Module 3: Functional Genomics. Advanced Light Microscopy.(3 weeks;6 ECTS)
Week 3 – Exploratory data analysis & statistical tools for Omics data (with R)
        Days 3, 4 and 5

STATISTICAL CONCEPTS REVIEW / INTRODUCTION TO R

Probability Theory

 Part I - http://www.youtube.com/watch?v=3ER8OkqBdpE (Kahn Academy)

Part II - http://www.youtube.com/watch?v=6E_NVnboMB8 (Kahn Academy)

Part III - http://www.youtube.com/watch?v=wBDOCvHYckE (Kahn Academy)

Random Variables

Discrete - http://www.youtube.com/watch?v=mrCxwEZ_22o (Kahn Academy)

                http://www.youtube.com/watch?v=0P5WRKihQ4E (JBstatistics)

                Att. The bars in the graphic should be separated (bar plot)

Continuous – http://www.youtube.com/watch?v=Fvi9A_tEmXQ (Kahn Academy)

                http://www.youtube.com/watch?v=OWSOhpS00_s (JBstatistics)

$E(X)$ / $Var(X)$ – Discrete http://www.youtube.com/watch?v=g_AeTGaAu0c (David Waldo)

                Continuous http://www.youtube.com/watch?v=gPAxuMKZ-w8 (MrNichollTV)

Covariance / Correlation – http://www.youtube.com/watch?v=pIj4PklTuMc (David Waldo)

Probability Distributions

Discrete – http://www.youtube.com/watch?v=Jm_Ch-iESBg (JBstatistics)

                Binomial; Geometric; Hypergeometric; Poisson

Chi-Square – http://www.youtube.com/watch?v=6Z4MBxye5VA (JBstatistics)

Normal – http://www.youtube.com/watch?v=iYiOVISWXS4 (JBstatistics)

Central Limit Theorem

http://www.youtube.com/watch?v=Pujol1yC1_A (JBstatistics)

Notes:

Empirical variance – http://www.youtube.com/watch?v=9ONRMymR2Eg (JBstatistics)

Introduction to R

http://www.twotorials.com/2012/11/a-two-minute-introduction-to.html

Short videos - check the first 10