JOBS: Joint PhD Positions in bioinformatics (located in Grenoble, France).

Title:
Global (systemic) analysis of microRNAs (gene regulators) in prostate cancer

Context and Subject:
Our CEA laboratory is involved in cancer fight through the identification of key genes acting in the oncogenic process. To that end our laboratory has developed an original RNAi-based screening approach using cell microarrays. Briefly, it consists in high throughput and high content screening on microarrays, of the phenotypic consequences of gene or microRNA depletion at single cell level. After analysis, this leads to a list of genes / microRNAs implicated in the phenotype of interest (such as cell death of prostate cancer cells).

MicroRNAs are small non-coding RNAs (around 20 bases) which are important gene regulators in cells (human, animals, plants, etc.). Discovered in the 90s, more than a thousand human microRNAs are now known (1872 in miRBase, 2013). However, their functions remain largely unknown. The goal of the proposed PhD thesis is to investigate the role of microRNAs with a system biology approach, in particular in the case of prostate cancer. The PhD student will use in-house high content screening data, and available data bases (data mining). It will also benefit from the ongoing PhD thesis in the laboratory on microRNA networks (R software, graph theory).

The work, realized in the bioinformatics team of a biological lab (where the data are generated), will be in collaboration with the center of bioinformatics in Mines ParisTech. It will be codirected by a biologist, a statistician, and co-supervised by a biostatistician.

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Background of the student:
Bioinformatics or Statistics / Applied mathematics / Computing, with a strong interest in biology and health application. Knowledge of R would be a plus.

Application (before the 30th of March for first round)
Applicant must own a Master in bioinformatics, computing, statistics, applied mathematics or related.
Applications must be submitted as one pdf file containing all materials. To apply, send an email to Laurent Guyon, and attach the following materials in English:
  - A letter motivating the application (cover letter, max 1 page)
  - Curriculum vitae (including at least two references)
  - Grade transcripts and BSc/MSc diploma

Web:
http://www-dsv.cea.fr/irtsv/bge/biomics
http://laurent.guyon.phd.free.fr/
http://cbio.ensmp.fr/?lang=en&page_name=Overview

Keywords
microRNAs, system biology, cancer, network biology, data mining