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Marie Skłodowska-Curie Actions

*Developing talents,  
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## Postdoctoral Fellowships



### CALL FOR APPLICATIONS 2025 – FELLOWS

<b>Supervisor</b>	Jorge Fernandez de Cossio Diaz
<b>Supervisor page</b>	<a href="https://scholar.google.com/citations?user=yPBUaRkAAAAJ&amp;hl=en">https://scholar.google.com/citations?user=yPBUaRkAAAAJ&amp;hl=en</a>
<b>Host Institution</b>	Centre National de la Recherche Scientifique (CNRS) <a href="https://www.cnrs.fr/en">https://www.cnrs.fr/en</a>
<b>Research Lab</b>	Institute of Theoretical Physics <a href="https://www.ipht.fr/en/">https://www.ipht.fr/en/</a>
<b>Research Team</b>	Statistical physics and applications, Condensed matter, Quantum information <a href="https://www.ipht.fr/en/statistical-physics-and-applications-condensed-matter-quantum-information/">https://www.ipht.fr/en/statistical-physics-and-applications-condensed-matter-quantum-information/</a>

#### Project Title

Understanding and manipulating function in biological sequences through representation learning

#### Project Description

Biological sequences (DNA, RNA, protein) encode molecular processes that support life. The sequence-function mapping is complex and often unknown. Large sequence datasets can be collected in high-throughput experiments, rich in evolutionary signals that can shed light on this map. The objective of this project is to develop models to extract representations of biological sequences that help explain their function and that can be manipulated to design new sequences with desired properties.

#### Keywords

statistical physics, representation learning, biological sequences

#### Description of the Host Research Lab

A great deal of research is carried out at the IPhT. Its main aim is to formulate and study the physical and mathematical laws that govern our universe, its structure and its organisation, and it covers almost all the major subjects of modern theoretical physics: from the study of fundamental interactions, aimed in particular at describing the primordial universe, to the development of models for understanding certain biological structures. They also involve the mathematical study of complex systems in statistical physics and field theory. Beneath the diversity of the systems studied lies a profound unity between the various mathematical formalisms used to describe them.

To submit your application, please send an email with the required documents to  
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