UNIDOS CONTRA LOS CRIADEROS

CIMPA
Centro de Investigación en **Matemática Pura y Aplicada**

Nakul Chitnis, Swiss Tropical and Public Health Institute

Charla: "Mathematical Models of Mosquito Population Dynamics and Malaria"

Nakul Chitnis es un matemático aplicado que lidera un grupo de epidemiología matemática en el Instituto Suizo Tropical y de Salud Pública. Sus principales áreas de actividades se Encuentran en el desarrollo y análisis de modelos matemáticos para responder preguntas de relevancia para la salud pública.

Malaria is an infectious disease, spread through mosquito bites, that is responsible for substantial morbidity and mortality around the world. In the last decade, through increased funding and a global scale up of control interventions that target mosquitoes, significant reductions in transmission and disease burden have been achieved. However, these gains in public health are faced with the twin threat of a decrease in funding for malaria control and the development of resistance (physiological and behavioural) in mosquitoes.

Mathematical models can help to determine more efficient combinations of existing and new interventions in reducing malaria transmission and delaying the spread of resistance. We present deterministic population based models of mosquito population dynamics and malaria in mosquitoes and stochastic individual based models of malaria in humans. We analyze these models to provide threshold conditions for the survival of mosquitoes and show the existence of endemic malaria states; and run numerical simulations to provide quantitative comparisons of control interventions in reducing transmission and disease and evaluate their potential for eliminating malaria.

Miércoles 03 de octubre, 2018 – 4 p.m.
Mini auditorio CIMPA-EMA

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