



Infectious
Diseases Labs

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Dr Albin Fontaine

French Armed Forces Biomedical Research Institute
IRBA, France



Monday, 30 January 2023

5:00pm to 6:00pm (SGT)

Join Zoom Meeting [here](#)

Meeting ID: 921 4739 1994

Passcode 676671

Analysis of trapped mosquito excreta as a non-invasive method to reveal arbovirus circulation and biodiversity.

Emerging and endemic mosquito-borne viruses can be difficult to detect and monitor because they often cause asymptomatic infections in human or vertebrate animals or cause nonspecific febrile illness with a short recovery waiting period. Some of these pathogens circulate into complex cryptic cycles involving several animal species as reservoir or amplifying hosts. Detection of cases in vertebrate hosts can be complemented by entomological surveillance, but this method is not adapted to low infection rates in mosquito populations that typically occur in low or nonendemic areas. We identified West Nile virus circulation in Camargue, a wetland area in South of France, using a cost-effective xenomonitoring method based on the molecular detection of virus in excreta from trapped mosquitoes. We also succeeded at identifying the mosquito species community on several sampling sites, together with the vertebrate hosts on which they fed prior to being captured using amplicon-based metabarcoding on mosquito excreta without processing any mosquitoes. Mosquito excreta-based virus surveillance can complement standard surveillance methods because it is cost-effective and does not require personnel with a strong background in entomology. This strategy can also be used to noninvasively explore the ecological network underlying arbovirus circulation.

Dr Albin Fontaine is a research scientist at the French Armed Forces Biomedical Research Institute (IRBA). I am working on vector borne diseases surveillance and prevention. One of my main interests are to develop cost-effective methods to detect arthropod-borne pathogens in a community, or to assess vector population composition, densities and dispersion, using sequencing methods and molecular strategies. Based in Marseille in South of France, I am surrounded by *Aedes albopictus* and at close range from Camargue, a large wetland where West Nile virus transmission has been repeatedly reported for several years. I am working on vector borne viruses transmitted in South of France and in areas where French military forces are deployed (mainly in Africa), in collaboration with several military and non-military institutions.

Webinar is open to all. No registration required

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