

UMR 5553 - CNRS / UGA / USMB

Faculty: UFR Sciences and Mountain

PhD school: Chemistry and the Science of Living Species (CSV)

FIELDS OF TRANSVERSAL SKILLS

- *Fundamental Science, Earth sciences and Environment*
- *Mountain studies, Tourism, Sport, Health*

KEY WORDS

Mountain ecosystem • Plant-herbivores • Chemical ecology • Movement ecology • Population genetics • Biodiversity • Functional traits • Allelopathy • Genomic • Interactions network • Ecosystem services

SECTORS

Environment • Management Conservation • Global changes • Agriculture/Cynegetic/ Forestry • Tourism

PRESENTATION

The aim of the LECA is to understand the functioning and biodiversity of alpine ecosystems and to predict their response to global changes by using theoretical and applied tools from ecology and evolutionary biology. Integrated researches are then developed from molecular mechanisms of adaptation to global impact of the physical environment on ecosystems functioning and biodiversity preservation. Researchers on the Université Savoie Mont Blanc site belong to the "Functioning, dynamics and ecosystem services" team. The Chambéry team is particularly interested in the mechanisms of coexistence and the functional roles of the large herbivores on the mountain ecosystems, in interaction with the plant communities.

RESEARCH THEMES

LECA's research is organized around 6 departments:

- **Adaptation, diversification and origins of biodiversity**
- **Network of specific interactions: functional perspectives**
- **Pressure of xenobiotics: adaptation and dysfunction in ecosystems**
- **Social system dynamics in a changing world**
- **Macroecology and the rules for assembling metacommunities: applications for modelling and conserving the biodiversity**
- **Biogeochemistry: links between diversity and recycling nutrients in permanent meadows**

...and 2 emerging themes:

- **Mathematics and algorithmics for the studying biodiversity**
- **Paleoenvironments: long term perspectives of the trajectory of mountain ecosystems**

KEY DATA*

- **30** researchers and professors
- **20** administrative and technical staff
- **42** PhD students and post-doctoral students

* Academic year 2014-2015

SPECIFIC EQUIPMENT AND EXPERTISE

- Radio tracking VHF GPS
- Analysis of spatial and demographic data, SIG
- Molecular biology analysis
- Extraction equipment
- High Pressure Liquid Chromatography
- Laboratory and Field spectroscopy (UV-visible)
- Phytotron
- Microtome and Microscopy

PhD STUDENTS SKILLS

- Functional and spatial ecology
- Monitoring of animal and vegetal communities/populations
- Statistical analysis of spatial and demographic data
- Functional traits measurements
- Analysis of plant metabolism
- Molecular ecology, phylogeny, phylogeography
- Modeling

NETWORKS / PARTNERSHIPS

Academic cooperations

- University of Tromsø and Trondheim (Norway)
- University of Quebec at Rimouski; University of Laval (Canada)
- University College Dublin
- University of Vigo (Spain)
- ETH Zurich and Federal Institute for Forest, Snow and Landscape Research WSL (Switzerland)

Institutional cooperations

- Office national de la Chasse et de la Faune Sauvage
- Office National des Forêts
- Geopark des Bauges
- Parc National des Ecrins

Industrial cooperation

- Spynge

INTERNATIONAL RELATIONS

- Cross-border cooperation with the University of Turin and Neuchâtel-Lausanne (Franco-Swiss federation of Masters studies)