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# OMNI-REUNIS Super-Spreader Seminar Series

These seminar series is intended to provide faculty members, OMNI-RÉUNIS affiliates and HQPs a platform to present their research, share experiences and foster collaboration among OMNI-RÉUNIS, the Emerging Infectious Disease Modelling (EIDM) networks, and the scientific community.

## MATHEMATICAL MODELLING OF THE FIRST HIV/ZIKV CO-INFECTION CASES IN COLOMBIA AND BRAZIL

Zoom (Virtual Seminar) | Thursday, Dec 14, 2023 | 11:00 am-12:00 pm EDT

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**DR. JHOANA P. ROMERO-LEITON**

### MEET THE PRESENTER

Jhoana Romero-Leiton holds a Ph.D. in Mathematics with expertise in mathematical biology, applied statistics, data visualization, and extensive research experience in mathematical modelling of public health, ecological and environmental problems. Her research interests include vector-borne diseases (VBDs), antimicrobial resistance (AMR), time-series analysis for fisheries, and population ecology.

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## SEMINAR TITLE AND ABSTRACT

## MATHEMATICAL MODELLING OF THE FIRST HIV/ZIKV CO-INFECTION CASES IN COLOMBIA AND BRAZIL

Dr. Romero-Leiton will present a mathematical model to investigate co-infection with HIV/AIDS and zika virus (ZIKV) in Colombia and Brazil, where the first cases were reported in 2015-2016. The model considers the sexual transmission dynamics of both viruses and vector-host interactions. The model also considers the impact of intervention strategies, such as, personal protection, antiretroviral therapy (ART), and sexual protection. Using available parameter values for Colombia and Brazil, the model is calibrated to predict the potential effect of the intervention strategies on the co-infection spread. Furthermore, it is noted that co-infection with HIV and ZIKV may result in higher rates of HIV transmission and an increased risk of severe congenital disabilities linked to ZIKV infection.This study provides novel insights into the dynamics of HIV/ZIKV co-infection and highlights the importance of integrated intervention strategies in controlling the spread of these viruses, which may impact public health.

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