

## BMM9 / Res@cnic-sec /Getting to know CNIC Course

### Frontiers in Cardiovascular Research Course 2020-2021

Coordinators: Valentín Fuster, José Javier Fuster & Guadalupe Sabio (CNIC)  
Teresa González (UAM)

Teams Link: [Click here to join the meeting](#)

#### January 11, 2021

##### Teams

14:30-15:00 Welcome by BMM9 coordinators

#### Form and function of the cardiovascular system

##### Teams (Moderator: J.J. Fuster)

15:00-15:50 Cardiovascular disease: Needs and opportunities for translational research  
**Héctor Bueno**, CNIC

16:00-17:20 Cardiovascular disease: Present and future  
**Valentín Fuster**, CNIC

17:30-18:20 Cardiac computational modelling on supercomputers  
**Mariano Vázquez**, BSC

#### January 13, 2021

##### Teams (Moderator: T. González)

14:30-15:20 Molecular Basis of Cardiac Electrophysiology and Arrhythmias  
**Teresa González**, UAM

15:30-16:20 Potassium channels in the regulation of vascular myocytes function  
**Angel Cogolludo**, UCM

16:30-17:20 Biomechanics of the cardiovascular system  
**Francisco Rojo**, UPM

## January 14, 2021

### Teams (Moderator: J.J. Fuster)

16:30-17:20 Development of the vasculature: Vasculogenesis, angiogenesis and lymphangiogenesis  
**Rui Benedito, CNIC**

## January 15, 2021

### Teams (Moderator: T. González)

14:30-15:20 Anatomy and physiology of the vasculature: Types of vessels, constitution of vessels. Physiology of vasculature: resistance, blood pressure, etc.  
**Gonzalo Pizarro, CNIC**

15:30-16:20 How do cells and tissues sense, adapt and respond to mechanical forces? An emerging perspective in biomedicine  
**Miguel Angel del Pozo, CNIC**

16:30-17:20 Developmental biology of the heart  
**José Luis de la Pompa, CNIC**

## Pathology of the cardiovascular system

## January 19, 2021

### Teams (Moderator: G. Sabio)

14:30-15:20 From drug re-purposing to gene therapy: A personalized approach to treat cardiac arrhythmias  
**Silvia Priori, CNIC**

15:30-16:20 Clinical utility of advanced imaging and mathematical analysis of complex cardiac arrhythmias  
**David Filgueiras, CNIC**

16:30-17:20 The artificial heart: past, present and future  
**Aida Suárez, Clínica Universitaria de Navarra, Madrid**

## January 20, 2021

### Teams (Moderator: J.J. Fuster)

14:30-15:20 Pathophysiology of atherosclerosis: Insight gained from experimental models  
**Jacob Fog Bentzon, CNIC**

- 15:30-16:20 Aging and cardiovascular disease: From the rarest to the most common  
**Vicente Andrés, CNIC**
- 16:30-17:20 Beyond traditional risk factors: acquired mutations as a shared driver of cardiovascular disease and cancer  
**José J. Fuster, CNIC**

### January 21, 2021

#### Teams (Moderator: G. Sabio)

- 14:30-15:20 Inflammation and cardiovascular disease  
**David Sancho, CNIC**
- 15:30-16:20 Metabolic disorders: Basic and molecular concepts in obesity and diabetes  
**Guadalupe Sabio, CNIC**
- 16:30-17:20 Providing energy to the heart  
**José Antonio Enríquez, CNIC**

### January 22, 2021

#### Teams (Moderator: G. Sabio)

- 14:30-16:10 Myocardial diseases: From large animals to Clinical trials  
**Borja Ibáñez, CNIC**
- 16:20-17:10 Muscle regeneration and aging: rejuvenating strategies  
**Pura Muñoz, CNIC**

### January 25, 2021

#### Teams (Moderator: J.J. Fuster)

- 14:30-15:20 Experimental models in cardiovascular research: Cardiac ischemia  
**Enrique Lara-Pezzi, CNIC**
- 15:30-16:20 Novel diagnosis and therapy for myocarditis  
**Pilar Martín, CNIC**
- 16:30-17:20 Experimental models in cardiovascular research: Lentiviral-mediated gene therapy and mouse models of aortic diseases  
**Juan Miguel Redondo, CNIC**

## Cardiovascular genetics

January 26, 2021

### Teams (Moderator: J.J. Fuster)

- 14:30-15:20 Introduction to cardiovascular genetics  
**Julián Palomino**, Hospital 12 de Octubre
- 15:30-16:20 From single molecules to heart disease  
**Jorge Alegre-Cebollada**, CNIC

## Population studies: Genomics, epidemiology and clinical trials

January 27, 2021

### Teams (Moderator: T. González)

- 14:30-15:20 Research and development in medicine: The industry's vision  
**Savion Gropper**, Boehringer Ingelheim Pharma GmbH & Co. KG
- 15:30-16:20 Cardiovascular epidemiology: Descriptive, intervention and health promotion studies  
**Juan Miguel Fernández Alvira**, CNIC

January 28, 2021

### Teams (Moderator: T. González)

- 14:30-15:20 Interpreting statistics in clinical trials  
**Stuart Pocock**, CNIC/London School of Hygiene and Tropical Medicine
- 15:30-16:20 The Fuster-CNIC-Ferrer cardiovascular polypill project: A new paradigm in cardiovascular therapeutics innovation  
**José M<sup>a</sup> Castellano**, CNIC
- 16:30-17:20 Oral antiplatelet treatment in ACS: From bench to bedside  
**Antonio Fernández-Ortiz**, CNIC

## Frontiers in cardiovascular research

**January 29, 2021**

### Teams (Moderator: G. Sabio)

14:30-15:00 A Network of Macrophages Supports Mitochondrial Homeostasis in the Heart  
**Andrés Hidalgo, CNIC**

15:00-15:30 ALDH4A1 is an atherosclerosis auto-antigen targeted by protective antibodies  
**Almudena R. Ramiro, CNIC**

### T. González

#### CNIC

15:45-17:00 Anatomy and physiology of the heart: Basic concepts in cardiac echocardiography: in situ echocardiogram; interpretation of normal heart and basic anomalies  
**Gabriela Guzmán, Hospital Universitario La Paz**

## BMM9 students presentations

**February 1, 2021**

### Teams

14:30-16:00 Students presentations

**February 2, 2021**

### Teams

14:30-16:00 Students presentations

Moderators: José Javier Fuster, Guadalupe Sabio and Teresa González (CNIC-UAM)

## Practical Workshops

**February 3, 2021**

### First Floor Seminar and Meeting Rooms (Teams)

14:30-15:00 Introduction Seminar Microscopy Unit  
**Valeria Caiolfa, CNIC**

15:00-15:30 Cardiovascular disease modelling: culture, differentiation and gene editing in mESC and hiPSC  
**Giovanna Giovinazzo, CNIC**

**GROUP 1: Cell Culture Room**

15:30-17:30 Cardiovascular disease modelling: culture, differentiation and gene editing in mESC and hiPSC  
**Elisa Santos, Belén Prados, CNIC**

**GROUP 2: Microscopy Unit 2<sup>nd</sup> Floor West**

15:30-17:30 Advance confocal and live cell microscopy  
**Verónica Labrador, Alfonso Díaz CNIC**

**February 4, 2021**

**First Floor Seminar and Meeting Rooms**

**GROUP 1: Microscopy Unit 2<sup>nd</sup> Floor West**

14:30-16:30 Advanced confocal and live cell microscopy  
**Moreno Zamai, Elvira Arza, Olga Gimenez CNIC**

**GROUP 2: Cell Culture Room**

14:30-16:30 Cardiovascular disease modelling: culture, differentiation and gene editing in mESC and hiPSC  
**Elisa Santos, Belén Prados, CNIC**

**February 5, 2021**

**First Floor Seminar and Meeting Rooms (Teams)**

14:30-15:30 Preclinical molecular imaging  
**Beatriz Salinas, Instituto de Investigación Sanitaria Gregorio Marañón / CNIC / Universidad Carlos III de Madrid**

**First Floor Seminar and Meeting Rooms / Teams and Presential**

15:45-16:30 Case studies: RM and PET  
**Daniel Calle, CNIC**

**Sótano -3 – Animal pequeño**

**GROUP 1:**

16:30-17:00 Equipment Cardiovascular image: RM and PET  
**Daniel Calle, CNIC**

**GROUP 2:**

17:00-17:30 Equipment Cardiovascular image: RM and PET  
**Daniel Calle, CNIC**

## February 8, 2021

### First Floor Seminar and Meeting Rooms (Teams)

14:30-16:30 Bioinformatics and Biostatistics  
**Fátima Sánchez Cabo, CNIC**

### Basement -3

#### GROUP 1:

16:30-17:15 Visit Animal Facility  
**Santiago Rodríguez, CNIC**

#### GROUP 2:

17:15-18:00 Visit Animal Facility  
**Santiago Rodríguez, CNIC**

## February 10, 2021

### Teams

14:30-16:30 Model systems (I): mouse-transgenesis  
**Juan de Dios Hourcade, CNIC**

## February 11, 2021

### Teams

14:30-16:00 Flow cytometry  
**Beatriz Álvarez, CNIC**

## February 12, 2021

### Teams

14:30-16:00 Proteomics  
**Juan Antonio López, CNIC**

16:00-17:30 Genomics  
**Ana Quintas, CNIC**

## February 15, 2021

### First Floor Seminar Room

14:30-17:00 Model systems (II): Zebrafish  
**Laura Andrés, Eduardo Díaz, María Galardi, Irene García, CNIC**