

## PhD scholarship opportunity

Subject title: "*Epigenetic inheritance of physiological flexibility in a primate species, the grey mouse lemur*"

Location: UMR CNRS/MNHN 7179 (MECADEV) 1 avenue du petit château, 91800 Brunoy (France)

Main PhD supervisor: Dr Fabienne Aujard

Secondary PhD supervisors: Drs Pierre-Yves Henry and Jérémy Terrien

The French research unit UMR 7179 is offering an opportunity to defend a PhD scholarship to be attributed by the Museum National d'Histoire Naturelle. The applicant will defend a subject treating on the "Epigenetic inheritance of physiological flexibility in a primate species, the grey mouse lemur". Briefly, exhibiting high phenotypic flexibility requires fine tuning of all mechanisms involved in the control of metabolism, including regulation of gene expression through epigenetic changes. Epigenetic modifications are a mechanism of regulating gene expression that is reversible, heritable and particularly sensitive to environmental conditions. The role of epigenetic modifications as a way of adjusting phenotypic flexibility in response to environmental change has gained much interest since epigenetic inheritance has been described as a potential mechanism for a specimen to benefit from its parents history.

In this project, we propose to evaluate the potential of epigenetic inheritance in a primate species, the grey mouse lemur (*Microcebus murinus*), characterized by its great phenotypic flexibility adapted to the unpredictability of Madagascar climate. Using the in-house breeding colony resource (~400 individuals), we will mimic periods of food scarcity during key periods of reproduction (spermatogenesis for males and gestation, lactation for females) and evaluate the impacts of such treatment in juveniles and their ability to respond to the same energetic challenge. The student will have to conduct experiments to answer 2 main questions:

- 1) Which are the epigenetic modifications induced by an energetic challenge in the adult grey mouse lemur, and can we link these changes to metabolic phenotyping characteristics?
- 2) Can we estimate the epigenetic inheritance in such context, and evaluate the potential of parental history on juvenile physiological capacities?

Applicants must be highly motivated and have a strong interest in our scientific area (for more information, please visit our website at <http://www.mecadev.cnrs.fr/> ). A strong background of basic molecular research methodology (knowledge of epigenetic mechanisms would be highly appreciated) is highly recommended. Given the scope of this subject, a good background in physiology and biology of adaptation would be appreciated. Applications should contain a CV, a short statement of your research interests as well as a recommendation letter. Please send your application to [terrien@mnhn.fr](mailto:terrien@mnhn.fr) **before May 20, 2015.**