



BioHealth Computing EM

European Master

Integration Period and Summer School



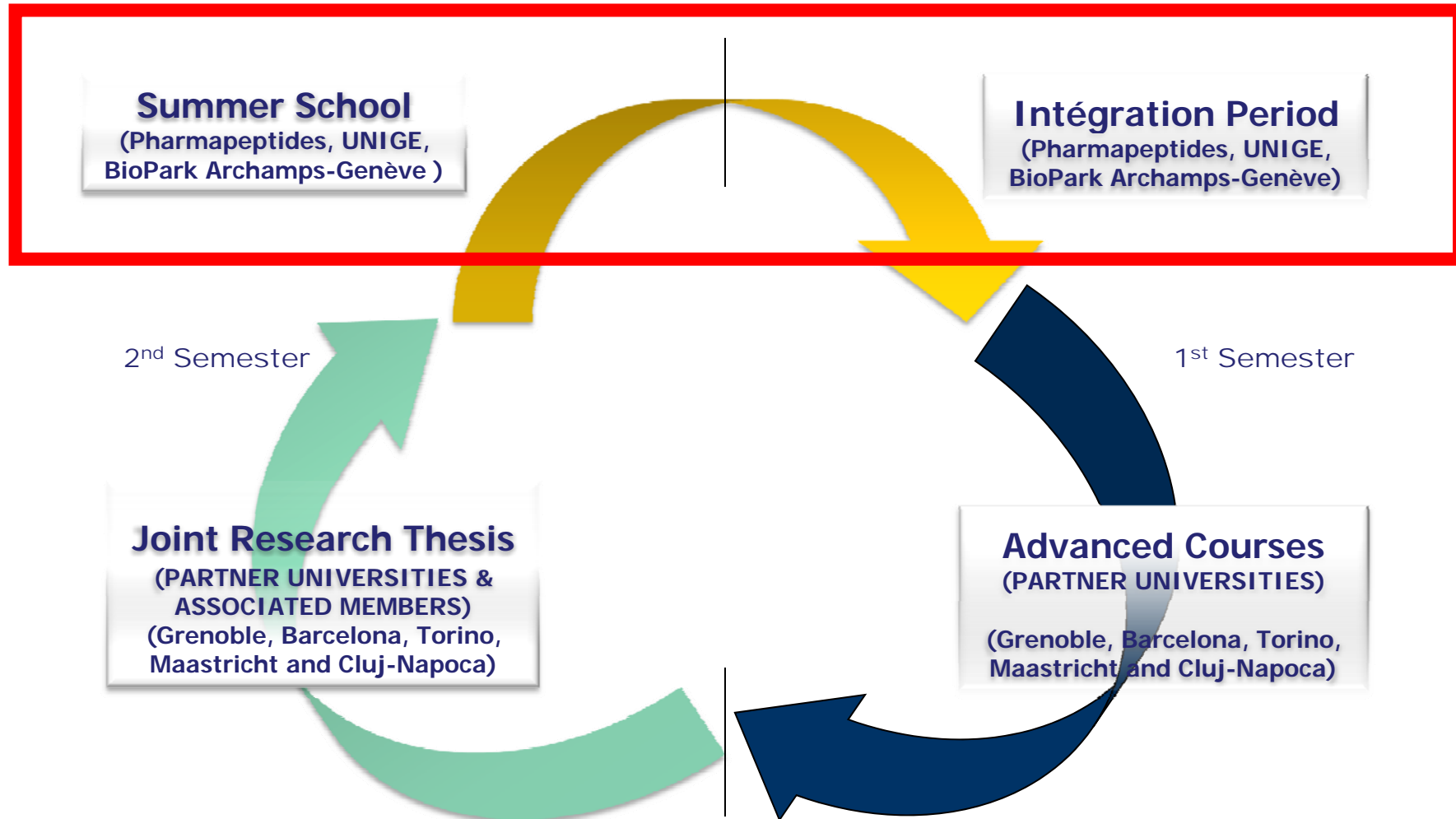
DG Éducation et culture

ERASMUS MUNDUS

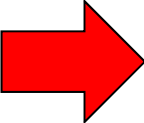
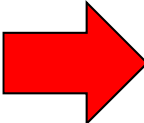
Presentation

- **One year MSc programme**, open to well motivated students who have completed one year MSc course (60 ECTS), or equivalent degree;
- **Starting and finishing by a Summer School**, gathering all the students in the BioPark of Archamps-Genève ;
- **First semester**. Advanced Courses in the following tracks: Clinical Research, Molecular Biotechnology, Environmental and Animal Health and Computational Mathematics.
- **Second semester**. Dedicated to a nine months Joint Research Project, associating two students, coming from two different tracks to solve a unique problem.
- **Two semesters followed at two different Partner Universities**, that will be both in charge of awarding credits (30:30 ECTS), and degrees to the student.
- **Courses in English (TOEFL 550 required). Introduction to local culture and language.**

Mobility Scheme



Global Structure of Courses

	Courses	Aim	Semesters		ECTS
			1	2	
	Integration Period	Introduction, Thesis preparation, Project Management, Grant writing, etc.	10 %		6
	Advanced Courses I	Disciplinary subjects in BioHealth and Computing	20 %		12
	Advanced Courses II	Complementary subjects gaining flanking knowledge (including multidisciplinary subjects)	20 %		12
	Joint Research Thesis	Research project, Master thesis		40 %	24
	Summer School	Communication		10 %	6
	Degree at two universities		50 %	50 %	60 100%

Integration Period

■ 1. Objectives:

- (a) to introduce a comprehensive education in Translational Research principles and methods, which need a truly interdisciplinary approach;
- to present the different proposals to the students during the first week of the Summer school, and to help students to find their way within research themes of the participating institutes;
- to start the research work with the formulation of a question and the design of the associated study. For the start of the research work, an important aspect is structural and quantitative analysis of the literature. Students would get acquainted by writing a master thesis (literature research);
- to follow an International Conference and to be able to produce a critical appraisal of the oral communications.

■ 2. Person in charge: organizing committee (**3 or 4 persons**)

■ 3. Duration: 2 weeks

■ 4. Location: BioPark Archamps Genève Technopole.

■ 5. Evaluation of the courses. In order to monitor the quality of these courses, they will be evaluated at the end of the semester by means of a standard evaluation form.

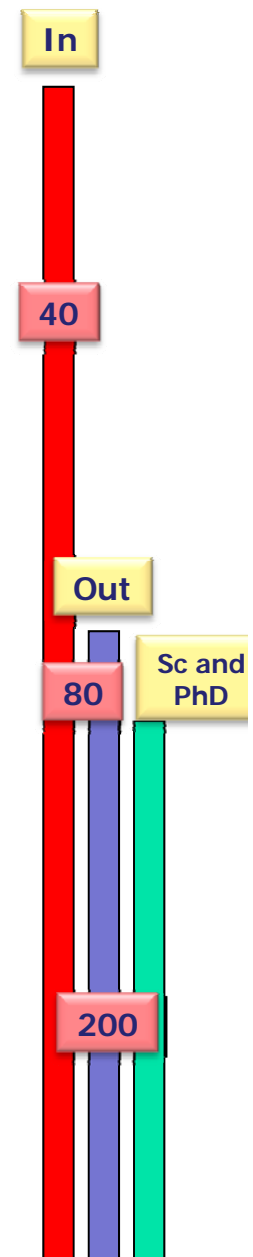
Summer School

- Organized each year, under the responsibility of the Consortium's Scientific Committee, bringing together scientists and medical professionals from across the Europe to present and discuss research in all phases of "bench to bedside" process.
- Oral communications should develop a greater understanding of how through combining systems biology and high-throughput molecular analysis translational research can improve patient care (medical applications).
- As examples, the following research subjects should be addressed: "DNA sequencing", "genotyping strategy", "expression analysis", "protein separation and identification", "biomedical informatics analysis", "epidemiological studies", "risk analysis", and "mathematical modeling".
- Students should learn: to understand the current biotechnology approaches leading to new therapeutic biomolecules; to identify biological and environmental markers assessing health impacts of environment; to develop application of new technologies in a patient driven environment ; and to provide accurate modeling of disease process and treatment response, in order to enroll individuals in specific early detection trials.

Proposed Structure for the IP and Summer School

5-23 septembrer2011

- **Integration period:** 2 weeks courses (W1 and W2)
 - Introduction: Overviews and Needs
 - Project management, IP, HR, Innovation and Tech transfer
 - Multicultural and holistic approaches of the health
 - Bibliography, Communication
 - Keynotes on BioHealth & Computing topics
 - Bioethics and philosophical aspects through the watching of documents and a roundtable
- **Thesis presentations** (2 days, W3)
- **Scientific conferences** (2 days, W3)
 - Introductory conference by an internationally recognized scientist (Nobel prize,...)
 - Conferences on the 4 topics of BioHealth & computing, translational and system medicine,...
 - Poster session by Master and PhD students
 - Widely opened to scientists (academic and industry), but priority for PhD students from universities of the consortium
- **Steering committee** (1 day, W3)



- Organizing committee:
 - ?
 - ?
 - ?
 - ?

