

Boston University Medical Campus

Community Liaison Committee (CLC)

National Emerging Infectious Diseases Laboratories (NEIDL)

MEETING NOTES

Tuesday February 11, 2020

6:30 pm. * 650 Albany Street Room 715

ATTENDING

David Opp, CLC; J. Kevin Fisher, CLC; Jean Lee, CLC; Joe Lillis, CLC; Vanessa Hackett, CLC; Robert Timmerman, CLC; Valeda Britton, Executive Director, Community Relations/MED, BU; Chimel Idiokitas, Director, Community Outreach/MED, BU; Florian Douam, Assistant Professor, BU Microbiology; Dr. Ronald Corley, BU Department of Microbiology, Director, NEIDL

Meeting opened at 6:40pm

Humanizing Mice to Study Viruses by Dr. Florian Douam:

Dr. Florian Douam is a new Assistant Professor at the NEIDL. He is a native of France, and was heavily involved in community outreach while pursuing his master's degree. He then went on to attend Princeton University for his post-doctoral training.

Dr. Douam's work focuses on how our immune system fights virus infections. His lab studies mosquito born viruses such as Dengue, EEE and Zika. There are two broad parts of the immune systems, called Innate and Adaptive, and both are required for surviving a pathogen. Innate immunity starts immediately once a human is infected. Once the innate system responds, the adaptive immune system kicks in more aggressively.

With his research he attempts to answer the question: Why does the immune system fail to protect the body from certain viruses? If you understand how a virus escapes the immune system, you can then train the system to better recognize viruses, and that also helps to develop vaccines. At times the human immune system gets out of control and may cause disease by "over-reacting", to a pathogen, causing an inflammatory disease. The key is to balance the immune system by developing viable vaccines.

The immune system is a complex of tissues, cells and soluble components. To study the immune response to a virus, researchers need animal models to be able to recapitulate human responses. A novel way to study human immunity is to create "Humanized Mice". Humanized Mice are ideal to use and enable technology to study human-virus infections. Humanized mice are in between mice and humans on the scale. There are different ways to create humanized mice.

Human Immune System (HIS) mice are being used to understand how viruses interact with the human immune system. Dr. Douam develops HIS mice models to enhance the accuracy and significance of these interactions to

- Develop novel anti-viral and vaccine approaches against virus infection
- Enhance our understanding of the human immune system

NEIDL Director Update by Dr. Ron Corley:

Global News:

Dr. Corley announced that 44,852 coronavirus cases have been identified worldwide. There have been over 1000 deaths. WHO has labeled this virus as “SARS-CoV- 2”. There are seven different known strains of coronaviruses that cause human disease. Four strains were identified that caused very mild respiratory infections and cold-like symptoms. SARS-CoV-2 is the third human coronavirus known to cause severe disease.

While China was not transparent up the front end of the outbreak, they have since quarantined the first 27 infected individuals, fully sequenced the virus in 10 days and shared their findings with the world.

Experts believe that the virus infection started with a mammal (likely a bat) located about 1000 miles away from the first known location in China (Wuhan). The virus may have then been transmitted to another animal, who was then sold at an open market.

On the federal level, there has been more of an emphasis put on what is being called “conflict of commitment & research security”. There have been concerns on the part of the funding agencies in the U.S. about researchers being supported by the federal government to develop new intellectual property and then also receive support from other countries, and sharing this intellectual property. New systems to ensure that BU faculty know of the issues and are compliant with current guidelines are being developed.

NEIDL Receipt of Agents:

The NEIDL would like to receive the coronavirus for testing, however the main difficulty is the process and length of time to receive new pathogens. The lab must write IBC protocols, then go to the IBC for approval, then the lab must get approval from BPHC. The IBC has agreed to have an accelerated review committee meeting on Friday for the 3 protocols on the coronavirus.

Right now, the NEIDL can receive the coronavirus from Australia and/or the Galveston National Lab. The NEIDL will internally look at ways to streamline the process and create a standard procedure, which will only require amendments depending on what the future virus may be.

New Labs/ Investigators/ Research:

The NEIDL is in talks with the Ragon Institute on potential collaborations along with MIT, MGH, & Harvard.

Government & Community Affairs Updates:

Ms. Britton announced that Community Relations is beginning outreach to BPS schools for Intro to Careers in Medicine scholarships.

The NEIDL is looking to add CLC members and asked CLC members to let Community Relations know if they have any recommendations.

NEIDL personnel have volunteered to take part in a speaker series at the Hurley School with their 8th grade students.

Other Topics:

Meeting adjourned