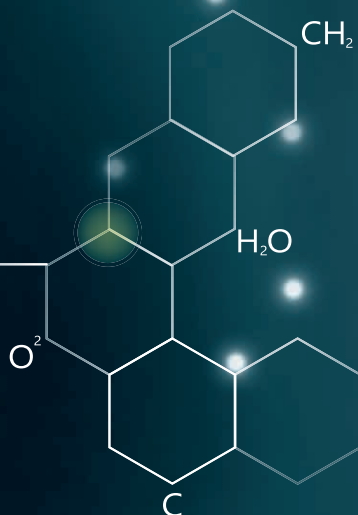


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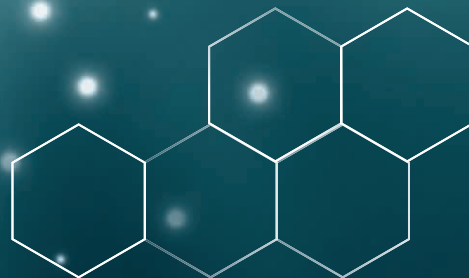
# SCHOOL OF ENGINEERING IN BIOTECHNOLOGIES



CERTIFIED  
SCHOOL OF  
BIOTECHNOLOGY  
ENGINEERING

Cti

Commission  
des titres d'ingénieur



AT YOUR COMPANY'S SERVICE





# YOUR CONTACTS AT THE CORPORATE RELATIONS OFFICE

## DIRECTOR OF CORPORATE RELATIONS

• Frédérique Buil  
+33 (0) 144 080 164  
frederique.buil@supbiotech.fr

## OUR GOAL

The Corporate Relations office focuses on creating a network between companies (both nationally and internationally) and students in order to facilitate their integration into the workplace and increase the visibility of companies among the student body.

The Corporate Relations office also strives to help your business in the recruitment of trainees or graduates.

## THE SCHOOL

Sup'Biotech's pedagogy is a multidisciplinary balance between scientific and engineering qualifications (theoretical lessons, laboratory practical experiments and projects), management skills, industrial know-how as well as knowledge of both domestic and international biotechnology markets. Our five year program leads to an engineering diploma in biotechnology, classes are taught in English from the third year onward to prepare Sup'Biotech students to work in an international environment.

*Sup'Biotech was created to give companies what they needed in terms of Biotech engineering knowledge and manpower*



# EXPERTISE PROGRAM

## CORE CURRICULUM

4<sup>th</sup> year: 4 month internship during the Fall Semester

- 🌀 **Life Sciences:** Genetic Engineering, Pharmacology, Toxicology, Membrane Systems
- 🌀 **Chemistry and Physics:** Organic Synthesis, Green Chemistry, Analytic Physico-chemistry
- 🌀 **Mathematics:** Biostatistics
- 🌀 **Bioinformatics:** Molecular Modeling, Applied Genomics
- 🌀 **Management:** Project Management, Finances, Law, Patents, Economic Intelligence, Business
- 🌀 **Development, Business Strategy**
- 🌀 **Communication:** Professional Communication
- 🌀 **French as a Foreign Language for International**

## CORE CURRICULUM

5<sup>th</sup> year: 6 month internship during the Spring Semester

- 🌀 **Life Sciences:** Protein Engineering, Nanobiotechnologies, Advanced Immunology
- 🌀 **Chemistry:** Combinative Chemistry, Green Tech
- 🌀 **Bioinformatics:** Conception of Databanks, Drug Discovery
- 🌀 **Management:** Human Resource Management, Technological Resource Management, Economic Intelligence
- 🌀 **French as a Foreign Language for International Students**



## MAJORS

### FOURTH YEAR COURSES

#### Production:

- Production Systems
- Production Control
- Quality Logistics
- Choice of materials and processes
- Applied Cross-disciplinary Project

#### Marketing & Sales:

- Marketing (methods and organization)
- Communication Sciences
- Communication Tools
- Industrial Economics
- Innovative Marketing
- Negotiation Techniques
- Applied Cross-disciplinary Project

#### R&D:

- Stem Cells: Human Genetics
- Molecular self-assembly in vivo and in vitro
- Physicochemistry of biological molecules
- Crystallography
- Applied Cross-disciplinary Project

### FIFTH YEAR COURSES

#### Production:

- Bio-processes
- Processes
- Installation of an Industrial Operation
- Industrial Reliability
- Lean Management
- Applied Cross-disciplinary Project

#### Marketing & Sales:

- Sales Force Management
- Financial Management
- International Trade and Marketing
- Design
- Strategy
- Applied Cross-disciplinary Project

#### R&D:

- Research Valorization and Technology Transfer
- Virology
- Integrative Biology
- Advanced Genomics
- Robotics
- Applied Cross-disciplinary Project



## MINORS

### FOURTH YEAR COURSES

#### • Health:

Nucleic acid/Drug Interactions and Regulations, Advanced Organic Synthesis of Drugs, Galenic, Molecules to Drugs

- **Food:** Metabolic Biochemistry, Food Biochemistry, Transgenesis/GMO, Nutrition

- **Environment:** Waste processing, Water Cycle, Soil and Water Microbiology

- **Cosmetics:** Formulation Chemistry, Galenic, Marketing, Project Management, Biology of Aging

- **Bioinformatics:** Advanced Biostatistics, Imagery

### FIFTH YEAR COURSES

#### • Health:

Angiogenesis, Oncology, Gene Therapy, Clinical Trials, Neurobiology

- **Food:** Food Microbiology, Food Traceability and Safety

- **Environment:** Microbial Ecology, Risks, Detection Tools for Chemical Pollution, Bioremediation

- **Cosmetics:** Bioprocesses, Regulation, Reconstituted Skins, Quality Control

- **Bioinformatics:** Metabolic engineering, protein engineering, environmental design, virtual screening, molecular modelling, genetic algorithm

## INTERNSHIP PERIODS CALENDAR

MASTER PROGRAM	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
4 <sup>th</sup> year internship > 4 months												
5 <sup>th</sup> year internship > 6 months												

OUR EXPERTISE CURRICULUM INCLUDES 2 INTERNSHIPS.

INTERNSHIP	4 <sup>th</sup> YEAR: ASSISTANT ENGINEER INTERNSHIP	5 <sup>th</sup> YEAR: ACCREDITATION INTERNSHIP
<b>Goals</b>	<ul style="list-style-type: none"> <li>&gt; To take on a study that would usually be given to an engineer specialized in one of the chosen fields of biotechnology</li> <li>&gt; To acquire the skills of a future executive in engineering</li> </ul>	<ul style="list-style-type: none"> <li>&gt; To accomplish a genuine long term engineering project in relation with the student's major and professional project</li> <li>&gt; To be immediately operational post-graduation and aim for a first employment</li> </ul>
<b>Contribution to the host organization</b>	<p><b>The grad student is capable of :</b></p> <ul style="list-style-type: none"> <li>&gt; Analyzing a problem</li> <li>&gt; Offering an implementation in problem solving methods and solutions</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Applying scientific knowledge, technical abilities and project management on complex systems independently</li> <li>&gt; Validating a company executive's performance by being capable of undertaking responsibilities</li> <li>&gt; True pre-hiring phase</li> </ul>

## INTERNSHIP EXAMPLES

### R&D:

#### Pharmaceutical company:

Ex: Identification and characterization of oxidative DNA damage caused by chemicals (with a focus on pharmaceuticals) in in vitro systems with various technologies.

#### Biotech company:

Ex: Assessment of novel CNS therapeutics, specifically on spinal cord injury and Alzheimer's disease projects.

### Marketing:

#### Cosmetic company:

Ex: Product development, sales, marketing, proposing ideas for new organic cosmetics products.

#### Lab equipment manufacturer:

Ex: Marketing, sales, and public relation-related activities: development and design of marketing content, materials and strategies; organization of promotional events, e.g., conventions, trade fairs.

### Production:

#### Biorefinery company:

Ex: Improve the process of simultaneous saccharification and fermentation of sugar palm for the production of second generation biofuel.

#### Winemaking group:

Ex: Participate in the realization of microvinifications, monitoring of temperature & density during fermentation, sampling & collecting the results to build a database.

# TESTIMONIALS



"Working in a startup environment, I have learnt to be very organized, efficient and independent. For this internship, creativity was also required. Also, as the firm was small, I have been able to see every aspect of the development of cosmetics. "

**Alexandra SILVAIN,**

4<sup>th</sup> year internship in Marketing, MAULI RITUALS, England



"My mission there was to develop the marketing campaign of laboratory products. I had to write and update the website content, make the brochures, flyers and explain to the salesmen company products. "

**Julie FICHEUX,**

4<sup>th</sup> year internship in Marketing, EUROGENTEC, Belgium



"I wanted to do my internship abroad because for me it's important to have an international experience. My project was to do a preliminary in-vitro assessment of Clostridium septicum strains for their suitability as source of vaccine antigen. "

**Martin PONS,**

4<sup>th</sup> year internship in R&D, VIRBAC, Australia



"It was great experience. I hope of developing a partnership between Sup'Biotech for internships and projects. "

**Elena KIPROUCHKINA,**

Internship supervisor, ITMO UNIVERSITY, Russia



"I had the great opportunity to realize my 5<sup>th</sup> year and end of study internship at Brown University, Providence in the United States in the Reproductive Toxicology laboratory. I had the mission to elaborate and optimize a protocol for 3D human prostatic (RWPE-1 and WPMY-1 cell lines) microtissue for androgenic screening assessment and characterization with HCS with the aim to develop new models than mimic more accurately in vivo human conditions. "

**Chloé BARS,**

5<sup>th</sup> year internship in R&D, BROWN UNIVERSITY, USA



"The training that was provided to Chloe before she came to us gave her a basic understanding and hands on experience with the skills necessary for her work in the laboratory. After minimal additional training and guidance in the methods of this lab, she had the confidence to pursue her own project and set up her own experiments. The training that Chloe had received more than met expectations. "

**Kim BOEKELHEIDE,**

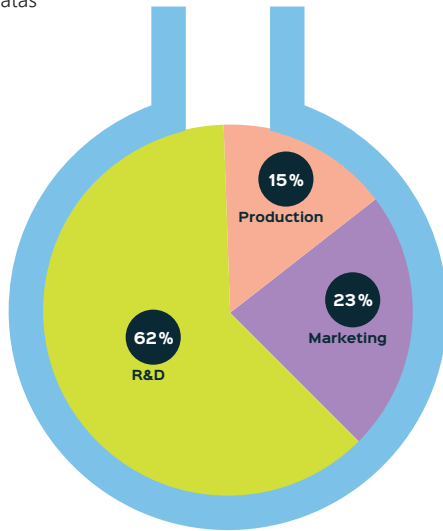
Internship supervisor, BROWN UNIVERSITY, USA



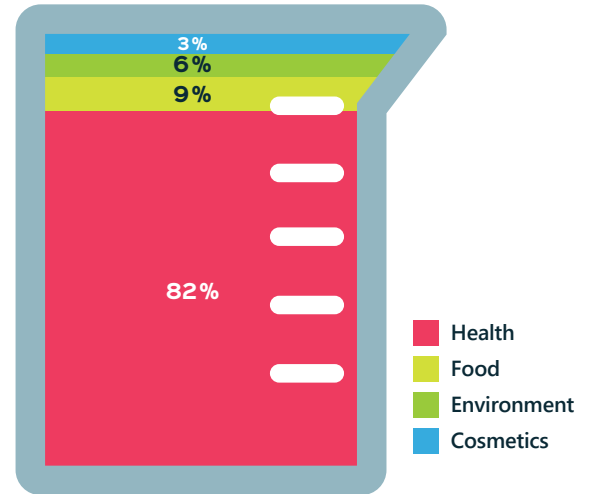
# A FEW KEY NUMBERS ABOUT INTERNATIONAL INTERNSHIPS

## INTERNSHIPS BY SPECIALTIES\*

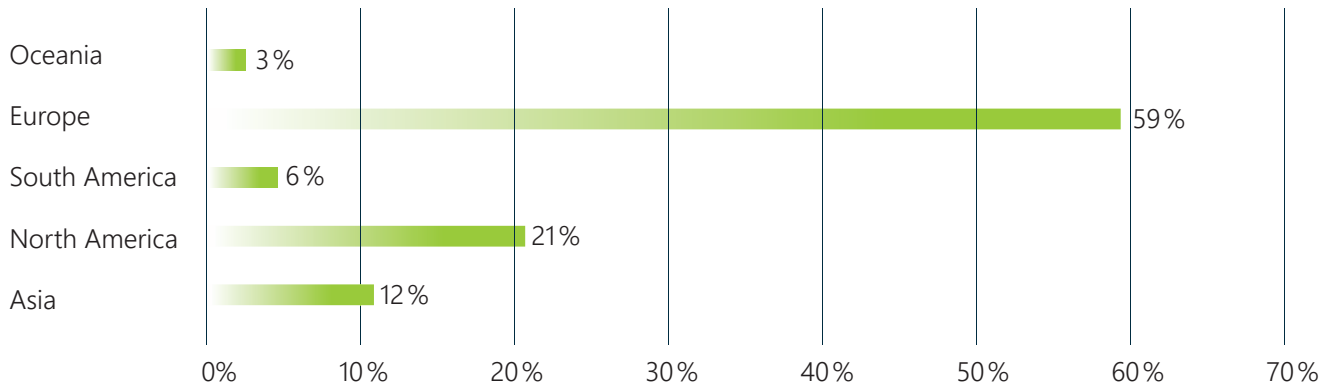
\*2016-2017 datas



## INTERNSHIPS BY SECTORS\*



## WHERE ABROAD



# REFERENCES

## USA:

- LabMinds Inc., Boston (MA)
- Northeastern University - College of Science, Boston (MA)
- Cambridge Biolabs, Cambridge (MA)
- Brown University, Providence (RI)
- NOVORON BIOSCIENCE INC., San Diego (CA)
- HSCI iPS Core Facility, Cambridge (MA)

## CANADA:

- Jus Loop, Québec

## GERMANY:

- BAYER PHARMA AG - Investigative Toxicology, Berlin
- GTMHC, Berlin
- Labiotech UG, Berlin

## ENGLAND:

- Mauli Rituals, London
- Evotec Ltd, Oxfordshire

## IRELAND:

- National University of Ireland Galway, Galway

## BELGIUM:

- UCB Pharma SA, Brussels
- ALTEN, Saint-Gilles
- EUROGENTEC SA, Seraing

## LUXEMBOURG:

- IBBL (Integrated BioBank of Luxembourg), Luxembourg

## CZECH REPUBLIC:

- Biowebspin, Prague



## SWITZERLAND:

- Glenmark Pharmaceuticals SA, La Chaux-de-fonds
- ALCIMED, Lausanne
- ETH ZURICH (Eidgenössische Technische Hochschule Zurich)

## CHILE:

- Vina San Pedro Tarapaca SA (VSPT Wine Group) Santiago

## ECUADOR:

- Centro Neotropical para la Investigacion de la Biomasa, Ecuador

## RUSSIA:

- ITMO University, Saint-Petersburg

## AUSTRALIA:

- Virbac Australia Pty Ltd, Penrith

## DANEMARK:

- Nordic Bioscience, Herlev
- Back II Basics, Vejle

## SWEDEN:

- AstraZeneca, Molndal



66 rue Guy Môquet  
94800 Villejuif - France

**CORPORATE RELATIONS OFFICE**  
+33 144 080 164 / +33 180 517 109  
[relationsentreprises@supbiotech.fr](mailto:relationsentreprises@supbiotech.fr)

IONIS Education Group was founded by Marc Sellam in 1980. Today, it is France's leading private higher education group, with some 20 schools and educational institutions in 12 French cities. The Group serves around 25,000 students studying business, marketing/communications, management, finance, IT, digital applications, aeronautics, energy, transportation, biology, design, and more. IONIS Group's mission is to train the next generation of business intelligence leaders; our students are constantly challenged to cultivate an international perspective, to maintain an innovative and entrepreneurial mindset, and to promote a culture of adaptability and change. This positions our students, and our 65,000+ alumni, as key players in the new economy.

\* ISG, Moda Domani Institute, ISEG Business & Finance School, ISEG Marketing & Communication School, ISTH, ICS Bégulé, ISEFAC Bachelor, ISEFAC R.H., EPITA, ESME Sudria, IPSA, Epitech, Web@cadémie, Sup'Biotech, e-artsup, Ionis-STM, SUP'Internet, ISEFAC Alternance, ETNA, IONIS UP, Coding Academy, IONISx, IONIS 361

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