

# POSTERS

1. Cardiac vasculature is a niche-like structure for murine adult cardiac progenitor cells. *D. Herrero (ES)*
2. Single cell transcriptomics identifies a hedgehog-mediated immunomodulatory signaling circuit between endothelial and perivascular stromal cells in the eye choroid. *GL. Lehmann (ES)*
3. Exploring the role of hypoxia in coronary stability and cardiac inflammation: new genetic models to study cardiovascular disease. *B. Escobar (ES)*
4. Actomyosin dynamics acts coordinately with bmp and notch signaling pathways to drive apical extrusion of proepicardial cells. *L.I. Andrés-Delgado (ES)*
5. Isure-cre: a new genetic tool to reliably induce and report cre-dependent genetic modifications. *M. Fernández-Chacón (ES)*
6. FoxO1-induced metabolite signaling enforces quiescence in the vascular endothelium. *J. Andrade (GE)*
7. The slit-robo signalling pathway regulates cardiac innervation development. *J. Zhao (UK)*
8. Versican is crucial for the cardiovascular development in medaka fish. *N. Mittal (JP)*
9. The role of transforming growth factor  $\beta$  in phenotypic alteration of vascular smooth muscle cell in Angiotensin II aortic abdominal aneurysm model. *R. García (ES)*
10. Identifying new players in flow mechanosensation using a new high-throughput microfluidic device. *C.G. Fonseca (PT)*
11. Light deficiency in ApoE<sup>-/-</sup> mice increases the progression and vulnerability of atheroma plaques. *A. Herrero-Cervera (ES)*
12. Cardiac energy metabolism regulation in chronic heart failure. *A. Voronova (RU)*
13. Molecular and operational determinants of intra-hepatic vascular zonation. *J.M. Gomez-Salinerio (US)*
14. New insights into the cellular principles and molecular mechanisms involved in postnatal microvascular remodeling in the mouse heart. *R. Santamaría (ES)*
15. Endothelial Mitofusin2 loss ameliorates metabolic health and protects against obesity. *I. Chivite (ES)*
16. SRSF3 is a key regulator of epicardial formation and differentiation in the murine embryonic heart. *I.E. Lupu (UK)*
17. The role of meis transcription factors in the epicardium. *E. Cruz-Crespillo (ES)*
18. Measuring 3D forces during capillary network remodelling. *D. Zalvidea (ES)*
19. Cardiomyocyte structure alterations and cardiac metabolism in heart failure. *T. Kulikova (RU)*
20. The relationship between cardiac regenerative and metabolic processes. *O. Stepanova (RU)*
21. Intraflagellar transport proteins modulate the activity of the hippo pathway effector yap1 during proepicardium development. *M. Peralta (FR)*
22. CCBE1 is required for coronary vessel development and proper coronary artery stem formation in the mouse heart. *F. Bonet (PT)*
23. ECMI promotes heart regeneration via regulating pro-regenerative ecm molecules necessary for cardiomyocyte proliferation and migration. *D. Mukherjee (IN)*
24. CYP26B1 is required for normal epicardial function. *S. Lasoye (UK)*
25. Investigating the role of endocardial Notch signalling for neovascularisation of the heart after myocardial infarction. *T. Thomas (UK)*
26. Asymmetric endothelial adherens junctions in angiogenesis. *A. Angulo-Urarte (NL)*
27. Deubiquitinase USPI0 regulates notch signaling in the endothelium. *R. Lim (GE)*
28. Automatic staging system for E7.5-E8.5 mouse embryos. *I. Esteban (ES)*
29. Unbalanced dietary vitamin A levels modulates the incidence of congenital heart defects in a 22q11DS mouse model. *D. Heine (ES)*
30. Postnatal lung morphogenesis relies on YAP/TAZ mechanosensitive responses at the endothelial-epithelial interphase. *A. Vadakan Cherian (GE)*
31. Investigating molecular heterogeneity in the developing zebrafish epicardium. *M. Weinberger (UK)*
32. H19 LncRNA displays endocardial restricted expression during cardiac development. *C. García-Padilla (ES)*
33. Widespread cardiomyocyte proliferation and local fibrosis after neonatal apex resection support cardiac benign remodelling and functional recovery: the role of fibroblasts. *V. Sampaio-Pinto (PT)*
34. Dissecting the role of miR-200b in epicardial derived cell diversification and migration. *S. Simon-Fernández (ES)*
35. A tale of forces: how blood flow and chemokines interact to establish endothelial polarity. *P. Barbacena (PT)*
36. Mechanisms driving axial polarity during vascular patterning. *M. A. Domínguez-Cejudo (PT)*

# GENERAL INFORMATION

## ORGANIZERS



Fundaciónpröcnic



HIG EXCELLENCE IN RESEARCH

## DATES

Madrid, November 16 - 17, 2018

## VENUE

CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES (CNIC)

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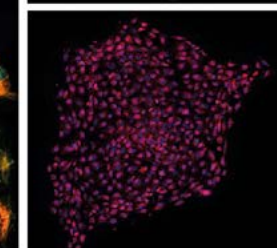
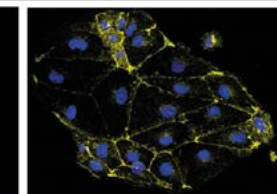
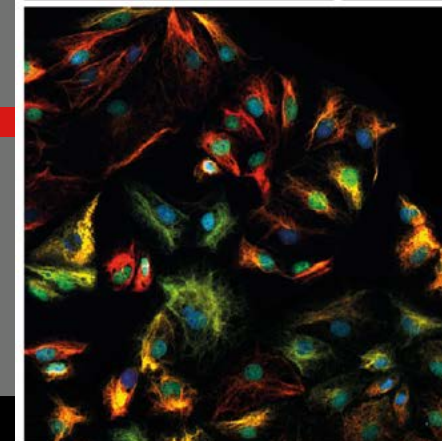
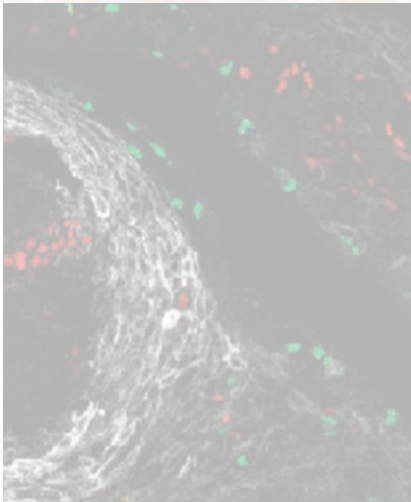
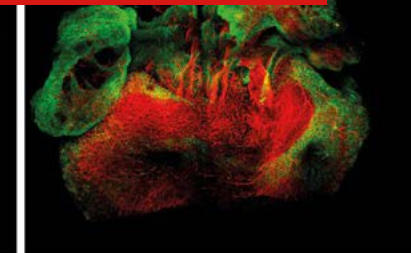
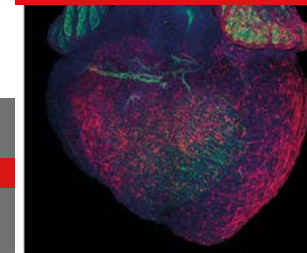
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Fundaciónpröcnic

## Emerging Concepts in Cardiovascular Biology

Madrid, November 16 - 17, 2018  
[www.cnic-conference.com](http://www.cnic-conference.com)



## organizers

Rui Benedito  
José Luis de la Pompa  
José María Pérez Pomares  
Didier Stainier

venue:

CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES (CNIC)  
Melchor Fernández Almagro, 3 - 28029 Madrid, Spain

## Friday, November 16, 2018

- 08:30-08:50 Registration  
08:50-09:00 Opening by the organizers

### Session Topic 1 - Biology of the distinct vascular cells

**Chairs: Rui Benedito and Michael Potente**

- 09:00-09:30 **Holger Gerhardt.** VIB-KU Leuven Center for Cancer Biology. Leuven, Belgium  
*Shaping and breaking symmetry in vascular networks*
- 09:30-10:00 **Martin Bennett.** University of Cambridge. UK  
*Vascular smooth muscle cell proliferation and senescence in atherosclerosis*
- 10:00-10:30 **Christer Betsholtz.** Uppsala University. Sweden  
*Decoding vascular cell types, subtypes and phenotypes by single cell RNASeq*
- 10:30-10:45 **Coffee Break – Poster Hang up**

### Session Topic 2 - Cardiovascular system development and repair

**Chairs: Salim Seyfried and José María Pérez-Pomares**

- 10:45-11:15 **Kristy Red-Horse.** Stanford University. USA  
*Coronary artery development and regeneration*
- 11:15-11:30 **Selected Short Talk**  
**Ignacio Flores.** CNIC. Madrid, Spain  
*Telomere control of cardiomyocyte binucleation and heart regeneration*
- 11:30-12:00 **Ken Poss.** Massachusetts Institute of Technology. Duke University Medical Center. Durham, USA  
*Natural heart regeneration mechanisms*
- 12:00-12:45 **Lunch**
- 12:00-13:45 **Poster viewing**
- 13:45-14:15 **Didier Stainier.** Max Planck Institute for Heart and Lung Research. Bad Nauheim. Germany  
*Heart formation and regeneration in zebrafish*
- 14:15-14:45 **5 x 5 minutes Flash presentations**  
**Sara González.** CNIC. Madrid, Spain  
*Role of SOX17 in coronary development and its requirement for the nestin neural enhancer activation in endothelial cells during arteriogenesis*  
**Gillermo Luxán.** Max Planck Institute for Molecular Biomedicine. Münster. Germany  
*The role of EPHB4 in adult coronary vasculature*  
**Noelia Muñoz.** CNIC. Madrid, Spain  
*Meis transcription factors are implicated in the regulation of cardiac morphogenesis and electrical impulse transmission*  
**Juan Antonio Guadix.** University of Málaga. Spain  
*COUP-TFII expression defines two different septum transversum cell compartments crucial to cardiac septation and compact ventricular wall growth*

**Wen Luo.** CNIC. Madrid, Spain  
*Coronary vasculature development and remodelling*

### Session Topic 3 - Cardiovascular Metabolism and Signalling

**Chairs: Didier Stainier and Holger Gerhardt**

- 14:45-15:15 **Mariona Graupera.** Institut d'Investigació Biomèdica de Bellvitge (IDIBELL). Barcelona. Spain  
*PI3King in blood vessel: the importance of keeping PIP3 levels in shape*
- 15:15-15:45 **Peter Carmeliet.** VIB-KU Leuven Center for Cancer Biology. Leuven, Belgium  
*Angiogenesis revisited: role and (therapeutic) implications of endothelial metabolism*
- 15:45-16:00 **Selected Short Talk**  
**Liam Ridge.** University College London Great Ormond Street Institute of Child Health. United Kingdom  
*The CXCL12-CXCR4 axis establishes cell polarity during endocardial-derived cell migration within cardiac semilunar valves*
- 16:00-16:30 **Michael Potente.** Max Planck Institute for Heart and Lung Research. Bad Nauheim. Germany  
*Endothelial nutrient acquisition during quiescence and growth*
- 16:30-16:45 **Selected Short Talk**  
**Sophie Payne.** University of Oxford, United Kingdom  
*Transcriptional regulation of coronary vessel growth during development and after injury*
- 16:45-17:15 **Zoltan Arany.** University of Pennsylvania. Philadelphia, USA  
*Metabolism in Endothelial Cells*
- 17:15-17:45 **Coffee Break – Poster viewing**

### Session Topic 4 - Biophysical forces in cardiovascular remodelling

**Chairs: Jose Luis de la Pompa and Kristy Red-Horse**

- 17:45-18:15 **Arndt Siekmann.** Perelman School of Medicine, University of Pennsylvania. USA  
*Forcing trees into shape: How hemodynamics coordinate blood vessel growth*
- 18:15-18:45 **Salim Seyfried.** University of Potsdam. Potsdam, Germany  
*The biomechanics of zebrafish cardiac valve morphogenesis*
- 18:45-19:00 **Claudio Franco.** Instituto de Medicina Molecular. Lisboa, Portugal  
*Endothelial cell orienting*
- 19:00-19:30 **Julien Vermot.** Institute of Genetics and Molecular and Cellular Biology (IGBMC). Strasbourg, France  
*Cell response to forces in the developing cardiovascular system*
- 19:30-20:00 **Cecilia Lo.** University of Pittsburgh, USA  
*Intrinsic myocardial defects in hypoplastic left heart syndrome*

## Saturday, November 17, 2018

### Session Topic 5 - Angiocrine function of vessels and organ regeneration

**Chairs: Tatiana Petrova and Claudio Franco**

- 9:00-9:30 **Ralf Adams.** Max Planck Institute for Molecular Biomedicine. Münster. Germany  
*Molecular heterogeneity and functional specialization of vascular cells*
- 9:30-9:45 **Selected Short Talk**  
**Richard Tyser.** University of Oxford, United Kingdom  
*Defining cardiac progenitor cell types genetically and anatomically at the single cell level during cardiac crescent development*
- 9:45-10:00 **Selected Short Talk**  
**Rashmi Priya.** Max Planck Institute for Heart and Lung Research. Bad Nauheim, Germany  
*Contractility anisotropy patterns the trabecular layer during cardiac development*
- 10:00-10:30 **Bin Zhou.** Shanghai Institutes for Biological Sciences. China  
*Role of resident vascular stem cells in blood vessel repair*
- 10:30-10:45 **Coffee Break – Poster viewing**
- 10:45-11:15 **Mauro Giacca.** International Centre for Genetic Engineering and Biotechnology. Trieste, Italy  
*Harnessing miRNAs for cardiac regeneration*
- 11:15-11:45 **Shahin Rafii.** Weill Cornell Medical College. New York. USA  
*Adaptable durable endothelial cells for organogenesis and tumorigenesis*

### Session Topic 6 - Lymphangiogenesis and its role in cardiac repair

**Chairs: Mariona Graupera and Arndt Siekmann**

- 11:45-12:15 **Tatiana Petrova.** University of Lausanne. Switzerland  
*Organ-specific mechanisms of lymphatic vascular development and function*
- 12:15-12:30 **3 x 5 minutes Flash presentations**  
**Fidel Lolo.** CNIC. Madrid, Spain  
*Caveolae integrate mechanical force of blood flow and LDL management during atherogenesis*  
**Ghislaine Lioux.** CNIC. Madrid, Spain  
*The second Heart field contributes to the cardiac lymphatic vasculature*  
**Álvaro Sahún.** CNIC. Madrid, Spain  
*New insights into post-myocardial infarction revascularization: MT4-MMP regulates vascular smooth muscle cell proliferation in coronary arteries*
- 12:30-13:00 **Paul Riley.** University of Oxford. UK  
*Immunomodulation via the cardiac lymphatic system to improve heart repair*
- 13:00-13:30 **Kari Alitalo.** University of Helsinki. Finland  
*Vascular growth factors in cardiac protection and repair*
- 13:30-13:45 **Concluding Remarks – Remove posters**
- 13:45 **Lunch boxes and Farewell**