

T109 Data Analyses - Schedule 2021/2022 - Semester 1

	Monday 04/10	Tuesday 05/10	Wednesday 06/10	Thursday 07/10	Friday 08/10
9-12	<b>Reminders of univariate analysis</b> Point estimation and confidence intervals	<b>Experimental design and power analysis</b> Discussion on experimental design and introduction to power analysis	<b>Statistical modeling (regression)</b> Variable selection Extension to correlated variables with PLS and to large datasets with Lasso	<b>Statistical modeling (ANOVA)</b> Analysis of variance for complex designs with introduction to the notion of contrasts Extension to mixed effect models Illustration on qPCR data	<b>Multivariate analysis</b> Unsupervised clustering, a glimpse at biclustering
14-17	<b>Univariate analysis (hypothesis testing)</b> Hypothesis testing Extension to multiple testing Illustration on proteomics data for a simple design	<b>Statistical modeling (regression)</b> Correlation and linear regression	<b>Statistical modeling (ANOVA)</b> Analysis of variance for simple designs	<b>Open session</b> Discussion General questions Supervision on the final project	<b>Multivariate Analysis</b> Dimension reduction with component-based methods (PCA and PLS-C), a glimpse at the new contestants: tSNE, UMAP and Co.

Teaching team:

Emeline PERTHAME: [emeline.perthame@pasteur.fr](mailto:emeline.perthame@pasteur.fr)

Hugo VARET: [hugo.varet@pasteur.fr](mailto:hugo.varet@pasteur.fr)

Pascal CAMPAGNE: [pascal.campagne@pasteur.fr](mailto:pascal.campagne@pasteur.fr)

Vincent GUILLEMOT: [vincent.guillemot@pasteur.fr](mailto:vincent.guillemot@pasteur.fr)