Marion Haramboure

Skills

Epidemiology/ Population dynamic/ Modeling / Evolution

Personal data

French nationality

32 rue Mirabeau,
bat L n°229
35000 Rennes
France

hbemarion@gmail.com

06-66-40-22-91

References

Pierrick labbé
PhD Director
ISEM
pierrick.labbe@univ-montp2.fr

Annelise Tran
PhD Director
CIRAD
annelise.tran@cirad.fr

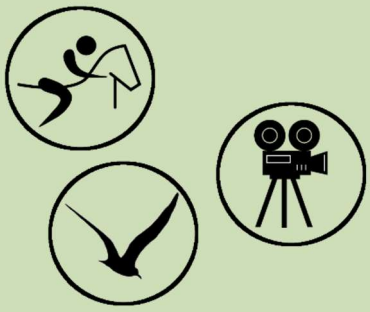
Community involvement

Assistant warden from LPO (Birding Association)

Volunteer in hospital and nursing home

Organizer days for disability Awareness

Interests & activities



Scientific CV

Currently in PhD at Cirad, my work consists at developing a model for *Ae. albopictus* at the scale of La Réunion island, to predict the effects of alternative control methods on mosquitoes populations and arbovirus transmission, and thus to be used as an operative decision support tool.

Education

2017-2020 **PhD Degree in Ecology specialising in Population Dynamics**
University of Montpellier II, Montpellier, France
CIRAD, Sainte Clotilde, Reunion

2015-2017 **Master's Degree specializing in Ecological Modeling**
University of Rennes 1, Rennes - France

2012-2015 **BSc Degree in Biology specializing in Ecology**
(with honors),
University of Rennes 1, Rennes - France

2009-2011 **BTEC option health, social and protective services**
(with honors),
Agricol High School of Chalosse, Mugron – France

Traineeship

Jan-July 2017 **Impact of potatoe plants' architecture on the dynamic of the late blight**
INRA, Le Rheu - France

- To create a SI epidemic model
- To use the maximum likelihood parameters estimation
- To introduce the climatic variables in the model

Responsibles: Melen Leclerc, Didier Andrivon, Claudine Pasco

April-June 2016 **Impact of the kind of Ebola's transmission on the gorilla's metapopulation viability**
Ecobio, Paimpont - France

- To create a sex age structured matrix model
- To compare Spillover vs Wave Spread
- To create a deterministic and stochastic model

Responsible : Pascaline Le Gouar

Technical skills

Python/ Netlogo/ Scilab: ★★★★★

R: ★★★★★

Arcgis/ Fragstat/ Stella / OpenBugs: ★★½★★

Base: ★★★★★

Foreign languages

French: ★★★★★

English: ★★½★★

Research Abstract : Modeling the natural populations dynamic of *Aedes albopictus* and response to vector control

The tiger mosquito *Ae. albopictus* is a public health hazard through the transmission of human diseases. Insecticides are used to control mosquitoes populations, but their efficiency is now threatened by mosquitoes adaptations (resistance). This PhD aims at predicting the impact of alternative control methods, like the sterile insect technique (SIT) and the "boosted SIT" on this mosquito population dynamics. The SIT consists in releasing males sterilized using ionizing radiation. The "boosted SIT" is a SIT variant where sterile males allow contaminating specifically the females with a control agent. Predictive models of populations dynamic are useful tools to test different scenarios and to propose sustainable and efficient management practices, explicitly taking environmental heterogeneity and resistance emergence into account. This PhD thus aims at developing such a model for *Ae. albopictus* at the scale of La Réunion island, to predict the effects of alternative control methods on mosquitoes populations and arbovirus transmission, and thus to be used as an operative decision support tool.

Statement of Interest and Intent:

I have already developed a model including the effect of the SIT and the boosted SIT on the population mosquito dynamic. From now, I would like to include the dengue transmission at:

- The regional scale modelling the professional human mobility. Each city is composed by a human population and a mosquito population divided in function of their epidemic status (SEIR). The mosquito population cannot disperse in the neighbor city. A portion of human of each epidemic status can disperse in the other cities in function of the mobility data (INSEE data).
- The local scale modelling the individual human behavior. Each human is characterized by his epidemic status (SEIR), his professional activity and his level of vigilance. The human is modeled by a model based on agents, the mosquito population by an automata cellular model.