Multi-omic data science with R/Bioconductor

Oulu Summer School, June 2022

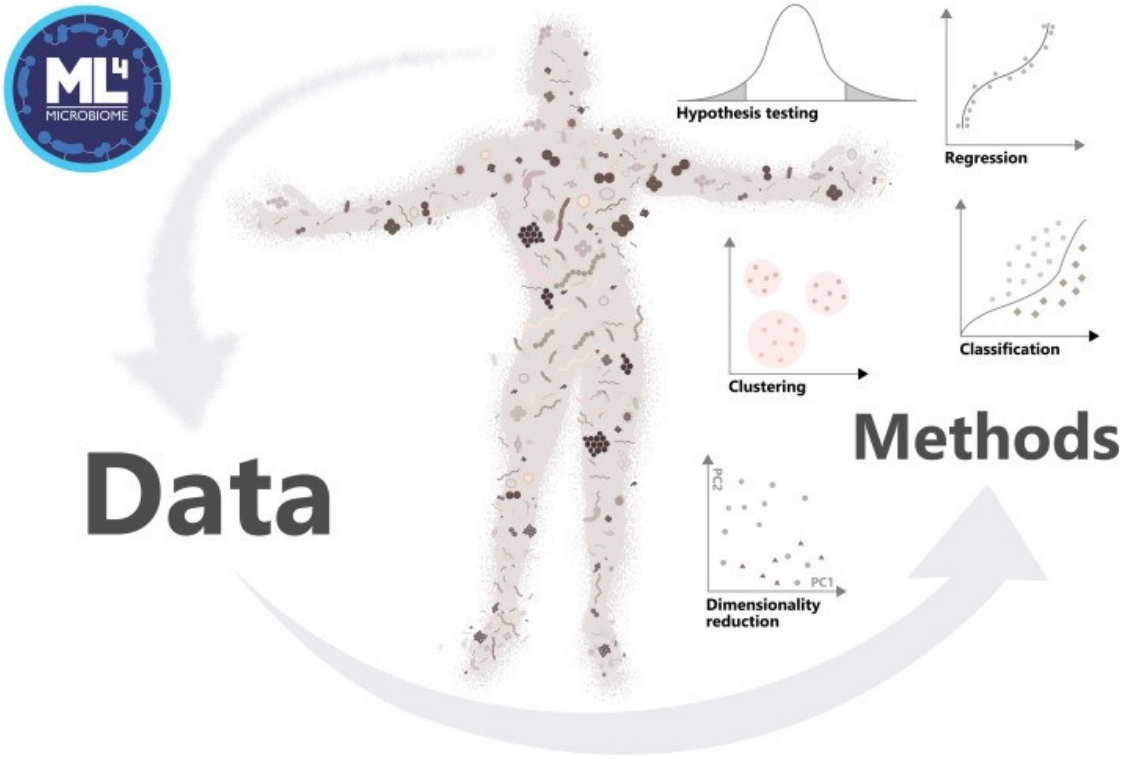

Figure: Moreno-Indias et al. Frontiers in Microbiology 12:11, 2021.

Contents and learning goals

This course will teach the **basics of biomedical data analysis with R/Bioconductor**, a popular open source environment for scientific data analysis. The participants get an overview of the reproducible data analysis workflow in modern multi-omics, with a focus on recent examples from published microbiome studies. After the course you will know how to approach new tasks in biomedical data analysis by utilizing available documentation and R tools. The teaching format allows adaptations according to the student's learning speed.

The teaching will follow open online documentation created by the course teachers, extending the online book Orchestrating Microbiome Analysis (https://microbiome.github.io/OMA). The training material walks you through the standard steps of biomedical data analysis covering data access, exploration, analysis, visualization, reproducible reporting, and best practices in open science. The openly licensed teaching material will be available online during and after the course, following national recommendations on open teaching materials.

Schedule and organizers

The course will be organized in a live format.

Venue University of Oulu. June 20-23, 2022.

Schedule Contact teaching daily between 9am – 5pm, including lectures, demonstrations, hands-on sessions, and breaks. A more detailed schedule is available at the course website: (https://microbiome.github.io/course_2022_oulu)

Teachers and organizers

Leo Lahti is the main teacher and Associate Professor in Data Science at the University of Turku, with specialization on biomedical data analysis. Course assistants are *Tuomas Borman* (University of Turku) is one of the main developers of the open training material covered by the course and *Jenni Hekkala*, a PhD researcher at the University of Oulu, in the group of the course coordinator Docent *Justus Reunanen*.

The course is jointly organized by Health and Biosciences Doctoral Programme University of Oulu Graduate School, Cancer & Translational Medicine Research Unit, University of Oulu, and the Department of Computing, University of Turku, Finland. The Finnish IT Center for Science (CSC) supports the course with cloud computing services.

How to apply

Target audience

The course is primarily designed for advanced MSc and PhD students, Postdocs, and biomedical researchers who wish to learn new skills in scientific programming and biomedical data analysis. Academic students and researchers from Finland and abroad are welcome and encouraged to apply. The course has limited capacity of max 20 participants, and priority will be given for local students from Oulu.

Application

- Send a brief motivation letter to Jenni Hekkala jenni.hekkala@oulu.fi
- Applications sent before May 20 will be given priority

Course fee

The course fee covers contact teaching and teaching material.

- 285 euros with registration by May 20, 2022
- 350 euros with registration after May 20, 2022
- Local students are exempted from the fee

Accommodation

Accommodation and travel costs are not included in the registration fee. For accommodation tips, see https://visitoulu.fi/en/arrival-overnight/