

Course overview

Francisco García García, fgarcia@cipf.es
Bioinformatics & Biostatistics Unit. CIPF

16 Oct 2019



Unidad de
Bioinformática y
Bioestadística



PRINCIPE FELIPE
CENTRO DE INVESTIGACION

WODA

WEB-BASED OMICS DATA ANALYSIS

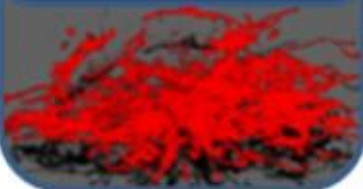
The UBB-CIPF is a technical and scientific unit that aims to **promote biomedical research** from the interaction with the groups and services of our center.



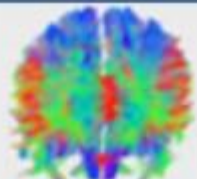
PRINCIPE FELIPE

CENTRO DE INVESTIGACION

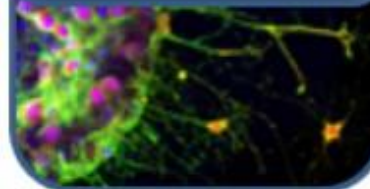
**Molecular Basis
of Human
Diseases**



**Neuroinflammation
and neurological
impairment**



**Advanced
Therapies**



**New Technologies
For Biomedical
Research**





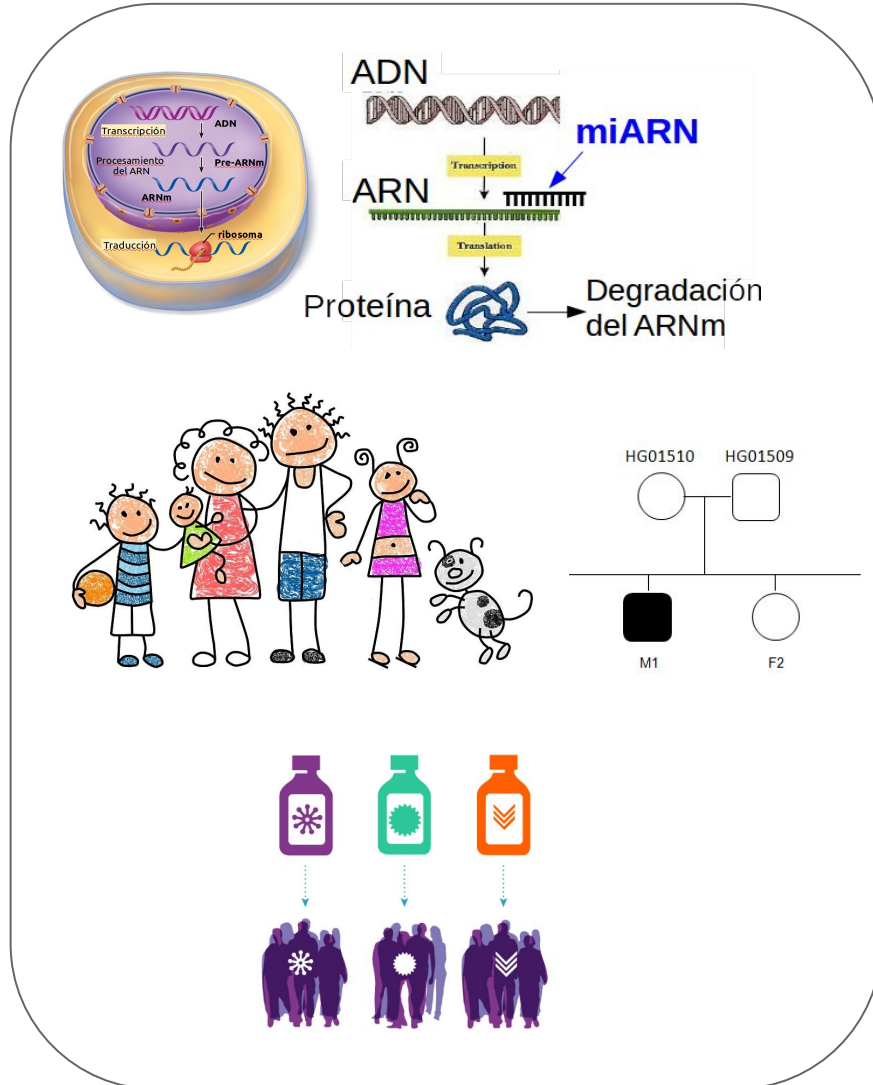
UBB team



<http://bioinfo.cipf.es/ubb/>

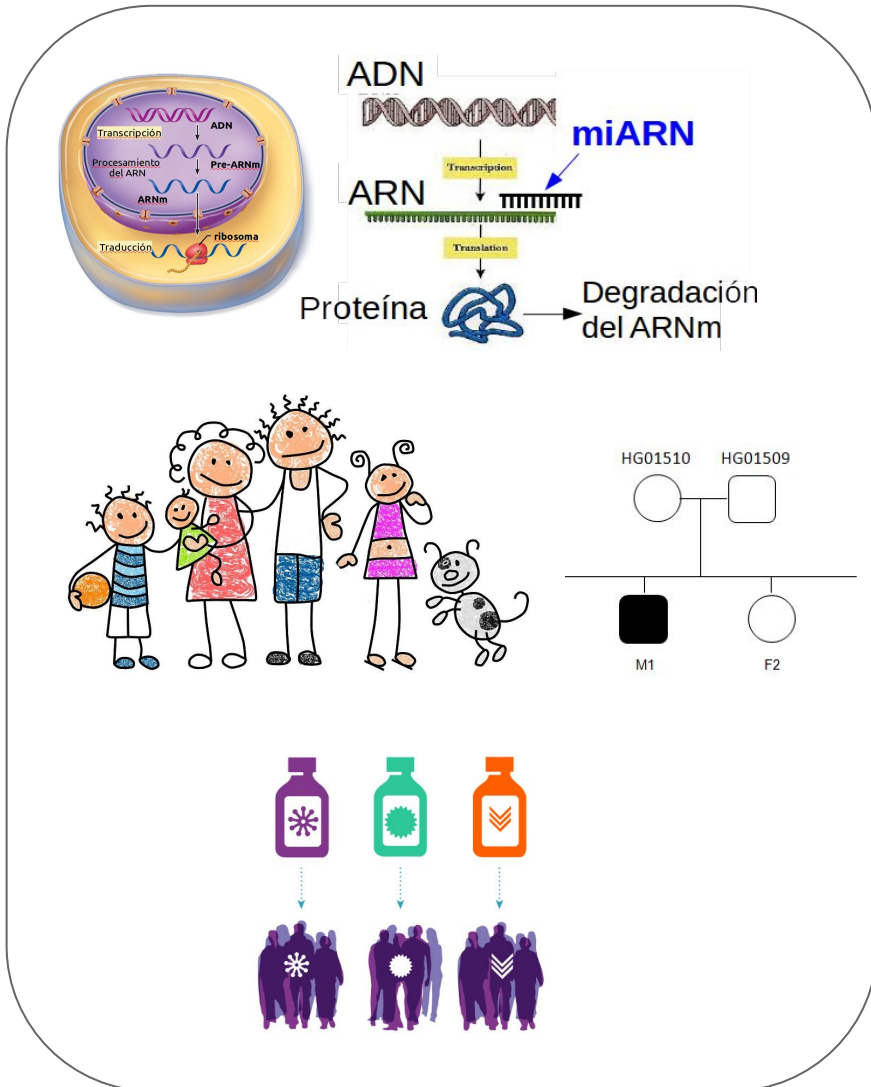


Why this Unit at CIPF?

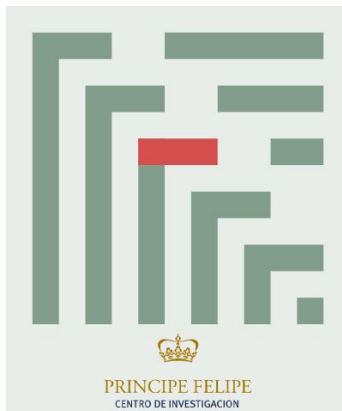




Why this Unit at CIPF?



What activities do we do?



Bioinformatics &
Biostatistics Unit



UBB activities

1. Consulting

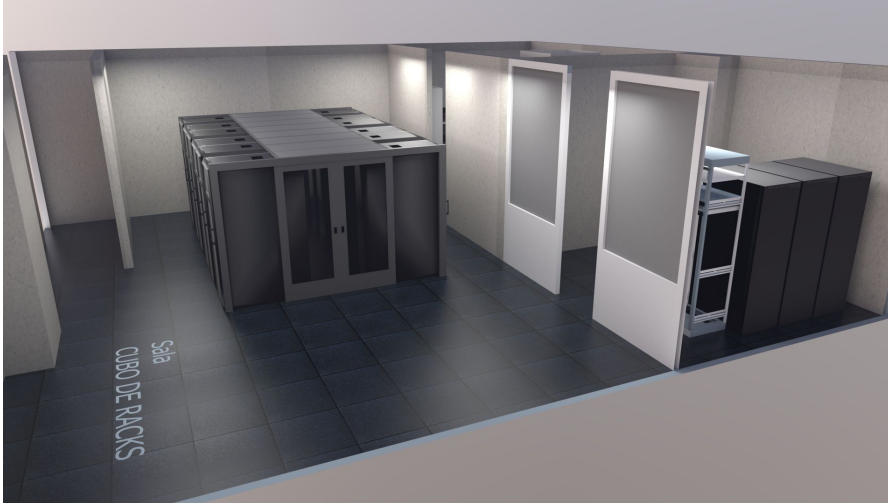
2. Teaching

3. Cluster
coordination

4. Research



UBB activities



3. Cluster coordination

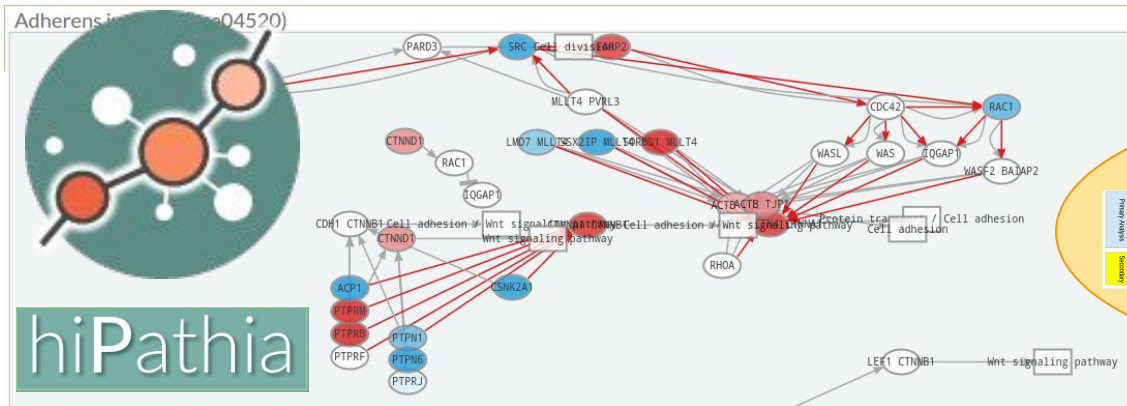
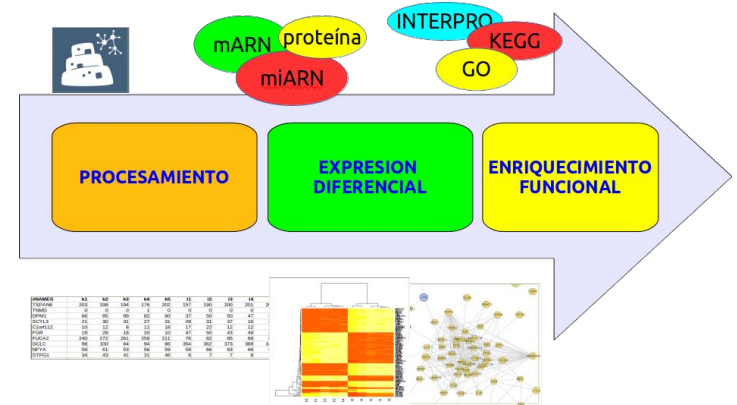
- Computing cluster 44 nodes
- 600 CPU's
- RAM 11 TB
- 1 PB (130.000 DVDs)



UBB activities

4. Research activities

- **Methods** for omics data analysis
- Research **projects**





WEB-BASED OMICS DATA ANALYSIS

WODA

16-18 October 2019

A course specifically designed to learn how to perform
a NGS analysis pipeline in the simplest way

MAIN TOPICS:

- Main biological/clinical databases
- Omic biomarker detection
- Functional analysis
- Pathway analysis
- Single cell data analysis
- Data Visualization



Unidad de
Bioinformática y
Bioestadística



PRINCIPE FELIPE
CENTRO DE INVESTIGACION

What is WODA?



A Practical course
Web-based resources
Free tools

Start point: processed or normalized data
Any laptop or pc



Programming skills
Raw data processing
Powerful computational infrastructure

Toolbox



Omic tools toolbox

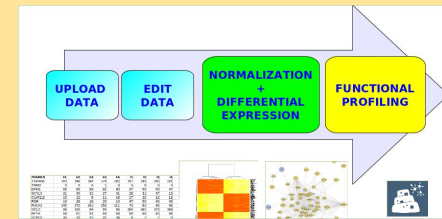
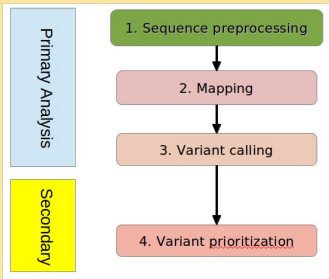
hiPathia



Babelomics 5



PathAct



TEAM

CIBERER Copy Number Variation

BierApp

CSVS

Program. Day 1

11:00 - 11:15 Registration

11:15 - 11:45 Welcome, course overview

11:45 - 13:30 Introduction

13:30 - 14:30 Lunch

14:30 - 16:00 Visualization of omics data

16:00 - 16:15 Break

16:15 - 18:00 Omics-based biomarkers detection I

Program. Day 2

9:30 - 11:00 Omics-based biomarkers detection II

11:00 - 11:30 Break

11:30 - 13:30 Over-representation and GSA methods

13:30 - 14:30 Lunch



14:30 - 16:00 Protein-protein interaction

16:00 - 16:15 Break

16:15 - 18:00 Prioritization of genes

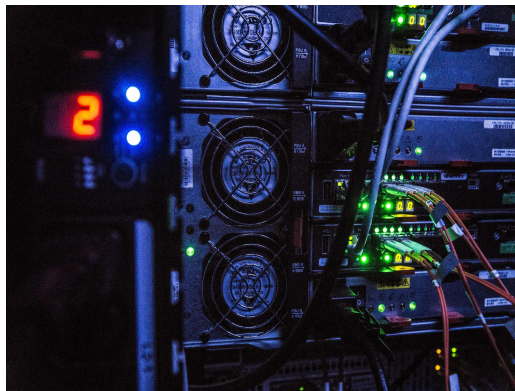
Program. Day 3

9:30 - 11:00 Single-cell analysis

11:00 - 11:30 Break

11:30 - 13:00 Signaling pathway activity: Hipathia

13:00 - 13:15 Course feedback and wrap up



Logistics

- wiki: <http://bioinfo.cipf.es/WODA19>
- wifi: WODA, password: woda2019
- lunch menu
- certificates
- twitter: #WODA19 @UBB_CIPF @CIPFciencia

Any question?

