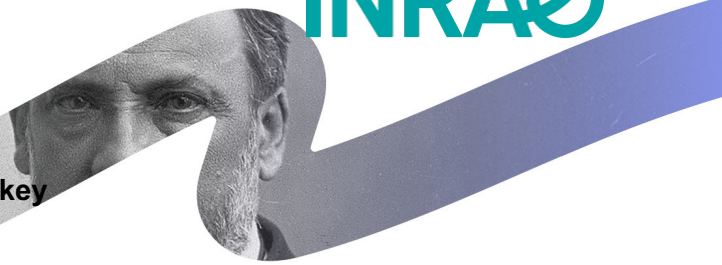

Postdoctoral position at Institut Pasteur, Paris
Development of an interactive tick identification key

A postdoctoral position of 18 months, funded by the European Union in the framework of the **One Health Secure project** (OH Secure- https://www.onehealthsecure.com/partners/institut-pasteur), is available in the " Ecology and emergence of arthropod-borne pathogens" unit in Institut Pasteur, Paris, France, for ideal strat in February 2026. The OH Secure project, built on a unique One Health network, supports the adaptation to new emerging biological risks driven by environmental and climate changes in countries neighbouring the European Union including the Mediterranean, the Balkan, Black Sea, and Sahel regions.

The **Ecology and Emergence of Arthropod-borne Pathogens Unit** (EEAP) is an UMR Institut Pasteur-CNRS and an USC Institut Pasteur-INRAE unit that focuses on vector-borne diseases by studying two groups of vectors in particular: mosquitoes and ticks. The unit works on quantifying the zoonotic risk associated with environmental changes and ascertaining the underlying key features behind spill-over events, and with the ultimate objectives of developing effective monitoring and control strategies.

Reasearch project: Worldwide, ticks are the most important vectors of pathogens that affect animals, and the second only to mosquitoes that affect humans. Due to the intensification of human and animal movements and to socio-economic and environmental changes, the geographical distribution of several tick species is expanding and emergence or re-emergence of Tick-borne diseases is a growing problem in the "One Health" context. Like for other arthropod vectors, each tick species has a vector competence corresponding to its intrinsic ability to acquire a specific pathogen by feeding on an infected host, allowing the multiplication/development of this agent and its retransmission to a new host during a new blood meal. Consequently, the identification, distribution, and density of arthropod vectors, as well as the intensity of host-vector contact, are principal indicators for estimating the distribution of vector-borne diseases. Being able to identify tick species present in different geographical regions with diverse climates, vertebrate hosts, and environments is then of primordial importance for understanding both the dynamics of vector transmission of pathogens, and the impact on human and animal health. A certain number of identification keys currently exist for different regions of the world, but these are often cumbersome and difficult to use for uninitiated people. The aim of the project is then to develop a friendly interactive key for the identification of tick species. The different species of ticks to be included in the identification key will be obtained from an already existing collection at Institut Pasteur and samples provided by the network members.

Candidate requirements: PhD. The successful candidate should have strong skills in computer tools, software development, and the recent possibilities offered by artificial intelligence for species recognition. Knowledge in entomology would be appreciated but is not essential because it can be acquired within the laboratory, notably regarding the morphology of ticks. The selection of the candidate will be done after analysis of the application file and interview with R. Paul and S. Bonnet. Application will be reviewed continuously until the position is filled.

To apply: Applicants should send their CV, a motivation letter and 2-3 names of referring persons to Sarah Bonnet (sarah.bonnet@pasteur.fr) and Richard Paul (rpaul@pasteur.fr).