Course in Systems Biology

2CFU – April-May 2022

Organized by Giovanni Scala

The course aims at providing the students with the basics approaches and principles of Systems Biology spanning from multi-omics data integration to their complex functional characterization. The proposed topics will be accompanied by use cases from real world applications in the field of toxicology testing and with practical sessions of data analysis.

- Day 1 (3h) 20 April Giovanni Scala (10:00-13:00) (Dept. of Biology, UNINA)
  Introduction to Systems Biology and Omics technologies

- Day 2 (3h) 22 April (10:00-13:00) Giovanni Scala (Dept. of Biology, UNINA) & Antonio Federico (Faculty of Medicine and Life sciences, Tampere University, Finland)
  Preprocessing and analysis of omics data with Eutopia

- Day 3 (2h) 24 April (10:00-12:00) Michele Ceccarelli (DIETI, UNINA)
  Large scale integrative bioinformatics and systems biology in cancer genomics

- Day 4 (3h) 27 April (10:00-13:00) Giovanni Scala (Dept. of Biology, UNINA)
  Integrative analyses of multi-omics data

- Day 5 (2h) 29 (14:00 16:00) April Francesco Napolitano (Computational Bioscience Research Center, KAUST, Saudi Arabia).
  Systems Biology approaches for drug discovery and repositioning.

- Day 6 (3h) 4 May (10:00-13:00) Giovanni Scala (Dept. of Biology, UNINA)
  Functional profiling of Mechanism of Actions in multiple experiments