PhD Position in Biophysical Chemistry of Chromatin

Our laboratory of Biophysical Chemistry of Macromolecules (LCBM) at the EPFL in Lausanne, Switzerland (http://lcbm.epfl.ch/) offers a position on the PhD level in the field of in Biophysical Chemistry of Chromatin for the ERC funded project “Chromo-SUMMIT: Decoding dynamic chromatin signaling by single-molecule multiplex detection”

Transient multivalent interactions are critical for biological processes such as signaling pathways controlling chromatin function. Chromatin, the nucleoprotein complex organizing the genome, is dynamically regulated by post-translational modifications (PTMs) of the chromatin fiber. Protein effectors interact with combinations of these PTMs through multivalent interactions, deposit novel PTMs, thereby propagate signaling cascades and remodel chromatin structure.

To reveal the underlying molecular mechanisms, methods outside classical biochemistry are required, in particular due to the combinational complexity of chromatin PTMs and the transient supramolecular interactions crucial for their recognition.

The aim of this project is thus to develop a novel approach, combining protein and chromatin synthesis and dynamic multiplex single-molecule imaging, to dissect multivalent signaling processes in chromatin – with a focus on the DNA damage response.

The ideal candidates for this position have an interest in chemical biology, biophysical chemistry or a related field and have a strong interest in elucidating molecular mechanisms in chromatin regulation. We are particular looking for candidates with interests in:

- single-molecule methods in biological systems
- protein and peptide chemistry
- quantitative / systems biology and modeling.

The position is open now. To apply for the position, please send a letter of motivation, a CV and the contact information of two referees to Prof. Beat Fierz, beat.fierz@epfl.ch.