Cardiovascular Diseases (BMM9) and Getting to Know CNIC course Course 2012-2013

Third Floor Seminar Room

A. Lectures: 14 - 30 January (09:30- 12:00 h)

I. Form and function of the cardiovascular system (14- 16 January)

14 January (10.15 to 12.45 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)

15 January (09.30 to 12.00 h)

Developmental Biology of the heart

Teacher: **Antoon Moorman** (Univ. Amsterdarm)

16 January (09.30 to 12.00 h)

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

Teacher: **Rodrigo Fernández Jiménez** (CNIC)

Development of the vasculature: Vasculogenesis, angiogenesis and lymphangiogenesis.

Teacher: **Miguel Torres** (CNIC)

II. Pathology of the cardiovascular system (17- 23 January)

17 January (09.00 to 11.00 h)

Cardiovascular disease: present and future

Teacher: **Valentín Fuster** (CNIC)

18 January (09.30 to 12.00 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)**

21 January (09.30 to 12.00 h)

Inflammation and cardiovascular disease.

Teacher: **David Sancho** (CNIC)

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

Teacher: **Guadalupe Sabio** (CNIC)

22 January (09.30 to 12.00 h)

New intercellular communication mechanisms in the immune response

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

Molecular mechanisms of atherosclerosis.

Teacher: **Vicente Andrés** (CNIC)

23 January (09.30 to 12.30 h)

Experimental models in cardiovascular research:

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

-Vascular injury, hypertrophy and aneurysm
Teacher: **Juan Miguel Redondo** (CNIC)

III. Repair mechanisms in the cardiovascular system (24 January)

24 January (09.30 to 12.30 h)

Cardiac stem cells.

Teacher: **Beatriz G. Gálvez**(CNIC)

Regeneration of the heart.

Teacher: **Nadia Mercader** (CNIC)

IV. Population studies: genomics, epidemiology and clinical trials (25 -29 January)

25 January (09.30 to 12.00 h)

Genomic approaches to cardiovascular disease: epigenetics and GWA.

Teacher: **José M. Ordovás** (CNIC)

28 January (09.30 to 12.00 h)

Design and interpretation of epidemiological studies: Framingham.

Teacher: **Manuel Franco** (Universidad de Alcalá de Henares)

PESA study: a case example at CNIC.

Teacher: **José Luis Peñalvo** (CNIC)

29 January (09.30 to 12.00 h)

Clinical trials.

Teacher: **Ginés Sanz** (CNIC)

Clinical Trials in Medicine: The Industry's Vision.

Teacher: **Savion Gropper** (Laboratorios Ferrer)

V. Frontiers in Cardiovascular Research (30 January)

30 January (09.30 to 11.10 h)

09.30 to 10.00 h
Mutations in the NOTCH pathway regulator MIND BOMB-1 (MIB1) cause left ventricular non-compaction cardiomyopathy
Teacher: **Jose Luís de la Pompa** (CNIC)

10.05 to 10.35 h
Notch-dependent VEGFR3 upregulation allows angiogenesis without VEGF-VEGFR2 signalling
Teacher: **Rui Benedito** (CNIC)

10.40 to 11.10 h
UNG shapes the specificity of AID-induced somatic hypermutation
Teacher: **Almudena Ramiro** (CNIC)

11.15 to 11.45 h
Ectopic expression of the histone methyltransferase Ezh2 in haematopoietic stem cells causes myeloproliferative disease
Teacher: **Susana González** (CNIC)

B. Student presentations: 31 January- 4 February (09:30- 12:30 h)

2-3 presentations per day
Moderators: **Alicia G. Arroyo; Martín Laclaustra and Miguel Manzanares** (CNIC)

C. Practical Workshops: 05- 18 February (09:30-12:30 h)

05 February (09.30 to 12.30 h)
Model systems (I): zebrafish and chick
Teachers: **Nadia Mercader, Eduardo Díaz** (CNIC)

06 February (09.30 to 12.30 h)
Model systems (II): mouse-transgenesis
Teacher: **Luis Miguel Criado** (CNIC)

07 February (09.00 to 12.00 h)
Model systems (III): mouse-intravital imaging and mouse-ultrasound recording
Teachers: **Andrés Hidalgo, Carlos Zaragoza** (CNIC)

08 February (09.00 to 12.00 h)
ES cell culture and differentiation
Teacher: **Giovanna Giovinazzo** (CNIC)

11 February (09.00 to 12.00 h)
Proteomics
Teacher: **Juan Antonio López** (CNIC)

Genomics
Teacher: **Ana Dopazo** (CNIC)

12, 13 February (09.00 to 12.00 h)
Cardiovascular Image
Teacher: **Jesús Ruíz Cabello** (CNIC)

14 February (09.00 to 12.00 h)
Advanced Confocal and live Cell Microscopy
Teachers: **Moreno Zamai, Olga Barreiro** (CNIC)

15 February (09.00 to 12.00 h)
Cell analysis techniques: Cytometry and High Content Screening
Teachers: **María Montoya, Hind Azegrouz** (CNIC)

18 February (09.00 to 12.00 h)
Bioinformatics and Biostatistics
Teachers: **Fátima S. Cabo, Carlos Torroja** (CNIC)

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

19 February (09.00 to 12.00 h)

How to look for bibliographic references and citations
Teacher: **Alicia Fátima Gómez** (CNIC)

20 February (09.00 to 12.00 h)

Communicating Science
Teacher: **Simon Bartlett** (CNIC)

21 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),