

Contact

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Secretary

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Application process

- ✓ Online application between **February 1st** and **July 4th**, 2016:
<https://www.universite-paris-saclay.fr/en/formation/admission>
- ✓ Admission in July based on application file possibly followed by an interview.
- ✓ Requirement:
 - Probability and Statistics / Statistics applied to life sciences
 - Direct admission is open to high level Graduate students (1st year validated) in a comparable program in applied mathematics, statistics and probability.
 - Some familiarity with genetics is a plus, but not required.
- ✓ Documents:
 - Curriculum Vitae
 - Description of the main course units completed
 - Certificate listing the previous year's course and units with marks.
 - Motivation letter.



M2

Statistical Engineering and Genomics (Ingénierie Statistique et Génomique - ISG)

Mathematics and Applications Track in Mathematics for the Life Sciences University of Paris Saclay

<http://www.universite-paris-saclay.fr/fr>

<http://www.math-evry.cnrs.fr/departement/doku.php?id=formation:master:m2isg>

- ✓ Supported by the GENMED LaBex
- ✓ Possibility of double degree with:
IL POLITECNICO DI MILANO (Italy) (Agreement in progress)
- ✓ Location: Evry, Orsay



Objectives

The master's degree in Statistical Engineering and Genomics is designed to provide students with the knowledge and skills needed to analyze high dimensional genomic data and to develop original mathematical and programming tools adapted to such data.

The program combines theoretical and methodological courses with applied projects related to statistics, genetics and programming. It is dedicated to students in mathematics or engineering interested in working at the interface between biology, mathematics and statistics.

Program overview

- ✓ 6 months with courses
 - **nonparametric statistics, survival analysis**
 - **statistics for genetics and genomics**
 - **high dimensional statistics, networks, graphical models, multiple testing**
 - **evolution models, dynamical systems, hidden markov models, particular filters**
 - **bayesian methods for genomics**
 - **programming and bioinformatics for genetics and genomics**
 - **formal and quantitative genetics, genetic linkage, association study, GWAS, population genetics**
 - **preparation for the TOEIC**
- ✓ A 4 to 6 months academic or non-academic internship addressing a real scientific challenge that will provide the opportunity to develop one of the topics addressed during the courses.
- ✓ Language: English

Professional opportunities

- ✓ **CRO, IT consulting, SMEs in biotechnology, startups**
- ✓ **Major industrial groups (pharmaceutical or others)**
- ✓ **PhD in various laboratories**
- ✓ **Academic jobs, research institutes**

Pedagogical team

Christophe Ambroise, Nicolas Brunel (ENSIIE), Valérie Chaudru, Julien Chiquet, Cyril Dalmaso, Randal Douc (TSP), Sophie Garnier (UPMC), Robert Olaso (CNG), Pierre Neuvial, Guillem Rigail, Marie-Luce Taupin.

Internship partners

- ✓ Academic laboratories: LaMME, URGV-INRA, University Paris Saclay, ENSIIE, GenMed LabEx partners, ...
- ✓ Professionnal: Institut de recherche Servier, Institut Curie, Centre National de Génotypage (CNG-CEA), Génopole, INRA, INSERM, GenMed LabEx partners, Fondation Jean Dausset-Centre d'Etude du Polymorphisme Humain (CEPH), ...