PROGRAM

DAY 1 | WEDNESDAY, 21 OCTOBER

08h50 – 09h00 Hands-on session registration

09h00 – 12h30 **Hands-on session on normal and congenitally malformed hearts: double outlet right ventricle**
Lucile Houyel and Monique Jongbloed

– Developmental aspects of DORV and functional single ventricle disease (MJ)
– Classification and nomenclature of DORV, including DORV in the setting of single ventricle disease (LH)
– Video demonstration of specimens (MJ/LH)
– Hands-on session (MJ/LH)

A special addition to this session will allow 3D exploration of the specimens with virtual reality (presented by Ségolène Bernheim and Cloé Huet).

To better decipher the mechanisms of cardiac development, it is essential to correlate the morphological variants of congenital heart disease found in humans with those found in mouse mutants. This hands-on session, with a selection of human specimens, is dedicated to double outlet right ventricle, a type of ventriculo-arterial connection that is particularly frequent in genetically modified mice. Specimens with DORV in the setting of functional single ventricle disease are included. The session is an extraordinary complement to the ESC Textbook of Cardiovascular Development (eds. José M. Pérez-Pomares and Robert G. Kelly).

12h30 – 14h00 *Lunch in the canteen (exclusive to hands-on session participants)*

13h50 – 14h15 General registration

14h15 – 14h30 **Opening ceremony**

Platform Session I | Congenital heart defects: spotlight on single ventricle defects

Chairs: Stefânia Forner & Dylan Barbera, Additional Ventures

14h30 – 14h40 Additional Ventures

14h40 – 14h55 **OC1 | Chick embryonic model of single ventricular physiology**
David Sedmera, First Faculty of Medicine, Charles University, Czechia

14h55 – 15h10 **OC2 | A dual role for ETS1 in cardiac endothelium in heart development and disease**
Paul Grossfeld, University of California San Diego School of Medicine, USA

15h10 – 15h25 **OC3 | Human HLHS-causing gene Myrf is expressed in multiple cardiac cell types and is sufficient to induce HLHS in mice**
Mingfu Wu, University of Houston College of Pharmacy, USA

Platform Session II | Cardiac structure, congenital heart defects and their mechanisms

Chairs: Deborah Henderson & Susan Liao

15h30 – 15h45 **OC4 | Wnt and Nodal asymmetries stratify laterality phenotypes in the absence of node flow in mice**
Sigolène Meilhac, Imagine – Institut Pasteur, Unit of Heart Morphogenesis, France

15h45 – 16h00	**OC5 | Mechanisms of NTN1-dependent tissue organization in heart development and congenital heart defects** *Irfan Kathiriya*, Department of Anesthesia and Perioperative Care, University of California, USA
16h00 – 16h15	**OC6 | Maternal iron deficiency increases congenital heart defect incidence in both wild-type and Notch1 single-point variant mouse models** *Hana Kolesova*, First Faculty of Medicine, Charles University, Czechia
16h15 – 16h30	**OC7 | Intracardiac fluid viscosity as a mediator of cardiac malformation** *Michael Bressan*, University of North Carolina at Chapel Hill, USA
16h35 – 17h05	*Coffee break*
17h05 – 17h50	**KEYNOTE LECTURE I | The making of the mammalian primitive heart tube: cell lineages and morphogenesis** *Miguel Torres*, CNIC, Madrid, Spain
17h50 – 20h00	**Poster Session I (odd numbers present) and welcome reception**

DAY 2 | THURSDAY, 22 OCTOBER

Platform Session III | Cardiac engineering and organoids

Chairs: Diego Franco & Hananeh Fonoudi

09h00 – 09h15	**OC8 | Mechanisms of local translation at the sarcomere and the role of LARPs in cardiac development and function** *Nicole Dubois*, Icahn School of Medicine at Mount Sinai, USA
09h15 – 09h30	**OC9 | Reconstructing the human cardiac-immune niche in vitro** *Selin Tüzüner*, Institute of Developmental and Regenerative Medicine, University of Oxford, UK
09h30 – 09h45	**OC10 | Decoding the pleiotropic role of Zic3 in congenital heart disease using gastruloids** *Caroline Choquet*, Marseille Medical Genetics (MMG), INSERM – Aix-Marseille University, France
09h45 – 10h00	**OC11 | A cardioid-based framework for functional characterization of cardiac enhancers in human heart development** *Ekapaski Wisnumurti*, Department for BioMedical Research (DBMR), University of Bern, Switzerland
10h00 – 10h15	**OC12 | Cellular programs controlling cardiovascular calcification in zebrafish** *Anabela Bensimon-Brito*, University of Toulouse, CNRS, Centre de Biologie Intégrative (CBI), France
10h15 – 10h25	Sponsor session: Oxford Instruments (Imaging)
10h25 – 10h50	*Coffee break*
10h50 – 11h35	**KEYNOTE LECTURE II | Living machines: how to build a beating heart** *Rashmi Priya*, Francis Crick Institute, UK
11h40 – 12h20	**Business meeting**
12h20 – 13h50	*Lunch*

Platform Session IV | Cardiac progenitors, lineages and early heart development

Chairs: Audrey Desgrange & Ian Scott

14h00 – 14h15	**OC13 | Mesp1 and Hes1 interplay controls early cardiac progenitor cell specification** *Sinem Inal*, Aix-Marseille University, INSERM, MMG, U1251, France
14h15 – 14h30	**OC14 | SHF progenitors regulate cardiac outflow tract septation by orchestrating neural crest cell migration via the extracellular matrix** *Yuke Ji*, Nanjing University Medical School, China
14h30 – 14h45	**OC15 | Disruption of desmosomal adhesion drives epicardial dysfunction and aberrant hematopoiesis in the embryonic heart** *Hoda Moazzen*, RWTH Aachen University, Germany
14h45 – 15h00	**OC16 | A tale of two hearts: lineages and boundaries in the human cardiac interventricular septum** *Claudio Cortes*, Institute of Developmental and Regenerative Medicine, University of Oxford, UK

Platform Session V | Epigenetics and differentiation

Chairs: Antonio Baldini & Nancy Stathopoulou

15h05 – 15h20 **OC17 | Using deeply conserved developmental enhancers to identify a TBX20 enhancer with a critical role in human cardiac development and disease**
Ian Scott, Department of Molecular Genetics, University of Toronto, Canada

15h20 – 15h35 **OC18 | Predicting pathogenic splicing with an "interpretable-by-design" neural network**
Susan E. Liao, Functional Genomics Section, IBENS – Institut de Biologie de l'École Normale Supérieure, France

15h35 – 15h50 **OC19 | Loss of Gm14014 lncRNA disrupts epicardial paracrine signalling, leading to progressive ventricular wall defects and electrophysiological shortening**
Estefanía Lozano Velasco, Cardiovascular Development Group, Department of Experimental Biology, University of Jaén, Spain

15h50 – 16h05 **OC20 | Dose-dependent sensitivity of human 3D chromatin to a heart disease-linked transcription factor**
Benoit Bruneau, Gladstone Institutes, USA

16h10 – 16h40 *Coffee break*

Platform Session VI | Arrhythmias and the conduction system

Chairs: Vincent Christoffels & Hana Kolesová

16h40 – 16h55 **OC21 | Investigating the specification and maturation of the cardiac pacemaker**
Tanishta Bhattacharya, Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany

16h55 – 17h10 **OC22 | Identification of an NKX2-5 dosage-dependent progenitor cell population contributing to the cardiac Purkinje fiber network**
Louise Michel, Aix-Marseille University, CNRS UMR 7288, IBDM, France

17h10 – 17h25 **OC23 | Loss of ZFP516 results in perinatal lethality through congenital heart defects, sinus bradycardia and autonomic dysfunction**
Lieke van Roon, Leiden University Medical Centre, The Netherlands

17h25 – 17h40 **OC24 | Identification and AAV-CRISPRi/a-based modulation of variant regulatory elements to unravel the regulome underlying Brugada syndrome**
Freek Tiel Groenestege, Amsterdam University Medical Centre, The Netherlands

17h40 – 17h55 **OC25 | Transcriptomic evaluation of Hand1 during cardiogenesis**
Anthony Firulli, Wells Center for Pediatric Research, Indiana University School of Medicine, USA

17h55 – 20h00 **Poster Session II (even numbers present), with snacks and drinks**

DAY 3 | FRIDAY, 23 OCTOBER

Platform Session VII | Valves and vessels

Chairs: Chris Derrick & Jose Luis de la Pompa

09h00 – 09h15 **OC26 | A new mechanism for arterial valve leaflet remodeling**
Deborah Henderson, Biosciences Institute, Newcastle University, UK

09h15 – 09h30 **OC27 | Loss of Nherf2 leads to progressive aortic dilation and diminishes systolic blood pressure**
Brenda Giselle Flores Garza, Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Spain

09h30 – 09h45 **OC28 | Investigating the novel role of VEGFR3 in pharyngeal arch artery development**
Jonathan Dias, Rutgers Biomedical and Health Sciences, USA

09h45 – 10h00 **OC29 | Lost in translation: how Pax9 loss disrupts cardiovascular development**
Rachel Sanders, Biosciences Institute, Faculty of Medical Sciences, Newcastle University, UK

10h15 – 10h50 *Coffee break*

Platform Session VIII | Myocardial structure and function

Chairs: Daniela Panakova & José Belo

10h50 – 11h05 **OC30 | Trabecular fate is genetically hardwired during vertebrate heart development**
Kelly Smith, The University of Melbourne, Australia

11h05 – 11h20 **OC31 | Dissecting oligogenic inheritance in sarcomere-negative hypertrophic cardiomyopathy through WGS and functional in vivo modeling**
Marina Piñol-Cancer, Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Spain

11h20 – 11h35 **OC32 | Human epicardioids reveal disruption of an epicardial–endothelial signaling niche in left ventricular hypertrabeculation pathogenesis**
Sophie Zengerle, Technical University of Munich, Germany

11h35 – 11h50 **OC33 | Deciphering endocrine control of cardiomyocyte gene programs**
Jack Alexander Palmer, Cambridge Stem Cell Institute, University of Cambridge, UK

12h00 – 12h45 **KEYNOTE LECTURE III | Reprogramming the heart for regeneration**
Thomas Braun, Max Planck Institute for Heart and Lung Research, Germany

12h45 – 13h00 Group photo

13h00 – 14h00 *Lunch*

Platform Session IX | Cardiac repair and regeneration

Chairs: Filipa Simões & João Cardeira da Silva

14h00 – 14h15	**OC34 | Sensing differently, building differently: ECM dynamics and cardiac fibroblast fate in the regenerative heart of the spiny mouse** *Maria Cardona-Timoner*, i3S, University of Porto, Portugal
14h15 – 14h30	**OC35 | Cardiac regeneration versus fibrosis: using zebrafish to understand the dual role of inflammation-adaptive immunity in the injured heart** *João Cardeira-da-Silva*, RESTORE Institute, France
14h30 – 14h45	**OC36 | Comparison of cardiac regeneration capacity between zebrafish and medaka reveals a regenerative response in both teleost species** *Miguel Ángel Garitagoitia-Romero*, Centro Nacional de Investigaciones Cardiovasculares (CNIC), Spain
14h45 – 15h00	**OC37 | Uncoupling protein 3 overexpression triggers cardiomyocyte metabolic reprogramming and improves heart repair after myocardial infarction** *Yoann Kovacs*, INSERM U1251 MMG – Aix-Marseille University, Marseille, France
15h00 – 15h15	**OC38 | Combining mechanical and pharmacological support to redirect post-MI wound healing towards regeneration** *Esmeralda Meijboom*, Leiden University Medical Centre, The Netherlands
15h15 – 15h30	Inside publishing for Cardiovascular Development & Regeneration *João Valente*, Senior Editor at Communications Biology, Springer Nature Group
15h30 – 15h50	**Awards and closing of the meeting**
15h50 – 16h15	*Coffee break*
16h15	Meet in front of the Institute for the visit to the Port Wine Cellars
19h30	**Farewell networking dinner at Sancho Panza Restaurant**