from one type of flavivirus can alter a person's immunity to another flavivirus, in some cases leaving a person at greater risk of severe disease (a phenomenon called antibody dependent enhancement.) [[Learn more: The dengue problem](#)]

Since 2015, Elong Ngono has worked with [LJI Professor Sujan Shresta, Ph.D.](#), to investigate exactly how immune cells respond to different flaviviruses—and how we might design vaccines to protect people in regions where several flaviviruses overlap. Their work, which includes close research partnerships with scientists in Nepal, has led to a better understanding of how the specific T cells on the lookout for one flavivirus react to other flaviviruses. By working with both human immune cells and cutting edge mouse models, Elong Ngono has shown how this T cell cross reactivity might be exploited through a future vaccine.

In 2021, Elong Ngono was able to pursue an independent research project thanks to support from LJI's [Tullie and Rickey Families SPARK Awards for Innovations in Immunology](#). With SPARK funding, Elong Ngono gathered meaningful preliminary data on cross reactivity between dengue and JEV infections in Nepal and strengthened important research ties with collaborators at Tribhuvan University.

"It's important to collaborate with people in countries where these diseases are endemic," says Elong Ngono. "Working with scientists on site helps us tackle critical questions regarding emerging infectious diseases and can lead to capacity strengthening for global health research going forward."

Elong Ngono says the GVN Rising Star Mentorship Program will help her take this research—and her career—even further. "This program will give me an opportunity to figure out my next career steps and how to make the biggest impact through collaboration," she says.

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About La Jolla Institute

La Jolla Institute for Immunology is dedicated to understanding the intricacies and power of the immune system so that we may apply that knowledge to promote human health and prevent a wide range of diseases. Since its founding in 1988 as an independent, nonprofit research organization, the Institute has made numerous advances leading toward its goal: life without disease. [Visit lji.org](http://lji.org) for more information.