Advanced Statistical Modelling
Lausanne, September 2025

Thomas Zwahlen and Rachel Marcone

Introduction

About this course-What you will learn:

- Learn about modelling, with a review of the basics of linear regressions and then quickly go beyond.
- Identify the appropriate model to analyze a dataset;
- Fit the chosen model using R;
- Assess the fit of the model, as well as its limitations.
- Work on "real-life" datasets
- Get to work and discuss statistical but also computational issues.
- Practice data analysis using modelling and predictions
- Learn from your neighbors.
- Don't be shy, each one of you will have something to add/offer to any discussion!

The course

- All the material and exercices are found here :

- https://sib-swiss.github.io/advanced-statistics/

- Feel free to let us know about bugs, issues, or improvements!

Schedule-tentative

Day 2

block	start	end	subject
block 1	9:15 AM	10:30 AM	Generalized linear models
	10:30 AM	11:00 AM	BREAK
block 2	11:00 AM	12:30 PM	Further exercises
	12:30 PM	1:30 PM	BREAK
block 3	1:30 PM	3:00 PM	
	3:00 PM	3:30 PM	BREAK
block 4	3:30 PM	5:00 PM	Further exercises

Code of conduct

SIB abides by the ELIXIR Code of Conduct. We are all thus expected to abide by the same code. In summary:

We **value** each other's perspectives providing a safe environment for people to be themselves.

We will **maintain** high ethical standards across all ELIXIR events.

We **adopt** a zero-tolerance approach to harassment and discrimination in any form.

We will **apply** honesty and integrity in the dealing of any transgressions against the Code.

We are **committed** to making ELIXIR events a collaborative, supportive and enjoyable experience.

We will **ensure** that our environment allows everyone to feel respected and included.
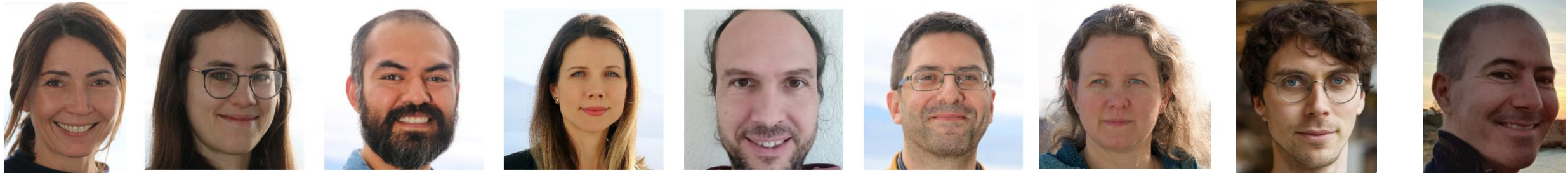
https://elixir-europe.org/events/code-of-conduct

1 DIVERSITY

3 FOSTER TRUST AND COLLABORATION

2 ACT ETHICALLY AND WITH INTEGRITY

4 RESPECT AND SHOW COURTESY TO EACH OTHER

Exam and feedback

- Please, give us feedback at the end of the course !

- Exam: exercises for credits (1 ECTS)
- Send answers to rachel.marcone@sib.swiss, latest on the 15th of September 2023

Translational data science TDS

- https://www.linkedin.com/company/tds-facility/
- https://agora-cancer.ch/scientific-platforms/translational-data-science-facility/

We are happy to hear about your projects and issues!
We work as a facility with transdisciplinary collaborations.
We are a team of bioinformaticians coming from very different backgrounds.

CONTACT US! @**tds-facility@sib.swiss**

The teachers- Presentation

- Thomas Zwahlen

- Rachel Marcone

- Joao Lourenco
- Tania Wyss

Vevox Poll

Now a round of table

- Let us know who you are, your background, what you are working on and where, and what type of data you might have to analyse (at some point) or what you expect from this course.

What to do if you feel overwelmed:

- Ask your neighbors (Interactive course)
- Do a quick search for refreshment on google on some of the stats concepts
- Ask us!