Computational Postdoc position – Pancreatic cancer

Gioacchino Natoli lab

A postdoctoral position is immediately available for a bioinformatician in the context of a long-term project that aims at understanding the molecular bases and therapeutic implications of cellular heterogeneity in human pancreatic cancer.

Pancreatic ductal adenocarcinoma (PDAC) is predicted to become the major cause of cancer cell deaths in the western world by 2030. It is nearly always an incurable disease, with a median survival time after diagnosis of four months. The causes of this extremely aggressive behavior are both the advanced stage of the disease at diagnosis and the peculiar biological properties of this tumor type, notably the co-occurrence within the same tumor of completely different and morphologically identifiable components: well-differentiated (low-grade) epithelial structures and nests of poorly differentiated (high-grade) quasi-mesenchymal tumor cells, whose coexistence reflects distinct underlying gene regulatory networks and transcriptional outputs. This project is the continuation of a long-term research effort motivated by the assumption that the extreme heterogeneity of human PDACs is a critical determinant of the aggressive clinical behavior of these tumors. Our overall aim is to obtain a molecular characterization and mechanistic understanding of the transcriptional bases of cellular variability, eventually leading to the identification of novel mechanism-aware therapeutic options.

The project is highly integrative, making use of complementary cutting-edge technologies, including sequencing- and imaging-based spatial transcriptomics and epigenomics.

Your role will be to lead, develop and apply advanced computational methods for genomics research, large-scale data integration and analysis of sequencing data from complementary genomics technologies applied to primary human pancreatic cancer samples and to samples from experimental models developed in the lab. Applicants should have a PhD in bioinformatics or related disciplines, excellent programming skills, a documented research background and excellent interpersonal and communication skills.

Interested candidates should submit their curriculum vitae, a motivation letter and contact information for referees to Gioacchino Natoli (gioacchino.natoli@ieo.it).

Selected recent publications from the lab

4) Opposing macrophage polarization programs show extensive epigenomic and transcriptional cross-talk (V. Piccolo ...G. Natoli). Nature Immunology 18, 530-540. PMID 28288101 (2017).