Cardiovascular Diseases (BMM9)  
Course 2010-2011

Lectures: 17 January - 4 February 2011  
(09:00-11:30 h)

17 – 20 January  
Lectures on Vascular Biology and Inflammation

17 January (09:00 to 11:30 h) – Monday

**Vascular Biology I:** The vessel wall: metalloproteinases and related molecules in vascular homeostasis and angiogenesis.  
Speaker: Alicia García Arroyo (CNIC)

**Vascular Biology II:** Calcineurin pathway in experimental models of angiogenesis, aortic aneurism and aortic valve stenosis.  
Speaker: Juan Miguel Redondo (CNIC)

18 January (09:00 to 11:30 h) - Tuesday

**Signaling I:** Functional integration of membrane trafficking, signaling and cytoskeleton dynamics: novel approaches and functional impact at the cellular and whole organism levels.  
Speaker: Miguel Ángel del Pozo (CNIC)

**Signaling II:** Signaling pathways in animal models of metabolic syndrome (insulin-resistance and obesity).  
Speaker: Guadalupe Sabio (CNIC)

19 January (09:00 to 11:30 h) - Wednesday

**Inflammation I:** Leukocyte-endothelium interactions. Soluble mediators in inflammatory processes: chemokines and their receptors.  
Speaker: Francisco Sánchez-Madrid (CNIC)

**Inflammation II:** Immunological basis of cardiovascular disease.  
Speaker: David Sancho (CNIC)

20 January (09:00 to 11:30 h) - Thursday

**Inflammation III:** Immunoregulation in cardiac pathology: new approaches and experimental models (myocarditis and heart transplant).  
Speaker: Pilar Martin (CNIC)
Inflammation IV: Pro-inflammatory and oxidative mechanisms in vascular dysfunction: link to diabetes mellitus and aging.
Speaker: Carlos Sánchez-Ferrer (Univ. Autónoma de Madrid)

21 – 25 January
Lectures on Cardiovascular Developmental Biology

21 January (09:00 to 11:30 h) - Friday
Introduction: history of cardiology and evolution of the knowledge of the cardiovascular system. Development, physiology and congenital diseases of the heart.
Speaker: José María Pérez Pomares (Univ. de Málaga)
Development of the epicardium and its role in tissue homeostasis of the heart.
Speaker: José María Pérez Pomares (Univ. de Málaga)

24 January (09:00 to 11:30 h) - Monday
Embryonic heart development I: General introduction, Cardiac fields specification, myocardiogenesis, heart tube morphogenesis.
Speaker: Antoon Moorman (Univ. Amsterdarm)
Cross-talk of the endocardium and myocardium in valve development and disease
Speaker: José Luis de la Pompa (CNIC)
Vasculogenesis, angiogenesis and lymphangiogenesis during embryonic development.
Speaker: Miguel Torres (CNIC)

25 January (09:00 to 11:30 h) - Tuesday
Embryonic heart development II: Chamber formation and septation, genetic basis of heart morphogenesis and regionalization.
Speaker: Antoon Moorman (Univ. Amsterdarm)
General discussion, questions, perspectives.
26 – 28 January
Lectures on Epidemiology, Atherothrombosis and Cardiovascular Imaging

26 January (09:00 to 11:30 h) – Wednesday

9:00-9:40 Epidemiology of cardiovascular disease. General Overview
   Speaker: Manuel Franco (CNIC)

9:40-10:10 Epidemiology of metabolic cardiovascular risk factors
   Speaker: Martín Laclaustra (CNIC)

10:10-10:25 Recess

10:25-11:00 Diet, lifestyle and cardiovascular disease risk
   Speaker: José Luis Peñalvo (CNIC)

11:00-11:30 Principles of biostatistics for cardiovascular research
   Speaker Pedro López Romero (CNIC)

27 January (09:00 to 11:30 h) - Thursday

9:00-9:45: Atherosclerotic process: from atherogenesis to restenosis
   Speaker: Vicente Andrés (CNIC)

9:45-10:30 Inflammation and atherothrombosis
   Speaker: Andrés hidalgo (CNIC)

10:30-10:45 Recess

10:45-11:30 Cardiovascular remodeling: from the vessel wall to the myocardium.
   Speaker: Carlos Zaragoza (CNIC)

28 January (09:00 to 11:30 h) - Friday

Clinical manifestations of atherosclerosis based on the knowledge of the disease (I)
   Speaker: Valentín Fuster (CNIC)

Clinical manifestations of atherosclerosis based on the knowledge of the disease (II)
   Speaker: Valentín Fuster (CNIC)
31 January
Lectures on Translational Cardiovascular Research

31 January (09:00 to 11:30 h) - Monday

9:00-9:45: Lipids and Atherothrombosis: role of HDL cholesterol.
   Speaker: Borja Ibáñez (CNIC)

9:45-10:30 Cardiovascular Imaging
   Speaker: Jesús Jiménez-Borreguero (CNIC)

10:30-10:45 Recess

10:45-11:30 Acute myocardial infarction: from ischemia to reperfusion.
   Speaker: Borja Ibáñez (CNIC)
1 – 3 February
Lectures on Regenerative Cardiology

1 February (09:00 to 11:30 h) - Tuesday
Biology of adult stem cells
Speaker: Antonio Bernad (CNIC)
The niche as an organizer of stem cell decisions
Speaker: Simón Méndez (CNIC)

2 February (09:00 to 11:30 h) - Wednesday
The clinical utility of stem cells
Speaker: Kenneth McCreath (CNIC)
Cardiac regeneration in animal models
Speaker: Beatriz González (CNIC)
Contribution of nuclear receptors to cardiovascular physiology: from stem cells to tissue regeneration
Speaker: Mercedes Ricote (CNIC)

3 February (09:00 to 11:30 h) - Thursday
Understanding the regenerative capacity of stem cells
Speaker: Susana González (CNIC)
Mitochondrial function and dysfunction in stem cells
Speaker: José Antonio Enríquez (CNIC)
Oral Presentations from Students: 4-8 February 2011
(09:00-12:30 h)

Practical Workshops: 9-18 February 2011
(09:00-12:00 h)

9 February (09:00 to 12:00 h) – Wednesday
The zebrafish model
Teacher: Nadia Mercader, Eduardo Díaz (CNIC)

10 February (09:00 to 12:00 h) - Thursday
The mouse model – Intravital imaging
Teacher: Antonio Jesús Quesada,

11 February (09:00 to 12:00 h) - Friday
Transgenesis – The mouse model
Teacher: Luis Miguel Criado (CNIC)
Ultrasound equipment – The mouse model
Teacher: Carlos Zaragoza (CNIC)

14 February (09:00 to 12:00 h) - Monday
Genomics
Teacher: Ana Dopazo (CNIC)

15 February (09:00 to 12:00 h) - Tuesday
Proteomics
Teacher: Juan Antonio López (CNIC)

16 February (09:00 to 12:00 h) – Wednesday
Advanced Confocal and live Cell Microscopy I
Teachers: Valeria Caiolfa, Olga Barreiro (CNIC)

17 February (09:00 to 12:00 h) - Thursday
Advanced Confocal and live Cell Microscopy II
Teachers: Valeria Caiolfa, Olga Barreiro (CNIC)
18 February (09:00 to 12:00 h) – Friday

Cytometry and/or high content screening platforms

Teachers: María Montoya, José Manuel Ligos (CNIC)

(Only for CNIC PhD Students - Course “APROXIMACIÓN AL CNIC”)

Additional Workshops: 21-22 February 2011 (09:00-12:00 h)

21 February (09:00 to 12:00 h) - Monday

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

22 February (09:00 to 12:00 h) - Tuesday

Communicating Science
Teacher: Simon Bartlett (CNIC)