IRBI - UMR 7261
CNRS / Université de Tours
Faculté des Sciences et Techniques
Parc de Grandmont - Avenue Monge
37200 TOURS France

Directeur : David GIRON
Tél. : 02 47 36 69 11
contact.irbi@univ-tours.fr
www.irbi.univ-tours.fr
@IRBI_Tours

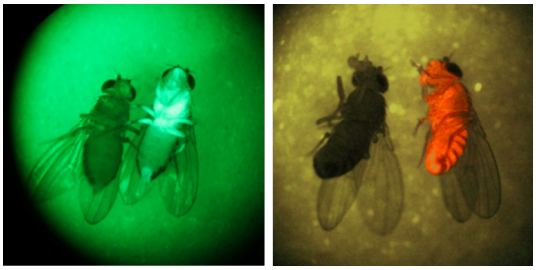
Institut de Recherche sur la Biologie de l'Insecte

Three-year PhD position – start expected October 2026

Role of sexual selection in the adaptation to temperature

Climate change exposes living organisms to extreme environmental conditions, in particular thermal conditions, threatening the extinction of maladapted populations. Genetic adaptation to temperature may occur by means of natural selection, favouring individuals that are most thermotolerant. Such adaptation may, however, be hampered or fostered when populations are exposed to other sources of selection. For example, sexual selection may favour individuals that are either more or less thermotolerant, thus acting synergistically or antagonistically with natural selection.

The overarching aim of the thesis project is to study the effects of sexual selection on the genetic adaptation to environmental stress through evolutionary quantitative genetics experiments, using the fruit fly, *Drosophila melanogaster* as a model species. The main research questions include: How does temperature change the strength of sexual selection? Are genotypes that are most thermotolerant favoured by sexual selection? Does thermotolerance evolve faster in populations exposed to a strong sexual selection regime? To tackle these questions, life history traits, behavioural traits, and ecophysiological traits may be measured in our lab, such as mate choice, mating success, siring success, and heat and cold tolerance.



Flies expressing green and red fluorescent proteins, allowing paternity analyses.

This thesis requires a taste for lab work and statistical analyses, as well as a strong interest in evolutionary quantitative genetics, behavioural ecology and ecophysiology. The PhD student will enjoy a stimulating working environment in the Insect Biology Research Institute at the University of Tours through seminars, journal clubs, and discussion groups. The lab is home to fundamental and cutting-edge research in evolutionary biology, behavioural ecology, insect physiology, and physical ecology. Tours is a small town in the middle of France (<1h to Paris), renowned for its quality of life along the Loire and Cher rivers, its castles, and its proximity to nature.

Feel free to contact us if you have any questions. To apply, please send to the two e-mail addresses below (1) a motivation letter, (2) your academic transcript, (3) a brief CV with your grades and rankings, (4) your master's thesis (if applicable), and (5) the e-mail address of a contact person willing to provide recommendations. The deadline is Wednesday the 15th of April.

Lucas Marie-Orleach
+33 2 47 36 71 23
lucas.marie-orleach@univ-tours.fr
https://lmarie-orleach.github.io/

Sylvain Pincebourde
+33 2 47 36 69 76
sylvain.pincebourde@univ-tours.fr
https://www.univ-tours.fr/annuaire/m-sylvain-pincebourde

Institut de Recherche sur la Biologie de l'Insecte
UMR 7261 CNRS–Université de Tours
37200 Tours, France