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 and 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) Dario Greco & Antonio Federico (Dario Greco group, Faculty of Medicine and Life sciences, Tampere University, Finland)
  Preprocessing and analysis of omics data in Toxicogenomics with Eutopia

- Day 3 (2h) 23 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