Level *Up*

LEARN ALL ABOUT SYSTEMS BIOLOGY FOR FREE!

EXPERIMENTAL TECHNIQUES IN SYSTEMS BIOLOGY

Trainers: Dr. Apostolos Zaravinos, Dr. Antonia Vlachou

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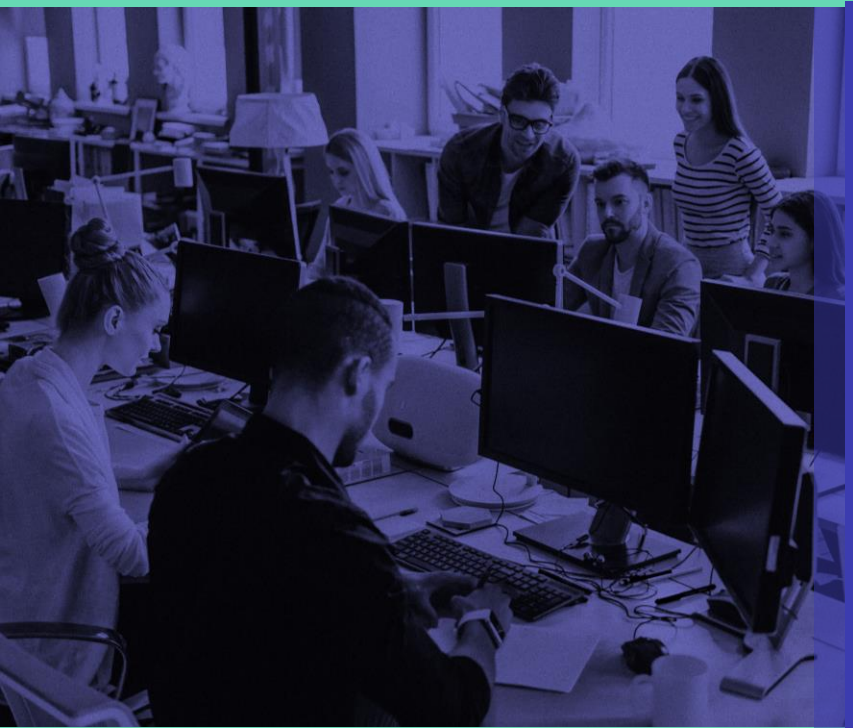
Learning Outcomes

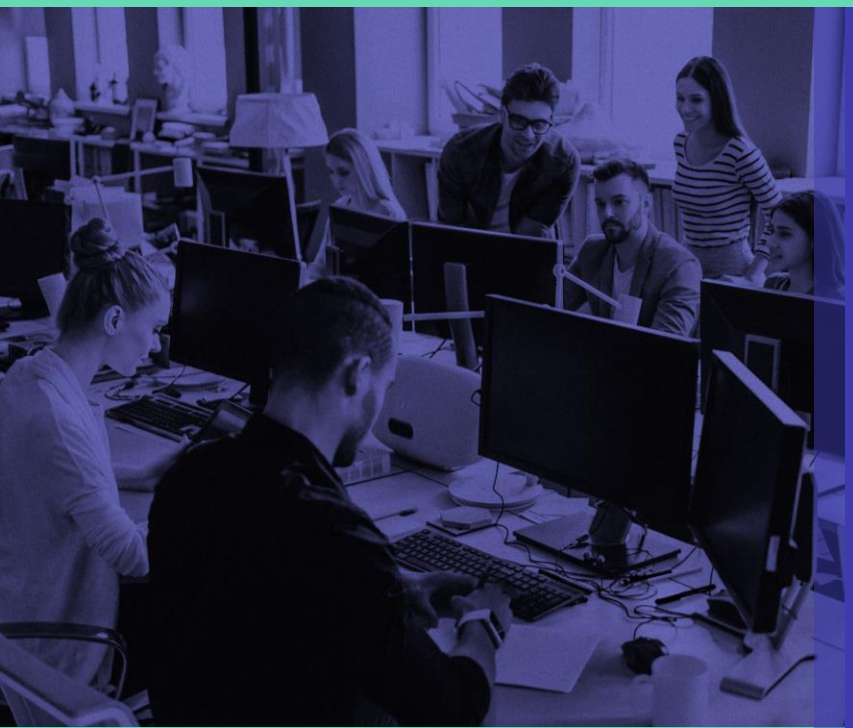
- Basic terms used in systems biology
- Modern laboratory approaches based on '-omics' methods and their importance in identifying key factors in the development of a phenotype/disease
- Integration of the '-omics' results into a meaningful whole and define the global model of biological processes responsible for the development of a phenotype/disease
- Usage of Systems Biology experimental methodologies in early diagnosis, prognosis and/or drug development.



Systems biology is about putting together rather simple pieces to understand much more complicated things.
Leroy Hood

COURSE DESCRIPTION

- Modern techniques that are commonly being used in Systems Biology, such as mRNA sequencing, mass spectrometry-based proteomics, flow/mass cytometry, and live-cell imaging.
- Modern laboratory approaches based on '-omics' methods and their importance in identifying key factors in the development of a phenotype/disease;
- Integration of the '-omics' results into a meaningful whole and
- Definition of the global model of biological processes responsible for the development of a phenotype/disease;
- The usage of Systems Biology experimental methodologies in early diagnosis, prognosis and/or drug development.



TRAINING TOPICS

- The systems biology loop
- Models in systems biology
- Three generations of sequencing
- Mass spectrometry
- The human disease network
- From model predictions to experiments
- Systems pharmacology and therapeutics
- Network properties of biological networks -
- Enrichment analysis

COURSE DETAILS

Where: Online, Asynchronous

When: 09/12/2024 - 27/01/2025

Time: N/A

What is Systems Biology and what techniques can you apply to better understand it?

TRAINERS

Dr. Apostolos Zaravinos is an Associate Professor of Cancer Genetics and coordinator of the program “BSc in Biological Sciences” in the Department of Life Sciences at the European University Cyprus. He received his B.Sc. in Biology from the Department of Biology, University of Crete, and his Ph.D. in Medicine from the same University. He worked as Research Scientist at the Harris Birthright Research Center for Fetal Medicine, King’s College Hospital, and performed postdoctoral research in Cancer Genetics at the Molecular Medicine Research Center, University of Cyprus. Dr. Zaravinos holds a Specialisation in “Systems Biology” from the Systems Biology Center at Icahn School of Medicine, Mount Sinai.

Dr. Antonia Vlahou received her BS from the School of Biology, University of Athens, Greece and her Ph.D. from the Department of Cell Biology, Baylor College of Medicine, Houston Texas. She is currently the co-Director of the Proteomics Research Unit at the BRFAA. Dr.Vlahou is a highly experienced researcher in the field of clinical proteomics.. She has served as an external expert for biomarker qualification at the European Medicines Agency and also as group leader in various EU or national funded projects (NeuriNox, Marie Curie EID BCMolMed, Caresyan, myBioTag.

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