



Date/Time : Mon, 27 July 2015 14:00-15:00
Venue : Seminar Room C209, Level C, Centre Bldg.
Speaker: Prof. Aleksandra Walczak, Département de Physique,
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Title: Diversity Generation in Immune Receptor Repertoires

Abstract:

Recognition of pathogens relies on the diversity of immune receptor proteins. Recent experiments that sequence the entire immune cell repertoires provide a new opportunity for quantitative insight into naturally occurring diversity and how it is generated. I will describe how we can use statistical inference to quantify the origins of diversity in these sequence and characterize selection in the somatic evolutionary process that leads to the observed receptor diversity. A well-adapted repertoire should be tuned to the pathogenic environment to reduce the cost of infections. I will finish by discussing the form of the optimal repertoire that minimizes the cost of infections contracted from a given distribution of pathogens.