



## Do aggression, activity and stress behaviors evolve in the same way between populations of fish subjected to different selective breeding programs? A comparison over several generations in a model species, the zebrafish (*Danio rerio*)

**Keywords:** Behavior, Domestication, Evolution, Fish

### Internship objective

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In the context of an international research partnership between the University of Lorraine and the University of Namur, URAFFPA has developed a [research project to study the consequences of domestication on the evolution of fish genotypes and phenotypes](#). This evolution is monitored over several generations [during an experimental domestication program](#) for a population of a model species, the zebrafish. During this program, [three types of breeding program](#), commonly applied in aquaculture, were developed. The aim is now to see whether genotypic and phenotypic modifications are specific to each type of breeding program.

The trainee will have the objective of [studying the expression of behavioral traits linked to aggressiveness and activity in four generations of zebrafish](#): F0 (acclimatized wild fish) as well as F1, F2, F3 (respectively first, second and third generation born in captivity), three sub-populations of which have been subjected to three types of breeding program. Datasets are already acquired for F0, F1, and F2. The trainee will acquire the dataset of F3 by observations and will analyze all generations.

### Trainee tasks and experience to be gained during the internship

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The trainee will have to set up a mirror test with the help of his supervisors and the technical staff of the experimental aquaculture platform at the University of Lorraine. This test has already been used to assess activity and aggressiveness in fish (Kalueff et al., 2013; Pham et al., 2012). This set-up will require the preparation of experimental aquariums and video recording devices, as well as the handling, sedation and acclimatization of the fish according to the regulations and ethical rules. The trainee will then analyze the recordings obtained using tracking software (i.e. trackr) and direct observation (i.e. through BORIS). She/he will also be involved in maintenance and care of zebrafish populations.

[This internship will enable the trainee to learn about animal experimentation](#) (particularly in ethology) [and the analysis of behavioral data in fish](#). He/she will benefit from a [dynamic and stimulating work environment in an international team](#) with up-to-date experimental facilities. Assuming the quality of her/his work, the trainee will be involved in the scientific valorization of his/her results (i.e. research article).

The internship will take place at the Faculty of Sciences and Technologies, University of Lorraine, Nancy, France. It is a full time, 6-month paid internship in accordance with the regulation of the University of Lorraine, with a monthly remuneration of 600.60 €.

Application must include (i) a cover letter, (ii) curriculum vitae, and (iii) the contact details of 1 reference person. This must be sent as a single pdf at [thomas.lecocq@univ-lorraine.fr](mailto:thomas.lecocq@univ-lorraine.fr), [emmanouil.diakos@univ-lorraine.fr](mailto:emmanouil.diakos@univ-lorraine.fr), [alain.pasquet@univ-lorraine.fr](mailto:alain.pasquet@univ-lorraine.fr).