

**Group “Computational Epigenetics of Cancer” (PI: Valentina Boeva)**

24 rue du Faubourg Saint-Jacques, 75014 Paris, France

**2.5 year post-doctoral position in computational epigenetics of cancer:  
Intratumor epigenetic heterogeneity and cell plasticity in neuroblastoma**



Our ATIP-Avenir team is looking for a post-doctoral researcher (position funded for 2.5 years) to work on **epigenetic heterogeneity and cell plasticity in neuroblastoma in the context of tumor aggressiveness and sensitivity to treatment**. Our group focuses on cancer epigenetics with the aim to understand the role of epigenetic changes in cancer development. We welcome both molecular biology and bioinformatics approaches. Currently the team works on neuroblastoma, adrenocortical carcinoma, osteosarcoma, renal cell carcinoma and leukemia. You would join the neuroblastoma project, on which you will collaborate with the team of Isabelle Janoueix-Lerosey (“Genetics and Biology of Pediatric Tumors”, Curie Institute, Paris) – a world-class expert in neuroblastoma biology.

Our team is a part of the big department of development, reproduction and cancer in the Cochin institute. The Cochin hospital and our international research center are located in a nice central district of Paris close to Port Royal and in a walking proximity from the Luxembourg garden. The institute provides access to the state-of-the-art facilities including Sequencing, Proteomics, and Imaging platforms. It regularly invites international speakers and promotes both scientific and non-scientific interactions between researchers. Being located in the center of Paris, you could also attend events organized by the neighboring research centers: Ecole Normale Supérieure, Pasteur and Curie Institutes.

This offer provides an opportunity to work on a multifaceted biological problem by developing and applying methods for integrative high-throughput data analysis. Your aim would be to investigate neuroblastoma cell identity, plasticity and heterogeneity using bioinformatics and computational biology approaches. In particular, through the analysis of cancer cell ChIP-seq and RNA-seq data you will (1) determine the mechanisms involved in neuroblastoma cell plasticity *in vitro*; (2) characterize intratumor heterogeneity and plasticity upon treatments using *in vivo* models; (3) evaluate intratumor heterogeneity in patient samples and investigate the links between heterogeneity and clinical parameters.

The candidate can come both from the bioinformatics or molecular biology fields but should be highly motivated to work with big data and dig into cancer epigenetics. A doctoral degree, experience in bioinformatics analysis (in R), and proficiency in English, are required. Programming skills (Perl/Python), computational and mathematical background and/or experience in cellular and molecular biology would be a plus.

**Selected publications:**

- Heterogeneity of neuroblastoma cell identity defined by transcriptional circuitries. V. Boeva , C. Louis-Brennetot, A. Peltier, ... I. Janoueix-Lerosey . **Nature Genetics**. 2017. 49(9):1408-1413.

- HMCAn-diff: a method to detect changes in histone modifications in cells with different genetic characteristics. H. Ashoor, C. Louis-Brennetot, I. Janoueix-Lerosey, V.B. Bajic, and V. Boeva. *Nucleic Acids Research*. 2017. 45(8):e58.
- QuantumClone: Clonal assessment of functional mutations in cancer based on a genotype-aware method for clonal reconstruction. P. Deveau, ... I. Janoueix-Lerosey, E. Barillot, O. Delattre, J. Maris, G. Schleiermacher, and V. Boeva. *Bioinformatics*. 2018. 34(11):1808-1816.

**Starting date:** January 1, 2019 or later.

To apply, please send your CV, a motivation letter, and the names of two references to:

**[Valentina.Boeva@inserm.fr](mailto:Valentina.Boeva@inserm.fr)**

Deadline for applications: **December 1, 2018**

**Institute website:** <http://cochin.inserm.fr/institute/institute-presentation>

**Group website:** <http://boevalab.com/>