- Faculté des sciences
- www.unine.ch/sciences

Génétique environnementale (3BL2137)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en physiologie et écologie des plantes	**Cours: 30 pg**	**controle continu: 1**	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante:

Dr Christian Parisod (responsable) – UniMail D323 – christian.parisod@unine.ch
Céline Geiser (assistant) – UniMail D322 – celine.geiser@unine.ch

Objectifs:

Landscape genetics addresses the impact of environmental factors and elements (such as mountains, rivers or roads) on the spatial distribution of genetic variation among individuals and populations. It improves our understanding of microevolutionary processes such as gene flow and adaptation at the scale of natural landscapes. It is a central toolbox for current studies in evolutionary ecology and for managing the diversity of threatened populations.

-Understanding how lansdcape affects genetic variation in real populations
-Being able to identify barriers to gene flow
-Being able to empirically infer adaptation in real populations

Contenu:

This course will examine the main concepts and methods of landscape genetics in plants. The first part consists of an introduction to the main trends in this burgeoning field with extensive reference to recent research work in the field (ex cathedra course). Groups of students will present a research article and lead the following discussion. Students will get trained with tools by analysing real data. Main concepts and results of these practicals will have to be summarized in a short reports to be delivered (max.)four weeks after the end of the course.

Lectures on the main concepts and tools
-Reminder on the origin of plant variation and population genetics
-From population genetics to landscape genetics (putting the landscape in landscape genetics)
-Gene flow in real landscapes *
-Adaptation in real landscapes *
(* with presentation of case studies from the literature by the students)

Practical analysis of real data
-Spatial population genetics
-Training to specific softwares allowing to infer gene dispersal or adaptation in natural populations

Forme de l'évaluation:

Contrôle continu
Presentation of reserach articles by (groups of) students will be evaluated
An individual report based on the practical work will be evaluated

Documentation:

Une bibliographie détaillée sera mise à disposition durant le cours