

GRADUATE SCHOOL

Biosphera

université
PARIS-SACLAY



Biosphera is a multi-disciplinary **Graduate School** focused on Life Sciences, in close interaction with the 'Science & Engineering' and 'Social Sciences and Humanities' Graduate Schools.

Master's tracks at Biosphera

- Agrosciences, Environment, Territory, Landscape, Forest
- Biodiversity, Ecology, Evolution
- Integrative Biology and Physiology
- Environmental, Energy and Transport Economics
- Land Management and Community Development
- Nutrition and Food Science

Doctoral Schools

- Agriculture, Food, Biology, Environment, Health (ABIES)
- Plant Sciences: from Genes to Ecosystems
- Structure and Dynamics of Living Systems (affiliated with the Life Sciences and Health Graduate School)
- Environmental Science (affiliated with the Geosciences, Climate, Environment, Planets Graduate School)

300
PhD candidates

2
Doctoral Schools
supported by Biosphera
and 2 associated doctoral schools

40
Master's
programmes

1,000
staff members

29
laboratories

100
research teams



Research teams and experimental facilities

- The research teams contributing to Biosphera provide work opportunities for trainees, students and young researchers of all levels, including doctoral and post-doctoral fellows, from all over the world. These teams manage core facilities and observatories (access via Université Paris-Saclay's Plug in Labs Portal). These outstanding scientific facilities are integrated into Biosphera's research and training activities and provide services for public and private partners. Biosphera interacts with the other Graduate Schools of Université Paris-Saclay, particularly in the field of Life Sciences.

The Biosphera Curriculum

The Biosphera curriculum is structured into 11 thematic programmes, which gather M2 tracks, doctoral schools and research communities around scientific challenges. As platforms for enhanced international visibility, these programmes foster links between the Master's and Doctorate levels and provide a unique space for the development of scientific activities and interaction with professional sectors, at the interface between research, education and innovation.

Thematic programmes

Agrosciences & agro-ecology

Bioeconomy

Synthetic biology

Ecology, evolution
& ecological engineering

Economy of the environment

Environmental genomics

Animal sciences

Science of the environment

Food science,
nutrition & diet

Plant sciences

Territories and societies

Biosphera's partner institutions

- AgroParisTech (coordinator)
- The French National Centre for Scientific Research (CNRS)
- The French Alternative Energies and Atomic Energy Commission (CEA)
- The Orsay Faculty of Sciences
- French National Research Institute for Agriculture, Food and Environment (INRAE)
- Évry University (UEVE)
- Versailles Saint-Quentin-en-Yvelines University (UVSQ)



Biosphera offers an interdisciplinary research and academic framework with both fundamental and applied foci. Devoted to life sciences and to the interactions between living organisms and their environment, Biosphera deals with major current issues pertaining to the future of the biosphere and our societies, building on seven core scientific challenges:

- The ecological transition towards sustainable agricultural production systems (livestock and crops)
- Global change and its impacts
- The management and use of resources (soils and water)
- The preservation of biodiversity, ecosystem services and more generally the environment
- Regional development strategies that incorporate environmental issues
- Food and nutrition transitions
- The transformation of bioresources and the recovery of biowaste

Biosphera tackles these issues by covering their social, economic and political impacts, and links them to global and ecosystem health, thus encompassing a wide range of interconnected challenges.



Agronomy Bioclimatology
 Animal biology Plant biology
 Biotechnology Ecology Ecophysiology
 Evolution Genetics Genomics Epigenetics
 Applied Mathematics Bioinformatics
 Applied computer science Microbiology
 Food Science Nutrition
 Environmental sciences Soil science
 Economic sciences Social sciences
 Management

Institutions and interdisciplinary projects

Biosphera brings together 29 laboratories affiliated with Université Paris-Saclay, organised into scientific communities on various topics and long-term projects:

- The Biodiversity, Agro-ecosystems, Society and Climate C-BASC interdisciplinary project
- The Paris-Saclay Plant Sciences University School of Research
- The Animal Sciences Paris-Saclay Network (SAPS)
- The CLAND Convergence Institute on 'Climate Change and Land-Management Systems'
- The Institute for the Diversity, Ecology and Evolution of the Living World (IDEEV)
- The SayFood, PNCA and ALISS laboratories in the fields of food science, nutrition and health.

Two additional organisations work alongside Biosphera: the Institute Pierre-Simon Laplace (IPSL), which focuses on the climate, and GO-SEE, which focuses on oceans and biodiversity.

Given its wide range of themes and disciplines, Biosphera works closely with the following Graduate Schools: 'Economics and Management', 'Geosciences, Climate, Environment, Planets', 'Life Sciences and Health' and 'Sociology and Political Science'.

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