

Medical Genomics: Introductory remarks

N. Alcalá & M. Foll

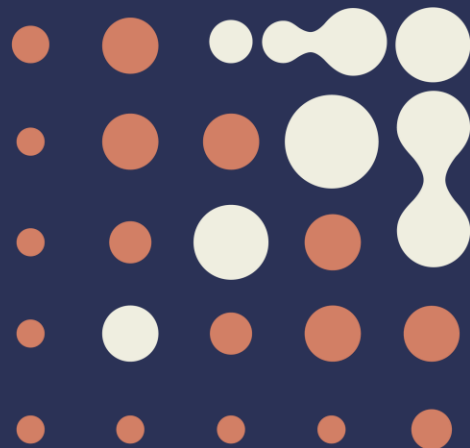
Rare Cancers Genomics Team

November 9th 2022

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

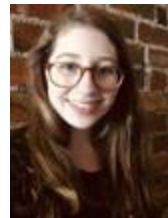
<https://www.iarc.who.int>



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
Nutrition and
Metabolism
branch,
computational biol
ogy

International Agency for Research on Cancer

Schedule

Lectures (8hrs)

1. **Genomics** (Matthieu Foll) 9/11/22 2-4pm
2. **Transcriptomics, multi-omics and beyond** (Nicolas Alcala) 16/11/22 2-4pm
3. **Epigenomics** (Alexandra Sexton-Oates) 23/11/22 2-4pm
4. **Metabolomics** (Adam Amara) 30/11/22 2-4pm

Practicals (8hrs)

1. **Developing and deploying a medical genomic bioinformatic workflow** (Nicolas Alcala & Baptiste Alberti) 9/11/22 4-6pm & 16/11/22 4-6pm
2. **Multi-omic analysis of cancer data with R** (Adam Amara, Nicolas Alcala, & Baptiste Alberti) 23/11/22 4-6pm & 30/11/22 4-5:30pm

Schedule

Projects (8hrs + personal work)

1. **Project choice** 30/11/22 5:30-6pm
 2. **Project week 1** 7/12/22 2-6pm
 3. **Project week 2** 15/12/22 2-6pm
 4. **Project debriefing, presentations, and evaluation** 04/01/23 2-4pm
- 4 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 discord/teams or by email within reason)
 - **Evaluation through presentation + general evaluation given by supervisor**

Medical Genomics course | *resources*

- **Teams/discord channel:** to communicate information about courses, discuss practicals, discuss with project supervisor
- **Github repository:** 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!