

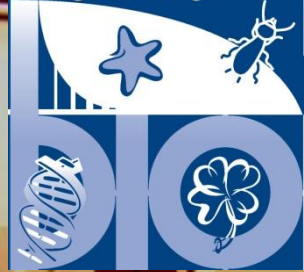
Masters in « Biology » at the ULB



Masters in « Biology » at the ULB

The ULB organizes four masters in biology or closely linked with biology:

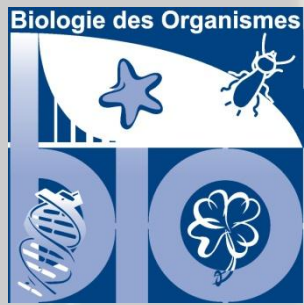
- **Master in Organism Biology and Ecology**
(general/research, BEVT/research, TROPIMUNDO/research and didactics)
- **Master in Biochemistry and Molecular and Cellular Biology** (research and didactics)
- **Master in Bio-informatics and Modeling**
(research)



Master in Biology of Organisms and Ecology (MABIOR)

- This master is managed by our Department of Organism Biology, and reflects our main research forces in five thematic approaches (with applications in temperate and tropical regions) :
 - Plant-environment interactions
 - Biology of aquatic organisms
 - Behavioural and evolutionary ecology
 - Bio-systems and conservation biology
 - Anthropology

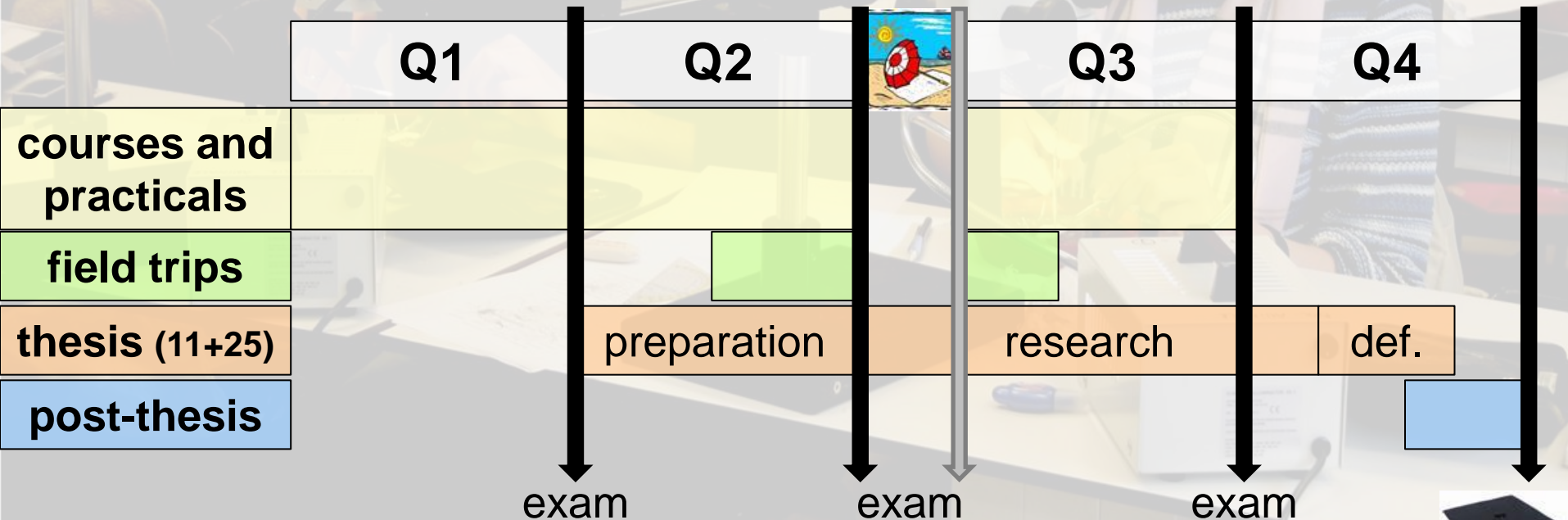
• Contact: Prof. Meerts (pmeerts@ulb.ac.be)



Master in Biology of Organisms and Ecology (MABIOR)

4 specialisations (« finalités ») :

- Finalité **Didactique** = teaching/didactics
- Finalité **Approfondie** = general in-depth research



• Contact: Prof. Meerts (pmeerts@ulb.ac.be)





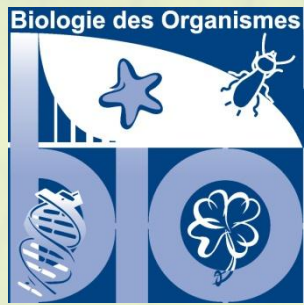
Master in Biology of Organisms and Ecology (MABIOR)

4 specialisations (« finalités ») :

- Finalité **Biodiversité et Environnements Végétaux Tropicaux - BEVT** (International Master Program with thematic in-depth research specialisation in Tropical Biodiversity and Environments, incl. 6 months in Senegal, Cameroon or Malaysia)




- Contact: Prof. Dahdouh-Guebas (bevt@ulb.ac.be)



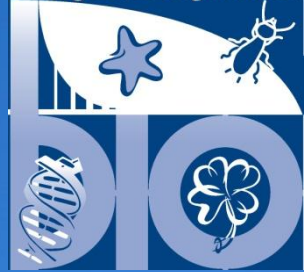
Master in Biology of Organisms and Ecology (MABIOR)

4 specialisations (« finalités ») :

- Finalité Biodiversité et Environnements Végétaux Tropicaux - BEVT

	Q1	Q2		Q3	Q4
courses and practicals					
field trips and field courses		exclusively in SN, CM or MY			
thesis					
post-thesis					

- Contact: Prof. Dahdouh-Guebas (bevt@ulb.ac.be)



Master in Biology of Organisms and Ecology (MABIOR)

4 specialisations (« finalités ») :

- Finalité Erasmus Mundus Masters Course in Tropical Biodiversity and Ecosystems



TROPIMUNDO



Vrije
Universiteit
Brussel

UPMC
SORBONNE UNIVERSITÉS



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA



- Contact: Prof. Dahdouh-Guebas (info@tropimundo.eu)

Erasmus Mundus Masters Course in Tropical Biodiversity and Ecosystems

TROPIMUNDO



Brussels, Belgium
 Université Libre de Bruxelles - ULB
 Vrije Universiteit Brussel - VUB

Paris, France
 Université Pierre et Marie Curie - UPMC
 Muséum National d'Histoire Naturelle - MNHN

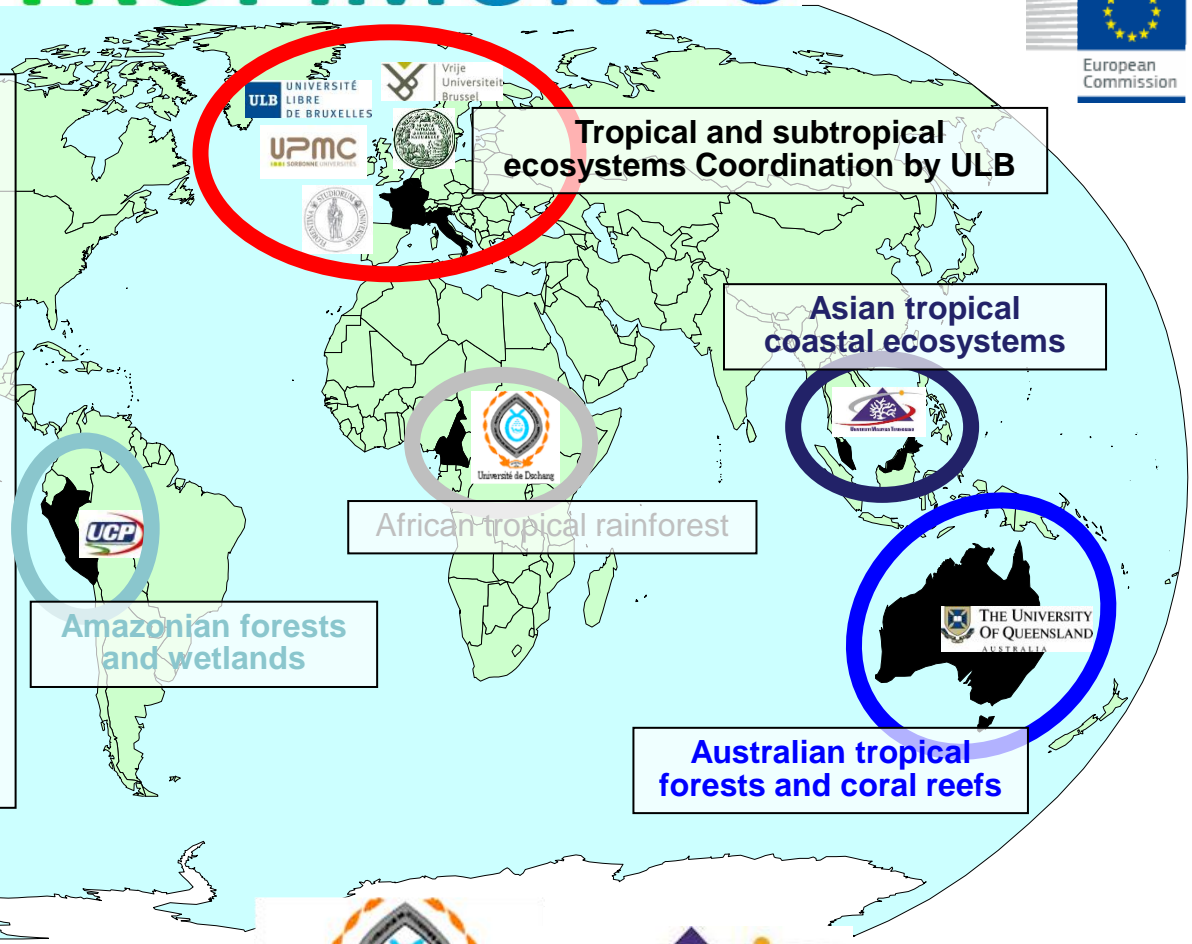
Florence, Italie
 Università degli Studi di Firenze - UNIFI

Peru-Amazonia
 Universidad Científica del Perú, UCP

Cameroon
 Université de Dschang - UDsch

Malaysia
 Universiti Malaysia Terengganu, UMT

Australia
 University of Queensland - UQ



THE UNIVERSITY OF QUEENSLAND AUSTRALIA

Local Coordinators

Farid
DAHDOUH-GUEBAS



Ludwig
TRIEST



Jean-Yves
DUBBUISSON



Bernard
RIÉRA



Stefano
CANNICCI



Julio
RUÍZ MURRIETA



François
NGUETSOP



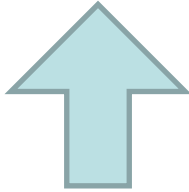
Satyanarayana Mohd. Lokman
BEHARA BIN HUSAIN



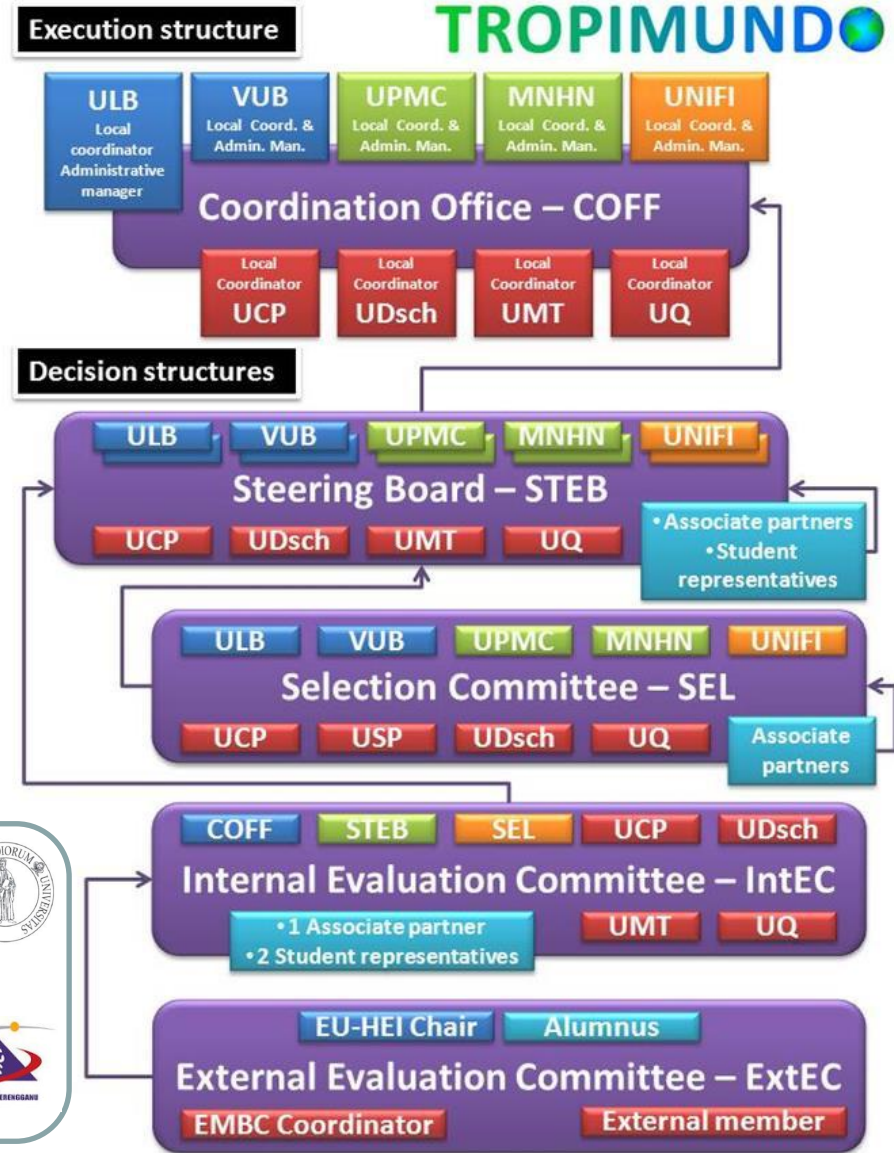
Ian
TIBBETTS



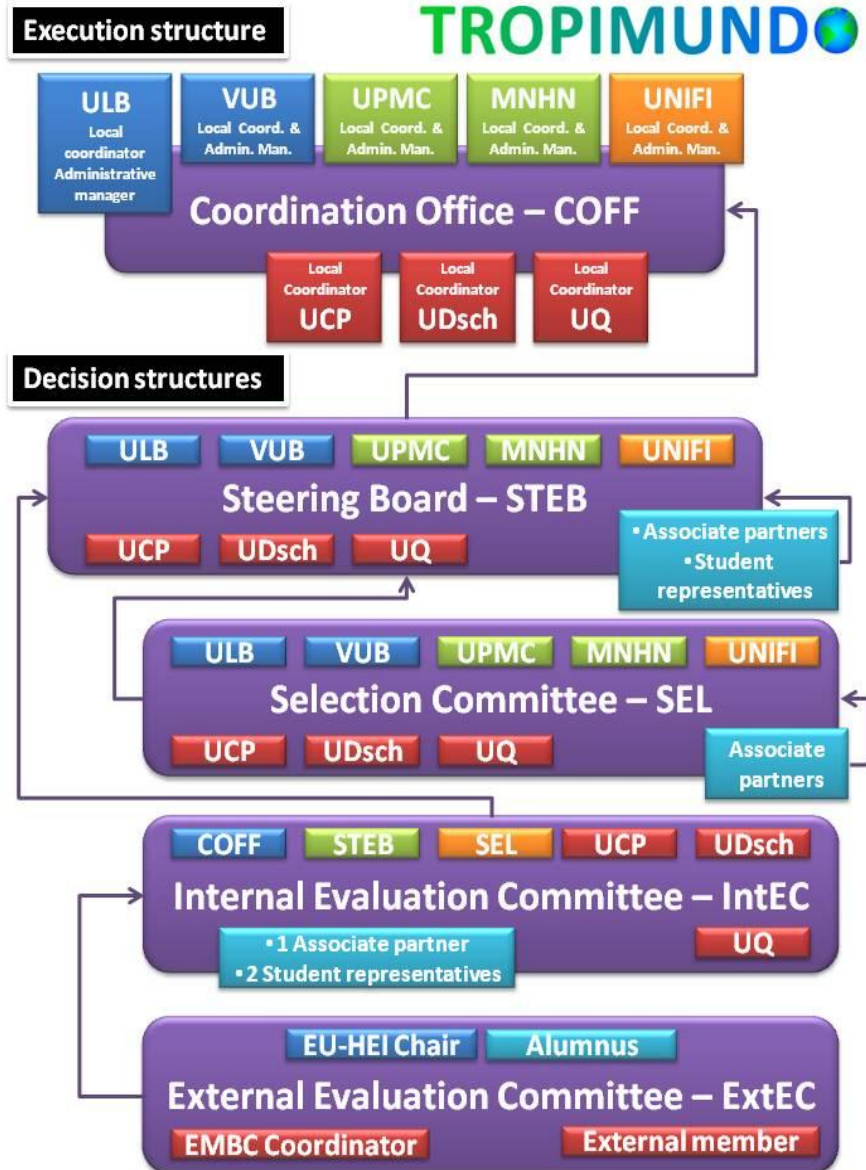
Decision and Execution bodies



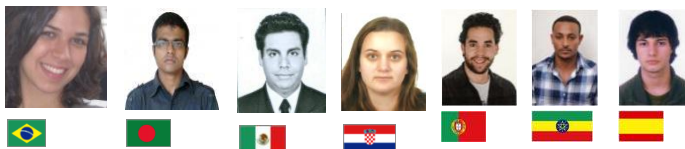
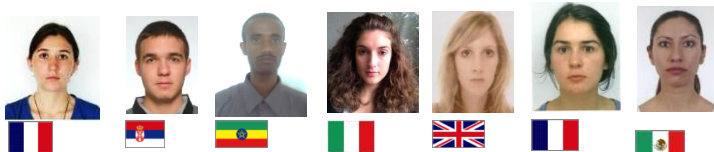
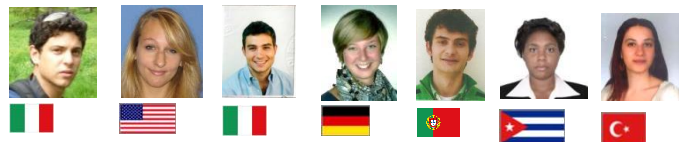
TROPIMUNDO



Decision and Execution bodies



Trajectories



Sep.	general courses at starting EU HEI
Oct.	
Nov.	
Dec.	
Jan.	exams

Feb.	
Mar.	courses at non-EU HEI (tropical mobility)
Apr.	
May	
Jun.	
Jul.	exams

Aug.	(exams)
Sep.	specialised courses at second EU HEI (European mobility)
Oct.	
Nov.	
Dec.	
Jan.	exams

Feb.-May	thesis at starting EU HEI
Jun.-Jul.	defence
Aug.	exam resit

S1



S2



S3



S4



Competences

		BIOLOGICAL LEVEL OF THE SCIENTIFIC COURSE LEARNING OUTCOMES					OTHER LEARNING OUTCOMES
		Organism	Population	Community	Ecosystem	Global	
ECOSYSTEM ELEMENT FOCUSED ON	Plant						<ul style="list-style-type: none"> • Knowledge of and insight into the study field • Research skills (incl. project writing and funding seeking) • Enhanced critical analysis and judgement • Presentation skills • Improved assertiveness • Improved ability to teach • Enhanced confidence, independence and creativity • Enhanced capabilities in devising original solutions to real world problems and obstacles in education and research <i>sensu lato</i> • Enhanced ethical and social understanding through socio-cultural experience in two EU and one third-country • Improved communication in European languages • Networking through national and international institutions in three European cities (among which two major capitals)
	Animal						
	Human						
	Environment						
	Interactions						
	Methods & tools						

ULB-VUB
UPMC-MNHN
UNIFI
UCP
Udsch
UQ

basic courses

specialised courses



S1 Courses at ULB-VUB





S1 Courses at ULB-VUB

<u>COMPULSORY:</u>	ECTS
<u>Analysis of biological data</u>	5
<u>The Earth system and its interactions</u>	5
<u>Tropical biocomplexity: natural dynamics, indigenous interactions and sustainable management</u>	5

<u>OPTIONAL (15 ECTS to be chosen):</u>	ECTS
<u>River and lake ecology (botanical and zoological aspects)</u>	5
<u>Variation and evolution of plants</u>	5
<u>Tropical parasitology and entomology</u>	5
<u>Marine biology</u>	5
<u>Plant-soil interactions</u>	5



S1 Courses at UPMC-MNHN





S1 Courses at UPMC-MNHN

<u>COMPULSORY:</u>	ECTS
<u>Statistiques et traitement des données</u>	3
<u>Problématiques actuelles en biodiversité (tropicale)</u>	3
<u>Bases (avancées) de la taxonomie</u>	6
<u>Bases (avancées) de la phylogénétique</u>	6
<u>Initiation aux milieux tropicaux</u>	3
<u>Langue étrangère</u>	3
<u>Insertion professionnelle</u>	3
<u>OPTIONAL (1 Module to be chosen):</u>	ECTS
MODULE: UPMC	
<u>Climat et biotope (c/o Grandes Questions Environnementales)</u>	3
<u>Géomatique, SIG, Télédétection</u>	3
MODULE: MNHN	
<u>Sciences de la nature et de l'homme: histoire des idées</u>	3
<u>Droit du patrimoine naturel in situ et ex situ</u>	3



S1 Courses at UNIFI





S1 Courses at UNIFI

	ECTS
<u>Data analysis and environmental modeling</u>	3
<u>Tropical botany</u>	3
<u>Biodiversity and conservation</u>	3
<u>Tropical climatology</u>	3
<u>Wetland plant communities</u>	3
<u>Marine and coastal biology</u>	3
<u>Pedology</u>	3
<u>Ecology</u>	3
<u>Molecular Ecology</u>	3
<u>Social insects in tropical environments</u>	3



S2 Courses at UCP





S2 Courses at UCP

[Amazon rainforest field course: biodiversity and ecosystems](#)

[Remote sensing and GIS in Amazon land planning](#)

[Biodiversity and ecosystems of the Loreto Region](#)

[Amazon terrestrial ecosystems](#)

[Amazon aquatic ecosystems](#)

[Amazon rainforest waters](#)

[The Amazon biological and cultural diversity](#)



S2 Courses at UDsch





S2 Courses at UDsch

	ECTS
<u>Mbalmayo école de terrain</u>	15
<u>GIS, remote sensing and landscape management</u>	3
<u>Thesis proposal</u>	3
<u>OPTIONAL (9 ECTS to be chosen):</u>	ECTS
<u>Advanced plant systematics</u>	3
<u>Biodiversity conservation</u>	3
<u>Tropical phytogeography</u>	3
<u>Natural resource evaluation methods</u>	3
<u>Forest ecology and silviculture</u>	3
<u>Socio-economic analysis and elaboration of a management plan for forests and community forests</u>	3
<u>Forest management and certification</u>	3
<u>Plantes mellifères et apiculture</u>	3
<u>Plantes médicinales</u>	3
<u>Ethnobotanique et valorisation des ressources naturelles</u>	3





S2 Courses at UMT

	ECTS
<u>UMT Field school</u>	15
<u>Remote sensing and GIS</u>	3
<u>Tropical oceanography</u>	3
<u>Estuarine and mangrove ecology</u>	3
<u>Conservation of marine endangered species</u>	3
<u>Thesis proposal</u>	3



S2 Courses at UQ





S2 Courses at UQ

<u>COMPULSORY:</u>	ECTS
<u>Remote sensing of environment</u> OR <u>Geographical information systems</u>	6
<u>Thesis proposal</u>	3

<u>OPTIONAL (1 Module to be chosen):</u>	ECTS
MODULE: Terrestrial Ecosystems	

<u>COMPULSORY:</u>	
<u>Australia's terrestrial environment (field course)</u>	15

<u>OPTIONAL (1 course to be chosen):</u>	
<u>Visitors in sensitive environments</u>	6
<u>Landscape ecology</u>	6
<u>Biological adaptation to climate change</u>	6
<u>Catchment processes & management</u>	6
<u>Research project (Environmental Management)</u>	6

MODULE: Aquatic Ecosystems	
...	



S2 Courses at UQ

<u>COMPULSORY:</u>	ECTS
<u>Remote sensing of environment</u> OR <u>Geographical information systems</u>	6
<u>Thesis proposal</u>	3

<u>OPTIONAL (1 Module to be chosen):</u>	ECTS
MODULE: Terrestrial Ecosystems	
...	
MODULE: Aquatic Ecosystems	

<u>COMPULSORY:</u>	
<u>Australia's marine environment</u>	15
<u>OPTIONAL (1 course to be chosen):</u>	
<u>Coastal processes & management</u>	6
<u>Catchment processes & management</u>	6
<u>Marine ecology</u>	6
<u>Marine invertebrates</u>	6
<u>Physical-biological oceanography</u>	6
<u>Biological adaptation to climate change</u>	6
<u>Research project (Environmental Management)</u>	6



S3 Courses at ULB-VUB

COMPULSORY:

Scientific presentation skills and career planning

ECTS

5

Tropical biocomplexity: natural dynamics, indigenous interactions and sustainable management

5

Behavioural ecology in natural and man-made ecosystems

5



S3 Courses at ULB-VUB

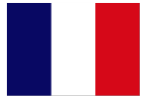
<u>OPTIONAL (1 Module to be chosen):</u>	ECTS
MODULE ULB	
<u>OPTIONAL (15 ECTS to be chosen):</u>	
<u>Dynamics of artifact-organism systems</u>	5
<u>Biology of animal societies</u>	5
<u>Tropical parasitology and entomology</u>	5
<u>Marine biology</u>	5
<u>Plant-soil interactions</u>	5
<u>River and lake ecology (botanical and zoological aspects)</u>	5
MODULE VUB	
<u>Integrated coastal zone management: mangroves, seagrass beds and coral reefs</u>	3
<u>Conservation genetics</u>	3
<u>Governance and policy in development and cooperation</u>	3
<u>Guided self-study</u>	6



S3 Courses at UPMC-MNHN

RECOMMENDED:

	ECTS
<u>Initiation aux techniques avancées de collecte et d'inventaire systématique</u>	3
<u>Diversité et histoire des lignées chlorophylliennes (DIVEG)</u>	6
<u>Xylogie-paléoxylologie: systématique et paléoécologie</u>	3
<u>Floristique tropicale (FLORATROP)</u>	3
<u>Ecologie Tropicale (ECOT)</u>	6



S3 Courses at UPMC-MNHN

<u>OPTIONAL (6 ECTS to be chosen):</u>	ECTS
<u>Exploration et description de la biodiversité</u>	3
<u>Taxinomie et nomenclature</u>	3
<u>Formalisation des connaissances en systématique et paléobiodiversité</u>	3
<u>Morphologie cladistique informatisée</u>	3
<u>Phylogénie moléculaire</u>	6
<u>Biodiversity informatics</u>	6
<u>Modélisation des formes et analyse des données morphométriques</u>	3
<u>Enjeux patrimoniaux, économiques et scientifiques de la connaissance des espèces</u>	3
<u>Partenaires institutionnels et associatifs de la gestion et de la conservation de la biodiversité</u>	3



S3 Courses at UNIFI

	ECTS
<u>Natural resources, population and development</u>	3
<u>Coastal morphology and shoreline protection</u>	3
<u>Wetland resources evaluation</u>	3
<u>Climate change biology</u>	3
<u>Physical landscape modelling</u>	3
<u>Primateology</u>	3
<u>Animal phylogeography</u>	3
<u>Migrations and orientation in tropical environments</u>	3
<u>Tropical herbarium management</u>	3
<u>Scientific presentation skills and career planning</u>	3



Courses at all EU HEI

	ECTS
<u>Scientific presentation skills and career planning</u>	3/5
<u>Thesis</u>	30

Associated Partners



**TECHNISCHE
UNIVERSITÄT
DRESDEN**



**COSMETIC VALLEY
FRANCE**



1933



Procedures for scholarships

1^e sem

- Information

Oct/Nov

- Submission of applications

Dec/Jan

- Assessment of applications by TROPIMUNDO consortium

Feb

- Report to the European Commission

April

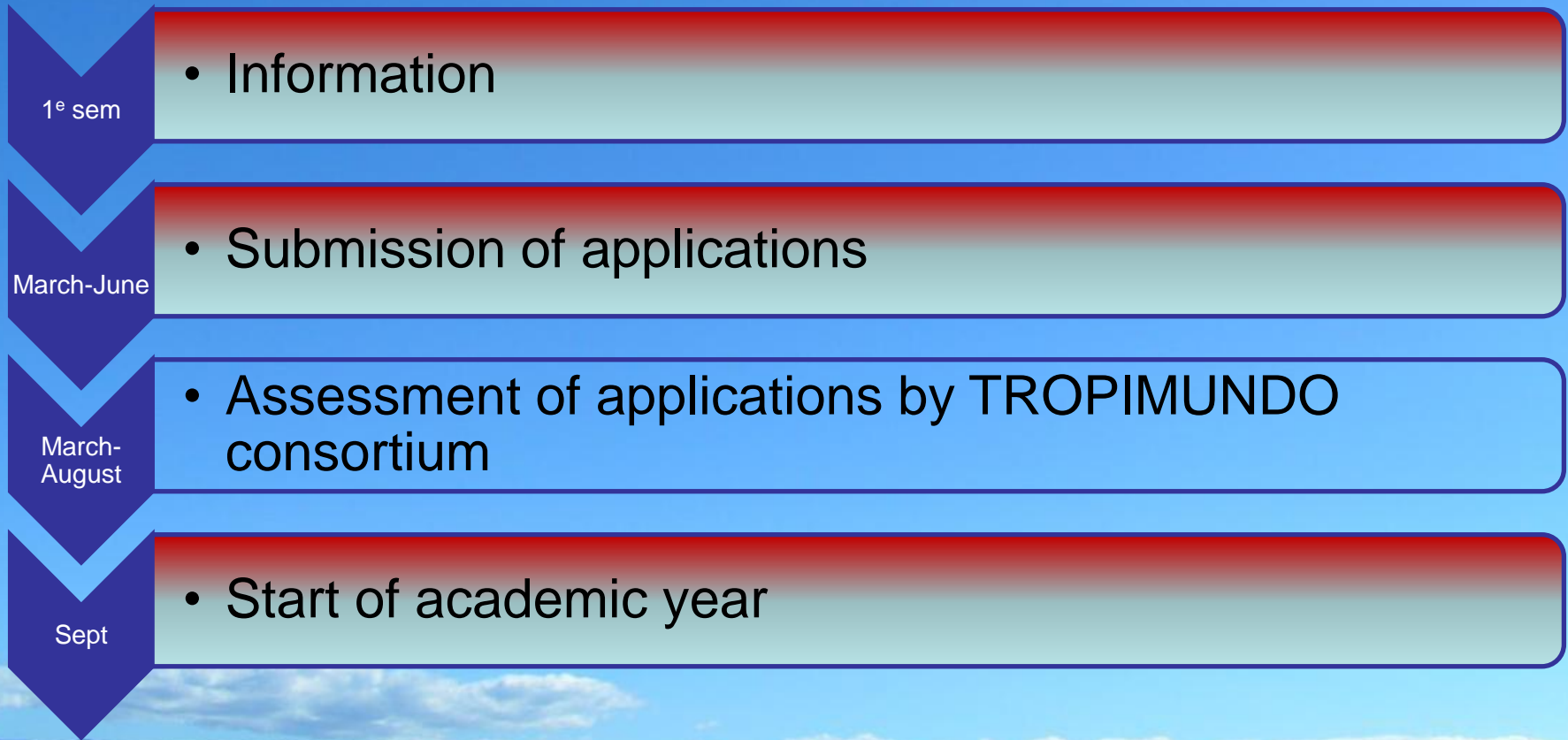
- List of scholarship holders

+

- Vaccination, visa procedures








Procedures for self-funded (EU only and provided places are left)



Diplomas and Certificates

Diplômes des universités de l'UE faisant partie du trajectoire

-  • ULB: Master en Biologie des Organismes et Ecologie (finalité EMMC in Tropical Biodiversity and Ecosystems)
-  • VUB: Master of Biology (specialisation EMMC in Tropical Biodiversity and Ecosystems)
-  • UPMC: Master de Sciences et Technologie (Mention: Sciences de l'Univers, Environnement, Ecologie; Spécialité: Systématique, Evolution et Paléobiodiversité; Parcours: Tropical Biodiversity and Ecosystems)
-  • MNHN: Master Evolution, Patrimoine Naturel et Sociétés (Spécialité: Systématique, Evolution et Paléobiodiversité; Parcours: Tropical Biodiversity and Ecosystems)
-  • UNIFI: Master di I Livello in Tropical Biodiversity and Ecosystems

Certificats

- Joint Europass Diploma Supplement signed by all TROPIMUNDO partners
- Europass Mobility
- Europass Language Passport



Erasmus Mundus Masters Course in Tropical Biodiversity and Ecosystems

TROPIMUNDO 

www.tropimundo.eu

Master in Biology of Organisms and Ecology (MABIOR)



>30 credits offered in English in collaboration with
and 15 ECTS in English obliged !



March-April

15th of September

Holidays

1st of July

Courses, labs and field courses

Thesis preparation

Courses and thesis

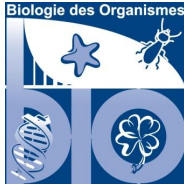
Post-thesis training

First year

Second year

For Int'l Masters : separate deadlines corresponding to scholarship application, selection and admission. More details on <http://bevt.ulb.ac.be/> and www.tropimundo.eu

Faculté des Sciences
Faculty of Sciences



Département de Biologie des Organismes
Department of Organism Biology

Laboratory of ...

- ... Anthropology and Human Genetics**
- ... Evolutionary Biology and Ecology**
- ... Marine Biology**
- ... Plant Biotechnology**
- ... Plant Ecology and Biogeochemistry**
- ... Social Ecology**
- ... Systems Ecology and Resource Management**

MABIOR: Plant – environment relationships

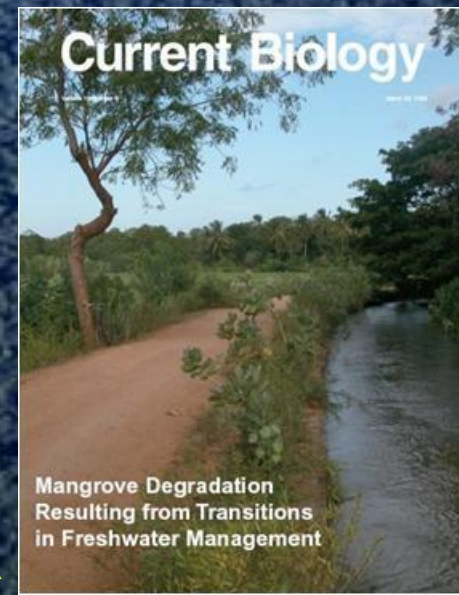
Exotic invasive plants and their impact on ecosystems

Spatio-temporal complexity and dynamics of vegetation through remote sensing and GIS-studies

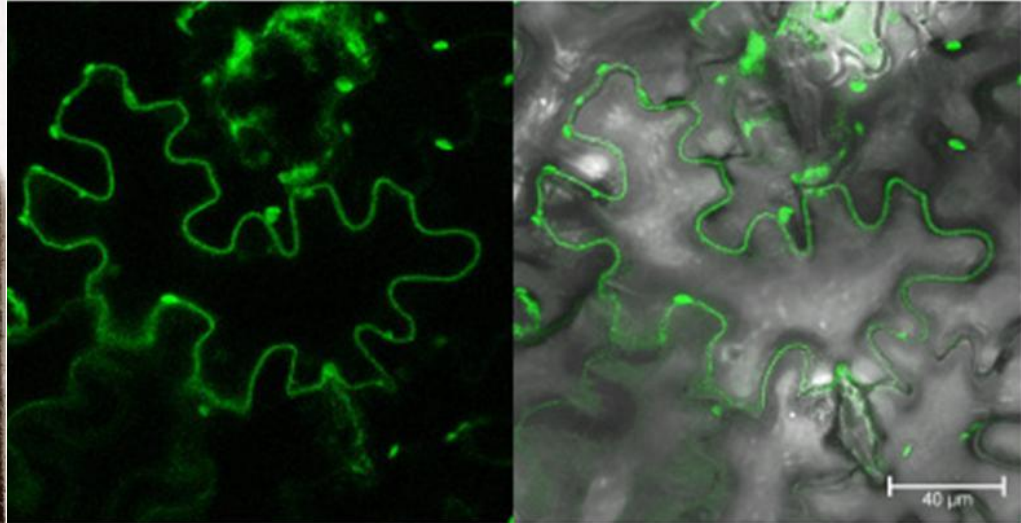
Biogeochemical cycles studied by stable isotopes

Ecology of heavy metal accumulator plants

Sites : Brazil, Belgium, Mauritania, Gambia, Cameroon, Central African Republic, Gabon, RD Congo, Kenya, India, Sri Lanka, Malaysia, China



MABIOR: Plant – environment relationships



Molecular mechanisms of mineral element uptake and mineral distribution within plants (including heavy metals)

Molecular process of plant tumour and vascular tissue growth

MABIOR: Biology of aquatic organisms

- Morphology, physiology and ecology of marine benthic organisms
- Impact of global change on marine organisms



Sites : Caribbean, Belgium, France, North Sea, Madagascar, Antarctic Ocean

MABIOR: Biology of aquatic organisms



Symbiosis studies

Marine organisms as
pollution bioindicators

Aquaculture

MABIOR: Behavioural & evolutionary ecology



- Biodiversity, spatial distribution and behaviour of threatened species
- Chemical ecology of plant-insect interactions and of between-insect recognition

Sites : Belgium, France,
Central-Africa, Papoua
New Guinea

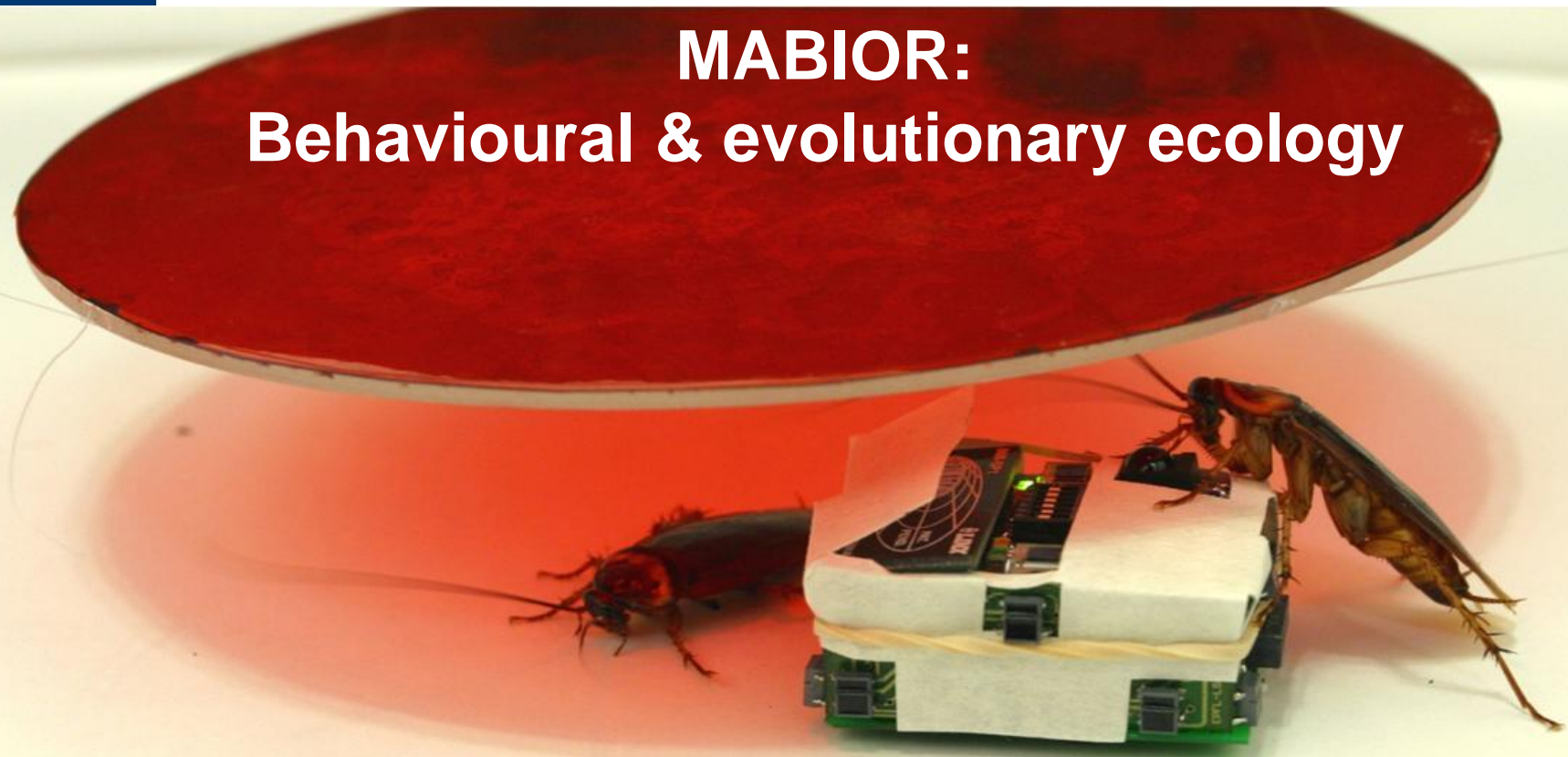
MABIOR: Behavioural & evolutionary ecology



- Population genetics at the species level and within communities
- Evolution of animal societies, genetic structure and reproductive strategies
- Population dynamics of termites, ants, crabs and their role in ecosystem functioning

Sites : USA, Canada, Belgium, Central-America, French Guyana, C-Africa, E-Africa, Indian subcontinent, Papua New Guinea, Siberia (Russia)

MABIOR: Behavioural & evolutionary ecology



- Link between the organization of animal societies and behavioural mechanisms
- Modelling of social behaviour and design of joint animal-robot societies

MABIOR: Bio-systems and conservation biology

- Man-ecosystem interactions and ethnobiology
- Restoration ecology and management
- Ecotoxicology and environmental studies
- Biogeography and conservation genetics of plants and animals

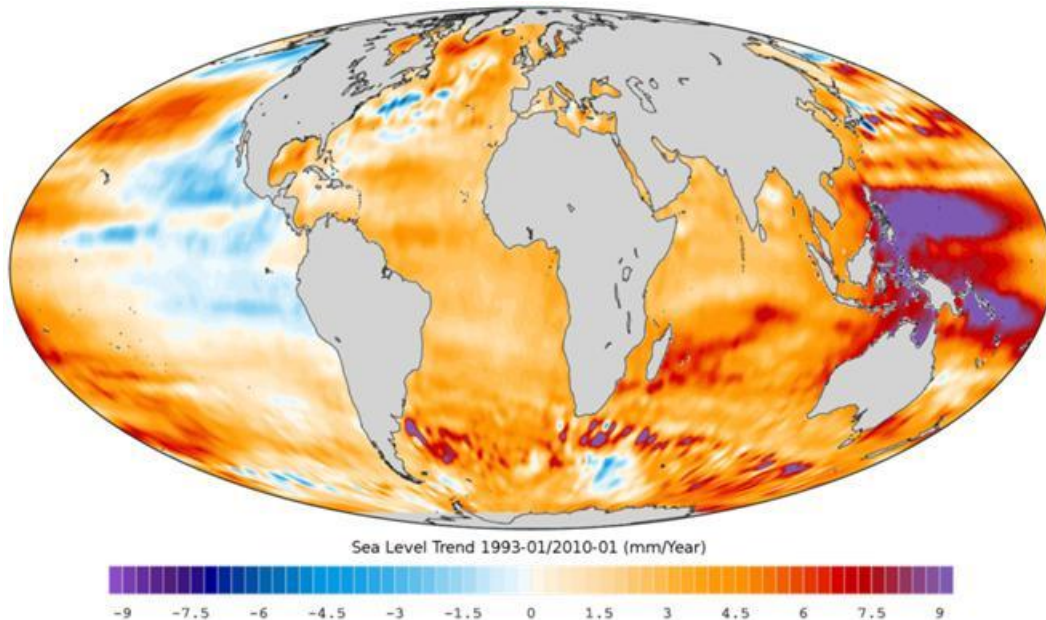


Sites : Brazil, Gambia, Senegal, Benin, Central Africa, East-Africa, Indian subcontinent, Malaysia, China

MABIOR:

Bio-systems and conservation biology

- Ecosystem functions, goods and services in a context of building resilience for complexity and change in social-ecological systems
- Macroecology and global change studies



Master in Biochemistry, Molecular and Cellular Biology (MABMOL)

- This master is managed by our Institute of Molecular Biology and Medicine (IBMM)

Institut de Biologie et de Médecine Moléculaires (IBMM)



- ✓ This Institute was created in 1999
- ✓ It employs 200 people
- ✓ It has got a world-wide reputation
- ✓ <50 publications per year

- IBMM is part of the Biopark (Gosselies aeropole):

500 scientists in research institutes (IBMM, Institute of Medical Immunology, Immune Health), the Center for Microscopy and Molecular Imaging, and 6 spin-offs)

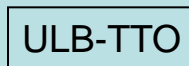
<http://www.biopark.be/>

BIOPARK
CHARLEROI BRUSSELS SOUTH

BIOPARK Charleroi Brussels South

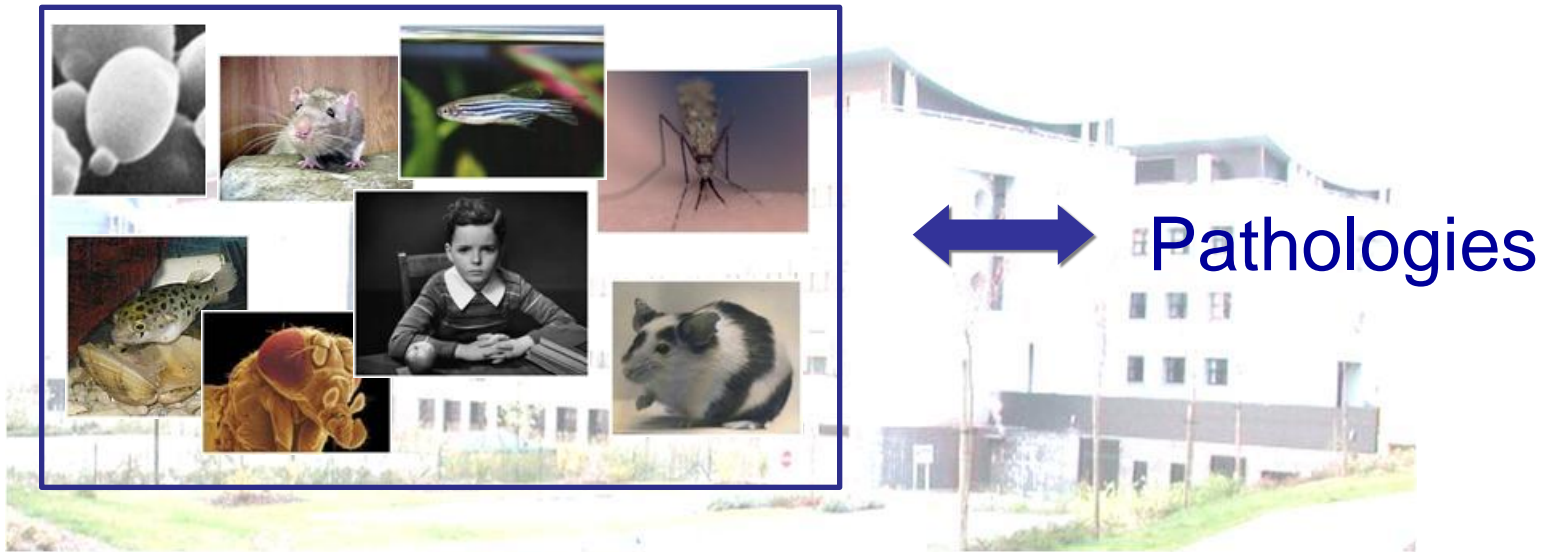
The complete innovation chain

[Research] - [Tech platform] - [Tech transfer] - [Training] - [Companies]



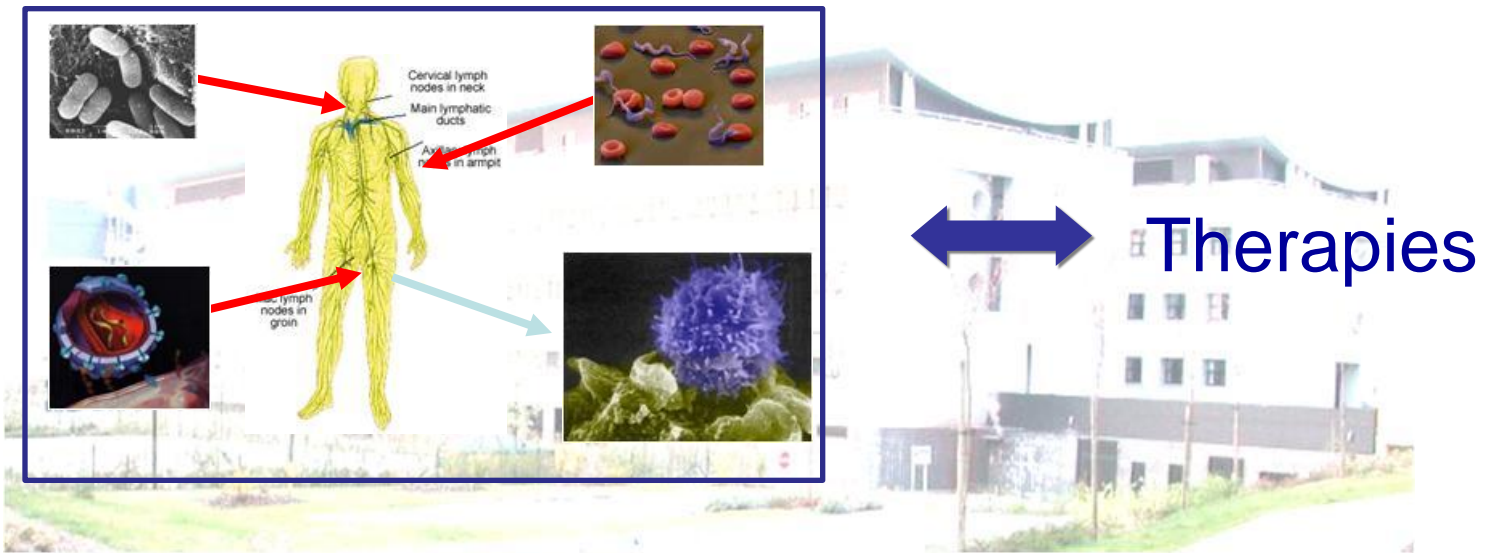
Institute of Molecular Biology and Medicine (IBMM)

Functional genomics



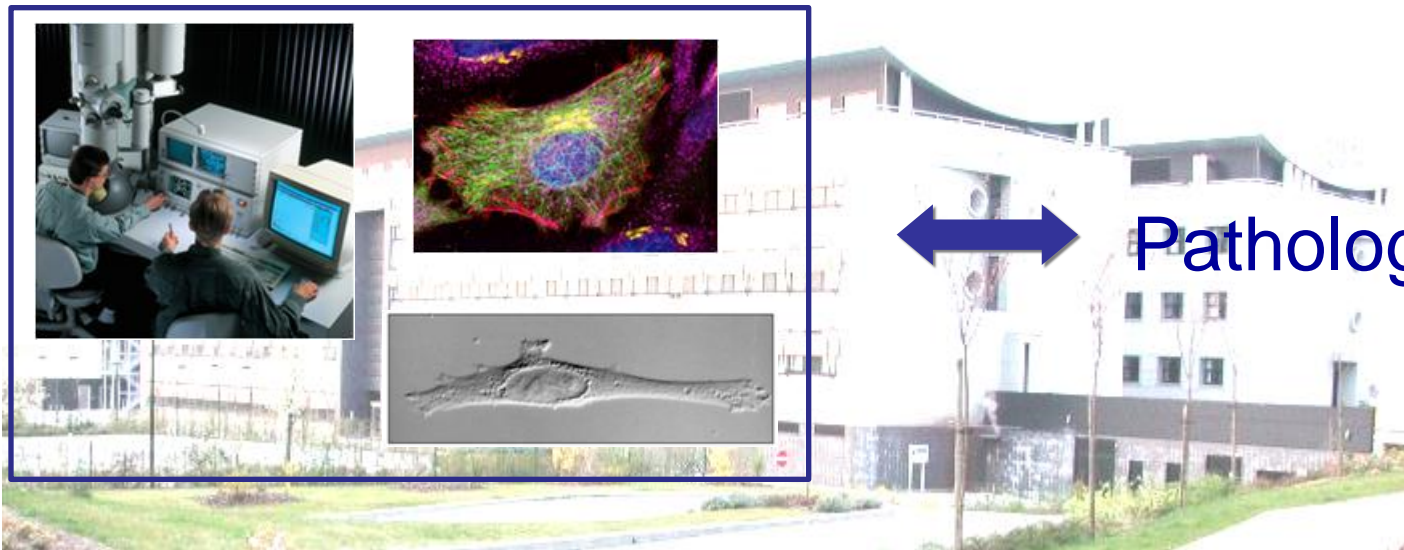
Institute of Molecular Biology and Medicine (IBMM)

Host-parasite relations



Institute of Molecular Biology and Medicine (IBMM)

Cellular Biology - imaging



Master in Biochemistry, Molecular and Cellular Biology (MABMOL)

- Two orientations (« finalités »):
 - general (« approfondie »)
 - didactics (« didactique »)

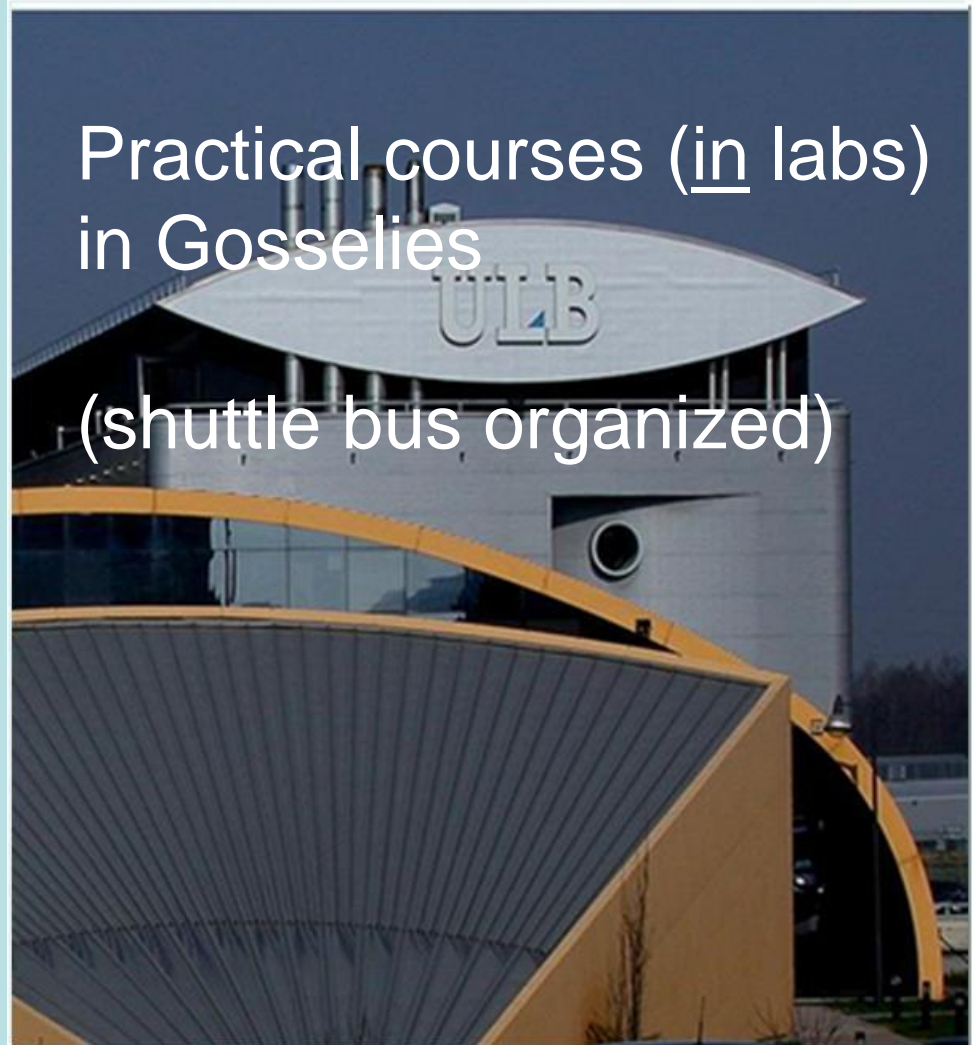
<http://www.biopark.be/>

MABMOL : « approfondie » and « didactique »

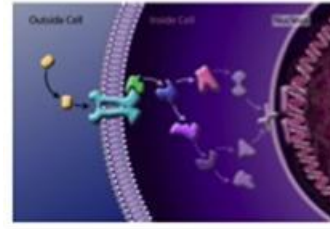
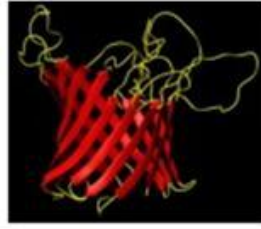
All lectures in Brussels
In French



Practical courses (in labs)
in Gosselies
(shuttle bus organized)



Master in Bio-informatics and Modeling



interdisciplinary approach combining experimental and theoretical skills for computer scientists, physicists, chemists and biologists

Two major themes : **biomolecular sequence and structure** and **cellular function**



Privileged partners of ULB



Vrije
Universiteit
Brussel



COLLÈGE
DE FRANCE
—1530—



WASEDA University



International collaborations

- ▲ **± 360 SOCRATES / ERASMUS+ partners**
- ▲ **± 350 bilateral cooperation agreements at institutional level**
- ▲ **Founder of the UNICA network assembling the universities of the capitals of Europe (ca. 40 members with a total of 1.5 million students)**



Brussels



- ▲ **Capital of Europe**
- ▲ **Largest university city** in Belgium
- ▲ **Multi-cultural and multi-lingual** (personal and professional enrichment)
- ▲ Numerous **networking, internship** and **job opportunities** through NGOs, Consultancy Bureaus, Environmental Agencies,...
- ▲ **European Commission**





Masters in « Biology » at the ULB

More information in the poster session

Thank you for your attention