

The background image shows a modern architectural complex. On the left, a white brick wall is visible. To its right is a building with a large, multi-story glass facade that reflects the sky and surrounding environment. A dark, diagonal structural element cuts across the upper part of the glass. In the foreground, there is a courtyard area with various green plants and shrubs. A paved walkway leads towards a covered entrance area with a dark metal frame. To the right, a white wall features the word 'ONICS' in large, gold, vertical letters, with a small logo above it.

# Program

Vincent Guillamot

Nov. 25

# Introduction



- Biostatistician
- Data integration

Vincent Guillemot

Welcome Quiz

# Kahoot!

Got to [www.kahoot.it](https://www.kahoot.it) or use the Kahoot! app

# Program

- Nov. 25: `ggplot2` and `pheatmap`
- Dec. 2: PCA, clustering and maybe more

# Proposition

To make it more interactive:

- Quizzes (Kahoot, cf. programme)
- Exercises
- Students will be asked directly for the solution
- Tutorials

# Simple data... for me



Composition of a selection of fruits (<https://ciqua.anses.fr/>)

# But also...

- Course's web-page: <https://vguillemot.github.io/ReMUSE/>
- Slides in PDF (and HTML) format
- Exercises and solutions
- Tutorials



# Ressources

- [Rstudio's cheasheets](#) (EN) de
  - [dplyr](#) (EN)
  - [ggplot2](#) (EN)
- STDHA's page [on colors](#) (FR)
- [R pour les débutants d'Emmanuel Paradis](#) (FR)
- [L'aide-mémoire de Julien Chiquet](#)



# moRe !

- *R for Data Science* : <https://r4ds.had.co.nz/>
- *R Cookbook* : <https://rc2e.com/>
- *Modern Data Science with R* : <https://mdsr-book.github.io/mdsr2e/>
- *Computational Genomics with R* : <https://compgenomr.github.io/book/>
- *ggplot2: elegant graphics for data analysis* : <https://ggplot2-book.org/index.html>
- Reference for ggplot2 : <https://ggplot2.tidyverse.org/reference/>
- Extensions of ggplot2 : <https://exts.ggplot2.tidyverse.org/gallery/>
- *A ggplot2 Tutorial for Beautiful Plotting in R* : <https://www.cedricscherer.com/2019/08/05/a-ggplot2-tutorial-for-beautiful-plotting-in-r/>
- Package R patchwork : <https://github.com/thomasp85/patchwork>
- *Circular Visualization in R* : [https://jokergoo.github.io/circlize\\_book/book/](https://jokergoo.github.io/circlize_book/book/)
- ComplexHeatmap : <https://jokergoo.github.io/ComplexHeatmap-reference/book/>
- Color palettes : <https://github.com/EmilHvitfeldt/r-color-palettes>

# RNA-Seq

- YouTube Channel [StatQuest](#)
- DoltYourself Transcriptomics :  
<https://diytranscriptomics.com/>
- RNA-Seqlopedia :  
<https://rnaseq.uoregon.edu/>
- *[Selecting between-sample RNA-Seq normalization methods from the perspective of their assumptions](#)*  
(Evans 2017) :