

DRAFT programme Systems Biology Course 8-11 December 2008

Monday, December 8th

- 9.15 Registration, Coffee/Tea, handing out the course materials.
- 9.45 Welcome, announcements: Fré Pepping, Chris Maliepaard
- 9.55 **Lecture Peter Schaap: introduction into systems biology, array technologies, transcriptomics data; preprocessing of data**
- 10.40 Coffee Break
- 11.05 **Lecture Chris Maliepaard: Experimental design**
- 11.50 Break
- 11.55 **Lecture Chris Maliepaard: Differential expression, False Discovery Rate**
- 12.30 Lunch and group picture
- 13.30 Practical: R statistical language; (Pre-)processing of Affy data with BioConductor, differential expression, FDR.
- 18.00 End of Day 1.
- 18.30 Dinner: 't Carrilion, Wageningen

Tuesday, December 9th

- 9.00 **Lecture Fred van Eeuwijk: Cluster analysis**
- 9.45 Break
- 9.55 **Lecture Fred van Eeuwijk: PCA and biplots**
- 10.40 Coffee Break
- 11.00 **Lecture Chris Maliepaard: Classical regression and regression analysis for ~omics data**
- 12.00 Lunch
- 13.00 Practical: Cluster analysis, PCA/Biplot.
- 17.00 End of day 2

Wednesday, December 10th

- 9.00 **Lecture Sander van der Krol: Acquiring metabolomics data**
- 9.45 Break
- 9.50 **Lecture Sander van der Krol: From MS spectra to mass lists**
- 10.35 Coffee Break
- 11.00 **Lecture Sander van der Krol: From masses to compounds, from compounds to pathways**
- 12.00 Lunch
- 13.00 Practical: comparison of chromatograms and spectra, aligning, statistical analyses.
- 17.00 End of day 3

Thursday, December 11th

- 9.00 **Lecture Chris Maliepaard: Classification procedures for ~omics data**
- 9.45 Break
- 9.50 **Lecture Chris Maliepaard: Random forest, variable importance, variable selection**
- 10.35 Break
- 11.00 **Lecture Joost Keurentjes: genetic integration of ~omics data.**
- 12.00 Lunch
- 13.00 Practical: classification using random forest.
- 15.00 Evaluation, concluding remarks, drinks.
- 15.30 End of day 4