

Tutorial: Genetics of Inherited Cardiac Diseases

Course teacher: Dr. Z. A. Bhuiyan, PD & MER, Unit of Cardiogenetics Research, Division of Genetic Medicine, UNIL & CHUV

Total 12 hours (1 ECTS incl. preparation)

Session 1) General introduction on Human Genetics, Modes of Inheritance, Human Cardiovascular system, Hereditary Cardiac Disease

Session 2) Genetic basis of Cardiac Arrhythmias, Part-1: Genetics, Pathophysiology (Electrophysiology), Journal club discussion

Session 3) Genetic basis of Cardiac Arrhythmias, Part-2: Genetics, Pathophysiology (Electrophysiology), Journal club discussion

Session 4) Genetic Basis of Cardiomyopathies, Pathophysiology + Journal club discussion

Session 5) New Gene identification in Cardiac Arrhythmias, Mechanistic insight, Gene identification to Treatment + Journal club discussion

Objective of the course:

The main objective of this course is to familiarize the doctoral candidates (MD, PhD, or MD-PhD) with cardiovascular system biology, diseases in cardiovascular system, genetic basis of the cardiac diseases e.g. hereditary cardiac arrhythmias, cardiomyopathies and congenital structural heart defects.

The goal is to familiarize participants with the present state of scientific knowledge in this field of medicine, and the prospects of experimental research in this branch of science and medicine.

Content:

- Normal heart: anatomy, physiology
- Heart diseases: pathophysiology
- Genes in Heart and their function
- Experimental research in genetics of cardiac diseases: how genetic defects could lead to cardiac arrhythmia and sudden deaths
- Discovery of new genes in cardiac arrhythmias and other cardiac disease pathology
- Application of stem cells in deciphering the mechanism of cardiac diseases

Note: Three to four papers will be discussed in each session. All participants are expected to have read the papers in advance and participate in the group discussion.

Evaluation:

Personal work: Yes

Presentation: Yes

Final Test: No

Participation evaluated by the tutor: Yes

Bibliography:

Articles for journal club discussions will be provided in advance to registered participants.

Location and Dates in 2021

[Auditorium Placide Nicod in the Orthopedics Hospital](#) of the CHUV. Enter by the main entrance, turn to the left into the “old” part of the hospital, and take the stairs to floor 5.

- 1) Thursday, Oct 28: 9 am to 11 am
- 2) Thursday, Nov 4: 9 am to 11 am
- 3) Thursday, Nov 11: 9 am to 11 am
- 4) Thursday, Nov 18: 9 am to 11 am
- 5) Thursday, Nov 25: 9 am to 11 am

Online registration will open on August 30, please see here:

<https://www.unil.ch/ecoledoctoralefbm/validationects>