

Workshop in Omics Integration and Systems Biology

6 - 10 September
Online





Rui Benfeitas

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Instructions



Please remain muted
during lectures



Camera on
throughout, if possible



Raise your hand
to ask questions



Chat
Please refrain from using the chat
Use [HackMD](#)



Important links
are on [canvas](#)

Please note this session will be recorded

Mentimeter

Go to

<https://www.menti.com/x13m4v8fyx>

Or **www.menti.com** and use the code **9841 6145**

Themes

Before the course

Installation
Data pre-processing



Rui Benfeitas, NBIS

Day 1

Machine learning view of integration

Unsupervised integration

MOFA and personalised medicine



Nikolay Oskolkov, NBIS



Ricard Argelaguet
Babraham Institute, UK

Day 2

Supervised integration through Mixomics

Deep Learning for Integrative Omics
Single-cell and UMAP



Kim-Anh Lê Cao
Melbourne University, Australia



Nikolay Oskolkov, NBIS

Themes

Day 3

Biological network analysis



Rui Benfeitas, NBIS

Signalling networks and GWAS



Pedro Beltrão

EMBL-EBI, UK

Day 4

Network fusion

Non-negative matrix factorisation



Sergiu Netotea

NBIS, Gothenburg

Genome-scale metabolic modeling



Nikolaus Sonnenschein

DTU, Denmark

Day 5

Gene-set analysis and Reporter Features

Network meta-analysis



Ashfaq Ali, NBIS

Invited talks

Invited seminars

Online Seminar



Network based analysis of 1002 GWAS study defines a pleiotropy map of human cell biology

Dr. Pedro Beltrao, EMBL - EBI
United Kingdom

September 8, 15:00-16:00
Zoom and Youtube

Summary and online registration at
scilifelab.se/events

Sign up and read more: scilifelab.se/events



Invited seminars

Online Seminar



Sign up and read more: scilifelab.se/events

Metabolic Atlas: genome-scale metabolic models for easy browsing and analysis

**Mihail Anton, Metabolic Atlas,
Chalmers Univ. Technology**

September 10, 13:00-13:55

Zoom and Youtube

Summary and online registration at
scilifelab.se/events



Invited seminars

Online Seminar



Network-based integration and visualization of large- scale data

**Dr. Lars Juhl Jensen, Novo Nordisk CPR
Denmark**

September 10, 14:00-15:00

Zoom and Youtube

Summary and online registration at
scilifelab.se/events

Sign up and read more: scilifelab.se/events



Resources

All resources will be shared in the homepage

Lectures will be recorded

Slides and scripts: Schedule or Modules

Questions / Bugs?: HackMD

NBIS ELIXIRSE_OMICSINT_H21 > Syllabus

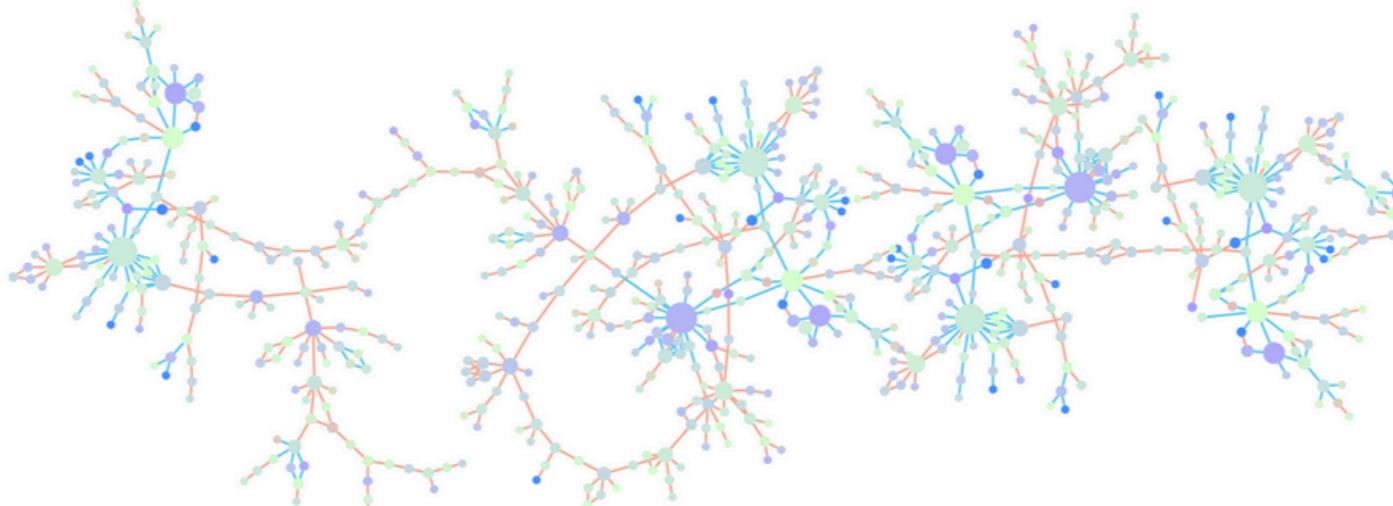
2021H ELIXIR Omics Integration and Systems Biology

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Key Login Dashboard Calendar Inbox History Help

DOI 10.5281/zenodo.4084627 Github repository 6 - 10 September 2021 Online

Connection details Open seminars Schedule Start here



The aim of this workshop is to provide an integrated view of data-driven hypothesis generation through biological network analysis, constraint-based modelling, and supervised and unsupervised integration methods. A general description of different methods for analysing different omics data (e.g. transcriptomics and genomics) will be presented with some of the lectures discussing key methods and pitfalls in their integration. The techniques will be discussed in terms of their rationale and applicability.

Organization

Exercises & Assisted Exercises

Attendance

Feedback

NBIS ELIXIRSE_OMICSINT_H21 > Syllabus

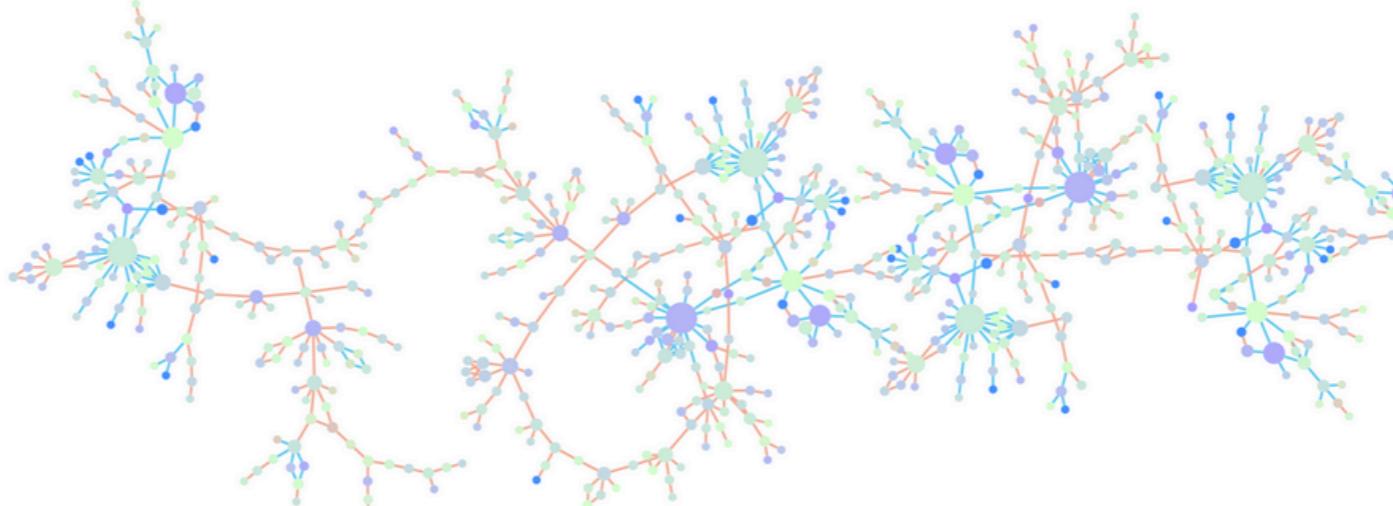
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