

Cardiovascular Diseases (BMM9) and Getting to Know CNIC course Course 2011-2012

A. Lectures: 16 January- 1 February (09:00- 11:30 h)

I. Form and function of the cardiovascular system (16- 18 January)

16 January (09.00 to 11.30 h)

Anatomy and Physiology of the Heart (I): Basic concepts of heart anatomy (i.e. pig heart dissection).

Teacher: **José María Pérez-Pomares** (Univ. Málaga)

Anatomy and Physiology of the Heart (II): Basic concepts in cardiac electrophysiology (in situ ECG, interpretation of normal ECG and basic anomalies) and basic concepts of heart mechanics (ejection fraction, 'cardiac output').

Teacher: **Borja Ruiz Mateos** (Hosp. Clínico San Carlos)

17 January (09.00 to 11.30 h)

Developmental Biology of the heart.

Teacher: **José María Pérez-Pomares** (Univ. Málaga)

Congenital diseases of the heart.

Teacher: **José Luis de la Pompa** (CNIC)

18 January (09.00 to 11.30 h)

Anatomy and Physiology of the vasculature: types of vessels, constitution of vessels. Physiology of vasculature: resistance, blood pressure, etc

Teacher: **Leticia Fernández Frieria** (CNIC)

Development of the vasculature: Vasculogenesis, angiogenesis and lymphangiogenesis.

Teacher: **Miguel Torres** (CNIC)

II. Pathology of the cardiovascular system (19- 25 January)

19 January (09.00 to 11.30 h)

Ischemic cardiovascular disease (I): pathophysiology of myocardial infarction.(differential diagnosis versus heart arrest and heart failure).

Ischemic cardiovascular disease (II): experimental approaches to myocardial infarction (imaging and pig as experimental animal model).

Teacher: **Borja Ibáñez (CNIC)**

20 January (09.15 to 11.00 h)

Atherosclerosis (II): Clinical manifestations of atherosclerosis.

Atherosclerosis (III): experimental approaches to atherosclerosis (imaging and pig as experimental animal model).

Teacher: **Valentín Fuster (CNIC)**

23 January (09.00 to 11.30 h)

Inflammation and cardiovascular disease.

Teacher: **David Sancho (CNIC)**

Metabolic disorders: Basic and molecular concepts in obesity and diabetes.

Teacher: **Guadalupe Sabio (CNIC)**

24 January (09.00 to 11.30 h)

Cellular and molecular basis of the immune response.

Teacher: **Francisco Sánchez-Madrid (UAM-CNIC)**

Atherosclerosis (I): Molecular mechanisms of atherosclerosis.

Teacher: **Vicente Andrés (CNIC)**

25 January (09.00 to 12.00 h)

Experimental models in cardiovascular research:

-Myocarditis, heart transplant

Teacher: **Pilar Martin (CNIC)**

-Cardiac ischemia

Teacher: **Enrique Lara-Pezzi (CNIC)**

-Vascular injury, hypertrophy and aneurysm

Teacher: **Juan Miguel Redondo (CNIC)**

**III. Repair mechanisms in the cardiovascular system
(26 January)**

26 January (09.00 to 12.00 h)

General concepts about stem cells.

Teacher: **Antonio Bernad (CNIC)**

Cardiac stem cells.

Teacher: **Beatriz G. Gálvez (CNIC)**

Regeneration of the heart.

Teacher: **Nadia Mercader (CNIC)**

**IV. Population studies: genomics, epidemiology and clinical trials
(27 and 30- 31 January)**

27 January (09.00 to 11.30 h)

Genomics approaches to cardiovascular disease: epigenetics and GWA.

Teacher: **José M. Ordovás (CNIC)**

30 January (09.00 to 11.30 h)

Design and interpretation of epidemiological studies: Framingham.

Teacher: **Manuel Franco (CNIC)**

PESA study: a case example at CNIC.

Teacher: **José Luis Peñalvo (CNIC)**

31 January (09.00 to 11.30 h)

Design and interpretation of clinical trials.

Teacher: **Luz Alvarez (CNIC)**

METOCARD

Teacher: **Borja Ibañez (CNIC)**

V. Frontiers in Cardiovascular Research (1 February)

1 February (09.00 to 11.15 h)

09.00 to 09.30 h

Mesenchymal and haematopoietic stem cells from a unique bone marrow niche

Teacher: **Simón Méndez Ferrer (CNIC)**

09.35 to 10.00 h

Regulator of calcineurin 1 mediates pathological vascular wall remodeling

Teacher: **Juan Miguel Redondo (CNIC)**

10.15 to 10.45 h

Evolution meets disease: penetrance and functional epistasis of mitochondrial tRNA mutations

Teacher: **Jose Antonio Enríquez (CNIC)**

10.45 to 11.15 h

Biochemical remodeling of the microenvironment by stromal caveolin-1 favors tumor invasion and metastasis

Teacher: **Miguel Ángel del Pozo (CNIC)**

B. Student presentations: 2- 6 February (09:00- 12:30 h)

4 presentations per day

C. Practical Workshops: 7- 20 February (09:00-12:00 h)

7 February (09.00 to 12.00 h)

Model systems (I): zebrafish and chick

Teachers: **Nadia Mercader, Eduardo Díaz (CNIC)**

8 February (09.00 to 12.00 h)

Model systems (II): mouse-transgenesis

Teacher: **Luis Miguel Criado (CNIC)**

9 February (09.00 to 12.00 h)

Model systems (III): mouse-intravital imaging and mouse-ultrasound recording

Teachers: **Andrés Hidalgo, Carlos Zaragoza (CNIC)**

10 February (09.00 to 12.00 h)

ES cell culture and differentiation

Teacher: **Giovanna Giovinazzo (CNIC)**

13 February (09.00 to 12.00 h)

Genomics

Teacher: **Ana Dopazo (CNIC)**

14 February (09.00 to 12.00 h)

Proteomics

Teacher: **Juan Antonio López (CNIC)**

15 February (09.00 to 12.00 h)

Advanced Confocal and live Cell Microscopy

Teachers: **Moreno Zamai, Olga Barreiro**

16 February (09.00 to 12.00 h)

Cytometry

Teachers: **José Manuel Ligos (CNIC)**

17 February (09.00 to 12.00 h)

High Content Analysis

Teachers: **María Montoya, Hind Azegrouz (CNIC)**

20 February (09.00 to 12.00 h)

Bioinformatics and Biostatistics

Teachers: **Fátima S. Cabo, Carlos Torroja, Pedro López (CNIC)**

Extra Workshops (for Course “Getting to Know CNIC”)

21 February (09.00 to 12.00 h)

How to look for bibliographic references and citations

Teacher: **Alicia Fátima Gómez (CNIC)**

22 February (09.00 to 12.00 h)

Communicating Science

Teacher: **Simon Bartlett (CNIC)**

23 February (09.00 to 12.00 h)

09.00 to 09.20 h

CNIC Predoctoral Programme

Teacher: **Susana Negrete (CNIC)**

09.25 to 09.45 h

Finance Department

Teacher: **Jose Alberto Alonso (CNIC)**

09.50 to 10.10 h

Human Resources Department

Teacher: **Antonio Ureña (CNIC)**

10.15 to 12.00 h

“The importance of the projects-&-results management in biosciences: CNIC Projects & TT Office”

Teachers:

Luzma García, Cristina Giménez, Noelia López
(CNIC),