

The Laboratory of Virology and Genetics is recruiting two graduate students to work on the roles of transposable elements and their epigenetic controllers in human cancer.

The human genome contains more than 4.5 million inserts derived from transposable elements (TEs). This so-called endovirome is a major motor of genome evolution and, together with their KRAB zinc finger protein (KZFP) controllers, TE-embedded regulator sequences exert profound influences on human development and physiology, conferring to the conduct of most biological processes a high degree of species-specificity. TEs are phylogenetically related to so-called RNA tumor viruses, and owing to their mutagenic potential are commonly viewed as genetic threats. However, we recently discovered that TEs can also act as sentinels to alert the cell against epigenetic perturbations, and that cancer cells subvert KZFPs to evade this surveillance mechanism.

We are seeking highly motivated individuals to join our multi-disciplinary team in exploring the translational potential of these discoveries for precision oncology and cancer therapeutics.

Background in molecular/cellular biology or genomics is suitable, knowledge of bioinformatics a significant plus, willingness to wander into new disciplines a definite must.

Thesis work will be co-supervised by Didier Trono and another professor, e.g. Elisa Oricchio.