1.5-year Postdoc in ecological genomics: Mediation analysis for investigating gene ~ environment interactions and climate-driven maladaptation.

** Project:

Climate change is having a major impact on biodiversity, posing a significant threat to the health and persistence of natural populations. High-resolution climate models, combined with high-throughput DNA sequencing, provide powerful tools to assess the capacity of populations to respond to environmental change. In this context, genotype-environment association (GEA) methods are commonly used to identify loci associated with local adaptation. More recently, data on adaptive genetic variation have been incorporated into predictive statistical models aimed at estimating the mismatch between populations and future climates, a concept known as genomic offset.

This project proposes to adapt the mediation analysis framework, a method widely used in fields such as epidemiology and social sciences, to ecological genomics. The postdoctoral researcher will develop and implement a statistical framework to 1) identify the genetic basis of local adaptation to climate and 2) estimate population maladaptation to climate change. Both simulated and empirical data will be used to evaluate the potential of this approach in predictive ecological genomics.

** Activities:

During this project, the postdoc will be expected to:
* Develop a mediation analysis model integrating phenotypes, genotypes, and environmental variables to detect signals of local adaptation.
* Conduct simulation studies to assess the strengths and limitations of the model.
* Apply the model to real-world datasets.
* Evaluate the potential of this approach for predicting population maladaptation under future climates.

** Skills:

We are looking for a motivated early-career researcher with a strong interest in statistical modeling and ecological or evolutionary genomics. Ideal candidates may come from one of two backgrounds:
* A biologist with enthusiasm for method development and quantitative modeling, or
* A statistician/data scientist with a strong interest in evolutionary biology and genomics.

** Work Context:

The position is funded by the junior professor chair of Thibaut Capblancq at Université Grenoble Alpes. The postdoc will be hosted at the Laboratoire d'Écologie Alpine (LECA), a dynamic and interdisciplinary research lab located in the heart of the French Alps.

The project will be carried out in co-supervision with Olivier François, a leading expert in statistical modeling and genotype-environment association (GEA) methods. This collaboration will offer the postdoc excellent opportunities for mentorship, technical development, and exposure to cutting-edge research in ecological genomics.

** Conditions:

*   Starting date: March 2026
*   Duration: 18 months
*   Location: Grenoble, France
*   Qualification: PhD in evolutionary biology or mathematical biology
*   Salary: ~2900 to 3400 euros/month (gross) depending on experience

** To apply:

Please submit your CV and a motivation letter, detailing your previous research experience and professional goals, and contact information for 2 referees, on this plateform before february 20th: https://academicpositions.com/ad/universite-grenoble-alpes/2026/postdoctoral-researcher-in-population-biology-and-ecology-m-f/243400#apply

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