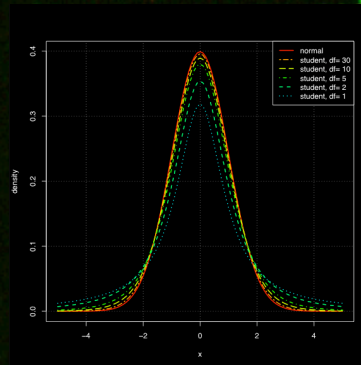
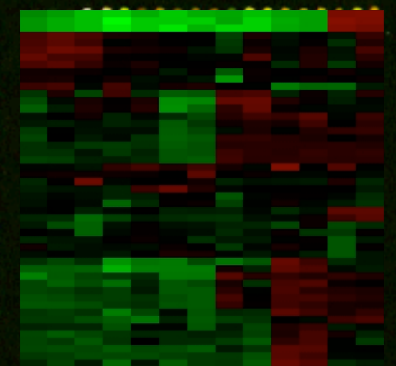
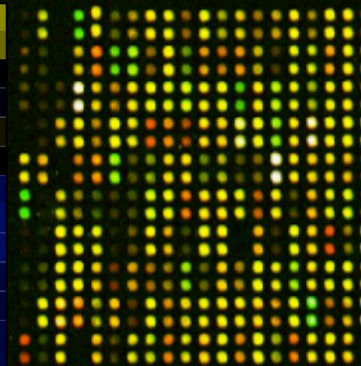
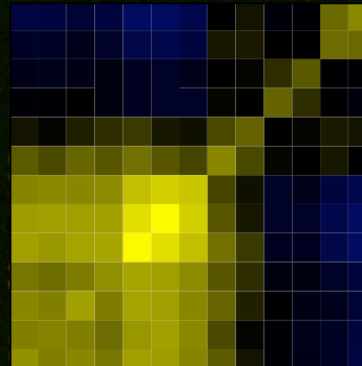
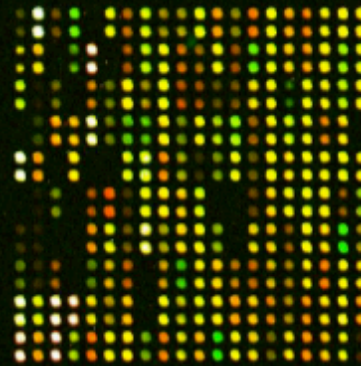
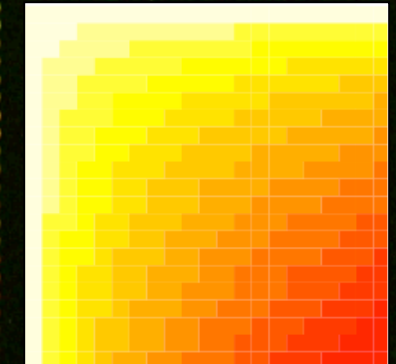
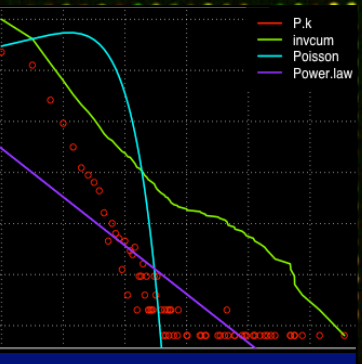
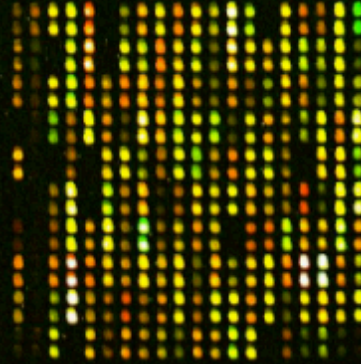
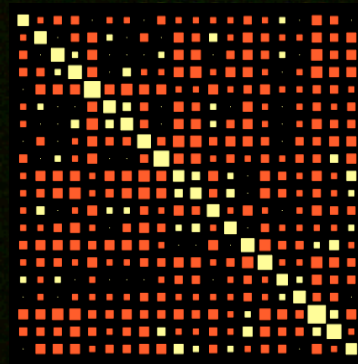


Jacques van Helden

```
TGCATGACTGATTGGTCC
GGCCGATAACAGGTGTGC
TTGCACCCAGTGCCCAAC
GTCAACAAGCAGGAACAA
CGGGCTGATAAGGGAGAA
GATAAGATAAGATAAGAT
AACAAATCATTGCGTCCG
ACCACAGGCCGACACATA
GCAGAACGATGTGAAGCA
```



Statistics for Bioinformatics



Univariate statistics

- [1. Introduction](#)
- 2. Study cases
 - [2.1 Gene expression data](#)
 - 2.2 Sequence lengths
 - 2.3 Word counts in DNA sequences
- [3. Descriptive statistics](#)
- [4. Elements of probabilities](#)
- [5. Theoretical distributions](#)
- 6. Statistical inference
 - [6.1 Sampling and estimation](#)
 - [6.2 Fitting](#)
 - [6.3 Hypothesis testing](#)
 - 6.3.1 Conformity
 - 6.3.2 Significance
 - 6.3.3 Homogeneity
 - [6.3.4 Goodness of fit](#)

Multivariate statistics

1. [Introduction](#)
2. [Study cases](#)
3. Correlation analysis
4. Regression analysis
5. [Clustering](#)
6. [Principal component analysis](#)
7. Multidimensional scaling
8. [Discriminant analysis](#)
9. [Summary](#)

Books

- Statistics applied to bioinformatics
 - van Helden, J. Statistics pr bioinformatics. Oxford University Press. To appear in 2009.
 - Ewens, W. J. & Grant, G. R. (2001). *Statistical Methods in bioinformatics: an introduction*. Statistics for Biology and Health (Dietz, K., Krickeberg, K., Samet, J. & Tsiatis, A., Eds.), Springer, New York.
- Univariate analysis
 - Dagnelie, P. (1973). *Theorie et methodes statistiques - applications agronomiques*. 2d edit, Les presses agronomiques de Gembloux, Gembloux - Belgium.
 - Zar, J. H. (1999). *Biostatistical analysis*. 4th edit (Ryu, T., Ed.), Prentice Hall, Upper Saddle River.
- Multivariate analysis
 - Kachigan, S. K. (1991). *Multivariate statistical analysis: a conceptual introduction*. 2d edit, Radius Press, New York.
 - Hastie, T., Tibshirani, R. & Friedman, J. (2001). *The elements of statistical learning - data mining, inference and prediction*. Springer series in statistics. 1 vols, Springer-Verlag, New-York.
 - Flury, B. (1997). *A first course in multivariate statistics*, Springer-Verlag, New York.
 - Huberty, C. J. (1994). *Applied Discriminant analysis*. Wiley series in probability and mathematical statistics (al., B. e., Ed.), John Wiley & sons, New York.