2026 spring call PhD selections

AVAILABLE POSITIONS

Principal Investigator	Stefano Santaguida
Institute of Affiliation	IEO

PROJECT INFO	
Title of the proposed project:	Metabolic Vulnerabilities and Adaptations in Aneuploid Cancers
Short description of the project	A hallmark of cancer cells is an imbalance in chromosome number, a condition known as aneuploidy. This project focuses on understanding how aneuploidy reshapes cellular metabolism in cancer cells. Aneuploid tumors exhibit imbalances in gene expression due to abnormal chromosome numbers, which can alter metabolic pathways and create unique biochemical dependencies. The project combines metabolic profiling, molecular biology, and genome editing techniques to identify how these changes support tumor growth and survival. By characterizing the metabolic vulnerabilities specific to aneuploid cancers, the project aims to uncover potential targets for more selective and effective therapeutic strategies.
Main research area for the project	Cancer Biology
Second research area for the project	Metabolism
3 key words for the project	Cancer vulnerabilities, Metabolic dependencies, chromosomal alterations

LAB INFO	
Main topic/s of the lab	Genome Integrity
Short description of the lab activity	Genome integrity relies on accurate chromosome segregation during cell division, ensuring each daughter cell receives the correct genetic material. Errors in this process can cause aneuploidy, a condition characterized by an abnormal number of chromosomes, which is common in human cells and frequently observed in solid tumors. Our lab investigates how aneuploidy affects normal cell function and contributes to tumor development. Using cell biology, molecular biology, and genome editing approaches, the research focuses on identifying cellular pathways disrupted by chromosome segregation errors. The ultimate aim is to better understand aneuploid cell biology and uncover potential targets for cancer therapy.
Recent bibliography	Martin et al., Science 2024; Ippolito, Zerbib et al., Cancer Discovery 2024; Zerbib, Ippolito et al., Nature Communications 2024; Garribba, De Feudis et al., Nature Communications 2024
Group composition	1 Staff Scientist, 2 Postdocs, 2 PhD Students
Institutional page link	https://www.research.ieo.it/research-and-technology/principal-investigators/stefano-santaguida/
Lab website link	https://www.santaguidalab.org
Video link	https://youtu.be/-7lRCjNfPhg

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