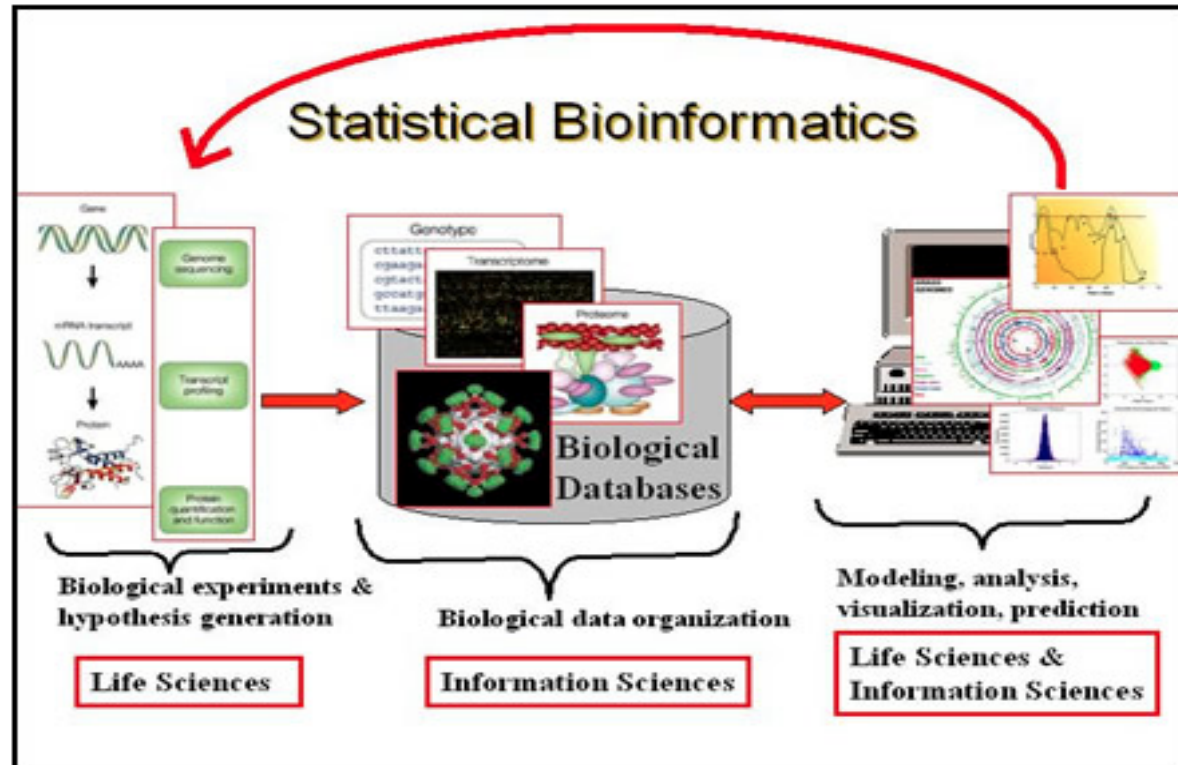


# R Programming

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# Statistics in Bioinformatics



# Set up Rstudio at home

- Download Rstudio:



Download RStudio

- R automatically includes several datasets that you can play around with at home
- Access them by typing :  
**data()**

# Data Sets in R

Data sets in package 'datasets':

AirPassengers

Monthly Airline  
Passenger Numbers  
1949-1960

BJsales Sales Data with  
Leading Indicator

BJsales.lead (BJsales)  
Sales Data with  
Leading Indicator

BOD Biochemical Oxygen  
Demand

CO2 Carbon Dioxide Uptake  
in Grass Plants

ChickWeight

Weight versus age of  
chicks on different  
diets

DNase Elisa assay of DNase

EuStockMarkets

Daily Closing Prices  
of Major European  
Stock Indices,  
1991-1998

Formaldehyde

Concentration of

- Pick a data set!
- Type the name into R and see what happens.
- **head(ChickWeight)**
- **Column: ChickWeight[,1]**
- **Row: ChickWeight[1,]**

# Fun with R

- **time <- ChickWeight[,2]**
- **weight <- ChickWeight[,1]**
- **plot(time,weight,col="red")**
- **hist(time)**                      **boxplot(weight)**

# Make Fancy Plots

- `install.packages("ggplot2")`
- `library(ggplot2)`
- `qplot(time,weight,color="red")`
- `qplot(weight,data=ChickWeight, geom= "histogram", binwidth=1)`

# More ggplot2 samples

- `p <- ggplot(mtcars,aes(factor(cyl),mpg))`
- `p + geom_boxplot()`
- `p + geom_boxplot(aes(fill=cyl))`
- `p + geom_boxplot(notch=TRUE)`
- `p + geom_boxplot(aes(fill=factor(am)))`

# Graphics using R

**library(graphics)**

example(plot)

example(boxplot)

example(hist)

example(stars)

example(contour)

example(persp) ← *(This one is cool!)*

example(barplot)

example(coplot)

example(fourfoldplot)

example(image)

example(filled.contour)



# Practice at Home!

<http://tryr.codeschool.com/>



{swirl}

Learn R, in R.

<http://swirlstats.com/>