

# Medical Genomics: Introductory remarks

*N. Alcala & M. Foll*

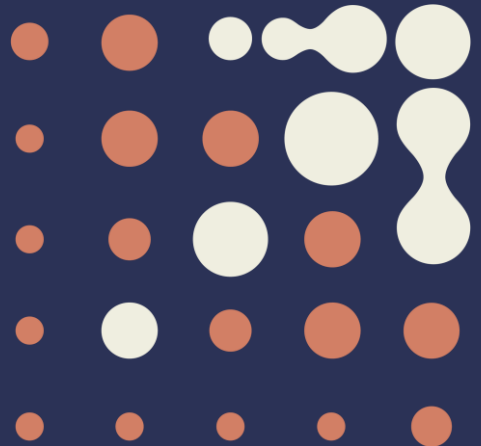
Rare Cancers Genomics Team

November 8th 2023

International Agency  
for Research on Cancer



World Health  
Organization



# Medical Genomics course

## Hands-on course with a focus on real-world medical problems

> *Rationale*: to know if you want to dedicate your professional career to medical research, you need to see what working on a typical medical genomic project is like

> *Consequence*: we will see just enough theory to grasp the main concepts and then **code and do actual data analysis**, and do **team work**

# Medical Genomics team

IARC – WHO: the world's cancer agency

<https://www.iarc.who.int>



**Matthieu Foll**

Rare Cancers  
Genomics team  
leader, head of  
bioinformatics



**Nicolas Alcala**

Rare Cancers  
Genomics team,  
cancer ecology  
and evolution



**Alexandra  
Sexton-Oates**

Rare Cancers  
Genomics team,  
rare and pediatric  
tumor genomics



**Adam Amara**

Founder of  
Turing  
Biosystems,  
computational  
biology

International Agency for Research on Cancer

# Schedule

## Lectures (8hrs)

1. **Genomics** (Matthieu Foll) 8/11/23 2-4pm
2. **Transcriptomics, multi-omics and beyond** (Nicolas Alcalá) 15/11/23 2-4pm
3. **Epigenomics** (Alexandra Sexton-Oates) 22/11/23 2-4pm
4. **Metabolomics** (Adam Amara) 29/11/23 2-4pm

## Practicals (8hrs)

1. **Developing and deploying a medical genomic bioinformatic workflow** (Nicolas Alcalá & Baptiste Alberti) 8/11/23 4-6pm & 15/11/23 4-6pm
2. **Multi-omic analysis of cancer data with R** (Laurane Mangé & Nicolas Alcalá) 22/11/23 4-6pm & 29/11/23 4-5:30pm

# Schedule

## Projects (8hrs + personal work)

1. **Project choice** 29/11/23 5:30–6pm
  2. **Project week 1** 6/12/23 2–6pm
  3. **Project week 2** 13/12/23 2–6pm
  4. **Project debriefing, presentations, and evaluation** 20/12/23 2–4pm
- 5 subjects, part of actual research topics from the agency
  - Ranging from bioinformatics to data analysis
  - Groups of 3–4 (at the latest on December 1st)
  - **Weekly meeting with supervisor** (can ask questions in between on teams or by email within reason)
  - **Evaluation through presentation + general evaluation given by supervisor**

# Medical Genomics course | *resources*

- **Teams channel:** to communicate information about courses, discuss practicals, discuss with project supervisor
- **Github repository:**  
[https://github.com/IARCBioinfo/medical\\_genomics\\_course/wiki](https://github.com/IARCBioinfo/medical_genomics_course/wiki)  
for additional resources, lectures, practicals, and project information

**And do not hesitate to come discuss with us about careers, and network!**