The Animal Genetics Division of INRA (Institut National de la Recherche Agronomique), France, has 4 openings for permanent (French government employee) research positions at the junior research scientist level (CRCN).

**Deadline for application is 4th of Mars 2019**

1) **Mammary gland and milk extracellular vesicles : vehicles of genetic information (CRCN-2019-12-GA-4)**

Extracellular vesicles secreted by breast tissue in milk represent a new class of mediators of cell-to-organism communication. They contain molecules, which when integrated by the recipient cell, induce phenotypic changes. Through integrative approaches combining genomics and physiology, the recruited scientist will undertake research to understand the origin of extracellular milk vesicles, their content and its variability, and analyse their effects on the mammary epithelium and on the construction of the young’s phenotypes. He/she will be able to exploit the animal models (mouse, rabbit, ruminant) with modifications of the milk composition developed within the team or in collaboration. The genetic effects on the composition of extracellular vesicles will be analyzed in collaboration with geneticists working on the genetic determinism of dairy traits in ruminants.

PhD or equivalent. Training in animal science with a specialisation in animal genetics is highly recommended. Training in functional genomics and/or cell biology is an advantage. Having completed training in animal experimentation is a plus. Candidates should have a good command of English, and long-term international experience would also be desirable. Successful candidates who have not yet acquired postdoctoral training will be required to do so, preferably abroad, after their probationary period (1st year).

Location : INRA, Unité GABI, Domaine de Vilvert - Bât 211 F-78352 Jouy-en-Josas Cedex, France

**Before applying, please contact : Fabienne Le Provost**
Email : fabienne.le-provost@inra.fr
Phone : +33 (0)1 34 65 25 69

2) **Genetic models for high-throughput phenotyping (CRCN-2019-10-GA-3)**

On-farm recordings via sensors or imaging systems produce high-throughput phenotyping data on livestock and their rearing environment. The recruited scientist will develop dedicated statistical models (nonlinear mixed, non-parametric models) to analyse this new data for genetics. New models such as supervised or non-supervised learning models will be considered to predict animal responses. In addition, specific covariance structures required for genetic selection will be integrated in these models to provide operational solutions to select livestock. Ultimately, the objective will be to harness, beyond the available records, the variation in animal responses depending on their environment to contribute to the selection of more robust livestock.

PhD or equivalent. Specialisation in statistical genetics is recommended. Training in animal genetics would be desirable. Candidates should have a good command of English, and long-term international experience would also be desirable. Successful candidates who have not yet acquired postdoctoral training will be required to do so, preferably abroad, after their probationary period (1st year).

Location : INRA, Unité GenPhySE, 24, Chemin de Borde Rouge CS 52627 31326 Castanet Tolosan, France

**Before applying, please contact : Hélène Gilbert**
3) Genomic approaches for the characterization, management and valorization of the genetic diversity in an agro-ecological context (CRCN-2019-9-GA-2)

Genomic selection has revolutionized the methods of improving animal genetics by modifying selection parameters (generation interval, etc.) and by providing genome-level information for the accurate characterization of the genetic diversity of populations. The recruited scientist will cover all issues relating to animal genetic diversity in the context of genomic selection. He/she will explore diversity management strategies based on the complementarity of in situ populations and ex situ collections to assess the benefits of reintroducing diversity from ex situ material (cryobanks) or the creation of crossbreed populations. Good command of computer programming and knowledge of statistical software is highly recommended. Experience in statistics applied to quantitative or population genetics and in the analysis of "omics" data is highly recommended.

PhD or equivalent. Specialisation in quantitative or population genetics is recommended. Training or experience in genomics and/or in applied statistics is a plus. Candidates should have a good command of English, and long-term international experience would also be desirable. Successful candidates who have not yet acquired postdoctoral training will be required to do so, preferably abroad, after their probationary period (1st year).

Location : INRA, Unité GABI, Domaine de Vilvert - Bât 211 F-78352 Jouy-en-Josas Cedex, France

Before applying, please contact : Denis Laloë
Email : denis.laloe@inra.fr
Phone : +33 (0)1 34 65 22 00

4) Genetics of resources allocations and agro-ecological transition in aquaculture (CRCN-2019-9-GA-1)

With the expansion of aquaculture, a shift towards agroecology is needed. For that, breeders need robust animals, i.e., efficient and relatively insensitive in the expression of their performance to environmental variations. Moreover, to promote alternative rearing systems in addition to conventional systems, diversification of breeding objectives is needed. With skills in quantitative genetics and genomics highly recommended, the successful candidate will focus on understanding resource allocation between different traits and its genetic determinism in various rearing systems to select robust fish. Furthermore, the successful candidate will review the breeding objectives not only by maximizing economic profits but also taking into account environmental and societal impacts. Experience in aquaculture systems would be a real bonus to address these thematics.

PhD or equivalent. Specialisation in quantitative genetic is recommended. Training in animal genetics is desirable. Experience in aquaculture will be a plus. Ability to team work and to develop a network is important too. Candidates should have a good command of English, and long-term international experience would also be desirable. Successful candidates who have not yet acquired postdoctoral training will be required to do so, preferably abroad, after their probationary period (1st year).

Location : INRA, Unité GABI, Domaine de Vilvert - Bât 211 F-78352 Jouy-en-Josas Cedex, France

Before applying, please contact : Mathilde Dupont-Nivet
Email : mathilde.dupont-nivet@inra.fr
Phone : +33 (0)1 34 65 23 49

Salary is commensurate with experience but starts at around 28,000 euros/year. Knowledge of French is not a requirement. French or European Union nationalities are not required.

Complete profiles, information on the positions and instructions to apply can be found at:

http://jobs.inra.fr/eng/offers/emploi_perm/concours/crcn/?campagne=23129&intitule=concours&concours=243
Please note that the applicants have to produce a scientific report following formal guidelines, and that selection of the successful candidates is in two stages. The first stage-selection is based on the reports sent in due time, and candidates selected on the basis of their report are audited for the final, second stage.