

**MSc European Forestry**  
ERASMUS MUNDUS



# ***Your second year track in AgroParisTech, Nancy, France***

Meriem Fournier

January 2023

Contact : [meriem.fournier@agroparistech.fr](mailto:meriem.fournier@agroparistech.fr)



*Paris Institute of technology for  
life, food and environmental  
sciences*

*Campus of Nancy*

## Key facts and figures (1)

- National Institute of Technology for Life, Food and Environmental Sciences
  - An institute created in 2007... with an history of 200 years
- French leading “*Grande Ecole*” (Elite higher education institution) in life sciences
  - World-class reputation
  - Training programs from master level (Flagship French MSc in engineering “diplome d’ingénieur”, MSC, PhD, Advanced Master, Executive Education)
- Offering solution to the main global challenges:
  - Fostering knowledge and understanding to enable humanity to better safeguard our ecosystems, feeding populations while preserving natural resources, and sustainably managing the environment

## Key facts and figures (2)

- Our missions:

- education, research, outreach, entrepreneurship and innovation

- Our Disciplines:

- |                       |                                 |                                 |
|-----------------------|---------------------------------|---------------------------------|
| • Plant Sciences      | • Nutrition and Health Sciences | • Water Engineering             |
| • Animal Sciences     | • Biotechnology and Green       | • Remote Sensing                |
| • Agronomy            | • Chemical Engineering          | • Ecotoxicology                 |
| • Food Sciences       | • <b>Forestry</b>               | • Economics and Social Sciences |
| • Ecology             | • Microbiology                  | • Bioclimatology                |
| • Data Science and AI | • Soil Sciences                 | • Statistics and Mathematics    |

- Our Values:

- international cooperation, student/scientific exchanges and open science

## Key facts and figures (3/3)

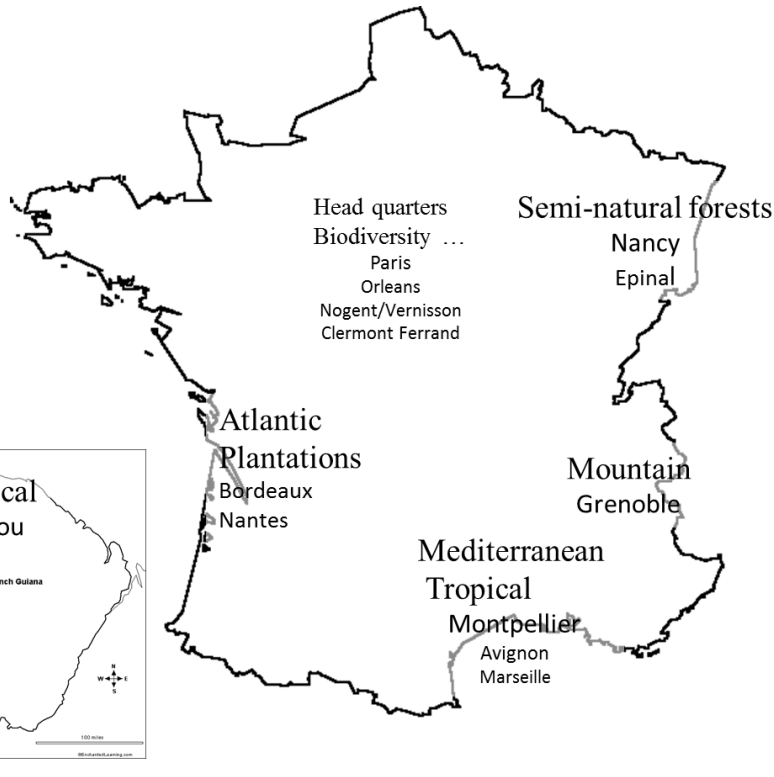
- **7 campuses (not all in Paris)**
- ~3000 trained students (50% engineering, 16% international)
- ~830 staff including ~280 academic staff
- **22 research units** (mostly joint with INRAE >>> an overall potential of 1000 researchers)
- 5 Education and Research Departments
- Entrepreneurship support to students/alumni including **4 thematic InnLabs** (incubators) with a **Forest InnLab**
- **12 academic & research chairs** with leading French companies and other socio-economic actors
- Large experimental facilities: 1 Experimental Farm + 1 Experimental Pilot Plant + **3 Forests (790 ha)**
- 1 broad alumni community (18.000 members)

5 campuses are dealing with forests, Nancy is the leader



Nancy coordinator of forest research and high education throughout AgroParisTech

# Why in Nancy ?



**Nancy – Lorraine region :**

**Only place where education, research, R&D, forest reporting and management are strongly linked, including all fields of forest science, from nature conservation to wood end uses.**

# AgroParisTech Campus of Nancy

Founded in 1824, located downtown in the historical site





# AgroParisTech Campus of Nancy

Trains 250 students (**MSc, PhD**) per year

*Master and PhD programs on :*

*Forestry, Ecology, Plant sciences, Microbiology,  
Environmental economics*



## 3 Research Units

- SILVA (forest ecology, tree biology, silviculture, wood formation and quality)



- BETA (forests and environmental economics)



- LIF Forest Inventory Lab



= 50 researchers and teachers





# AgroParisTech Nancy - research

Laboratoire d'excellence

**ARBRE**

A strategic research alliance labelled by French government (different research units working together to solve research/societal challenges)

ARBRE is managed by INRAE with the local University (U. Lorraine)

INRAE = National and world's top research institute in Agriculture, Food and Environment (including forest sciences)

-> 2 other campuses in Nancy you will be welcomed in during your first semester

- Key questions related to nutrient cycling, carbon storage and cycling, forest productivity, forest biodiversity, wood products, ecosystem services and sustainable forest management.
- A wide range of disciplines – genomics, biology, ecology, forest inventory, wood sciences, economics, sociology, silviculture, forest management –
- 270 researchers and teachers.
- Partnerships with the French private and public forest sector,
- Facilities for citizen sciences (Tous Chercheurs) and open innovation (Forest Inn Lab)
- International flagships projects within networks (EFI, Nancy Freiburg Zurich forest.net, Europe, North and South America, China ...)

# Research facilities

## Field facilities



Eddy flux tower of Hesse (57)

## Silvicultural experiments



## Labs



## Forest system models

A carbon accounting tool for complex and uncertain greenhouse gas emission life cycles

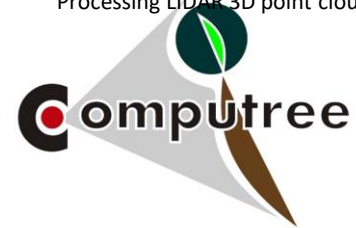
Article in Environmental Modelling and Software - June 2018



Mobile platform M-POETE

## THE COMPUTREE PLATFORM

Processing LIDAR 3D point clouds



Credit logo Computree : Pierre Gellhaye (INRA Nancy).

**Computree** Computree is a processing platform for 3D points clouds, obtained with LIDAR or photogrammetry. It aims to regroup algorithms for forests scenes analysis, in order to extract data on structure of trees and stands.

## Technical tools

## Large data bases

### Journal of Vegetation Science

Advances in plant community ecology

Full Access

**EcoPlant: A forest site database linking floristic data with soil and climate variables**

Jean-Claude Gégout , Christophe Coudun, Gilles Baillly, Bernard Jabiol



**French Forest Sector Model: version 1.0.**  
Presentation and theoretical foundations

# Student residence

## On-site residence in Nancy

- 76 rooms
- 12 studios
- Priority given to foreign students
- Monthly rent for a room  $\approx 195$  € for a room,  $\approx 460$  € to 512€



# Nancy District



- 300 000 residents
- Student town : 50 000 students



- Eastern France, continental Europe
- 1h 30 from Paris by train
- Close to the Vosges Mountains
- Close to Belgium, Germany, Switzerland and Luxembourg



# Nancy District – History

Porte de la Craffe (14<sup>th</sup> century)



Palais ducal (16<sup>th</sup> century)



Place Stanislas (18<sup>th</sup> century)



# Nancy District – Green areas

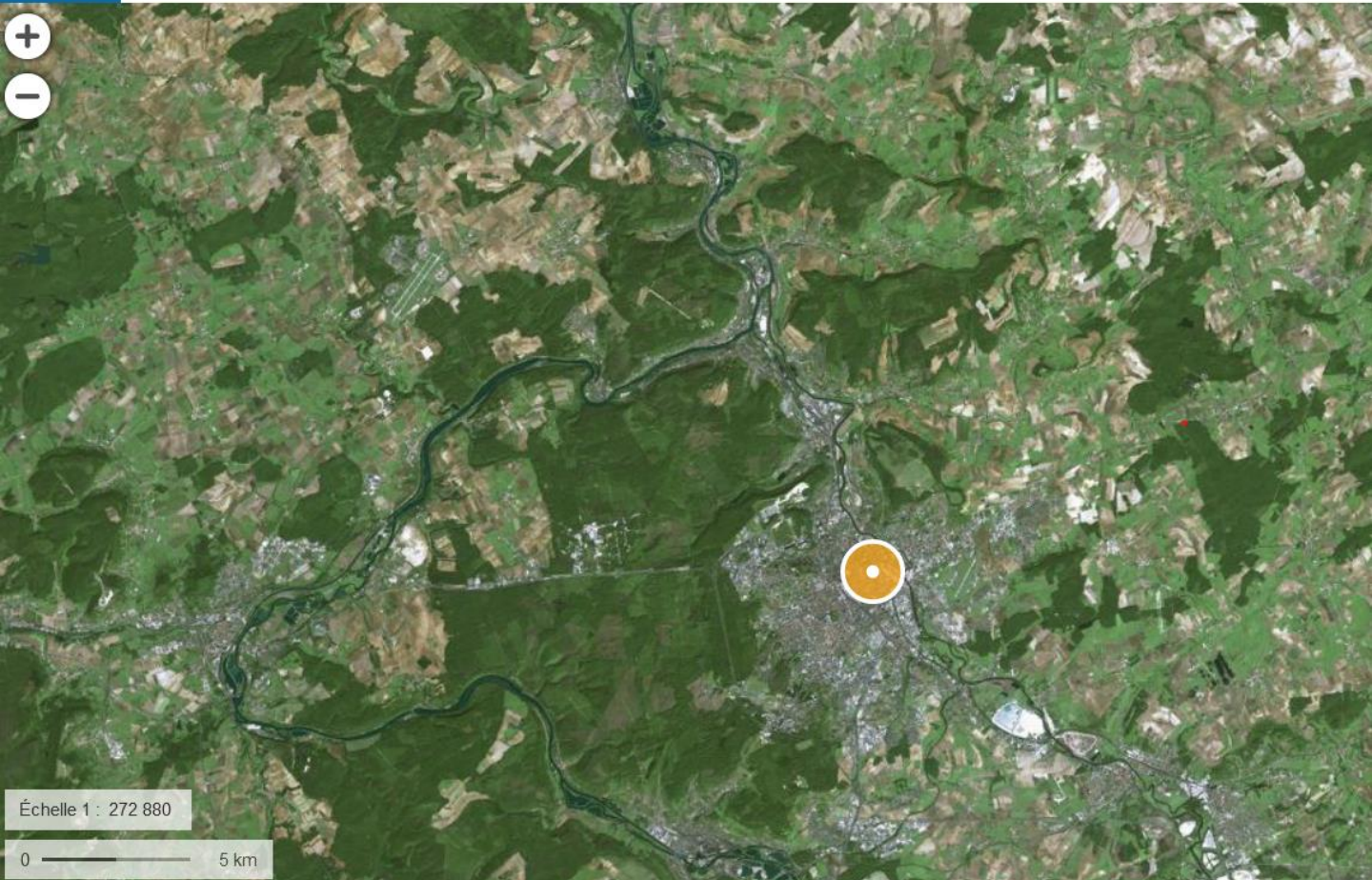


La Pépinière, 23 ha  
500 m from the campus

Plateau de Malzéville, 400 ha  
5 km from the campus







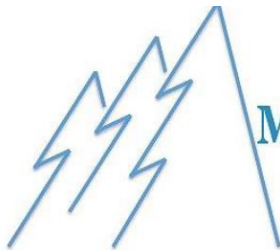


# Nancy – student events



Sports  
Week-end hike  
Restaurants  
Music  
Student nights

# *Your education during the second year in Nancy*



**MSc European Forestry**  
ERASMUS MUNDUS

**You are registered in our master program.**



**The national degree is called « AETPF »**

**Your track (among 5 in Nancy) is called  
« FEN »**

**Forests and their environment**

# FEN's objectives

- Train experts in the assesment and monitoring of Forest Ecosystems .
  - Strong expertise in Ecology.
  - Good knowledge of global and local issues in Forestry.
- Small groups (10 to 15 students; French & International)
- Many options for pursuing a doctorate degree.

# FEN's schedule

First semester (Sept – Jan)

➤ 9 modules (30 ECTS).

➤ + French course

Second semester (Feb – Aug)

➤ A thesis based on a 5 to 6-month internship (30 ECTS)

# 1st semester :

## 8 courses of 3 ECTS (with a limited choice)

### **Forest Resource Management**

- Forestry wood-chain tour in Lorraine
- European forests, sustainable forest management, certification
- Forests and forestry in a context of global change (with ALU)
- GIS for forest science

### **Advanced forest ecology**

- Understanding tree structure and functions
- Biogeochemical cycles in forest ecosystems
- Dynamic of forest plant and tree communities
- Models for forest management
- Advanced statistics

**Advanced courses : lectures, field and lab visits, conferences, personal work.  
1 module with ALU Freiburg (1 week in Germany, 1 week in France)**

# FEN's schedule – Field courses

## Forest plant communities and forestry



## Introduction to the forestry context in Eastern France



# one module of 6 ECTS called « project » = professional and creative in project mode

## 2 PROFILES

### Individual

- 6 weeks in a research lab.
- Daily life of scientists
- Developing your own skills working with a researcher
- Defining a research approach (like in the beginning of a thesis)

### Team (3 to 5 students)

- A diversity of questions proposed by a supervisor (monitoring the impacts of climate change, assessing changes in forest policies, developing participative approaches of management ...)
- Field work, contact with researchers, practitioners and local policies
- Developing skills in team work



## PROJECT REPORT AND DEFENSE



## 2<sup>nd</sup> semester :

### **Your master thesis in a forest private or public research or RDI or consulting or ... institution**

- **You are free to find your supervisor and host institution (in Nancy but also everywhere in France or abroad, just take care of Erasmus Mundus rules = not in your home country)**
- **Your internship/thesis subject in this host institution must be presented « as a job offer ». Requirements are :**
  - **the proposed activity involves to solve problems using innovative thinking and methods (at master level)**
  - **you are supported by an AgroParisTech academic tutor with regular meetings.**

## **2<sup>nd</sup> semester :**

### **Your master thesis in practice**

- **French master degree : The thesis is associated to a 5 to 6 month internship (compulsory).**
- **French law : interns have a contract with the hosting institution (signed by you, AgroParisTech and the host institution). They are paid (not so much) if the HI is French.**
- **How to prepare your master thesis :**
  - **start early (november)**
  - **find the host institution and the supervisor with the help of an AgroParisTech teacher who will be your tutor.**
  - **AgroParisTech communicates offers.**

See you all here !

# Questions ?

*Vosges mountains, autumn*





# AgroParisTech forests

- Forest of Brin
- 20 km from Nancy
- 600 ha
- Many issues
  - Wood production, Oak and beech silviculture
  - Hunting
  - Recreation (close to the city of Nancy)
  - Risks & climate change (drought, processionary caterpillar)
  - Biodiversity, water management (pond)
  - History (battlefield of the world wars)

