

Dr Marie-Laure Martin Magniette
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Biography:

Marie-Laure Martin-Magniette is a director of research at the French National Institute for Agronomical Research (INRA) in the Unit of Applied Mathematics and Computer Sciences (Statistics & Genome team) and in the Plant Genomics Research Unit (Bioinformatics for predictive genomics team). In 2001, she has received her PhD in Université Paris-Sud, France for the development of new survival models taking into account measurement error of covariates and allowing the estimation of flexible hazard function. She did a one year postdoctoral fellowship in epidemiology at INRA and at Nantes hospital and she was recruited as junior researcher at INRA in the Plant Breeding Department in 2003.

Since 2003, Marie-Laure Martin-Magniette is strongly involved in the analyses of genomic data and is at the interface between statistics and molecular biology. She has been for 11 years in charge of the statistical analyses of the data produced by the transcriptomic platform of the Plant Genomics Research Unit. Since 2003, she has acquired a strong expertise on the data normalization and the differential analysis for microarray and High-Throughput Sequencing technologies. She has also investigated the analysis of chIP-chip data to detect enriched regions and differentially methylated regions.

Since 2005 she has been focused on the discovery and characteristics of underlying structures in genomic data with mixture models and Hidden Markov Models. She conceived these models in close collaboration with fellow biologists and statisticians. Since September 2013, she has led the team Bioinformatics for predictive genomics of the Plant Genomics Research Unit. Her team project is highly interdisciplinary and deals with the construction of genomic networks of the plant model *Arabidopsis thaliana* for the discovery of functional modules and the prediction of functions of orphan genes involved in stress responses.