BIOENGINEERING SEMINAR

“Recent Approaches for Detecting Local Selection”

Wednesday – April 2, 2014 – 3:00 p.m.
EPFL – room SV1717a

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hosts: Prof. Jeffrey Jensen

Abstract

In the past 5 years there has been an increased use of methods for detecting the putative effects of natural selection that lead to adaptive differences between populations. At the same time there has been a greatly increased appreciation of the difficulties inherent in such methods, particularly those that lead to false positives. This talk will give a brief review of the area, starting with Lewontin and Krakauer's original proposals. Most methods are based on detecting outliers under a neutral model of differentiation. I will describe a recent approach (Vitalis, Gautier, Dawson & Beaumont, Genetics, 2014) in which the parameterisation is in terms of Wright's stationary distribution for alleles under selection in an infinite island model. The method appears to have some advantages in terms of ROC characteristics, and reduced sensitivity to the effects of population covariance in allele frequency.