

Opportunity: Postdoctoral Research Opportunity in Epigenomics at Columbia University in New York City

Columbia University Medical Center is one of the world's foremost centers for patient care and health science education. It is also one of the world's leading biomedical research organizations, and provides a unique environment to support breakthrough discoveries in this fundamental area of biology.

The Haghghi laboratory is studying the epigenetic profiles of human brain development and its emerging role in gene regulation, as well as its fundamental importance for our understanding of normal and pathological neuronal function. Epigenetic patterns in the genome vary among tissues and cell types in normal and pathological states. A major unanswered question is how epigenetics plays a role in neuronal development and how alterations in normal epigenetic processes during development lead to neurodevelopmental diseases, such as autism and schizophrenia. Next-gen sequencing technologies now allow a global view of whole genome epigenetic profiles. Studies involve bioinformatic analysis of data from whole genome DNA and histone methylation profiling via BS-seq and ChIP-seq to detect differentially methylated regions associated with disease and their potential function through genomic datamining. This interdisciplinary group offers an excellent environment to uncover new fundamental principles and regulatory mechanisms in this emerging area of genome biology.

RESPONSIBILITIES:

A postdoctoral position is immediately available for those candidates with a Ph.D. in computational biology and/or bioinformatics who are interested in genetic and epigenetic research. The research group is highly multi-disciplinary, and the successful candidate will have the opportunity to work side-by-side with both experimental and computational biologists. The candidate must have experience in programming and high-throughput analysis of biological data, as the position involves integration of large-scale data sets, design and implementation of data processing pipelines, and analyses of genomic and epigenomic data.

REQUIREMENTS:

- A strong quantitative background in math/computer science, with a demonstrated ability to design and implement algorithms in working code.
- An extensive grounding in bioinformatics and genomics, including an understanding of genomic structure, expression control, molecular evolution and comparative genomics.
- Programming experience in a UNIX/Linux environment using programming languages such as Perl or Python, and relational databases such as MySQL or PostgreSQL, as well as proficiency with bioinformatics toolkits such as BioPerl and Bioconductor (within the R statistical programming environment).
- Experience in high-throughput data analysis and familiarity with widely used genomic databases and software.

- Coursework and practical experience in applying statistical and/or data-mining approaches to complex and noisy biological data.
- Excellent communication and teamwork skills to take advantage of the highly collaborative environment, adaptability and willingness to contribute to the overall goals of the research.
- A passion for innovation, and demonstrated initiative in tackling new areas of research and in leading a major project

SALARY & BENEFITS: Commensurate with experience

HOW TO APPLY:

Applicants should send a curriculum vitae, a brief statement of research interests, up to three reprints/preprints, and arrange for three letters of recommendation. Application material should be sent by email (a single PDF file preferred) to Dr. Fatemeh Haghighi at fg3@columbia.edu

Letters of recommendation may be sent by email to fg3@columbia.edu upon request.

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