To: ESC Council Office & the ESC Council Nominating Committee  
European Society of Cardiology

Application of Prof Antoine Bondue as Chairperson-elect for the Council on Cardiovascular Genomics of the European Society of Cardiology

Brussels, May 25th 2024,

Dear members of the ESC Council Nominating Committee,
Dear colleagues,

With this letter, I wish to submit my application for the Chairperson-elect position of the European Society of Cardiology Council on Cardiovascular Genomics.

Cardiovascular medicine is fast evolving, and genetics is part of this transformation. Indeed, genetic determinants are now recognized as major players for many cardiovascular diseases, and the field of genetics in cardiology is rapidly expanding. Beside providing useful diagnostic tools, inherited disease traits are pushing cardiologists into the field of personalized medicine, including gene therapy. With a rapid growing knowledge, genetics is not anymore restricted to rare diseases, but rather applies to many disorders in the clinics, including common diseases. In line with this expanding role of genetics in cardiology, the ESC Council on Cardiovascular Genomics is called to play a key role at the intersection of ESC Working Groups and Associations, aiming at promoting and diffusing cardiogenomic science and knowledge. To achieve this, the Council on Cardiovascular Genomics organizes scientific activities, generates scientific documents, and spreads newsletters with the goal to develop every cardiologist’s knowledge and skills on genetics. The Council on Cardiovascular Genomics should interact and play a role at the interface of many ESC bodies, increasing its visibility in many ESC activities. As a candidate for the Chairperson position, this will be my main objective.

Currently, I am a board member of the ESC Council on Cardiovascular Genomics since 2022, operating as Media Task Force coordinator. Previously, I was a member of this same Media Task Force (since August 2020; almost at the time of the launch of the council in 2019). Through this position, I had the opportunity to contribute to the first wave of council’s growth together with Prof Perry Elliott (past-Chair), Prof Heribert Shunkert (Chair) and Prof Stefan Kaab (Chairperson-elect), as well as the board members. Together, we produced various documents promoting genomic science and medicine in cardiovascular practice. We generated newsletters highlighting the Council’s activities and identified ten golden rules for the use of cardiogenomics in practice (see website). We also issued ten cardiovascular genomics insights (see website) discussing various areas of cardiogenetics in daily practice. All those documents were elaborated with the help of appointed experts emanating from various countries, promoting the work and members of ESC Working Groups and Associations. Through this, we also promoted interaction with ERNs, allowing to improve the Council’s visibility beyond the ESC. For the Council, I also participated to the council’s round table on gene therapy in cardiology in March 2023.

Knowing the importance of promoting education and awareness for inherited cardiac conditions, I participated in the elaboration of consensus documents for ESC journals. I am currently contributing with other board members to the elaboration a consensus document highlighting the role of genetic counseling in cardiology. I am also working on a consensus document describing the challenges to implement gene therapy in cardiology, with adequate clinical trials. In the past, I published a review on the complex roads from genotype to phenotype in dilated cardiomyopathy (Cardiovascular Research, 2018) and a consensus document on the role of genetic counselling in adult congenital heart
disease (European Journal on Cardiovascular Prevention, 2020). Those works were presented during the ESC congress in 2019 and at the EUROGUCH meeting in 2021. I also reviewed the 2020 ESC Guidelines for the management of adult congenital heart disease as a representative of the Belgian Society of Cardiology. As an ESC fellow and besides the Council on Cardiovascular Genomics, I am a member of the WG on Adult Congenital Heart Disease, of WG on Myocardial and pericardial diseases, as well as the WG on Myocardial Function. I am also a recent member of the Lancet Commission on sudden cardiac death.

Working for the ESC Council on Cardiovascular Genomics, I am also honored to be the local host (together with Professor Bart Loeys), for its first “in person” meeting, that will be held in Antwerp (Belgium) in December 2024. I am willing to further improve the scientific and educational content regarding cardiogenomics, including generating consensus documents, disseminating Guidelines, and building networking opportunities within the ESC community.

At the national level, I launched and still lead the BELCARGEN council, a Belgian Council for Cardiovascular Genomics (at the interface between the Belgian Society of Cardiology and the Belgian Society for Human Genetics). I am also the current president of the Belgian Heart League and the Past-President of the Belgian Working group on Adult Congenital Heart disease.

At the clinical level, I am Head of the department of Cardiology since 2015 and Rare Disease director of the HUB Erasme Hospital in Brussels (the academic hospital of the Université libre de Bruxelles, Brussels). After working on cardiovascular development, my research projects are nowadays focused on genetics, cardiomyopathy, pulmonary arterial hypertension and congenital heart disease.

Overall, it would be a privilege for me to work for the ESC as Chair-Elect person for the Council on Cardiovascular Genomics. Through a dynamic collaboration with the board members, I am convinced that we can build the future of the ESC Council on Cardiovascular Genomics in line with the ESC expectations.

Thank you for considering my application.

Sincerely,

Prof Antoine Bondue, MD, PhD, FESC
ESC Council on Cardiovascular Genomics Board member - Media Task Force coordinator
Head of the department of Cardiology and Rare Disease Director of the HUB Hôpital Erasme, Brussels
President of the Belgian Heart Ligue
Chairperson of the BELCARGEN Council
Short CURRICULUM VITAE for Antoine BONDUE

May 2024

Born in Ixelles, Belgium, January 24th 1976
Nationality: Belgian
National Registry ID: 76.01.24-243.58
Marital status: married, 2 children
Medical License: 1-8916483-730

Professional address:
Hôpital universitaire de Bruxelles
Erasme Hospital
Department of Cardiology
808, route de Lennik
B-1070 Bruxelles, Belgique
Sec: +32-2-555 3907
DECT: +32-2-555 4639
Cell Phone: +32-496-176456
e-mail: Antoine.Bondue@hubruxelles.be

- Head of the Department of Cardiology (HUB Erasme Hospital, Université libre de Bruxelles). Clinical cardiogeneticist in the ULB Genetics Center (Brussels).
- Rare Disease Director of the Hôpital universitaire de Bruxelles (H.U.B.; Université libre de Bruxelles)
- Professor at the Faculty of Medicine of the Université libre de Bruxelles (chargé de cours)
- Board member and Media Task Force Coordinator of the ESC Council on Cardiovascular Genomics (board member; European Society of Cardiology); Fellow of the European Society of Cardiology
- Chairperson of the BELCARGEN council (Belgian Society of Cardiology); board member of the Belgian Society of Cardiology; Past-Chair of the Belgian working Group on Adult Congenital Heart Disease
- President of the Scientific Committee of the Belgian Heart Ligue

I- EDUCATION:

- 3rd Cycle:
  - 2016: Interuniversitary Certificate on Medical Management (CIMM)
  - 2015, 2018 & 2022: Good Clinical Practice certificate for Clinical Research
  - 2012: Certificate on animal health for experimental purpose (ULB)
  - 2010: National University Degree: board of Internal Medicine/Cardiology (Université Libre de Bruxelles - ULB, Belgium), with summa cum laude.
  - 2009-2012: Postdoctoral fellow in the laboratory of Pr. Cédric Blanpain, IRIBHM, Université Libre de Bruxelles, as a « Chargé de recherche » of the belgian FNRS.
  - 2005-2009: PhD degree in Medical Science, Université Libre de Bruxelles, Supervisor: Pr. Cédric Blanpain «Mesp1 functions in multipotent cardiovascular progenitor specification », as an « Aspirant » of the belgian FNRS.
  - 2003: Graduated in Acute Medicine, Université Libre de Bruxelles, with summa cum laude.
• 2nd Cycle:
  - 2001: MD graduated from Medical School of the Université Libre de Bruxelles (ULB, Belgium), with summa cum laude.

II- PROFESSIONAL EXPERIENCE & POSITIONS
  - Since 2022: Rare Diseases Director of the Hôpital Universitaire de Bruxelles (H.U.B.; Université Libre de Bruxelles)
  - Since 2020: “Chargé de cours” at the Université Libre de Bruxelles with a teaching activity in Semiology (MEDI-G3310 – 30h) and coordination of seminars in Erasme hospital (HOSP-G-177 - 15 h)
  - Since July 2015: Operational Director of the Department of Cardiology – CUB Erasme Hospital - Brussels with a clinical and research activity on cardiovascular genetics within the ULB Genetics Center (Brussels).
  - Since 2016: Professor in the department of Cardiology – Hôpital Erasme
  - 2012-2013: FNRS fellow as “Postdoctorate Clinical Master Specialist” in the laboratory of Cédric Blanpain (IRIBHM – ULB) – transcriptional regulation of cardiovascular development.

Main Clinical skills:
  - Cardiovascular genetics and rare cardiovascular diseases
  - Cardiac imaging
  - Congenital heart disease, Cardiomyopathies, Valvular heart disease, Pulmonary Arterial Hypertension, Aortopathies, Rythmic disorders

III-TEACHING ACTIVITIES
  - Since 2020: Academic coordinator of the Belgian Interuniversity Course on Echocardiography
  - Since 2020: Titular of the course “Semiaology and propaedeutic in Medicine” – MEDI-G3310 – 30 hours/year
  - Since 2020: President of the Scientific Committee of the Belgian Heart Ligue
  - Since 2017: Master in translational Medicine – BIME - Coordinator of the cardiopulmonary module
- Since 2015: Seminars of cardiology in Erasme hospital (HOSP-G-177- 15h)
- Since 2015: Scientific board member for the annual congress of the Belgian Society of Cardiology
- Since 2015: Annual Symposium for general practitioner, department of cardiology, Erasme Hospital

IV. PUBLICATIONS AND SCIENTIFIC ACTIVITIES

4-1 PUBLICATIONS IN PEER-REVIEWED JOURNALS

Inflammation, infection, and cardiovascular risk.
Goldman M, Bondue A, Cogan E.
PMD: 38492939

Serious unexpected vascular events in two patients with lymphocytic variant hypereosinophilic syndrome.
Torcida N, Casalino G, Bondue A, Jodaitis L, Vanden Eynden F, Roufoss F.
PMD: 37829688

Pulmonary artery wedge pressure and left ventricular end-diastolic pressure during exercise in patients with dyspnoea.
PMD: 37670852

Pediatric pulmonary arterial hypertension due to a novel homozygous GDF2 missense variant affecting BMP9 processing and activity.
PMD: 37249087

Right Heart Adaptation to Exercise in Pulmonary Hypertension: An Invasive Hemodynamic Study.

Lung diffusion capacity correlates with pre-implant pulmonary hypertension and predicts outcome after LVAD implantation.

Expectant Management or Early Ibuprofen for Patent Ductus Arteriosus.

An updated meta-analysis of hemodynamics markers of prognosis in patients with pulmonary hypertension due to left heart disease.

Baratto C, Caravita S, Soranna D, Dewachter C, **Bondue A**, Zambon A, Badano LP, Parati G, Vachiery JL.


Impact of COVID-19 lockdown on exercise capacity in PAH patients.

Baratto C, Dewachter C, Caravita S, Zambon A, **Bondue A**, Parati G, Vachiery JL.


Exercise haemodynamics in heart failure with preserved ejection fraction: a systematic review and meta-analysis.

Baratto C, Caravita S, Soranna D, Dewachter C, **Bondue A**, Zambon A, Badano LP, Parati G, Vachiery JL.

**ESC Heart Fail.** 2022 Jun 24. doi: 10.1002/ehf2.13979. PMID: 35748109

Early-onset and severe pulmonary arterial hypertension due to a novel compound heterozygous association of rare VHL mutations: A case report and review of existing data.

Chomette L, Migeotte I, Dewachter C, Vachiery JL, Smits G, **Bondue A**.


Contemporary Management of Severe Symptomatic Aortic Stenosis


Summary of 2020 ESC guidelines on non-STE ACS, adult congenital heart disease, sports cardiology and atrial fibrillation.

Claeys MJ, **Bondue A**, Lancellotti P, De Pauw M.


Pregnancy outcome in thoracic aortic disease data from the Registry Of Pregnancy And Cardiac disease.


**Heart.** 2021 Nov;107(21):1704-1709. doi: 10.1136/heartjnl-2020-318183. PMID: 33468574

Hydropsinophilic syndrome: considerations for the cardiologist.

**Bondue A**, Carpentier C, Roufosse F.


Current Limitations of Invasive Exercise Hemodynamics for the Diagnosis of Heart Failure With Preserved Ejection Fraction.


**Circ Heart Fail.** 2021 May;14(5):e007555. doi: 10.1161/CIRCHEARTFAILURE.120.007555. PMID: 33951935.
Feasibility and cost of FH cascade screening in Belgium (BEL-CASCADE) including a novel rapid rule-out strategy.

Combined Post-capillary and Pre-capillary Pulmonary Hypertension in Left Heart Diseases: is there a genetic component?
Chomette L, Caravita S, Dewachter C, Abramowicz M, Vachiery JL, Bondue A.

Screening for Fabry disease in male patients with arrhythmia requiring pacemaker or ICD.
Dimitri Hemelsoet, Jan De Keyser, Frederic Van Heuverswyn, Rik Willems, Hans Vandekerckhove, Antoine Bondue, Carlo De Asmundis, Johan Saenen, Stefaan Van de Walle, Pascal Godart, Christoph Kampmann, Hedwig Stepman, Brian Poppe, and Wim Terryn

2020 ESC Guidelines for the management of adult congenital heart disease.


Genetic counselling and testing in adults with congenital heart disease: A consensus document of the ESC Working Group of Grown-Up Congenital Heart Disease, the ESC Working Group on Aorta and Peripheral Vascular Disease and the European Society of Human Genetics.

Non-invasive versus invasive pressure/flow relationship of the pulmonary circulation: bias and error.

A Belgian consensus strategy to identify familial hypercholesterolaemia in the coronary care unit and its subsequent cascade screening and treatment: BEL-FaHST (The BELgium Familial Hypercholesterolaemia SStrategy).
Olivier S. Descamps, Olivier Van Caenegem, Jean-Luc Balligand, Christophe Beaulye, Antoine Bondue, Stéphane Carlier, Emilie Castermans, Fabien Chenot, Marc Claeys, Christophe De Block, Anne de Leener, Antoine De Meester, Fabian Demeure, Herbert De Raedt, Walter Desmet, Ivan Elegeert, Michel Guillaume, Michel P Hermans, Etienne Hoffer, Raymond Kacenelenbogen, Patrizio Lancellotti,
Michel Langlois, Attilio Leone, Ann Mertens, Nicolas Paquot, Jean-Louis Vanoverschelde, Ann Verhaegen, Pieter Vermeersch, Caroline Wallemacq, Ernst Rietzschel. On Behalf of the Belgian Atherosclerosis Society/Belgian Lipid Club (BAS/BLC), the Belgian Society of Cardiology (BSC) and the Royal Belgian Society of Laboratory Medicine (RBSLM). 
*Atherosclerosis*; 2018 Oct;277:369-376. doi: 10.1016/j.atherosclerosis.2018.05.037

Complex roads from genotype to phenotype in dilated cardiomyopathy: scientific update from the Working Group of Myocardial Function of the European Society of Cardiology.

Antoine Bondue, Eloisa Arbustini, Anna M. Bianco, Michele Ciccarelli, Dana Dawson, Matteo De Rosa, Naza Hamdani, Denise Hilfiker-Kleiner, Benjamin Meder, Adelino Leite Moreira, Thomas Thum, Carlo Gabriele Torchetti, Gilda Varricchi, Jolanda Van der Velden, Roddy Walsh, Stephane Heymans

Clinical phenotypes and outcomes of pulmonary hypertension due to left heart disease: role of the pre-capillary component


Haemodynamics to predict outcome in pulmonary hypertension due to left heart disease: a meta-analysis


Left ventricular hypertrophy: how to identity the cause?

Bondue A.

Pulmonary hypertension and ventilation during exercise: Role of the pre-capillary component.


Mesp1 controls the speed and orientation of cardiovascular progenitor migration.


NKX2-5 mutations causative for congenital heart disease retain functionality and are directed to hundreds of targets.


Early lineage restriction in temporally distinct populations of Mesp1 progenitors during mammalian heart development.

Clarke RL, Yzaguirre AD, Yashiro-Ohtani Y, Bondue A, Blanpain C, Pear WS, Speck NA, Keller G. The expression of Sox17 identifies and regulates haemogenic endothelium.

*JVA, LT and AB contributed equally to this work.*

Eomesodermin induces Mesp1 expression and cardiac differentiation from embryonic stem cells in the absence of Activin.


Defining the earliest step of cardiovascular progenitor specification during embryonic stem cell differentiation.


**Bondue A** and Blanpain C

Mesp1 : a key regulator of cardiovascular progenitor specification.


Mesp1 acts as a master regulator of multipotent cardiovascular progenitor specification.


Unger P, **Bondue A**, Loiseau J, Dessy H, Primo G, Le Clerc JL.

Right-to-left shunting with normal pulmonary pressure complicating atrial septal defect surgery.


The core domain of chemokines binds CCR5 extracellular domains while their amino terminus interacts with the transmembrane helix bundle.


**Bondue A**, Jao SC, Blanpain C, Parmentier M, LiWang PJ

Characterization of the role of the N-loop of MIP-1 beta in CCR5 binding.


*AB and CG contributed equally to this work.*

Activation of CCR5 by chemokines involves an aromatic cluster between transmembrane helices 2 and 3.


Characterization of a novel VPAC(1) selective agonist and identification of the receptor domains implicated in the carboxyl-terminal peptide recognition.


**4-2 SCIENTIFIC SOCIETY MEMBER**

2022: Media task force coordinator and board member of the ESC Council on Cardiovascular Genomics (European Society of Cardiology)
2022: President of the Belgian Council on Cardiogenomics (BELCARGEN; Belgian Society of Cardiology)
Since 2021: Member of the European Society of Cardiology Council on Cardiovascular Genomics
Since 2020: President of the scientific committee of the Belgian Heart Ligue
2017: Member of the scientific committee of the “Fonds Erasme”
2017: Board member of the scientific committee of the Princess Lilian Foundation (and administrative board since 2021)
2017: Board Member of the Belgian Foundation for “Medications and Society”
2017-2021: President of the Belgian Working Group on Adult Congenital Heart Disease
2016: Board Member of the Rijlant Foundation
Since 2016: Fellow of the European Society of Cardiology
2016: Board member of the scientific committee of the Fonds pour la Chirurgie Cardiaque
Since 2015: Member of the ESC working group on Adult Congenital Heart Disease
2015: Member of the College for Rare Diseases of the ULB
In 2013: Member or the European Association for Cardiovascular Imaging (European Society of Cardiology)
Since 2012: Board member of the “Grown-Up Congenital Heart Disease” working group of the Belgian Society of Cardiology (ordinary member since 2011)
Since 2012: Member of the Working group on myocardial function of the European Society of Cardiology
Since 2010: Member of the European Society of Cardiology
Since 2004: Member of the Belgian Society of Cardiology

V-LOGISTICAL AND ORGANIZATIONAL ACTIVITIES (BESIDE SCIENTIFIC SOCIETIES)

5.1. FACULTY

- 2015-2024: ULB Faculty of Medicine: member of the Faculty Council
- 2017-2024: ULB Faculty of Medicine: member of the Research Commission & teaching committee
- 2017-2021: ULB Faculty of Medicine: board member

5.2 HOSPITALS

- 2021-2023: member of the Common Medical Council for the CHORUS hospital network
- 2021-2023: Board member of the Medical Council of the Erasme Hospital (ULB)
- 2021-2022: Member of the “Conseil Hospitalier de la Recherche Clinique” – Erasme Hospital
- 2016-2023: Member of the board of Directors of the CHU Tivoli (ULB)