

## **Internship Proposal**

### **Academic Year 2019-2020**

#### **1. Host team :**

Research Unit (e.g. Department or Institute) : IBENS  
Research Unit Director : Paoletti  
Research Team Director : Holcman  
Team name : Computational biology and predictive medicine.

Address : 46 rue d'Ulm

Supervisor of the Research Intern for this project :

Telephone : 0144323661

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#### **2. Internship project title:**

**Extracting EEG patterns from patients and building a data basis**

#### **3. Internship Description :**

Spectral analysis of the EEG signal recorded in anesthetized elderly patients without known neurological pathology can be used to differentiate various profile of sedations from the low brain flow profile.

In this training period, the goal would be to identify features in the EEG to predict post-anesthetic morbidity and thus to prevent it. Tools are statistical classification, data analysis, Bayesian inferences, Fourier or wavelet analysis. A decision software should be built.

The group of D. Holcman (ENS) dedicated to Applied Mathematics and Computational biology offers the following training period at a Master or graduate level. Fields covered are signal processing, connecting devices, stochastic processes, numerical simulations and Big data analysis. The project is in collaboration with Pr. N. Kubis (Lariboisiere Hospital, Paris)

Very recent publications of the lab:

**Duration:** at least 6 months.

**Candidate:** The candidate for this position is expected to be strongly motivated by signal processing and medical sciences. He/she should have a background in applied mathematics/physics or computer science. The candidate should be passionate by her/his research. Students are encouraged to write a publication at the end of the training period. We strongly encourage student motivated to continue on a PhD thesis. Our groups have a strong tradition in training students that are joining top international institutions.

**Contact information:**

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