

A postdoctoral position for 22 months is available in the group of Dr. Alessandra Magistrato at CNR-IOM SISSA Trieste, Italy.

### **Project**

Intron removal from premature-messenger RNA (pre-mRNA splicing) is a key step of gene expression and regulation. The spliceosome promotes pre-mRNA splicing to produce long non coding RNAs and mature mRNA. The spliceosome consists of 5 small nuclear (sn)RNAs and over 100 proteins. Almost 50% of the human spliceosome proteins are predicted to be intrinsically disordered (IDP) or to contain ID regions (IDR). Among them, the SF3B1 protein, exhibits an IDR N-terminus domain (NTD) and a C-terminal domain (CTD) composed of 22 HEAT-repeats. SF3B1 is key for the recognition of a key pre-mRNA signaling sequence. SF3B1 is also object of post-translational modifications both in its NTD and CTD. It was recently discovered that phosphorylation of SF3B1 at its NTD regulates splicing. In this project we aim to fill the gap of knowledge on the structure and function of the spliceosome IDRs, focusing on SF3B1. To this end we will synergically use molecular dynamics simulations along with NMR, SAXS taking advantage of the complementary expertise of the research units involved in this project. The project is in collaboration with PR. Pierattelli, University of Firenze, Italy, Maria Luisa Napolitano, CNR-IC, Trieste, Silvia Onesti, Elettra, Trieste

### **Required skills**

The interested applicant should be experienced in molecular dynamics simulations of biological systems. Knowledge of enhanced sampling methods is desirable. Programming or scripting knowledge is required.

The position is expected to start in February/March. The position is for 12 months and will be renewed for other 10 months.

Please send cover letter and CV sent to [alessandra.magistrato@sissa.it](mailto:alessandra.magistrato@sissa.it)