ADVANCED TOPICS IN CARDIOVASCULAR SCIENCES - JCV3060
MOLECULAR BIOLOGY & HEART SIGNAL TRANSDUCTION

PLACE: ***MEDICAL SCIENCES BLDG., ROOM 3287***
TIME: ***10:00 – 12:00***
DATE: ***SEPTEMBER – DECEMBER, 2013***

Sept 20 Introduction/Orientation (***Bolz****)*

Sept 27 Molecular basis of heart function ***(Bolz)***

Oct 4 Myocardial development in the murine heart ***(Adamson)***

Oct 11 Perinatal changes in gene expression in heart and lung (***Belik***)

Oct 18 Signaling of G-protein coupled receptors in the heart (***Heximer***)

Oct 25 Calcium handling and signalling mechanisms in myocytes (***Gramolini***)

Nov 1 Cardiac ion channels ***(Backx)***

Nov 8 Arrhythmias ***(Dorian)***

Nov 15 Anesthetics and cardiovascular function ***(Hare)***

Nov 22 Principles of CABG surgery ***(Latter***)

Nov 29 Vascular effects of heart failure ***(Bolz/Lidington)***

Dec 6 Cardiovascular clinical trials ***(Farkouh)***

Dec 13 TBA ***(Bolz***)

Marking Scheme:
40% - Written Reports
30% - Oral Presentation
20% - Manuscript Critique
10% - Participation

Course Description:

This course is organized by the Cardiovascular Sciences Collaborative Program at the University of Toronto

Course Objectives:

The objective of this course is to provide graduate students with a broad exposure to a range of research areas in molecular biology and signal transduction of the heart. Specifically, it focuses on various aspects of the genetic, molecular and cellular properties of the heart and its' development and new techniques used.

This course intends to provide:

(i) a general review of cardiovascular-related topics (focused on molecular biology and signalling of the heart) and

(ii) students with the opportunity to critically evaluate current research papers in cardiac biology.

Students from various backgrounds in the cardiovascular sciences will be exposed to a critical understanding of current research objectives in a number of major areas of study. An extensive background in cardiovascular physiology is not a prerequisite of this course.

Content:

This course will focus upon selected advanced topics in cardiac molecular biology and signalling. Students will be expected to make presentations based upon appropriate literature listed by the teaching faculty. Participation in discussions will also be required. Presentation topics will be chosen from the topics overviewed in the course outline.

Format:

(i) ***Introduction to the subject by Faculty member*** (15-20 min).

(ii) Two/three ***student presentations*** (30 min plus 15-30 min of discussion) based upon current research papers in selected areas for each class (2-2.5 hrs). Original papers and reviews chosen and provided by the faculty that gives the course will be used for student presentations and discussion. Active participation in discussions will be an absolute requirement. For each presentation, two student discussants in addition to the presenter will be assigned to review the paper and asked to come to class with prepared questions.

Evaluation:

(i) Written Reports: 40%

Each student must also submit a written report (5-10 pages mini review) within one week of his/her presentation. It will be marked by the faculty member who is responsible for the particular topic. This review should provide a critical review of topic, based on appropriate level of background research, and should incorporate the comments raised in the discussion following the oral presentation.

(ii) Oral Presentation: 30%

Each student is expected to present two or three times and each presentation will be assessed by present faculty members.

(iii) Manuscript Critique: 20%

(iv) Participation in Discussions: 10%

Student participation in discussions will be assessed on the basis of his/her role as discussants and general contribution to the in-class discussions.