

# Biometry. Lecture 21

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```
> setwd("<working folder>")  
or  
"Change dir"  
in menu!
```

On Mac, be sure that startup option is working: `getwd()`  
(`getwd()` checks if R is in working folder, `dir()` checks the folder  
content)



Morphometric data (plants or animals) with several species and several characters:

- Differences between two or more subgroups: two-sample tests or ANOVA-like methods
- Most correlated characters
- Linear model(s); possibly, compare them (ANCOVA)
- Classification of species or characters (clustering or similar)



# Human genetic traits

<b>Trait</b>	<b>Dominant</b>	<b>Recessive</b>
<b>Tongue rolling</b>	<b>yes</b>	<b>no</b>
<b>Earlobe attachment</b>	<b>free</b>	<b>attached</b>
<b>Pinky shape</b>	<b>bent (crooked)</b>	<b>straight</b>
<b>Arm folding</b>	<b>right on top</b>	<b>left on top</b>
<b>Cheek dimple</b>	<b>dimple</b>	<b>no dimple</b>
<b>Cleft chin</b>	<b>cleft</b>	<b>no cleft</b>
<b>Hitchhiker thumb</b>	<b>straight</b>	<b>hooked</b>
<b>Toe length</b>	<b>2<sup>nd</sup> toe longer</b>	<b>1<sup>st</sup> toe longer</b>
<b>Widow's peak</b>	<b>peak</b>	<b>no peak</b>



# Cluster analysis: training

```
> traits <- read.table("traits.txt", sep="\t", row.names=1, h=T)
> traits.d <- dist(traits, method="binary") # First
> plot(hclust(traits.d, method="ward"))
> library(vegan)
> traits.d2 <- vegdist(traits, method="jaccard") # Second
> plot(hclust(traits.d2))
> library(cluster)
> traits.d3 <- daisy(traits) # Third
> plot(hclust(traits.d3))
> traits.c <- cmdscale(traits.d) # Fourth
> plot(traits.c[,1:2], type="n")
> text(traits.c[,1:2], labels=row.names(traits))
```



## Save your commands!

`(savehistory(<today'sdate>.r)` or File -> Save as... on  
Mac)



# Short anonymous absolutely voluntary survey

- 1 What do you **like** most in biometrics course?
- 2 What do you **dislike** most in biometrics course?
- 3 **Which lab** do you remember most of all?
- 4 Please grade (1—bad, 5—excellent):
  - 1 Lectures
  - 2 Labs
  - 3 Final questions
  - 4 Exams
- 5 Please explain (1–3 sentences) how would you improve the textbook.

