



EPIGENESIS 2013 > 2016 Development of new scientific capacity

Six scientists have been recruited at CIRAD in Guadeloupe. They are specialized in proteomics, molecular microbiology, bioinformatics, spatial epidemiology, medical entomology and health economy.



From left to right: Dr. Adela Olivia Chavez, Dr. Isabel Marcelino, Dr. Jonathan Gordon, Dr. Eva De Clercq, Anne Dutour, Dr. Nonito Pagès

Dr. Adela Oliva Chavez is from the capital city of Honduras, Tegucigalpa. In 2005, she started a Master's degree in their laboratory studying the mechanism of the variation of the Major Surface Protein 2 (Msp2) from *Anaplasma marginale*. Later, she worked in the mutation of two genes, one encoding an *O*-methyltransferase and another a hypothetical protein in *Anaplasma phagocytophilum*. She has a strong interest in functional genomics and the identification of genes involved in the interaction of vector-borne pathogens and their host cells (mammalian and arthropod). At CIRAD, she will be working in the mutagenesis of *Ehrlichia ruminantium* and the identification of genes involved in the infection of its mammalian host.

Dr. Isabel Marcelino comes from Portugal and she is a microbiologist, specialized in proteomics. Within the EPIGENISIS project, she will be responsible for setting-up a new proteomic platform for bidimensional electrophoresis (2D-DIGE). She will then use these newly acquired equipments to study the effect of the *Rickettsales Ehrlichia ruminantium* (the causal agent f Heartwater) on host endothelial cells, especially for early time points post-infection. Since 2007, Isabel uses several proteomic tools to characterize the whole





proteome of several *E.ruminantium* strain in order to identify the proteins associated to the bacterium virulence. This knowledge will be useful to develop an improved vaccine against heartwater. Isabel collaborates with the CIRAD- CMAEE team in Guadeloupe since 2001 towards the large-scale development of an inactivated vaccine against heartwater.

Dr. Jonathan Gordon is specialised in computational biology. He will analyse the genomes of the bacterium *Ehrlichia ruminantium*, to identify its virulence genes and also to retrace the history of diffusion of the bacteria across the world. Originally from Ireland, Jonathan was previously a post-doc in la Réunion where he performed research on a bacterial pathogen of citrus plants in a team composed of researchers from CIRAD and from the University of Réunion. He has also worked on genomics in yeasts.

Dr. Eva De Clercq has been working in the field of medical geography over the last six years. S he specialized in spatial analysis and modeling of vector-borne diseases. She organized and participated in several scientific projects on the distribution of mosquitoes and ticks in Europe and West Africa. Within the EPIGENESIS project, she will work on the development of tools for spatial data collection in the framework of the CaribVET monitoring network . A t the regional level, the link between the environment and the etiology of given animal and human diseases will be explored. Previously based in Montpellier, she has previously collaborated with one of the European partners in the project, AviaGIS (Agriculture and Veterinary Information and Analysis).

Dr. Nonito Pagès is an entomologist and molecular biologist. He was former responsible researcher of Arboviruses and arthropod vectors research line at CReSA institute in Spain. He participated in different R & D activities in the field of vector-borne diseases. His interest focuses on the interactions between the vector, pathogen and host in vector-borne diseases. His experience, as entomologist and molecular biologist, spans from the establishment of animal models, vector competence and transmission models to population genetic studies or arthropod typing. He has strong background with two arthropod groups, Culicoides and mosquitoes, and with several of the diseases they transmit: Bluetongue, Schmallenberg, West Nile fever, Chikungunya and Rift Valley fever. He also participated in the entomological surveillance of Bluetongue and West Nile vectors for the Catalan government. He has participated as expert advisor for vector-borne diseases for private companies and public bodies as Catalan Government (Generalitat Catalunya) and the European Food Safety Agency (EFSA).



Dr. Damian Tago is an economist specialized in animal health economics. His work is related to the Caribbean animal health network CaribVET, with the task of evaluating the benefits coming from the activities implemented by the network and the adoption of a regional approach to fight the animal diseases that affect the Caribbean. Originally from Mexico, Damian obtained his PhD from the Toulouse School of Economics and spent one year at the USA as visiting scientist at the Harvard School of Public Health. His previous work was focused on the cost-effectiveness analysis of the movement restrictions implemented as a strategy against the dispersion of infectious diseases of livestock.