



**Dr Sébastien Bonnet PhD; F.A.H.A**

Full Professor in medicine

Distinguished Research Scholars FRQS chair

Immediate Past Chair of the American Heart Association 3CPR council

Director of the Pulmonary hypertension research group

Centre de recherche de IUCPQ 2725 Chemin Sainte-Foy

Local A2134

G1V 4G5 Québec, (Québec) Canada

418 656 8711 ext 5427 (lab) 3728 (office)

<https://phrg.ca/>

**A. Formation (Certificates / Academic Background)**

|           |   |
|-----------|---|
| 2011      | Fellow, American Heart Association (F.A.H.A)  |
| 2008-2009 | Heart and stroke foundation of Canada - New investigator award, "Dehydroepiandrosterone reverses vascular remodeling diseases"                                  |
| 2004-2006 | TORCH Trainee, University of Alberta, Edmonton Canada   |
| 2004-2006 | Fellow Post-doctoral, Vascular Biology Research Group, University of Alberta, Edmonton Canada   |
| 2001-2003 | PhD en Santé et biologie, Université de Bordeaux2, France "Rôle des canaux potassiques et du calcium intracellulaire dans l'hypertension artérielle pulmonaire" |
| 2000      | DEA en Santé et biologie, Université de Bordeaux 2, France "Rôle des contractions spontanées de l'artère pulmonaire dans l'hypertension artérielle pulmonaire"  |
| 1999-2000 | Master en Électrophysiologie Cardiovasculaire, Université de Trente, Italie   |
| 1999      | Master en Physiologie et Pharmacologie, Université de Tours, France   |
| 1998      | License en Physiologie cellulaire et moléculaire, Université de Tours, France   |
| 1997      | DEUG en Biologie, Université de Tours, France   |
| 1994      | Baccalauréat en Sciences, Tours, France   |

**B. Affiliation and employment**

|             |  |
|-------------|--|
| 2025-       | 20% Professorship ILH Giessen Germany  |
| 2016/08     | Full professor, Faculty of medicine, Laval University  |
| 2015 – 2020 | Canadian Research Chair holder in translational research in pulmonary vascular diseases, Laval University  |
| 2009 – 2015 | Canadian Research Chair holder in Vascular Biology, Laval University   |
| 2008 – 2016 | Associate professor with tenure, Faculty of medicine, Université Laval   |
| 2007 - 2008 | Assistant professor, University of Alberta - Medicine  |
| 2003 - 2006 | Postdoctoral Fellow, University of Alberta – Medicine department   |
| 2001 - 2002 | Teaching Assistant, Université Victor Ségalen Bordeaux 2 – Medicine department   |
| 2011        | Founder and Director of the Pulmonary Hypertension Research Group (fundamental and clinical research), Centre de recherche de l'Institut universitaire de cardiologie et de pneumologie de Québec (CRIUCPQ). |

**C. Funding (active and completed within the past 5 years)**

| Period  | Title | Principal applicant   | Co-applicants | Funding source                                  | Program name                | Amount (CAN\$)                                 |
|---|-------|---|---------------|---|-----------------------------|--|
| <b>Grants obtained – currently active [9]</b> |       |   |               |   |                             |  |
| 2023  | 2028  | Targeting Mitosis and Senescence to Reverse Pulmonary Hypertension: A Promising Therapeutic Strategy                      | S. Provencher | S. Bonnet<br>O. Boucherat                       | CIHR                        | Project grant<br>864 450\$<br>172 890\$/yr     |
| 2025  | 2030  | Chronobiology and pulmonary hypertension  | S. Bonnet     | S. Provencher                                   | CIHR                        | Project grant<br>1,218 670\$                   |
| 2024  | 2029  | Exploring the Interplay between Metabolic and Epigenetic Signalling Pathways to Regulate Neointima Hyperplasia            | S. Bonnet     | S. Provencher<br>P. Voisine                     | CIHR                        | Project Grant<br>1 116 900\$<br>(223 380\$/yr) |
| 2023  | 2028  | Targeting Hypusine signaling: an opportunity to counter pulmonary vascular remodelling in pulmonary arterial hypertension | S. Bonnet     | S. Provencher                                   | CIHR                        | Project Grant<br>845 325\$<br>(169 065\$/yr)   |
| 2023  | 2027  | Estrogen Receptor-alpha Effects on Right Ventricular Vascular Density and   | T. Lahm       | S. Bonnet<br>T. Nemkov<br>S. Sasse<br>K. Suresh | Colorado health care system | VA Merit submission<br>709 596\$<br>(USD)      |

| Period                                  |      | Title   | Principal applicant        | Co-applicants   | Funding source          | Program name              | Amount (CAN\$)                |
|---|------|---|----------------------------|---|-------------------------|---------------------------|-------------------------------|
|   |      | Angiogenesis in Pulmonary Hypertension  |                            | A. Alessandro<br>A. Gerber<br>A. Hevener<br>P. Maclean  |                         |                           |                               |
| 2022                                    | 2027 | ATP Citrate Lyase: an attractive target at the nexus of metabolic and epigenetic alterations in pulmonary arterial hypertension                     | O. Boucherat               | S. Bonnet<br>S. Provencher  | CIHR                    | Project Grant             | 742,050\$<br>(148 410\$/yr)   |
| 2022                                    | 2026 | Endothelial-pericyte interactions in the pathogenesis of pulmonary arterial hypertension  | V. De Jesus Perez          | S. Bonnet   | NIH                     | Research Project          | 57 000\$<br>(USD)             |
| 2021                                    | 2025 | Étude de la physiopathologie de l'hypertension artérielle pulmonaire et d'insuffisance cardiaque droite – supplément de recherche chercheur émérite | S. Bonnet                  |   | FRQS                    | Chercheur émérite         | 280 000\$<br>(70 000\$/yr)    |
| 2020                                    | 2025 | The anti-oxidative DNA damage protein MTH1, the novel pulmonary hypertension Achilles heel  | S. Bonnet                  | O. Boucherat<br>S. Provencher   | CIHR                    | Project grant             | 749,700\$<br>(149 940\$/yr)   |
| 2019                                    | 2024 | Role of the IncH19 as a novel biomarker and therapeutic target in RV failure in PAH   | O. Boucherat               | S. Bonnet<br>S. Provencher  | CIHR                    | Project Scheme            | 738,225\$<br>(147,645\$/yr)   |
| 2018                                    | 2023 | PARP inhibition in PAH: A Phase 1 clinical trial  | S.Provencher<br>S. Bonnet  | J. Granton<br>E. Michelakis<br>L. Mielniczuk  | CIHR                    | Project Scheme            | 267,750\$<br>(89,250\$/yr)    |
| 2018                                    | 2023 | PARP inhibition in PAH: A Phase 1 clinical trial  | S.Provencher<br>S. Bonnet  | J. Granton<br>E. Michelakis<br>L. Mielniczuk  | Astra Zeneca            | In-kind contribution only | 744,000\$<br>(248,000\$/yr)   |
| 2019                                    | 2023 | BRD4 inhibition in pulmonary arterial hypertension: a phase 2 clinical trial  | S. Provencher<br>S. Bonnet | D.Langleben<br>H. Bogaard<br>J. Granton<br>M. Toshner<br>S. Metha<br>A. Vonk<br>Noordegraaf<br>K. Stenmark<br>J. Weatherald | Resverlogix             | CIHR-industry partnership | 1 494 600\$<br>(373 650\$/yr) |
| 2018                                    | 2023 | Replication stress and pulmonary hypertension: Role for checkpoint kinase 1   | S. Bonnet                  | O. Boucherat<br>S. Provencher   | CIHR                    | Project Scheme            | 711,450\$<br>(142,290\$/yr)   |
| <b>Grants obtained – Completed [11]</b> |      |   |                            |   |                         |                           |                               |
| 2020                                    | 2021 | Role of ACLY in the pathogenesis of pulmonary hypertension  | S. Bonnet                  |   | Fondation de l'IUCPQ-UL | Concours-Pneumologie      | 30,000\$                      |
| 2019                                    | 2022 | Apabetalone for PAH: a pilot clinical study   | S. Provencher              | S. Bonnet   | Resverlogix             | Unrestricted grant        | 108,711\$<br>(36,237\$/yr)    |

| Period |      | Title   | Principal applicant | Co-applicants                                 | Funding source                        | Program name                         | Amount (CAN\$)                |
|--------|------|---|---------------------|---|---------------------------------------|--------------------------------------|-------------------------------|
| 2019   | 2020 | Apabetalone for PAH: a pilot clinical study   | S. Provencher       | S. Bonnet<br>G. Dion<br>S. Martel<br>M. Simon | Fondation de l'IUCPQ-UL               | Concours – Pneumologie               | 30,000\$<br>(30,000\$/yr)     |
| 2019   | 2020 | Role of the epigenetic factor EZH2 in pulmonary arterial hypertension                           | S. Bonnet           |   | Fondation de l'IUCPQ-UL               | Concours – Pneumologie               | 30,000\$<br>(30,000\$/yr)     |
| 2018   | 2019 | BMPR2 gene mutation altered metabolism and contributed to development of Pulmonary Hypertension | S. Bonnet           | F. Perros                                     | Pulmonary Vascular Research Institute | The Dinosaur Trust                   | 50 000 £<br>(84 000\$<br>CAD) |
| 2017   | 2020 | Role of FOXM1 in DNA damage response and cell survival in pulmonary hypertension                | S. Bonnet           | S.Provencher<br>O. Boucherat                  | Heart and Stroke Foundation of Canada | Grants in aid                        | 272,400\$<br>(90,800\$/yr)    |
| 2016   | 2021 | Prohibitin: a circulating mitokine involved in the Pulmonary Arterial Hypertension Syndrome     | R. Paulin           | S. Provencher<br>S. Bonnet<br>O. Boucherat    | CIHR operating grant                  | Project Scheme - 2016 1st Live Pilot | 676,584\$<br>(135,317\$/yr)   |
| 2015   | 2020 | RUNX2-related Pulmonary Artery Remodeling and Calcification in Pulmonary Arterial Hypertension  | S. Provencher       | S. Bonnet                                     | CIHR operating grant                  | Appareil respiratoire                | 851 833\$<br>(170 367\$/yr)   |

#### **D. Interruptions and Personal Circumstances**

None to declare

### Section 1 - Publication conventions in the discipline

**A. Publication convention in the nominee's discipline(s)** –Quality and quantity represent the major emphasis for publications in the nominee's discipline, with a focus on articles that are of original research, as well as invited reviews. As a basic scientist and preclinical researcher, taxpayer funded research is the primary means supporting the nominee's research, and there is a concerted effort to publish all studies undertaken in the lab. The publication of original research that is of higher quality (often reflected by the impact factor of the journal) is usually a lengthier process and requires a greater resource commitment. In general, trainees are expected and provided opportunities to present their own work for local meetings or national/international conferences, whereas the nominee (principal investigator) is responsible for presenting the trainee's work for invited presentations.

**B. Choices of venues for the dissemination of the nominee's research results** –Research from the nominee's discipline is often presented as poster or oral presentations at both national and international conferences, and eventually published as original research at various journals in the nominee's discipline following peer-review. For the dissemination of results in peer-reviewed journals, the convention is to aim for journals with a broader topic breadth with a greater overall reach in audience. Although impact factor as a journal metric has its flaws, the preference in the nominee's discipline is to publish manuscripts in journals with higher impact factors, as they are more likely to be read/cited by the field, while likely having the greater reach in audience.

**C. Citation conventions in the nominee's discipline(s)** –Authorship for trainees on original research articles in the nominee's discipline is determined by contribution. The trainee that performs most experiments, data analysis, and is responsible for writing the manuscript is designated the first author. Trainees that contribute to the work either intellectually or experimentally or are critically involved in assisting with the writing of the manuscript will be co-authors. The principal investigator is usually the individual responsible for designing, overseeing, and funding the study, while also training the individuals performing the work, and is designated as the senior and corresponding author. Higher quality publications that take longer may often involve 2 trainees or 2 senior investigators who both make significant and equal contributions to original research, and they may share first-or senior-authorship, respectively. In these situations, the order of who appears first (for trainees) or last (for principal investigators) does not matter and is deemed equal.

**D. Publication conventions as it relates to the students and trainees** –In order to remain competitive at both the national and international stage in the nominee's discipline, trainees are expected to publish 1-2 or 3-4 first-author original research articles within a MSc or PhD Thesis program, respectively. At the post-doctoral level, it is also expected that 3-4 first-author original research articles will be published, usually with a goal of publishing higher quality work in journals of higher impact/reach. Due to the breadth of publishing high-quality original research in the nominee's discipline, it is rare for undergraduate or summer students to publish as first-author, but these individuals will often receive co-authorship on publications. Students and trainees at all levels are expected to present their research as posters or podium oral presentations at local, national, and international meetings, with podium presentations being viewed as the more prestigious of the two.

**E. Particularities and/or challenges involved in the publication of interdisciplinary or multidisciplinary research results** –A major challenge for a basic science and preclinical researcher in the field of biomedical research is using animals to accurately model human pathology and disease when trying to discover a new drug target or therapeutic approach. Despite a highly similar genome, there are numerous intrinsic differences between animals and humans (e.g., nutrient and drug metabolism, lifespan, etc.) that may account for lack of reproducibility/translation when going from animals to humans. Thus, multiple animal models demonstrating reproducibility of results are preferred before moving to human studies for testing potential translation.

## Section 2 – Significant contributions

**SIGNIFICANT CONTRIBUTIONS OVERVIEW:** My Translational-Clinical Research Program not only opened new avenues of investigations and treatment for PAH but is also aimed to facilitate KT in the interest of the health of Canadians. Our contributions in the field attest for feasibility of our program and again fulfill Tier 1 CRC criteria.

**Advances in research that will likely impact Canadians' health:** I have established myself as the world leader in epigenetic-based research in PAH by being the first demonstrating the mechanistic and therapeutic potential of miRNAs/lncRNAs and BET in the lungs<sup>(1-5)</sup>, in the RV<sup>(6, 7)</sup> and skeletal muscles<sup>(8)</sup> of PAH patients. I also pioneered the role of DNA damage response (DDR) activation in PAH<sup>(9-11)</sup>. I established the “cancer theory of PAH”<sup>(12)</sup> that showed that similarly to cancer, PAH is associated with increased oncoprotein expression<sup>(13-16)</sup> that can be used as biomarkers<sup>(17)</sup> enhancing our ability to diagnose and prognosticate PAH. Also, our findings have contributed to elucidating the mechanism of the Warburg effect contributing to the hyperproliferative/apoptotic resistance phenotype seen in PAH<sup>(18-23)</sup> and cancer<sup>(24)</sup>. Finally, we were the first evocating PAH as a systemic disease with multi organs disorders<sup>(25-29)</sup>.

**Advances in research that are already impacting Canadians' health:** We also translated our breaking out preclinical findings to 2 ongoing multicentric clinical trials NCT03782818 & NCT03655704 confirming the strong translational aspects of our program and our ability to make a major contribution to advancing therapy for this incurable disease. Finally, our work has contributed to other clinical trials like DHEA (NCT03648385)<sup>(30-32)</sup> and trimetazidine (NCT03273387)<sup>(23)</sup>.

**Dissemination of Research Results:** My publication record clearly shows my ability to answer fundamental and clinical questions, to carry through projects and publish in highly influential journals (5-yr mean IF of 15). My ~200 papers have been increasingly cited >30,000 times (>17,000 times since 2018). H-index: 73 and i10-index: 144 (Google scholar).

**1. Epigenetic and vascular remodeling:** including role for microRNA-204 (JEM 2011, IF 14 and AJRCCM 2016, IF 29 ), miR-223 (AJPCP 2015), miR-138 and miR-25 (AJRCCM 2017, IF 29), bromodomain Containing Protein-4 (Circ Research 2015 IF 17, AJRCCM2019 IF 29), histone Deacetylase-6 ( Scientific Rep 2017, IF 4.3); P300 and histone acetylation (Science TM 2022 IF19) in pulmonary vascular diseases; BRD4/DNA damage in coronary artery disease contributing to heart failure (ATVB 2017 IF 7) as well as the role of miR-208, miR-126 and long-non coding RNA H19 in heart failure (Circ Res. 2015, IF 16; Circulation 2015, IF 30; H19 Circulation 2020 IF 30). We are now conducting the first ever epigenetic based clinical trial in pulmonary vascular remodeling APPROACH trial, NCT03655704 for which I am a PI.

**2. DNA damage in the PAH pathobiology:** We demonstrated for the first time that DNA damage is etiologically implicated in PAH and showed that PARP-1 downregulation (Circulation 2014, IF39) can reverses PAH. Later we showed that the protein CHK1 control PAH progression (ATVB 2019 IF8) and role that Pim-1/Ku70 axis regulates DNA damage response (ATVB IF8 2020). We are now conducted the first ever DNA damage based clinical trial in PAH OPTION trial, NCT03782818 for which I am a PI.

**3. Transcription factors in the PAH pathobiology:** RUNX-2-related pro-calcification processes occurring within pulmonary arteries of PAH patients (AJRCCM 2016, IF29), contributing to stiffness of the vessels. We established the role of STAT3 (Circulation 2011 IF39 and (ERJ 2012 IF 32), KLF5 (Respir Res. 2011 IF 6.5) and FOXM1 finally the role of SMAD3 in PAH signaling (AJRCCM 2018 IF29) and SMAD3 signaling (AJRCCM 2018, IF29) in PAH. Along with our DNA damage findings these publications have contributed to the establishment of the cancer theory of PAH, which has now been accepted by the field.

**4. Systemic manifestation of PAH:** We showed that proteomic signature in skeletal muscles of PAH patients is similar to the one seen in the lungs. Reduced angiogenesis and capillary rarefaction within the skeletal muscle (AJRCCM 2014, IF29), accounting for impaired muscle oxygenation. We demonstrated the existence of capillary rarefaction within the right ventricle (RV) of PAH patients

(Circulation 2015, IF39). The same phenotype (reduced perfusion and oxygenation) was observed within the brain of PAH patients (JAHA 2017, IF 5.1), contributing to patients' symptoms and exercise intolerance. Finally, we established the existence of coronary artery disease in PAH contributing to RV failure (ATVB 2017 IF8). We were the first group to established that manifestation seen in the lungs of PAH patients can spread to other organs.

**5. Guideline papers:** Thanks to important implication in multiple international scientific board, I have directly contributed to the establishment of several research guidelines: **A)** To ensure good preclinical research, facilitate translation and clinical research, we established the first preclinical research guidelines in PAH. **B)** As part of scientific board and as a TASK force 1 (AJRCCM 2017 IF29 and Circulation Res 2018 IF17) member of the world symposium of PAH, I contributed to the establishment of the priorities in PAH research (ERJ 2019 IF 32). As a member of the international PAH Genetic consortium, I have contributed to 2 guidelines on genetic testing in PAH (ERJ 2023 IF32 and Genetics in Med IF8.9) **C)** Being internationally recognized for my mentorship of several successful young investigator; I have been invited by the AHA to contribute to career development guidelines (Circulation 2018 IF39).

Overall, my previous accomplishments truly attest my expertise in vascular remodeling diseases and epigenetic and fully demonstrate my ability to build strong bridges between basic research and clinical investigation.

**Section 3 – Research contributions****A - Peer reviewed contributions**

Total number of published articles: 221

Published articles in the last 5 years: 105

H-index 77

**Original research articles****2026**

- 1. Breast Cancer Reveals Latent *BMP2*-Related Susceptibility to Pulmonary Hypertension.** Toro V, Mougín M, Brossat C, Jambon-Barbara C, Hlavaty A, Guay CA, El Kabbout R, Bilodeau C, Grobs Y, Martineau S, Breuils-Bonnet S, Abi-Sleimen A, Ruffenach G, Boucherat O, Bisserier M, Provencher S, **Bonnet S**, Montani D, Khouri C, Potus F. *Circulation*. 2026 Feb 17;153(7):516-533. doi: 10.1161/CIRCULATIONAHA.125.079067. Epub 2026 Jan 28. PMID: 41603037 Free PMC article.
- 2. Advanced Molecular, Metabolic, and Imaging Approaches to Characterizing Right Ventricular Failure: A Scientific Statement From the American Heart Association.** Pullamsetti SS, Vanderpool RR, de Man F, de Jesus Perez VA, Hemnes AR, Mukherjee M, Mercer-Rosa L, Spiekerkoetter E, Tello K, **Bonnet S**; Council on Cardiopulmonary, Critical Care, Perioperative, and Resuscitation; Council on Clinical Cardiology; and Council on Cardiovascular Surgery and Anesthesia. *Circulation*. 2026 Apr 2. doi: 10.1161/CIR.0000000000001422.
- 3. Cardiomyocyte NLRP3 signaling in right heart failure is sexually dimorphic via estrogen receptor  $\alpha$ .** Fais RS, Palotta EDN, Kopf KW, Massad KM, Neto-Neves EM, Hoffer C, Walts AD, Frump AL, Goldenberg NM, Givens S, Bourgeois A, Woodcock CC, Petrache I, Chesler NC, Woulfe KC, Pullamsetti SS, Boucherat O, Provencher S, Ogle BM, **Bonnet S**, Lahm T. *bioRxiv* [Preprint]. 2026 Feb 13:2026.02.12.705548. doi: 10.64898/2026.02.12.705548. PMID: 41726997 Free PMC article. Preprint.
- 4. Pulmonary Arterial Hypertension Induces a Metabolic and Inflammatory Hepatopathy.** Blake MJ, Prins SE, Blake JC, Hartweck LM, Mendelson JB, Provencher S, Breuils-Bonnet S, Bonnet S, Prins KW. *bioRxiv* [Preprint]. 2026 Mar 18:2026.03.16.712114. doi: 10.64898/2026.03.16.712114. PMID: 41890129
- 5. Alternative Polyadenylation Signatures Distinguish Maladaptive Right Ventricular Remodeling in Pulmonary Hypertension: Implications for RNA-Based Diagnostics and Therapeutics.** Subramaniam J, Jonnakuti V, Collum SD, Martineau S, Huang KL, Breuils-Bonnet S, Frump AL, Akkanti BH, Patel JA, Patel MK, Salas de Armas I, Lefebvre IN, Radovancevic R, Blanco E, Wagner EJ, Gregoric I, Nathan S, Kar B, Provencher S, **Bonnet S**, Potus F, Yalamanchili HK, Karmouty-Quintana H. *Br J Biomed Sci*. 2026 Feb 20;83:15687. doi: 10.3389/bjbs.2026.15687. eCollection 2026.

6. **A Critical Contribution of Cardiac Myofibroblasts in Right Ventricular Failure and the Role of UCP2 SNPs in the Predisposition to RV Decompensation in Pulmonary Arterial Hypertension.** Zhang Y, Bonnet S, Provencher S, Piao J, Haromy A, Liu Y, Zhao YY, Breuils-Bonnet S, Lemay SE, Bowles DE, Mendiola Pla M, Sutendra G, Michelakis ED. *Circulation*. 2026 Mar 9. doi: 10.1161/CIRCULATIONAHA.125.078674. Online ahead of print. PMID: 41797703

## 2025

7. **Cytochrome P450 1A1 influences obesity-induced pulmonary hypertension.** Dignam JP, Sharma S, Aitchison G, Gebril A, Stasinopoulos I, Laforest S, Coyle C, Andrew R, Homer NZM, Bonnet S, Breuils-Bonnet S, Wabitsch M, MacLean MR. *Br J Pharmacol*. 2025 Nov 30. doi: 10.1111/bph.70244. Online ahead of print. PMID: 41320177
8. **Protein biomarkers in pulmonary arterial hypertension: advances, clinical relevance, and translational challenges.** Niu Y, Tian J, Provencher S, Bonnet S, Boucherat O, Potus F, Gou D. *J Transl Med*. 2025 Nov 14;23(1):1288. doi: 10.1186/s12967-025-07257-w. PMID: 41239459 Free PMC article. Review.
9. **Acute Hemodynamic Effects of Sotatercept.** Kremer N, Thal BR, Janetzko P, Rako ZA, Yogeswaran A, Bonnet S, Pullamsetti S, Seeger W, Naeije R, Grimminger F, Ghofrani HA, Tello K. *Circulation*. 2025 Dec 16;152(24):1735-1738. doi: 10.1161/CIRCULATIONAHA.125.076913. Epub 2025 Nov 8. PMID: 41205220 No abstract available.
10. **Cellular senescence in adult pulmonary hypertension: current state and future challenges.** Lemay SE, Kuwabara Y, Bonnet S, Potus F, Provencher S, Adnot S, Boucherat O. *Eur Respir Rev*. 2025 Sep 17;34(177):250030. doi: 10.1183/16000617.0030-2025. Print 2025 Jul. PMID: 40962398 Free PMC article. Review.
11. **Impaired Lung BCAA Metabolism Promotes Ferroptosis and Resultant Pulmonary Arterial Hypertension-Associated Hepatopathy.** Blake MJ, Hong J, Brownstein A, Rhodes CJ, Blake JC, Moon RA, Hartweck LM, Prisco SZ, Markowski T, Higgins L, Murray K, Guerrero C, Breuils-Bonnet S, Provencher S, Pepke-Zaba J, Howard LS, Toshner M, Wilkins MR, Bonnet S, Prins KW. *bioRxiv [Preprint]*. 2025 Sep 3:2025.09.03.672819. doi: 10.1101/2025.09.03.672819. PMID: 40950189 Free PMC article. Preprint.
12. **IGFBP7 Contributes to Endothelial-to-Mesenchymal Transition and Serves as a Biomarker for Right Ventricular Dysfunction in Pulmonary Arterial Hypertension.** Deng L, Wang Z, Boucherat O, Leng B, Cao C, He M, Cai Z, Chen Z, Wu G, Bonnet S, Wei W, Bian JS. *Am J Respir Cell Mol Biol*. 2026 Jan 1;74(1):134-137. doi: 10.1165/rcmb.2025-0004LE. PMID: 40920989 No abstract available.
13. **Mapping disease-specific vascular cell populations responsible for obliterative arterial remodelling during the development of pulmonary arterial hypertension.** Cober ND, McCourt E, Godoy RS, Deng Y, Schlosser K, Qamsari ES, Azami J, Salehisiavashani E, Cook DP, Lemay SE, Klouda T, Yuan K, Bonnet S, Stewart DJ. *Cardiovasc Res*. 2025 Oct 28;121(13):2095-2112. doi: 10.1093/cvr/cvaf146. PMID: 40875786 Free PMC article.

14. **Pharmacological inhibition of Epac1 protects against pulmonary fibrosis by blocking FoxO3a neddylation.**  
Jankowski K, Lemay SE, Lozano-Ojalvo D, Pérez-Rodríguez L, Sauvaget M, Breuils-Bonnet S, Formoso K, Jagana V, Ochoa MT, Zhang S, Milara J, Cortijo J, Turnbull IC, Provencher S, **Bonnet S**, Ochando J, Lezoualc'h F, Bisselier M, Hadri L. *Eur Respir J*. 2025 Oct 16;66(4):2402250. doi: 10.1183/13993003.02250-2024. Print 2025 Oct. PMID: 40639873 Free PMC article.
15. **Anti-remodeling therapies in pulmonary arterial hypertension.**  
Boucherat O, **Bonnet S**, Provencher S, Potus F. *Trends Pharmacol Sci*. 2025 Jul;46(7):674-691. doi: 10.1016/j.tips.2025.05.004. Epub 2025 Jun 19. PMID: 40541519 Review.
16. **Exploratory Study of Prognostic Plasma Biomarkers in Patients with Pulmonary Arterial Hypertension.**  
Kuwabara Y, Yokokawa T, Lemay SE, Sauvaget M, Martineau S, Breuils-Bonnet S, Potus F, **Bonnet S**, Provencher S, Boucherat O. *Am J Pathol*. 2025 Aug;195(8):1376-1393. doi: 10.1016/j.ajpath.2025.04.018. Epub 2025 May 30. PMID: 40451321 Free PMC article.
17. **Single-Cell and Spatial Transcriptomics Identified Fatty Acid-Binding Proteins Controlling Endothelial Glycolytic and Arterial Programming in Pulmonary Hypertension.**  
Liu B, Yi D, Li S, Ramirez K, Xia X, Cao Y, Zhao H, Tripathi A, Qiu S, Kala M, Rafikov R, Gu H, de Jesus Perez V, Lemay SE, Glembotski CC, Knox KS, **Bonnet S**, Kalinichenko VV, Zhao YY, Fallon MB, Boucherat O, Dai Z. *Arterioscler Thromb Vasc Biol*. 2025 Jul;45(7):1145-1165. doi: 10.1161/ATVBAHA.124.321173. Epub 2025 May 22. PMID: 40401371 Free PMC article.
18. **Unraveling AURKB as a potential therapeutic target in pulmonary hypertension using integrated transcriptomic analysis and pre-clinical studies.**  
Lemay SE, Mougín M, Sauvaget M, El Kabbout R, Valasarajan C, Yamamoto K, Martineau S, Pelletier A, Bilodeau C, Grobs Y, Bourgeois A, Romanet C, Breuils-Bonnet S, Montesinos MS, Lu M, Chen H, Gilbert M, Théberge C, Potus F, Pullamsetti S, Provencher S, **Bonnet S**, Boucherat O. *Cell Rep Med*. 2025 Feb 18;6(2):101964. doi: 10.1016/j.xcrm.2025.101964. Epub 2025 Feb 10. PMID: 39933527 Free PMC article.
19. **Exploring Integrin  $\alpha 5\beta 1$  as a Potential Therapeutic Target for Pulmonary Arterial Hypertension: Insights From Comprehensive Multicenter Preclinical Studies.**  
Lemay SE, Montesinos MS, Grobs Y, Yokokawa T, Shimauchi T, Mougín M, Romanet C, Sauvaget M, Breuils-Bonnet S, Bourgeois A, Théberge C, Pelletier A, El Kabbout R, Martineau S, Yamamoto K, Akram M, Ray AS, Lippa B, Goodwin B, Lin FY, Wang H, Dowling JE, Lu M, Qiao Q, McTeague TA, Moy TI, Potus F, Provencher S, Boucherat O, **Bonnet S**. *Circulation*. 2025 Apr 22;151(16):1162-1183. doi: 10.1161/CIRCULATIONAHA.124.070693. Epub 2025 Jan 20.

## 2024

1. Mai V, Bonnet S, Provencher S. **How I do it: Managing Pulmonary Arterial Hypertension with Cardiopulmonary Comorbidities.** *Chest* 2023 *Role: conception/design/ of the study and revision of the manuscript Contribution: 30% co-senior*
2. Lemay SE, Grobs Y, Romanet C, Martineau S, Salem M, Shimauchi T, Breuils-Bonnet S, Bourgeois A, Théberge C, Potus F, Provencher S, Bonnet S, Boucherat O. **Hypusine signaling promotes pulmonary vascular remodeling in pulmonary arterial hypertension.** *Am J Respir*

*Crit Care Med. 2024 Role: conception/design/ of the study and revision of the manuscript Contribution: 30% co-senior*

3. Yokokawa T, Boucherat O, Martineau S, Lemay SE, Breuils-Bonnet S, Potus F, Bonnet S, Provencher S. **Prognostic significance of proteomics-discovered circulating inflammatory biomarkers in patients with pulmonary hypertension.** *JAHA 2024 Accepted Role: conception/design/ of the study and revision of the manuscript Contribution: 30% co-senior*
4. El Kabbout R, Azhar N, Breuils-Bonnet S, Martineau S, Krishna V, Shanker KS, Boucherat O, Provencher S, Bonnet S, Potus F. **Time is running out in pulmonary arterial hypertension: the epigenetic clock is clicking.** *Am J Respir Cell and molecular biology. 2024 accepted Role: conception/design/ of the study and revision of the manuscript Contribution: 20% co-senior*

## 2023

1. Khassafi F, Chelladurai P, Valasarajan C, Nayakanti S, Martineau S, Sommer N, Yokokawa T, Boucherat O, Kamal A, Kiely DG, Swift AJ, Alabed S, Omura J, Breuils-Bonnet S, Kuenne C, Potus F, Günter S, Savai R, Seeger W, Looso M, Lawrie A, Zaugg JB, Tello K, Provencher S, Bonnet S, Pullamsetti SS. **Transcriptional profiling unveils new molecular subgroups of adaptive and maladaptive right ventricular remodeling in pulmonary hypertension.** *Nat Cardiovas Res 2023 [In Press] Role: conception/design/ of the study and revision of the manuscript Contribution: 50% senior co-corresponding*
2. Welch CL, Aldred MA, Balachandar S, Dooijes D, Eichstaedt CA, Gräf S, Houweling AC, Machado RD, Pandya D, Prapa M, Shaukat M, Southgate L, Tenorio-Castano J; ClinGen PH VCEP; Chung WK; International Consortium for Genetic Studies in Pulmonary Arterial Hypertension (PAH-ICON) at the Pulmonary Vascular Research Institute (PVRI). **Defining the clinical validity of genes reported to cause pulmonary arterial hypertension.** *Genet Med. 2023 Jul;25(11):100925 [Online ahead of print] Role: 5% revision of the manuscript, member of PAH-ICON consortium*
3. Nayakanti SR, Friedrich A, Sarode P, Jafari L, Maroli G, Boehm M, Bourgeois A, Grobs Y, Khassafi F, Kuenne C, Guenther S, Dabral S, Wilhelm J, Weiss A, Wietelmann A, Kojonazarov B, Janssen W, Looso M, de Man F, Provencher S, Tello K, Seeger W, Bonnet S, Savai R, Schermuly RT, Pullamsetti SS. **Targeting Wnt-B-Catenin-FOSL Signaling Ameliorates Right Ventricular Remodeling.** *Circ Res. 2023 May;132(11):1468-1485 Role: conception/design of the study and revision of the manuscript Contribution: 20% senior*
4. Awada C, Bourgeois A, Lemay SE, Grobs Y, Yokokawa T, Breuils-Bonnet S, Martineau S, Krishna V, Potus F, Jeyaseelan J, Provencher S, Bonnet S, Boucherat O. **G9a/GLP Targeting Ameliorates Pulmonary Vascular Remodeling in Pulmonary Arterial Hypertension.** *Am J Respir Cell Mol Biol. 2023 May;68(5):537-550 Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% senior*
5. Eichstaedt CA, Belge C, Chung WK, Gräf S, Grünig E, Montani D, Quarck R, Tenorio-Castano JA, Soubrier F, Trembath RC, Morrell NW; for PAH-ICON associated with the PVRI. **Genetic counselling and testing in pulmonary arterial hypertension: a consensus statement on behalf of the International Consortium for Genetic Studies in PAH.** *Eur Respir J. 2023 Feb 23;61(2):2201471 Role: 5% revision of the manuscript, member of PAH-ICON consortium*
6. Yamamoto K, Lemay SE, Yokokawa T, Breuils-Bonnet S, Salem M, Potus F, Provencher S, Boucherat O, Bonnet S. **DNA-Protein Kinase Catalytic Subunit as a Potential Target for Pulmonary Arterial Hypertension.** *Am J Respir Cell Mol Biol. 2023 Jan;68(1):116-119 Role: conception/design/funding of the study and revision of the manuscript Contribution: 60% senior and corresponding*

7. Awada C, Boucherat O, Provencher S, Bonnet S, Potus F. **The future of group 2 pulmonary hypertension: Exploring clinical trials and therapeutic targets.** *Vascul Pharmacol* 2023 Aug;151 :107180 Role: Redaction and revision of the manuscript Contribution: 30%
8. Mai V, Gosselin C, Tremblay E, Rompre G, Lajoie AC, Weatherald J, Lega JC, Bonnet S, Provencher S. **Patients' perceptions on clinical trials outcomes in pulmonary arterial hypertension therapy.** *Thorax.* 2023 Jul;78(7)721-725 Role: Redaction and revision of the manuscript Contribution: 40%

## 2022

1. Zelt J, Cadete V, Deng Y, Godoy R, Cuillerier A, Rowe K, Abdul-Ghani M, Megeney L, Burelle Y, Giulivi A, Stewart A, Provencher S, Breuils-Bonnet S, Bonnet S, deKemp R, Beanlands R, Mielniczuk L, Stewart DJ. **Right Ventricular Maladaptation to Pressure Overload in Fischer Rats is Associated with Profound Deficiency in Adenylate Kinase 1 and Impaired Ventricular Energetics.** *Hypertension.* 2022 Dec;79(12):2774-2786
2. Bissierier M, Boucherat O, Bonnet S, Hadri L. **Intra-Airway Gene Delivery for Pulmonary Hypertension in Rodent Models.** *Methods Mol Biol.* 2022;2573-2578 Role: Redaction and revision of the manuscript Contribution: 40%
3. Al-Quazizi Rm Lima PDA, Prisco SZ, Potus F, Dasgupta A, Chen KH, Tian L, Bentley RE, Mewburn J, Martin AY, Wu D, Jones O, Maurice DH, Bonnet S, Provencher S, Prins KW, Archer SL. **Macrophage-NLRP3 Actiation Promotes Right Ventricle Failure in Pulmonary Arterial Hypertension.** *Am J Respir Crit Care Med.* 2022 Sep 1;206(5)-608-624 Role: conception/design/ of the study and revision of the manuscript Contribution: 20% senior
4. Tremblay E, Gosselin C, Mai V, Lajoie AC, Kilo R, Weatherald J, Lacasse Y, Bonnet S, Lega JC, Provencher S. **Assessment of Clinical Worsening End Points as a Surrogate for Mortality in Pulmonary Arterial Hypertension: A Systematic Review and Meta-Analysis of Randomized Controlled Trials.** *Circulation* 2022 Aug 23;146(8)597-612 Role: redaction and revision of the manuscript Contribution: 20% senior
5. Boucherat O, Yokokawa T, Krishna V, Kalyana-Sundaram S, Martineau S, Breuils-Bonnet S, Azhar N, Bonilla F, Butstein D, Potus F, Lawrie A, Jeyaseelan J, Provencher S, Bonnet S. **Identification of LTBP-2 as a plasma biomarker for right ventricular dysfunction in human pulmonary arterial hypertension.** *Nat Cardiovasc Res* 2022 Aug 11;1;748-760 Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% senior and corresponding
6. Lemay SE, Boucherat O, Bonnet S. **Reverse Reaction of Nicotinamide Nucleotide Transhydrogenase Promotes ROS Production and Contributes to Right Ventricular Failure.** *JACC Basic Transl Sci.* 2022 Jul 25;7(7):678-680 Role: Redaction and revision of the manuscript Contribution: 40% corresponding
7. Chelladurai P, Kuenne C, Bourgeois A, Günther S, Valasarajan C, Cherian AV, Rottier RJ, Romanet C, Weigert A, Boucherat O, Eichstaedt CA' Ruppert C, Guenther A, Braun T, Looso M, Savai R, Seeger W, Bauer UM, Bonnet S, Pullamsetti SS. **Epigenetic Reactivation of transcriptional programs orchestrating fetal lung development in human pulmonary hypertension.** *Sci Transl Med.* 2022 Jun 8;14(648)eabe5407 Role: conception/design/ of the study and revision of the manuscript Contribution: 30% senior
8. Wu WH, Bonnet S, Shimauchi T, Toro V, Grobs Y, Romanet C, Bourgeois A, Vitry G, Omura J, Tremblay E, Nadeau V, Orcholski M, Breuils-Bonnet S, Martineau S, Ferraro P, Potus F, Paulin R, Provencher S, Boucherat O. **Potential for inhibition of checkpoint kinases ½ in**

- pulmonary fibrosis and secondary pulmonary hypertension.** *Thorax* 2022 Mar;77(3):247-258 Role: conception/design of the study and revision of the manuscript Contribution: 40%
9. Bissierier M, Sun XQ, Fazaal S, Turnbull I, Bonnet S, Hadri L. **Novel Insights into the Therapeutic Potential of Lung-Targeted Gene Transfer in the Most Common Respiratory Diseases.** *Cells* 2022 Mar 12; 11(6):984 Role: Redaction and revision of the manuscript Contribution: 30%
  10. Boucherat O, Agrawal V, Lawrie A, Bonnet S. **The Latest in Animal Models of Pulmonary Hypertension and Right Ventricular Failure.** *Circ Res* 2022 apr 29;130(9);1466-1486 Role: Redaction and revision of the manuscript Contribution: 40% Corresponding
  11. Shimauchi T, Boucherat O, Yokokawa T, Grobs Y, Wu WH, Orcholski M, Martineau S, Omura J, Tremblay E, Shimauchi K, Nadeau V, Breuils-Bonnet S, Paulin R, Potus F, Provencher S, Bonnet S. **PARP1-PKM2 Axis Mediates Right Ventricular Failure Associate with Pulmonary Arterial Hypertension.** *JACC Basic Transl Sci.* 2022 Mar 16;7(4):384-403 Role: conception/design/funding of the study and revision of the manuscript Contribution: 60% senior and corresponding
  12. Kudryashova TV, Dabral S, Nayakanti S, Ray A, Goncharov DA, Avolio T, Shen Y, Rode A, Pena A, Jiang L, Lin D, Baust J, Bachman TN, Graumann J, Ruppert C, Guenther A, Schmoranzler M, Grobs Y, Eve Lemay S, Tremblay E, Breuils-Bonnet S, Boucherat O, Mora AL, DeLisser H, Zhao J, Zhao Y, Bonnet S, Seeger W, Pullamsetti SS, Goncharova EA. **Noncanonical HIPPO/MST Signaling via BUB3 and FOXO Drives Pulmonary Vascular Cell Growth and Survival.** *Circ Res* 2022 mar 4;130(5):760-778 Role: conception/design/ of the study and revision of the manuscript Contribution: 10% senior
  13. Provencher S, Potus F, Blais-Lecours P, Bernard S, Martineau S, Breuils-Bonnet S, Weatherald J, Sweeney M, Kulikowski E, Boucherat O, Bonnet S. **BET Protein Inhibition for Pulmonary Arterial Hypertension: A Pilot Study.** 2022 Mar 15, 205(11):1357-1360 Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% senior
  14. Lemay SE, Bonnet S, Potus F. **Commentary on: Xbp1s-Ddit3, DNA damage and pulmonary hypertension.** *Clin Sci (Lond).* 2022 Jan 14;136(1):163-166 Role: Redaction and revision of the manuscript Contribution: 40%

## 2021

1. Negi V, Yang J, Speyer G, Pulgarin A, Handen A, Zhao J, Tai YY, Tang Y, Culley MK, Yu Q, Forsythe P, Gorelova A, Watson AM, Al Aaraj Y, Satoh T, Sharifi-Sanjani M, Rajaratnam A, Sembrat J, Provencher S, Yin X, Vargas SO, Rojas M, Bonnet S, Torrino S, Wagner BK, Schreiber SL, Dai M, Bertero T, Al Ghouleh I, Kim S, Chan SY. **Computational repurposing of therapeutic small molecules from cancer to pulmonary hypertension.** *Sci Adv.* 2021 Oct 22; 7(43):eabh3794 Role: conception/design/ of the study and revision of the manuscript Contribution: 10% senior
2. Dasgupta A, Chen KH, Lima PDA, Mewburn J, Wu D, Al-Qazazi R, Jones O, Tian L, Potus F, Bonnet S, Archer SL. **PINK1-induced phosphorylation of mitofusin 2 at serine 442 causes its proteasomal degradation and promotes cell proliferation in lung cancer and pulmonary arterial hypertension.** *FASEB J.* 2021 Aug;35(8):e21771 Role: conception/design/ of the study and revision of the manuscript Contribution: 20% senior
3. Lemay SE, Awada C, Shimauchi T, Wu WH, Bonnet S, Provencher S, Boucherat O. **Fetal Gene Reactivation in Pulmonary Arterial Hypertension: GOOD, BAD of BOTH?** *Cells.* 2021 Jun 11; 10(6):1473) Role: Redaction and revision of the manuscript Contribution: 40%

4. Bonnet S, Gomez D. **RNA Methylation: A New Regulator of Vascular Remodeling in Pulmonary Hypertension.** *Am J Respir Crit Care Medicine*, 2021 May 1;203(9):1060-1062 *Role: Redaction and revision of the manuscript Contribution: 50%*
5. Malenfant S, Lebret M, Breton-Gagnon É, Potus F, Paulin R, Bonnet S, Provencher S. **Exercise intolerance in pulmonary arterial hypertension: insight into central and peripheral pathophysiological mechanisms.** *Eur Respir Rev.* 2021 Apr 13; 30(160):200284 *Role: Redaction and revision of the manuscript Contribution: 30% senior*
6. Frump AL, Albrecht ME, Yakubov B, Breuils Bonnet S, Nadeau V, Tremblay E, Potus F, Omura J, Cook T, Fisher A, Rodriguez BE, Brown RD, Stenmark KR, Rubinstein CD, Krentz K, Tabima DM, Li R, Sun X, Chesler NC, Provencher S, Bonnet S, Lahm T. **17 $\beta$ -estradiol and estrogen receptor- $\alpha$  protect right ventricular function in pulmonary hypertension via BMPR2 and apelin.** *J Clin Invest*, 2021 Mar 15;131(6):e129433 *Role: conception/design/ of the study and revision of the manuscript Contribution: 20% senior*
7. Vitry G, Paulin R, Grobs Y, Lampron MC, Shimauchi T, Tremblay E, Habbout K, Awada C, Nadeau V, Paradis R, Breuile-Bonnet S, Lemay SE, Roux-Dalvai F, Orcholski M, Potus F, Provencher S, Boucherat O, Bonnet S. **Oxidized DNA Precursors Cleanup by NUDT1 Contributes to Vascular Remodeling in PAH.** *Am J Respir Crit Care Med* 2021 Mar 1; 203(5):614-627 *Role: conception/design/funding of the study and revision of the manuscript Contribution: 60% senior and corresponding author*
8. Grobs Y, Awada C, Lemay SE, Romanet C, Bourgeois A, Toro V, Nadeau V, Shimauchi K, Orcholski M, Breuils-Bonnet S, Tremblay E, Provencher S, Paulin R, Boucherat O, Bonnet S. **Preclinical Investigation of Trifluoperazine as a Novel Therapeutic Agent for the Treatment of Pulmonary Arterial Hypertension.** *Int J Mol Sci.* 2021 Mar13;22(6):2919 *Role: conception/design/funding of the study and revision of the manuscript Contribution: 60% senior and corresponding*
9. Habbout K, Omura J, Awada C, Bourgeois A, Grobs Y, Krishna V, Breuils-Bonnet S, Tremblay E, Mkannez G, Martineau S, Nadeau V, Roux-Dalvai F, Orcholski M, Jeyaseelan J, Gutsetin D, Potus F, Provencher S, Bonnet S, Paulin R, Boucherat O. **Implication of EZH2 in the Proliferative and Apoptosis-Resistant Phenotype of Pulmonary Artery Smooth Muscle Cells in PAH: A Transcriptomic and Proteomic Approach.** *Int J Mol Sci.* 2021 Mar 15;22(6):2957 *Role: conception/design of the study and revision of the manuscript Contribution: 50% senior*
10. Sommer N, Ghofrani HA, Pak O, Bonnet S, Provencher S, Sitbon O, Rosenkranz S, Hoeper MM, Kiely DG. **Current and future treatments of pulmonary arterial hypertension.** *Br J Pharmacol.* Jan 2021; 178(1):6-30 *Role: Redaction and revision of the manuscript Contribution: 30%*
11. Chelladurai P, Boucherat O, Stenmark K, Kracht M, Seeger W, Bauer UM, Bonnet S, Pullamsetti SS. **Targeting histone acetylation in pulmonary hypertension and right ventricular hypertrophy.** *Br J Pharmacol.* Jan 2021; 178(1):54-71 *Role: Redaction and revision of the manuscript Contribution: 40%*
12. Awada C, Grobs Y, Wu WH, Habbout K, Romanet C, Breuils-Bonnet S, Tremblay E, Martineau S, Paulin R, Bonnet S, Provencher S, Potus F, Boucherat O. **(R)-Crizotinib Predisposes to and Exacerbates Pulmonary Arterial Hypertension in Animal Models.** *Eur Respir J.* 2021 Jan 14:2003271 *Role: conception/design/funding of the study and revision of the manuscript Contribution: 40%*

## 2020

1. Boucherat O, Austin ED, Bonnet S. **Revisiting the Role for HIF Stabilizers in**

- Bronchopulmonary Dysplasia.** *Am J Respir Crit Care Med.* 2020 Oct 15;202(8):1075-1077  
Role: Redaction and revision of the manuscript Contribution: 40% - senior and corresponding author
2. Klinke A, Schubert T, Müller M, Legchenko E, Zelt JGE, Shimauchi T, Napp LC, Rothman AMK, Bonnet S, Stewart DJ, Hansmann G, Rudolph V. **Emerging Therapies for Right Ventricular Dysfunction and Failure.** *Cardiovasc Diagn Ther.* 2020 Oct;10(5):1735-1767 Role: Redaction and revision of the manuscript Contribution: 20%
  3. Omura J, Habbout K, Shimauchi T, Breuils-Bonnet S, Tremblay E, Martineau S, Nadeau V, Gagnon K, Perron J, Potus F, Lawrie A, Archer S, Paulin R, Provencher S, Boucherat O, Bonnet S. **Identification of the long non-coding RNA H19 as a new biomarker and therapeutic target in right ventricular failure in PAH.** *Circulation.* 2020 Oct 13;142(15):1464-1484 Role: conception/design/funding of the study and revision of the manuscript Contribution: 60% senior and corresponding
  4. Provencher S, Boucherat O, Potus F, Bonnet S. **Pulmonary hypertension threshold: time to lower further.** *Lancet Respir Med.* 2020 Sep;8(9):834-836 Role: conception/design of the manuscript Contribution: 60% senior and corresponding
  5. Shimauchi T, Potus F, Bonnet S, Provencher S, Paulin R, Boucherat O. **Limitation and flaws of pre-clinical pulmonary hypertension studies.** *Advances in pulmonary hypertension* 2020 Aug; 19(2):47-54 Role: redaction and revision of the manuscript Contribution: 30%
  6. Potus F, Mai V, Leuret M, Malenfant S, Breton-Gagon E, Lajoie AC, Boucherat O, Bonnet S, Provencher S. **Novel Insights on the Pulmonary Vascular Consequences of Covid-19.** *Am J Physiol Lung Cell Mol Physiol* 2021 Aug 1;319(2):L277-L288. Role: Redaction and revision of the manuscript Contribution: 40%
  7. Maron BA, Gladwin MT, Bonnet S, De Jesus Perez V, Perman SM, YuPB, Ichinose F **Perspectives on Cardiopulmonary Critical Care for Patients With COVID-19: From Members of the American Heart Association Council on Cardiopulmonary, Critical Care J Am Heart Assoc.** 2020 Jul 21;9(14):e017111 (IF 5.5) Role: conception/design/and revision of the manuscript Contribution: 25%
  8. Veeroju S, Mamazhakypov A, Rai N, Kojonazarov B, Nadeau V, Breuils-Bonnet S, Li L, Weissmann N, Rohrbach S, Provencher S, Bonnet S, Seeger W, Schermuly R, Novoyatleva T. **Effect of P53 activation on experimental RV hypertrophy.** *PloS One.* 2020 Jun 19;15(6):e0234872 eCollection Role: conception/design/ of the study and revision of the manuscript Contribution: 20% senior and corresponding
  9. Provencher S, Potus F, Bonnet S. **COVID-19 and pulmonary vasculature.** *Pulm Circ.* 2020 Jun 10;10(3):2045894020933088 eCollection (IF 2.2) Role: conception/design/funding of the study and revision of the manuscript Contribution: 60% senior and corresponding
  10. Tian L, Wu D, Dasgupta A, Chen K-H, Mewburn J, Potus F, AD. Lima P, Hong Z, YZhao Y-Y, Hindmarch C, Kutty S, Provencher S, Bonnet S, Sutendra G, L. Archer S. **Epigenetic Metabolic Reprogramming of Right Ventricular Fibroblasts in Pulmonary Arterial Hypertension: A Pyruvate Dehydrogenase Kinase-Dependent Shift in Mitochondrial Metabolism Promotes Right Ventricular Fibrosis.** *Circ Res.* 2020 Jun 5;126(12):1723-1745. IF 16 Role: conception/design/funding of the study and revision of the manuscript Contribution: 20%
  11. Provencher S, Boucherat O, Berger RMF, Goumans MJ, Bonnet S. **Reply to Chen et al.: BET Signaling: A Novel Therapeutic Target for Pulmonary Hypertension?** *Am J Respir Crit Care Med.* 2020 May 15;201(10):1313-1314 Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% senior and corresponding
  12. Malenfant S, Brassard P, Paquette M, Le Blanc O, Chouinard A, Bonnet S, Provencher S. **Continuous reduction in cerebral oxygenation during endurance exercise in patients with**

- pulmonary arterial hypertension.** *Physiol Rep.* 2020 Mar; 8(6): e14389 (IF 2.5) Role: conception/design/funding of the study and revision of the manuscript Contribution: 30%
13. Provencher S, Boucherat O, Berger RMF, Goumans MJ, Bonnet S. **Reply to Ning et al: More Insights into the Association between RVX-208 and Pulmonary Arterial Hypertension.** *Am J Respir Crit Care Med* 2020 Feb 1;201(3):389-391 (IF 17) Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% senior and corresponding
  14. Lampron MC, Vitry G, Nadeau V, Grobs Y, Paradis R, Samson N, Tremblay E, Boucherat O, Meloche J, Bonnet S, Provencher S, Potus F, Paulin R. **PIM1 (Moloney Murine Leukemia Provirus Integration Site) Inhibition Decreases the Nonhomologous End-Joining DNA Damage Repair Signaling Pathway in Pulmonary Hypertension.** *ATVB* 2020 Jan 23;40 :783-801 (IF 7) Role: conception/design/funding of the study and revision of the manuscript Contribution: 30%
  15. Bonnet S, Boucherat O, Paulin R, Wu D, Hindmarch CCT, Archer SL, Song R, Moore JB 4th, Provencher S, Zhang L, Uchida S. **Clinical Value of non-coding RNAs in cardiovascular, pulmonary, and muscle diseases.** *Am J Physiol Cell Physiol.* 2020 Jan 1;318(1)C1-C28 Role: Redaction and revision of the manuscript Contribution: 60%
  16. Ramirez DF, Jung RG, Motazedian P, Nguyen DP, Di Santo P, MacDonald Z, Clancy AA, Labinaz A, Promislow S, Provencher S, Bonnet S, Graham ID, Wells GA, Hibbert B **Journal Initiatives to Enhance Preclinical Research: Analyses of Stroke, Nature Medicine, Science Translational Medicine** *Stroke* 2020 Jan;51(1):291-299. IF8 Conception design and analysis 15%
  17. Nickel NP, Yuan K, Dorfmueller P, Provencher S, Lai YC, Bonnet S, Austin ED, Koch CD, Morris A, Perros F, Montani D, Zamanian RT, de Jesus Perez VA. **Beyond the Lungs : Systemic Manifestations of Pulmonary Arterial Hypertension.** *Am J Respir Crit Care Med.* 2020 Jan 15;201(2):148-157 Role: Redaction and revision of the manuscript Contribution: 20%

## 2019

1. Boucherat O, Paulin R, Provencher S, Bonnet S. **New insights into H1MF (Hypoxia-Induced Mitogenic Factor)- mediated signaling pathways in pulmonary hypertension.** *ATVB* 2019 Dec;39(12):2451-2453 Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% senior and corresponding
2. Bonnet S, Boucherat O, Provencher S, Paulin R. **Early evidence of the role of lncRNA TUG1 in vascular remodeling in pulmonary hypertension.** *Canadian Journal of Cardiology* 2019 Nov;35(11):1433-1434 Role: Redaction of the manuscript Contribution: 80%
3. Kurakula K, Boucherat O, Van der Feen DE, Bogaard HJ, Kulikowski E, Bartelds B, Provencher S, Berger RMF, Bonnet S, Goumans MJ. **Reply to Piquereau and Perros and to Pullamsetti and de Jesus Perez.** *Am J Respir Crit Care Med.* 2019 Nov 1;200(9)1190—1191 Role: Redaction and revision of the manuscript Contribution: 20%
4. Bonnet S, Paulin R. **Involvement of PFKFB3 in pulmonary arterial hypertension pathogenesis: Is it all about glycolysis?** *American Journal of Respiratory and Critical Care Medicine.* 2019 Sep 1;200(5):532-534 (IF 15.2) Review Role: Redaction of the manuscript Contribution: 80%
5. Ranchoux B, Provencher S, Bourgeois A, Nadeau V, Tremblay E, Omura J, Côté N, Abu-alhayja R, Dumais V, Nachbar RT, Tastet L, Dahou A, Breuils-Bonnet S, Marette A, Pibarot P, Dupuis J, Boucherat O, Archer SL, Bonnet S, Potus F. **Metabolic syndrome exacerbates pulmonary hypertension due to left heart disease.** *Circulation Research* 2019 Aug 2;125(4):449-466) Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% co senior

6. Bourgeois A, Boucherat O, Breuils-Bonnet S, Peterlini T, Paradis R, Tremblay E, Lampron MC, Bertero T, Chan SY, Norris KA, Paulin R, Provencher S, Bonnet S. **Inhibition of CHK1 elicits therapeutic effects in pulmonary arterial hypertension.** *ATVB* 2019 Aug;39(8):1667-1681 (IF 6.6) *Role: conception/design of the study funding data acquisition and revision of the manuscript Contribution: 50% co first author*
7. Nadeau V, Bonnet S, Paulin R. **Letter by Nadeau et al regarding article, "BMP2 mutant rats develop pulmonary and cardiac characteristics of pulmonary arterial hypertension".** *Circulation.* 2019 Aug 13;140(7):e286-e287 *Role: conception/design/funding of the study and revision of the manuscript Contribution: 50%*
8. Van der Feen DE, Kurakula KB, Tremblay E, Boucherat O, Bossers GPL, Bourgeois A, Lampron MC, Habbout K, Martineau S; Kulikowski E, Jahagirdar R, Schalij I, Bogaard HJ, Provencher S, Berger RFM, Bartelds B, Bonnet S, Goumans MJ. **Multicenter preclinical validation of BET inhibition for the treatment of pulmonary arterial hypertension.** *Am J Respir Crit Care Med* 2019 Aug 2; 125(4):449-466 (IF 15.2) *Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% corresponding*
9. Mai V, Guay CA, Perreault L, Bonnet S, Bertoletti L, Lacasse Y, Jardel S, Lega JC, Provencher S. **Extended anticoagulation for VTE: A systematic review and meta-analysis.** *Chest* 2019 Jun;155(6): 1199-1216 (IF 7.7) *Role: conception/design/funding of the study and revision of the manuscript Contribution: 20%*
10. Omura J, Bonnet S, Kutty S. **Right ventricular and Pulmonary Vascular changes in Pulmonary Hypertension associated with left heart disease.** *AJP Heart and Circ Physiol.* 2019 May 1; 316(5):H1144-H1145 *Editorial Role: Redaction of the manuscript Contribution: 80%*
11. Tanguay VF, Babin C, Giardetti G, Sohier-Poirier C, Ménard-Cholette V, Ranchoux B, Ruffenach G, Montani D, Bonnet S, Provencher S. **Enhanced Pulmonary Artery Radiodensity in Pulmonary Arterial Hypertension: A sign of early calcification?** *Am J Respir Crit Care Med* 2019 Mar 15; 199(6):799-802 (IF 15.2) *Role: conception/design/funding of the study and revision of the manuscript Contribution: 50% co senior*
12. Humbert M, Guignabert C, Bonnet S, Dorfmueller P, Klinger JR, Nicolls MR, Olschewski AJ, Pullamsetti SS, Schermuly RT, Stenmark KR, Rabinovitch M. **Pathology and pathobiology of pulmonary hypertension: state of the art and research perspectives.** *Eur Respir J.* 2019 Jan 24;53(1) (IF 12.2) *Role: conception/design of the study and revision of the manuscript Contribution: 20%*

## **2018**

1. Bonnet S, Paulin R, Boucherat O. **Small SeP or Giant Leap for Pulmonary Hypertension Research?** *Circulation.* 2018 Aug 7;138(6):624-626 (IF 18.9) *Role: Redaction of the manuscript Contribution: 80%*
2. Guay CA, Morin-Thibault LV, Bonnet S, Lacasse Y, Lambert C, Lega JC, Provencher S. **Pulmonary hypertension-targeted therapies in heart failure: A systematic review and meta-analysis.** *PLoS One.* 2018 Oct 11;13(10):e0204610 (IF 2.8) *Role: conception/design of the study and revision of the manuscript Contribution: 20%*
3. Bourgeois A, Habbout K, Omura J, Bonnet S, Boucherat O. **Pulmonary Arterial Hypertension: New Pathophysiological Insights and Emerging Therapeutic Targets.** *The International Journal of Biochemistry & Cell Biology.* 2018 Sep 3;104:9-13 (IF 3.2) *Role: Redaction and revision of the manuscript Contribution: 33% co senior*
4. Agarwal S, Spiekerkoetter E, Austin ED, de Jesus Perez V, Dezfulian C, Maron BA, Ryan JJ, Starks MA, Yu PB, Bonnet S, Perman SM. **Career development of young physician-scientists**

- in the cardiovascular sciences: Perspective and advice from the early career committee of the cardiopulmonary, critical care, and resuscitation council of the American Heart Association.** *Circulation Research*. 2018 May 11;122(10):1330-1333. (IF 15.2) Role: conception/design of the study and revision of the manuscript Contribution: 30% Co senior
5. Lajoie AC, Bonnet S, Lacasse Y, Lega JC, Provencher S. **Interpreting risk reduction in clinical trials for pulmonary arterial hypertension.** *Eur. Respir Rev*. 2018 May 15;27(148):180020 (IF 5.8) Role: conception/design of the study and revision of the manuscript Contribution: 30%
  6. Provencher S, Archer SL, Ramirez FD, Hibbert B, Paulin R, Boucherat O, Lacasse Y, Bonnet S. **Standards and methodological rigor in pulmonary arterial hypertension preclinical and translational research.** *Circulation Research*. 2018 Mar 30;122(7):1021-1032 (IF 18.9) Role: conception/design of the study and revision of the manuscript Contribution: 50% senior and corresponding
  7. Adao R, Mendes-Ferreira P, Santos-Ribeiro D, Maia-Rocha C, Pimentel L, Pinto C, Mulvaney EP, Reid HM, Kinsella BT, Potus F, Breuils-Bonnet S, Rademaker MT, Provencher S, Bonnet S, Leite-Moreira A, Brás-Silva C. **Urocortin-2 Improves Right Ventricular Function in Pulmonary Arterial Hypertension.** *Cardiovascular Research* 2018 Jul1;114(8):1165-1177 (IF 6.3) Role: funding, conception/design of the study and revision of the manuscript Contribution: 25%
  8. Kuebler WM, Bonnet S, Tabuchi A. **Inflammation and autoimmunity in pulmonary hypertension – is there a role for endothelial adhesion molecules?** *Pulmonary Circulation* 2018 Apr-Jun;8(2):2045893218757596 (IF 2.3) Role: Redaction and revision of the manuscript Contribution: 33%
  9. Bonnet S and Boucherat O. **The ROS controversy in hypoxic pulmonary hypertension revisited.** *Eur Respir J*. 2018 Mar 8;51(3). pii:1800276 (IF 12.2) Role: Redaction and revision of the manuscript Contribution: 50%
  10. Chen KH, Dasgupta A, Lin J, Potus F, Bonnet S, Iremonger J, Fu J, Mewburn J, Wu D, Dunhan-Snary K, Theilmann AL, Jing ZC, Hindmarch C, Ormiston ML, Lawrie A, Archer SL. **Epigenetic dysregulation of the Drp1 binding partners MiD49 and MiD51 increases mitotic mitochondrial fission and promotes pulmonary arterial hypertension: mechanistic and therapeutic implications.** *Circulation* 2018 Jul 17;138(3):287-304 (IF 18.9) Role: conception/design of the study and revision of the manuscript Contribution: 25%
  11. Boucherat O, Peterlini T, Bourgeois A, Nadeau V, Breuils-Bonnet S, Boilet-Molez S, Potus F, Meloche J, Chabot S, Lambert C, Tremblay E, Chae YC, Altieri DC, Sutendra G, Michelakis ED, Provencher S, Bonnet S. **Mitochondrial HSP90 accumulation promotes vascular remodeling in pulmonary arterial hypertension.** *American Journal of Respiratory and Critical Care Medicine* 2018 Jul 1;198(1):90-103 (IF 15.2) Role: funding, conception/design of the study, interpretation of the data and wrote the manuscript Contribution: 50%
  12. Lajoie AC, Guay CA, Lega JC, Lauzière G, Simard S, Lambert C, Lacasse Y, Bonnet S, Provencher S. **Trial duration and risk reduction in combination therapy trials for pulmonary arterial hypertension.** *Chest* 2018 May;153(5):1142-1152 (IF 7.5) Role: funding, conception/design of the study, analysis/interpretation of the data and revision of the manuscript Contribution: 20%
  13. Bourgeois A, Lambert C, Habbout K, Ranchoux B, Paquet-Marceau S, Trinh I, Breuils-Bonnet S, Paradis R, Nadeau V, Paulin R, Provencher S, Bonnet S, Boucherat O. **FOXO1 promotes pulmonary artery smooth muscle cell expansion in pulmonary arterial hypertension.** *J Mol Med (berl)*. 2018 Feb;96(2):223-235 (IF 4.7) Role: funding, conception/design of the study, analysis/interpretation of the data and revision of the manuscript Contribution: 50%
  14. Ranchoux B, Harvey LD, Ayon RJ, Babicheva A, Bonnet S, Chan SY, Yuan JX, Perez VJ. **Endothelial dysfunction in pulmonary arterial hypertension: an evolving landscape (2017**

- Grover Conference Series). *Pulm Circ.* 2018 Jan-Mar;8(1):2045893217752912 (IF 2.3) Role: Redaction and revision of the manuscript 20%**
15. Frump AL, Bonnet S, de Jesus Perez VA, Lahm T. **The emerging role of angiogenesis in adaptive and maladaptive right ventricular remodeling in pulmonary hypertension.** *Am J Physiol Lung Cell Mol Physiol.* 2018 Mar 1;314(3):L443-L460. (IF 4.1) Role: Redaction and revision of the manuscript 20%
  16. Nadeau V, Potus F, Boucherat O, Paradis R, Tremblay E, Iglarz M, Paulin R, Bonnet S, Provencher S. **Dual ET<sub>A</sub>/ET<sub>B</sub> Blockade with Macitentan Improves both Vascular Remodelling and Angiogenesis in Pulmonary Arterial Hypertension.** *Pulm Circ.* 2018 Jan-Mar;8(1):2045893217741429 (IF 2.2) Role: funding, conception/design of the study, analysis/interpretation of the data and revision of the manuscript Contribution: 40%
  17. Boucherat O, Provencher S, Paulin R, Bonnet S. **Therapeutic value of ASK1 inhibition in pulmonary arterial hypertension.** *American Journal of Respiratory and Critical Care Medicine.* 2018 Feb 1;197(3):284-286 (IF 15.2) Role: draft and revision of the manuscript Contribution: 80%
  18. Zabini D, Granton E, Hu Y, Miranda MZ, Weichelt U, Breuils-Bonnet S, Bonnet S, Morrell NW, Connelly KA, Provencher S, Ghanim B, Klepetko W, Olschewski A, Kapus A, Kuebler W. **Loss of SMAD3 promotes vascular remodeling in pulmonary arterial hypertension via MRTF disinhibition.** *Am J Respir Crit Care Med.* 2018 Jan 15;197(2):244-260 (IF 15.2) Role: Funding, conception/design of the study, revision of the manuscript Contribution: 5%

### **Published Books / Chapters**

1. Lajoie AC, Provencher S, Paulin R, Bonnet S, Potus F. **Chapter 26 – MicroRNA targeted therapy in cardiovascular disease.** MicroRNA. Academic Press 2022, 521-547

**B) Other Contributions****Published and Presented abstracts**

Total number of published abstracts: 270

Published abstract in the last 5 years: 114

**2023**

- 1) **Targeting the lipogenic enzyme ATP Citrate Lyase as a potential therapy against coronary artery disease.** Grobs Y, Lemay SE, Romanet C, Breuils-Bonnet S, Bourgeois A, Martineau S, Salem M, Voisine P, Potus F, Provencher S, Boucherat O, Bonnet S. *Vascular Discovery 2023, Boston, Massachusetts, USA, May 10<sup>th</sup>-13<sup>th</sup> 2023.*
- 2) **Single cell transcriptomic analysis reveals cooperation between activated arterial ECs and Acta2+ pericytes in complex arterial remodeling in pulmonary arterial hypertension.** Cober ND, McCourt E, Soares Godoy R, Wang L, Deng Y, Schlosser K, Cook D, Lemay SE, Bonnet S, Stewart DJ. *ATS International Conference 2023, Washington DC, Washington, USA, May 19<sup>th</sup>-24<sup>th</sup> 2023.*
- 3) **Deoxyhypusine synthase-mediated hypusination of eIF5A drives PASMC proliferation and vascular remodeling in PAH.** Lemay SE, Grobs Y, Romanet C, Martineau S, Salem M, Shimauchi T, Breuils-Bonnet S, Bourgeois A, Théberge C, Potus F, Provencher S, Bonnet S, Boucherat O. *ATS International Conference 2023, Washington DC, Washington, USA, May 19<sup>th</sup>-24<sup>th</sup> 2023.*
- 4) **Identification of AURKB as a new actor in vascular remodeling in PAH.** Lemay SE, Sauvaget M, Mougin M, El Kabbout R, Martineau S, Breuils-Bonnet S, Bourgeois A, Salem M, Potus F, Provencher S, Boucherat O, Bonnet S. *ERS International Congress 2023, Milan, Italia, September 9<sup>th</sup>-13<sup>th</sup> 2023.*
- 5) **Targeting Deoxyhypusine synthase-mediated hypusination of eIF5A improves vascular remodeling in pulmonary arterial hypertension.** Lemay SE, Grobs Y, Romanet C, Martineau S, Salem M, Shimauchi T, Breuils-Bonnet S, Bourgeois A, Théberge C, Potus F, Provencher S, Bonnet S, Boucherat O. *ERS International Congress 2023, Milan, Italia, September 9<sup>th</sup>-13<sup>th</sup> 2023.*
- 6) **Targeting ATP citrate lyase to protect against vascular remodeling development.** Grobs Y, Romanet C, Bourgeois A, Lemay SE, Shimauchi T, Breuils-Bonnet S, Potus F, Provencher S, Boucherat O, Bonnet S. *ERS International Congress 2023, Milan, Italia, September 9<sup>th</sup>-13<sup>th</sup> 2023.*
- 7) **The Fibronectin-Binding Integrins System as a Contributor to pulmonary arterial hypertension Pathogenesis.** Lemay SE, Montesinos MS, Grobs Y, Yokokawa T, Shimauchi T, Breuils-Bonnet S, Martineau S, Salem M, Bourgeois A, Romanet C, Huang X, Dowling JE, Lu M, Ray AS, Potus F, Provencher S, Boucherat O, Bonnet S. *ERS International Congress 2023, Milan, Italia, September 9<sup>th</sup>-13<sup>th</sup> 2023.*
- 8) **Role of P300/CBP in pulmonary arterial hypertension and right ventricular failure.** Bourgeois A, Lemay SE, Grobs Y, Romanet C, Théberge C, Shimauchi T, Martineau S, Breuils-Bonnet S, Potus F, Provencher S, Boucherat O, Bonnet S. *ERS International Congress 2023, Milan, Italia, September 9<sup>th</sup>-13<sup>th</sup> 2023.*
- 9) **ATP Citrate Lyase (ACLY): a Promising Target Against Vascular Remodeling Development.** Grobs Y, Romanet C, Lemay SE, Bourgeois A, Breuils-Bonnet S, El-Kabbout R, Theberge C, Martineau S, Voisine P, Potus F, Provencher S, Boucherat O, Bonnet S. *Grover conference. Tabernash, CO, United States October 16<sup>th</sup>-20<sup>th</sup> 2023*
- 10) **Hypusine Signaling: A Novel Pathway Driving Vascular Remodeling in Pulmonary Arterial Hypertension.** Lemay SE, Grobs Y, Martineau S, Salem M, Shimauchi T, Breuils-Bonnet S,

Bourgeois A, Théberge C, Potus F, Provencher S, Bonnet S, Boucherat O. *Grover conference. Tabernash, CO, United States October 16<sup>th</sup>-20<sup>th</sup> 2023*

- 11) **Deoxyhypusine synthase-mediated hypusination of eIF5A drives vascular remodeling in pulmonary arterial hypertension.** Lemay SE, Grobs Y, Romanet C, Martineau S, Salem M, Shimauchi T, Breuils-Bonnet S, Bourgeois A, Théberge C, Potus F, Provencher S, Bonnet S, Boucherat O. *Journées scientifiques de l'Institut Universitaire de Cardiologie et Pneumologie de Québec – Université Laval. Quebec, Qc. Canada. October 10th-11th 2023*
- 12) **Targeting eIF5A hypusination: an opportunity to counter parenchymal and vascular remodeling in Idiopathic Pulmonary Fibrosis.** Sauvaget M, Lemay SE, Shimauchi T, Breuils-Bonnet S, Bourgeois A, Potus F, Provencher S, Bonnet S, Boucherat O. *Journées scientifiques de l'Institut Universitaire de Cardiologie et Pneumologie de Québec – Université Laval. Quebec, Qc. Canada. October 10th-11th 2023*
- 13) **Déterminer le meilleur modèle de rongeur pour étudier la dysfonction ventriculaire droite.** Theberge C, Lemay SE, Romanet C, Grobs Y, Bourgeois A, Potus F, Boucherat O, Bonnet S. *Journées scientifiques de l'Institut Universitaire de Cardiologie et Pneumologie de Québec – Université Laval. Quebec, Qc. Canada. October 10th-11<sup>th</sup> 2023*
- 14) **Senescent cells: A Therapeutic target to counter maladaptive right ventricular remodeling in PAH?** Martineau S, Yokokawa T, El Kabbout R, Breuils-Bonnet S, Potus F, Provencher S, Boucherat O, Bonnet S. *Journées scientifiques de l'Institut Universitaire de Cardiologie et Pneumologie de Québec – Université Laval. Quebec, Qc. Canada. October 10th-11<sup>th</sup> 2023*
- 15) **ATP citrate lyase coordinates lipid synthesis and cell cycle regulating genes to promote vascular remodeling in PAH.** Romanet C, Grobs Y, Lemay SE, Bourgeois A, Shimauchi T, Salem M, Martineau S, Breuils-Bonnet S, Sauvaget M, Théberge C, Potus F, Provencher S, Boucherat O, Bonnet S. *Journées scientifiques de l'Institut Universitaire de Cardiologie et Pneumologie de Québec – Université Laval. Quebec, Qc. Canada. October 10th-11<sup>th</sup> 2023*
- 16) **Unravelling the role of Deoxyhypusine synthase-mediated hypusination of eIF5A in pulmonary arterial hypertension.** Lemay SE, Grobs Y, Romanet C, Martineau S, Salem M, Shimauchi T, Breuils-Bonnet S, Bourgeois A, Théberge C, Potus F, Provencher S, Bonnet S, Boucherat O. *American Heart Association Scientific Session. Philadelphia, United States, November 11<sup>th</sup>-13<sup>th</sup> 2023*
- 17) **Histone Acetyltransferase P300/CBP In Pulmonary Arterial Hypertension and Associated Right Ventricular Failure.** Bourgeois A, Lemay SE, Grobs Y, Romanet C, Shimauchi T, Theberge C, Sauvaget M, Martineau S, Breuils-Bonnet S, Potus F, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session. Philadelphia, United States, November 11<sup>th</sup>-13<sup>th</sup> 2023*
- 18) **ATP Citrate Lyase coordinates lipid synthesis and expression cell cycle regulating genes to promote vascular remodeling in Pulmonary Arterial Hypertension.** Romanet C, Grobs Y, Lemay SE, Bourgeois A, Shimauchi T, Salem M, Martineau S, Breuils-Bonnet S, Sauvaget M, Théberge C, Potus F, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session. Philadelphia, United States, November 11<sup>th</sup>-13<sup>th</sup> 2023*

## 2022

- 1) **A Novel ATP Citrate Lyase-Dependent Metabolic-Transcriptional Axis in Pulmonary Arterial Hypertension.** Bonnet S, Romanet C, Grobs Y, Lemay SE, Bourgeois A, Breuils-Bonnet S, Martineau S, Salem M, Potus F, Provencher S, Boucherat O. *American Heart Association Scientific Session, Chicago, United States*
- 2) **Transcriptional Profiling Unveils New Molecular Subgroups of Adaptive and Maladaptive Right Ventricular Remodeling in Pulmonary Hypertension.** Khassafi K, Chelladurai P, R

Nayakanti S, Martineau S, Tello K, Sommer N, Omura J, Breuils-Bonnet S, Kuenne C, Guenther S, Potus F, Boucherat O, Provencher S, Savai R, Seeger W, Looso M, Bonnet S, Pullamsetti SS. *American Heart Association Scientific Session, Chicago, United States*

- 3) **Implication of the Post-Translational Formation of Hypusine in Eif5a in Pulmonary Arterial Hypertension.** Lemay SE, Grobs Y, Shimauchi T, Martineau S, Breuils-Bonnet S, Salem M, Potus F, Provencher S, Bonnet S, Boucherat O. *American Heart Association Scientific Session, Chicago, United States*
- 4) **Integrins Signaling Represents an Exciting Therapeutic Avenue to Counter Vascular Remodeling and Right Ventricular Failure in Pulmonary Arterial Hypertension.** Lemay SE, Montesinos MS, Grobs Y, Yokokawa T, Shimauchi T, Breuils-Bonnet S, Martineau S, Salem M, Bourgeois A, Romanet C, Huang X, Dowling J, Lu M, Ray A, Potus F, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session, Chicago, United States*
- 5) **Role of eIF5A hypusination in Pulmonary Arterial Hypertension.** Lemay SE, Grobs Y, Mkannez G, Shimauchi T, Breuils-Bonnet S, Potus F, Provencher S, Bonnet S, Boucherat O. *American Heart Association Scientific Session, Chicago, United States*
- 6) **DNA-PKcs: A Novel Therapeutic Target in Pulmonary Arterial Hypertension.** Yamamoto K, Yokokawa T, Lemay SE, Bourgeois A, Shimauchi T, Shimauchi K, Nadeau V, Salem M, Breuils-Bonnet S, Potus F, Boucherat O, Provencher S, Bonnet S. *American Heart Association Scientific Session, Chicago, United States*
- 7) **Coronary artery disease: lipogenic enzyme ATP citrate lyase (ACLY) as a novel potential therapeutic target.** Grobs Y, Lemay SE, Romanet C, Breuils-Bonnet S, Bourgeois A, Martineau S, Salem M, Voisine P, Potus F, Provencher S, Boucherat O, Bonnet S. *International Vascular Biology Meeting, Oakland, California, USA, October 13<sup>th</sup>-17<sup>th</sup> 2022.*
- 8) **Role of Hypusine Signaling in Pulmonary Arterial Hypertension.** Lemay SE, Grobs Y, Mkannez G, Shimauchi T, Breuils-Bonnet S, Potus F, Provencher S, Bonnet S, Boucherat O. *PVRI 2022 Annual World Congress. Athens, Greece, June 22<sup>nd</sup>-26<sup>th</sup> 2022.*
- 9) **Implication of Fibronectin-binding integrins in maladaptive lung and RV remodeling in pulmonary arterial hypertension.** Lemay SE, Montesinos MS, Grobs Y, Yokokawa T, Shimauchi T, Breuils-Bonnet S, Martineau S, Mkannez G, Bourgeois A, Romanet C, Huang X, Dowling JE, Lu M, Ray AS, Potus F, Provencher S, Boucherat O, Bonnet S. *PVRI 2022 Annual World Congress, Athens, Greece*
- 10) **ATP Citrate lyase (ACLY) a new therapeutic target for vascular remodeling diseases.** Grobs Y, Romanet C, Bourgeois A, Lemay SE, Shimauchi T, Breuils-Bonnet S, Potus F, Provencher S, Boucherat O, Bonnet S. *PVRI 2022 Annual World Congress, Athens, Greece*
- 11) **Implication of histone acetyltransferase P300 in right heart failure associated with pulmonary arterial hypertension.** Bourgeois A, Lemay SE, Grobs Y, Shimauchi T, Martineau S, Breuils-Bonnet S, Mkannez G, Potus F, Provencher S, Boucherat O, Bonnet S. *PVRI 2022 Annual World Congress, Athens, Greece*
- 12) **Targeting eIF5A hypusination: an opportunity to counter pulmonary vascular remodeling in Pulmonary Arterial Hypertension.** Lemay SE, Grobs Y, Mkannez G, Shimauchi T, Breuils-Bonnet S, Potus F, Provencher S, Bonnet S, Boucherat O. *PVRI 2022 Annual World Congress, Athens, Greece*
- 13) **Targeting Integrins signaling: A novel therapeutic avenue to counter vascular remodeling and right ventricular failure in pulmonary arterial hypertension.** Lemay SE, Montesinos MS, Grobs Y, Yokokawa T, Shimauchi T, Breuils-Bonnet S, Martineau S, Orcholski M, Bourgeois A, Romanet C, Huang X, Dowling JE, Lu M, Ray AS, Potus F, Provencher S, Boucherat O, Bonnet S. *ATS International Conference, San Diego, United States*

- 14) **ATP Citrate Lyase Orchestrates Metabolic and Epigenetic Modifications in Pulmonary Arterial Hypertension.** Romanet C, Bourgeois A, Grobs Y, Shimauchi T, Yokokawa T, Habbout K, Lemay SE, Nadeau V, Orcholski M, Mkannez G, Breuils-Bonnet S, Shimauchi K, Provencher S, Boucherat O, Bonnet S. *ATS International Conference, San Diego, United States*
- 15) **Role of Hypusine Signaling in Pulmonary Arterial Hypertension.** Lemay SE, Grobs Y, Orcholski M, Shimauchi T, Bonnet L, Potus F, Provencher S, Bonnet S, Boucherat O. *ATS International Conference, San Diego, United States*

## 2021

- 1) **Validity and relevance of Clinical Worsening as a Composite endpoint in Pulmonary Arterial Hypertension Trials.** Mai V, Tremblay E, Gosselin C, Lajoie AC, Lacasse Y, Lega JC, Bonnet S, Provencher S. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 2) **Sin3a Gene Delivery Restores Bmpr2 expression Through Foxk2 in Pulmonary Arterial Endothelial Cells and Inhibits Sugen/Hypoxia-Induced PAH.** Bissierier M, Zhang S, Dorfmueller P, Humbert M, Weber T, Perros F, Sassi Y, Bonnet S, Hadri L. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 3) **NLRP3 Inflammasome Activation in Macrophages Drives Adverse Right Ventricular Remodeling and Dysfunction.** Lima P, Al-Qazizi R, Prisco S, Potus F, Gupta A, Chen KH, Tian L, Mewburn J, Jones O, Wu D, Maurice D, Bonnet S, Provencher S, Prins K, Archer SL. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 4) **ROR2 Deficiency is Associated with Endothelial Dysfunction and Reduced Angiogenesis in Pulmonary Arterial Hypertension.** Chakraborty A, Nathan A, Agarwal S, Orcholski M, Yuan K, Breuils-Bonnet S, Bonnet S, DeJesus Perez V. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 5) **ATP Citrate Lyase: A New Therapeutic Target for Vascular Remodeling Disease.** Grobs Y, Lemay SE, Romanet C, Breuils-Bonnet S, Orcholski M, Bourgeois A, Sauvaget M, Shimauchi K, Voisine P, Paulin R, Potus F, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 6) **Novel Contribution of an Epigenetic Factor “g9a” in Pulmonary Arterial Hypertension.** Awada C, Grobs Y, Breuils-Bonnet S, Krishna V, Jeyaseelan J, Potus F, Paulin R, Provencher S, Bonnet S, Boucherat O. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 7) **BMPR2 Mutation and Breast cancer: A discovery still unexplained.** Toro V, Grobs Y, Martineau S, Nadeau V, Trembay E Boucherat O, Potus F, Bonnet S. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 8) **PARP1-PKM2 Axis Mediates Right Ventricular Failure Associated with Pulmonary Arterial Hypertension.** Shimauchi T, Wu WH, Grobs Y, Omura J, Tremblay E, Martineau S, Yokokawa T, Shimauchi K, Nadeau V, Breuils-Bonnet S, Orcholski M, Paulin R, Potus F, Boucherat O, Provencher S, Bonnet S. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 9) **ATP Citrate Lyase: An Attractive Target at the Nexus of Metabolic and Epigenetic Alterations in Pulmonary Arterial Hypertension.** Romanet C, Bourgeois A, Grobs Y, Shimauchi T, Lemay SE, Nadeau V, Breuils-Bonnet S, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 10) **Proteomic Signature of Right Ventricular Failure in Pulmonary Arterial Hypertension.** Yokokawa T, Shimauchi T, Breuils-Bonnet S, Potus F, Paulin R, Provencher S, Bonnet S, Boucherat O. *American Heart Association Scientific Session (Virtual due to COVID), Boston*

- 11) **Role of Integrin Signalin in Pulmonary Arterial Hypertension.** Lemay SE, Montesinos M, Grobs Y, Shimauchi T, Breuils-Bonnet S, Martineau S, Huang X, Dowling JE, Lu M, Ray AS, Paulin R, Potus F, Provencher S, Boucherat O, Bonnet S *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 12) **Failure of Right Ventricular adaptation to Pressure Overload Due to a Profound Deficiency in Adenylate Kinase 1 and Impaired Ventricular Energetics.** Zelt J, Cadete V, Deng Y, Godoy R, Cuillerier A, Rowe K, Abdul-Ghani M, Megeney L, Burelle Y, Giulivi A, Stewart AF, Provencher S, Breuils-Bonnet S, Bonnet S, Segalen V, deKemp R, Beanlands RS, Mielniczuk L, Stewart DJ. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 13) **Implication of Aurora Kinase B in Pulmonary Arterial Hypertension.** Sauvaget M, Lemay SE, Breuils-Bonnet S, Orcholski M, Mkannez G, Shimauchi K, Paulin R, Potus F, Boucherat O, Bonnet S. *American Heart Association Scientific Session (Virtual due to COVID), Boston*
- 14) **PARP1-PKM2 axis exacerbates Right Ventricular Failure associated with Pulmonary Arterial Hypertension.** Shimauchi T, Omura J, Breuils-Bonnet S, Nadeau V, Tremblay E, Grobs Y, Wu WH, Shimauchi K, Potus F, Paulin R, Provencher S, Boucherat O, Bonnet S. *ATS International Conference (Virtual due to COVID), Philadelphia*
- 15) **Implication of the Histone Methyltransferase “G9a” in Pulmonary Arterial Hypertension.** Awada C, Bourgeois A, Habbout K, Nadeau V, Breuils-Bonnet S, Paulin R, Provencher S, Bonnet S, Boucherat O. *ATS International Conference (Virtual due to COVID), Philadelphia*
- 16) **The AKT/FOXO3 axis involvement in Pulmonary Arterial Hypertension development.** Grobs Y, Romanet C, Omura J, Nadeau V, Orcholski M, Shimauchi T, Toro V, Tremblay E, Lemay SE, Bourgeois A, Paulin R, Provencher S, Boucherat O, Bonnet S. *ATS International Conference (Virtual due to COVID), Philadelphia*
- 17) **Linking Metabolism to Epigenetic Dysfunction in Pulmonary Arterial Hypertension: Role for the ACLY/P300 axis.** Bourgeois A, Romanet C, Lemay SE, Grobs Y, Tremblay E, Nadeau V, Breuils-Bonnet S, Potus F, Paulin R, Provencher S, Boucherat O, Bonnet S. *ATS International Conference (Virtual due to COVID), Philadelphia*
- 18) **FOXO3: a new potential therapeutic target in Pulmonary Arterial Hypertension.** Grobs Y, Romanet C, Omura J, Nadeau V, Orcholski M, Shimauchi T, Toro V, Tremblay E, Lemay SE, Bourgeois A, Paulin R, Provencher S, Boucherat O, Bonnet S. *15th PVRI annual world congress on PVD, (Virtual due to COVID), Greece*
- 19) **Implication of the Histone Methyltransferase “G9a” in Pulmonary Arterial Hypertension.** Awada C, Bourgeois A, Habbout K, Nadeau V, Breuils-Bonnet S, Grobs Y, Paulin R, Provencher S, Bonnet S, Boucherat O. *15th PVRI annual world congress on PVD, (Virtual due to COVID), Greece*
- 20) **Role for the ACLY/P300 axis in pulmonary hypertension: A Novel metabolism-epigenetic interplay.** Bourgeois A, Romanet C, Lemay SE, Grobs Y, Tremblay E, Nadeau V, Breuils-Bonnet S, Paulin R, Provencher S, Boucherat O, Bonnet S. *15th PVRI annual world congress on PVD, (Virtual due to COVID), Greece*
- 21) **PARP1-PKM2 axis mediates Right Ventricular Failure associated with Pulmonary Arterial Hypertension.** Shimauchi T, Omura J, Breuils-Bonnet S, Nadeau V, Tremblay E, Grobs Y, Wu WH, Shimauchi K, Potus F, Paulin R, Provencher S, Boucherat O, Bonnet S. *15th PVRI annual world congress on PVD, (Virtual due to COVID), Greece*
- 22) **Breast cancer and heritable PAH due to bmpr2 mutation: an unexpected discovery.** Toro V, Nadeau V, Hélie P, Omura J, Grobs Y, Paulin R, Potus F, Boucherat O, Provencher S, Bonnet S. *15th PVRI annual world congress on PVD, (Virtual due to COVID), Greece*

- 23) **Role for Checkpoint Kinases in Lung Fibrogenesis and Pulmonary Vascular Remodeling: a Translational Study.** Wu WH, Vitry G, Nadeau V, Toro V, Tremblay E, Omura J, Orcholski M, Marsolais D, Martineau S, Breuils-Bonnet S, Potus F, Paulin R, Provencher S, Boucherat O, Bonnet S. *15th PVRI annual world congress on PVD, (Virtual due to COVID), Greece*

## 2020

- 1) **Functional Role of G9a in Pulmonary Arterial Hypertension.** Awada C, Nadeau V, Habbout K, Breuils-Bonnet S, Paulin R, Boucherat O, Provencher S, Bonnet S. *American Thoracic Society International Conference, Philadelphia, United States*
- 2) **Role of PKM2-PARP1/inflammation/oxidative DNA damage axis in the pathogenesis of Right Ventricular Failure Associated with Pulmonary Arterial Hypertension.** Shimauchi T, Omura J, Breuils-Bonnet S, Nadeau V, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Thoracic Society International Conference, Philadelphia, United States*
- 3) **Failure associated with Pulmonary Arterial Hypertension.** Shimauchi T, Omura J, Breuils-Bonnet S, Nadeau V, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Thoracic Society International Conference Philadelphia, United States*
- 4) **The Anti-lung cancer drug (R)-Crizotinib predisposes and exacerbates pulmonary hypertension.** Awada C, Potus F, Tremblay E, Paulin R, Provencher S, Bonnet S, Boucherat O. *American Heart Association Scientific Session, Dallas, United States*
- 5) **Long non-coding RNA H19 promotes right ventricular failure in PAH.** Omura J, Habbout K, Shimauchi T, Breuils-Bonnet S, Tremblay E, Martineau S, Nadeau F, Potus F, Archer SL, Lin J, Zafar H, Kiely DG, Lawrie A, Paulin R, Boucherat O, Bonnet S, Provencher S. *American Thoracic Society International Conference, Philadelphia, United States*
- 6) **ATP citrate lyase a new signaling hub between metabolism and epigenetic in vascular remodeling and right ventricle failure in pulmonary arterial hypertension.** Romanet C, Bourgeois A, Grobs Y, Breuils-Bonne S, Nadeau V, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session, Dallas, United States*
- 7) **Role of Checkpoint Kinases in Pulmonary Hypertension Associated with Idiopathic Pulmonary Fibrosis.** Wu WH, Vitry G, Nadeau V, Orcholski M, Paulin R, Provencher S, Boucherat O, Bonnet S. *American thoracic society international conference, Philadelphia, United States*
- 8) **Identification of circulating long non-coding RNA H19 as a novel biomarker for right ventricular failure associated with pulmonary arterial hypertension.** Omura J, Habbout K, Shimauchi T, Breuils-Bonnet S, Tremblay E, Martineau S, Nadeau F, Potus F, Archer SL, Lin J, Zafar H, Kiely DG, Lawrie A, Paulin R, Boucherat O, Bonnet S, Provencher S. *American Thoracic Society International Conference, Philadelphia, United States*
- 9) **Clock modulating small molecule SR9001 enhances cell cycle arrest in pulmonary arterial hypertension.** Grobs Y, Lampron MC, Vitry G, Orcholski M, Provencher S, Boucherat O, Bonnet S, Paulin R. *American Heart Association Scientific Session, Dallas, United States*
- 10) **The epigenetic modifier EP300: a new corner stone in the regulation of both vascular remodeling and right ventricle failure in pulmonary arterial hypertension.** Bourgeois A, Lemay SE, Grobs Y, Romanet C, Toro V, Omura J, Nadeau V, Tremblay E, Breuils-Bonnet S, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session, Dallas, United States*
- 11) **Checkpoint kinases important players in lung fibrogenesis and pulmonary vascular remodeling: a translational study.** Wu WH, Vitry G, Nadeau V, Omura J, Orcholski M, Marsolais D, Tremblay E, Martineau S, Breuils-Bonnet S, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session, Dallas, United States*

- 12) **The AKT/AMPK/FOXO3 axis in pulmonary arterial hypertension.** Grobs Y, Romanet C, Omura J, Nadeau V, Orcholski M, Shimauchi T, Toro, Tremblay E, Lemay SE, Bourgeois A, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session, Dallas, United States*
- 13) **Implication of the histone methyltransferase “G9a” in pulmonary arterial hypertension.** Awada C, Habbout K, Nadeau V, Breuils-Bonnet S, Paulin R, Provencher S, Bonnet S, Boucherat O. *American Heart Association Scientific Session, Dallas, United States*
- 14) **Role of PARP1-PKM2 axis in the pathogenesis of right ventricular failure associated with pulmonary arterial hypertension.** Shimauchi T, Omura J, Breuils-Bonnet S, Nadeau V, Tremblay V, Grobs Y, Potus F, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Heart Association Scientific Session, Dallas, United States*
- 15) **Long Non-coding RNA H19 exacerbates Right Ventricular Failure in PAH.** Omura J, Habbout K, Shimauchi T, Breuils-Bonnet S, Tremblay E, Martineau S, Nadeau V, Potus F, L. Archer. S, Lin J, Zafar H, G Kiely D, Lawrie A, Paulin R, Provencher S, Boucherat O, Bonnet S. *Pulmonary Vascular Research Institute congress 2020, January 29<sup>th</sup>-February 2<sup>nd</sup>, Lima, Peru*
- 16) **Circulating long non-coding RNA H19 as a novel biomarker for right ventricular failure associated with pulmonary arterial hypertension.** Omura J, Habbout K, Shimauchi T, Breuils-Bonnet S, Tremblay E, Martineau S, Nadeau V, Potus F, Archer SL, Lawrie A, Paulin R, Provencher S, Boucherat O, Bonnet S. *Pulmonary Vascular Research Institute congress 2020, January 29<sup>th</sup>-February 2<sup>nd</sup>, Lima, Peru*
- 17) **Role of PARP1-PKM2/inflammation/oxidative DNA damage axis in the pathogenesis of right ventricular failure associated with pulmonary arterial hypertension.** Shimauchi T, Omura J, Breuils-Bonnet S, Nadeau V, Paulin R, Provencher S, Boucherat O, Bonnet S. *Pulmonary Vascular Research Institute congress 2020, January 29<sup>th</sup>-February 2<sup>nd</sup>, Lima, Peru*
- 18) **Implication of the histone methyltransferase “G9a” in pulmonary arterial hypertension.** Awada C, Habbout K, Nadeau V, Breuils-Bonnet S, Paulin R, Provencher S, Boucherat O, Bonnet S. *Pulmonary Vascular Research Institute congress 2020, January 29<sup>th</sup>-February 2<sup>nd</sup>, Lima, Peru*

## 2019

- 1) **Epigenetic factor CBP/p300 in pulmonary arterial hypertension.** Bourgeois A, Habbout K, Robert W, Orcholski M, Breuils-Bonnet S, Paulin R, Provencher S, Bonnet S, Boucherat O. *American Heart Association 2019, November 16-18<sup>th</sup>, Philadelphia, PA, USA*
- 2) **Role of PKM2 and oxidative DNA damage in the pathogenesis of right ventricular failure associated with pulmonary arterial hypertension.** Shimauchi T, Omura J, Breuils-Bonnet S, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Heart Association 2019, November 16-18<sup>th</sup>, Philadelphia, PA, USA*
- 3) **BMPR2 mutation: Another evidence that cancer and pulmonary hypertension can be linked together.** Nadeau V, Tremblay E, Ranchoux B, Lampron MC, Perros F, Helie P, Paulin R, Boucherat O, Provencher S, Bonnet S. *American Heart Association 2019, November 16-18<sup>th</sup>, Philadelphia, PA, USA*
- 4) **LncRNAH19/EZH2 axis: a new biomarker and therapeutic target in right ventricular failure associated with pulmonary arterial hypertension.** Omura J, Habbout K, Shimauchi T, Breuils-Bonnet S, Tremblay E, Martineau S, Nadeau V, Gagnon K, Potus F, Archer SL, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Heart Association 2019, November 16-18<sup>th</sup>, Philadelphia, PA, USA*

- 5) **Coronary artery remodeling contributes to right ventricular failure in pulmonary arterial hypertension patients.** Martineau S, Nadeau V, Omura J, Habbout K, Breuils-Bonnet S, Tremblay E, Orcholski M, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Heart Association 2019, November 16-18<sup>th</sup>, Philadelphia, PA, USA*
- 6) **Sensitize pulmonary artery smooth muscle cells to oxidative stress by 8-oxoguanine hydrolase NUDT1 inhibition has a therapeutic potential in pulmonary arterial hypertension.** Vitry G, Lampron MC, Bourgeois A, Paradis R, Nadeau V, Breuils-Bonnet S, Tremblay E, Martineau S, Orcholski M, Lambert C, Provencher S, Boucherat O, Bonnet S, Paulin R. *American Heart Association 2019, November 16-18<sup>th</sup>, Philadelphia, PA, USA*
- 7) **Long Non-coding RNA H19 in the pathogenesis of right ventricular failure associated with pulmonary arterial hypertension- A putative novel biomarker and therapeutic target.** Omura J, Habbout K, Martineau S, Breuils-Bonnet S, Nadeau V, Potus F, Archer SL, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Thoracic Society international conference, Dallas, US, May 17-May 22 2019.*
- 8) **Inducing oxidative DNA damage overload by inhibiting the 8oxoguanine hydrolase MTH1 to kill pulmonary artery smooth muscle cells: a new therapeutic strategy in pulmonary arterial hypertension.** Vitry G, Paradis R, Nadeau V, Tremblay E, Provencher S, Boucherat O, Bonnet S. *American Thoracic Society international conference, Dallas, US, May 17-May 22 2019.*
- 9) **Role of Long Non-coding RNA H19 in coronary artery remodeling in PAH patients with right ventricular failure.** Nadeau V, Omura J, Martineau S, Habbout K, Breuils-Bonnet S, Potus F, Archer SL, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Thoracic Society international conference, Dallas, US, May 17-May 22 2019*
- 10) **Extended anticoagulation for venous thromboembolism: a systematic review and meta-analysis.** Mai V; Guay CA, Perreault L, Bonnet S, Bertoletti L, Lacasse Y, Jardel S, Lega JC, Provencher S. *Journées scientifiques de la recherche universitaire du CRIUCPQ May 8-9<sup>th</sup> 2019, Université Laval.*
- 11) **Rôle de CHK1 et effets thérapeutiques en hypertension artérielle pulmonaire.** Bourgeois A, Bonnet S, Breuils-Bonnet S, Paradis R, Tremblay E, Lampron MC, Bertero T, Peterlini T, Chan SY, Norris KA, Paulin R, Provencher S, Boucherat O. *Journées scientifiques de la recherche universitaire du CRIUCPQ May 8-9<sup>th</sup> 2019, Université Laval.*
- 12) **Long Non-coding RNA H19 in right ventricular failure associated with pulmonary arterial hypertension.** Omura J, Habbout K, Martineau S, Breuils-Bonnet S, Nadeau V, Potus F, Archer SL, Paulin R, Provencher S, Boucherat O, Bonnet S. *Journées scientifiques de la recherche universitaire du CRIUCPQ May 8-9<sup>th</sup> 2019, Université Laval.*
- 13) **Implication of the histone methyltransferase EZH2 in PAH.** Habbout K, Omura J, Breuils-Bonnet S, Martineau S, Provencher S, Bonnet S, Boucherat O. *Journées scientifiques de la recherche universitaire du CRIUCPQ May 8-9<sup>th</sup> 2019, Université Laval.*
- 14) **L'inhibiteur de BRD4 Apabetalone (RVX-208): Du premier essai préclinique multicentrique en HTAP jusqu'aux essais cliniques.** Tremblay E, Van der Feen DE, Kurakula KB, Boucherat O, Bossers GPL, Bourgeois A, Lampron MC, Habbout K, Martineau S, Kulikowski E, Jahagirdar R, Schaliij I, Bogaard HJ, Provencher S, Berger RMF, Bartelds B, Goumans MJ, Bonnet S. *Journées scientifiques de la recherche universitaire du CRIUCPQ May 8-9<sup>th</sup> 2019, Université Laval.*
- 15) **Les rats mutant BMPR2 développent de manière spontanée des tumeurs de la glande mammaire.** Nadeau V, Tremblay E, Ranchoux B, Lampron MC, Paulin R, Boucherat O, Provencher S, Bonnet S. *Journées scientifiques de la recherche universitaire du CRIUCPQ May 8-9<sup>th</sup> 2019, Université Laval*
- 16) **Coronary artery remodeling a new component of right ventricular failure in PAH.** Martineau S, Nadeau V, Omura J, Habbout K, Tremblay E, Breuils-Bonnet S, Paulin R, Boucherat O,

Provencher S, Bonnet S. *Journées scientifiques de la recherche universitaire du CRIUCPQ May 8-9<sup>th</sup> 2019, Université Laval*

- 17) **Long Non-coding RNA H19 in the Pathogenesis of Right Ventricular Failure associated with Pulmonary Arterial Hypertension.** Omura J, Habbout K, Martineau S, Breuils-Bonnet S, Potus F, Archer SL, Paulin R, Provencher S, Boucherat O, Bonnet S. *Japanese circulation society meeting 2019, March 29-31<sup>st</sup> 2019, Tokyo, Japan*
- 18) **Inhibition of CHK1 elicits therapeutic effects in pulmonary arterial hypertension.** Boucherat O, Bourgeois A, Breuils-Bonnet S, Provencher S, Bonnet S. *13th PVRI annual world congress on PVD, January 30- February 3, 2019, Barcelona, Spain*
- 19) **The BRD4 inhibitor Apabetalone (RVX-208) improves experimental PAH in Sugen/hypoxia rat model.** Tremblay E, Bourgeois A, Martineau S, Lampron MC, Jahagirdar R, Kulikowski E, Boucherat O, Provencher S, Bonnet S. *13th PVRI annual world congress on PVD, January 30- February 3, 2019, Barcelona, Spain*
- 20) **Long Non-coding RNA H19 a new signaling hub in the pathogenesis of right ventricular failure associated with pulmonary arterial hypertension.** Omura J, Habbout K, Martineau S, Breuils-Bonnet S, Nadeau V, Potus F, Archer SL, Paulin R, Provencher S, Boucherat O, Bonnet S. *13th PVRI annual world congress on PVD, January 30- February 3, 2019, Barcelona, Spain*
- 21) **BMPR2 mutant rat model unexpectedly develops spontaneous breast tumor but no pulmonary hypertension.** Nadeau V, Tremblay E, Ranchoux B, Lampron MC, Paulin R, Boucherat O, Provencher S, Bonnet S. *13th PVRI annual world congress on PVD, January 30- February 3, 2019, Barcelona, Spain*
- 22) **Coronary artery remodeling a new component of right ventricular failure in PAH.** Martineau S, Nadeau V, Omura J, Habbout K, Tremblay E, Breuils-Bonnet S, Paulin R, Boucherat O, Provencher S, Bonnet S. *13th PVRI annual world congress on PVD, January 30- February 3, 2019, Barcelona, Spain*

## **2018**

- 1) **Cardiopulmonary Best abstract Award: Long Noncoding RNA H19 in the pathogenesis of right ventricular failure associated with pulmonary arterial hypertension, a putative novel biomarker and therapeutic target.** Omura J, Habbout K, Martineau S, Breuils-Bonnet S, Potus F, Archer S, Paulin R, Provencher S, Boucherat O, Bonnet S. *American Heart Association congress, November 10-14<sup>th</sup> 2018, Chicago, IL, USA* *Circulation* 2018; 138 (Suppl\_1): A13222
- 2) **Role for miR-424/CHK1 signaling in Pulmonary hypertension.** Bourgeois A, Habbout K, Tremblay E, Lampron MC, Vitry G, Peterlini T, Breuils-Bonnet S, Provencher S, Boucherat O, Bonnet S. *American Heart Association congress, November 10-14<sup>th</sup> 2018, Chicago, IL, USA* *Circulation* 2018
- 3) **Role of the epigenetic factor EZH2 in pulmonary arterial hypertension.** Habbout K, Martineau S, Bourgeois A, Breuils-Bonnet S, Omura J, Provencher S, Bonnet S, Boucherat O. *American Heart Association congress, November 10-14<sup>th</sup> 2018, Chicago, IL, USA* *Circulation* 2018;138(Suppl\_1): A13446
- 4) **NUDT1 overexpression in pulmonary arterial hypertension: a protective mechanism against stress?** Paradis R, Habbout K, Binabout A, Lampron MC, Breuils-Bonnet S, Provencher S, Boucherat O, Bonnet S. *American Heart Association congress, November 10-14<sup>th</sup> 2018, Chicago, IL, USA.* *Circulation* 2018;138(Suppl\_1): A14108
- 5) **Crizotinib exacerbates the severity of PAH in a preclinical rat model.** Potus F, Boucherat O, Provencher S, Bonnet S. *American Heart Association congress, November 10-14<sup>th</sup> 2018, Chicago, IL, USA* *Circulation* 2018;138(Suppl\_1): A17213

- 6) **BRD4 Antagonist RVX208 Reverses Vascular Remodeling and Supports the Right Ventricle in Pulmonary Arterial Hypertension via PLK1 and FoxM1.** Van der Feen DE, Kurakula K, Boucherat O, Bossers GP, Tremblay E, Jahagirdar R, Kulikowski E, Provencher S, Bogaard HJ, Bartelds B, Berger RM, Goumans MJT, Bonnet S. *American Heart Association congress, November 10-14<sup>th</sup> 2018, Chicago, IL, USA* Circulation. 2018;138:A16556
- 7) **Implication of the histone methyltransferase EZH2 in pulmonary arterial hypertension.** K. Habbout, S. Provencher, S. Bonnet, O. Boucherat. *European Respiratory Society international congress, Paris, France, September 15-19, 2018.* Eur Respir J 2018;52 (suppl 62): PA3925
- 8) **Role of CHK1 in Pulmonary Arterial Hypertension.** O. Boucherat, A. Bourgeois, S. Breuils-Bonnet, S. Provencher, **S. Bonnet.** *European Respiratory Society international congress, Paris, France, September 15-19, 2018.* Eur Respir J 2018;52 (suppl 62): PA3930
- 9) **Long noncoding RNA H19 in the pathogenesis of right ventricular failure with pulmonary arterial hypertension.** J. Omura, S. Breuils-Bonnet, O. Boucherat, S. Provencher, S. Bonnet. *European Respiratory Society international congress, Paris, France, September 15-19, 2018.* Eur Respir J 2018;52 (suppl 62): PA3933
- 10) **Urocortin-2 improves right ventricular function and attenuates experimental pulmonary arterial hypertension.** R. Adão, P. Mendes-Ferreira, D. Santos-Ribeiro, C. Maia-Rocha, L. Pimentel, C. Pinto, EP. Mulvaney, HM. Reid, B.T Kinsella, F. Potus, S. Breuils-Bonnet, M.T. Rademaker, S. Provencher, S. Bonnet, A. Leite-Moreira, C. Brás-Silva S. *European Respiratory Society international congress, Paris, France, September 15-19, 2018.* Eur Respir J 2018;52 (suppl 62): PA3041
- 11) **The BRD4-PLK1 axis drives vascular remodeling in PAH.** O. Boucherat, E. Tremblay, S. Martineau, R. Jahagirdar, E. Kulikowski, S. Provencher, S. Bonnet. *European Respiratory Society international congress, Paris, France, September 15-19, 2018.* Eur Respir J 2018;52 (suppl 62): PA3929
- 12) **Long non coding RNA H19 in the pathogenesis of right ventricular dysfunction with pulmonary arterial hypertension.** Omura J, Breuils-Bonnet S, Boucherat O, Provencher S, Bonnet S. *Journées scientifiques de la recherche universitaire CRIUCQ, May 30-31<sup>th</sup> 2018, Québec city, Canada*
- 13) **Implication de la protéine CHK1 dans l'hypertension artérielle pulmonaire.** Bourgeois A, Breuils-Bonnet S, Paradis R, Tremblay E, Peterlini T, Vitry G, Lampron MC, Bertero T, Chan SY, Norris KA, Paulin R, Provencher S, Bonnet S, Boucherat O. *Journées scientifiques de la recherche universitaire CRIUCQ, May 30-31<sup>th</sup> 2018, Québec city, Canada*
- 14) **Long Noncoding RNA H19 in the development of pulmonary arterial hypertension and right ventricular failure.** Omura J, Peterlini T, Provencher S, Bonnet S. *American Thoracic Society congress, 19-23<sup>th</sup> May 2018, San Diego, CA (USA)* Am. J. Respir. Crit, Care Med. 2018 (197)
- 15) **Apabeltone (RVX-208) alone and in combination with standard of care improves experimental PAH in Sugden/hypoxia rat model.** Tremblay E, Paquet-Marceau S, Lampron MC, Jahagirdar R, Kulikowski E, Provencher S, Bonnet S. *American Thoracic Society congress, 19-23<sup>th</sup> May 2018, San Diego, CA (USA)* Am. J. Respir. Crit, Care Med. 2018 (197)
- 16) **Inhibiting HDAC6/RUNX2 axis as a new therapeutic strategy in Idiopathic Pulmonary Fibrosis.** Vitry G, Paradis R, Bourgeois A, Gendron D, Marsolais D, Provencher S, Paulin R, Bonnet S. *American Thoracic Society congress, 19-23<sup>th</sup> May 2018, San Diego, CA (USA)* Am. J. Respir. Crit, Care Med. 2018 (197)
- 17) **Upregulation of CHK1 in PAH- PSMCs Is Essential for Proliferation and Survival by Promoting DNA Repair Mechanisms.** T. Peterlini, M. C. Lampron, N. Samson, A. Bourgeois, S. Breuils-Bonnet, T. Bertero, S. Y. Chan, S. Provencher, O. Boucherat, S. Bonnet. *American Thoracic Society annual congress, San Diego, May 20-23, 2018.* Am. J. Respir. Crit, Care Med. 2018 (197)

- 18) **Implication of NUDT1 in Pulmonary Arterial Hypertension.** A. Binabout, MC. Lampron, S. Breuils- Bonnet, S. Provencher, S. Bonnet. *American Thoracic Society annual congress, San Diego, May 20-23, 2018.* Am. J. Respir. Crit, Care Med. 2018 (197)

**C) Non-refereed contributions****Presentation as invited guest speaker**

Total number of presentations: 102

Presentation in the last 5 years: 26

|     | <b>Presentation title</b>   | <b>Congress/Meeting/University</b>  | <b>City/Country</b>                                | <b>Date</b> |
|-----|---|---|--|-------------|
| 1.  | Epigenetic based medicine in vascular diseases  | Basic Science and Engineering –BASE –Initiative Lecture Stanford University | Palo Alto US                                       | 04/2024     |
| 2.  | Novel predictive biomarker in PAH   | Grand Rounds in Pulmonary and Critical Care Medicine Stanford University    | Palo Alto US                                       | 04/2024     |
| 3.  | Canadian breakthrough discoveries in PAH  | Annual Scientific Meeting of the Japanese Circulation Society               | Fukuoka Japan                                      | 03/2023     |
| 4.  | Bridging metabolism and epigenetic in PAH   | Keystone symposium in PAH   | Santa Fe US  | 06/2023     |
| 5.  | BET inhibitors and pulmonary vascular diseases  | Grover Conference Lecture   | Denver US  | 10/2023     |
| 6.  | Metabolism and pulmonary hypertension: a New hope ?   | Harvard Right heart failure symposium                                       | Boston US  | 11/2023     |
| 7.  | A Novel ATP citrate lyase-dependent metabolic transcriptional axis in pulmonary arterial hypertension | American Heart Association Scientific Session                               | Chicago, United States                             | 11/2022     |
| 8.  | H19: A Biomarker and Target for RV Dysfunction in PAH   | American Heart Association Scientific Session                               | Boston, United States (Virtual due to COVID)       | 11/2021     |
| 9.  | From mice to human: The latest of PAH pathophysiology   | ISHLT   | Montreal, Canada (Virtual due to COVID)            | 04/2021     |
| 10. | New pathophysiological insights and emerging therapies for Pulmonary arterial hypertension            | International Web Conference on Pulmonary Vascular Disease                  | Shanghai, China (Virtual due to COVID)             | 04/2021     |
| 11. | LncRNAs H19 and RV failure  | American Thoracic Society congress  | Philadelphia, United States (Virtual due to COVID) | 05/2020     |
| 12. | PKM2 and PARP-1 signaling in human RV failure   | PVRI annual meeting   | Lima, Peru   | 01/2020     |
| 13. | Breast cancer and BMPR2 mutation a new class of pulmonary hypertension                                | PVRI annual meeting   | Lima, Peru   | 01/2020     |
| 14. | The role of the dark genome in pulmonary hypertension and right heart failure                         | American Heart Association Scientific session                               | Philadelphia, United States                        | 11/2019     |

|     |  |  |                  |               |
|-----|--|--|------------------|---------------|
| 15. | Cancer theory of PAH   | Canadian Vascular Network  | Montréal, Canada | 06/08/2019    |
| 16. | Preclinical research guidelines in PAH                                   | PVRI Drug discovery meeting  | Paris, France    | 03/07/2019    |
| 17. | Mechanisms of lung injury in PAH: experimental and clinical perspectives | 4 <sup>th</sup> RV symposium   | Toronto, Canada  | 06/04/2019    |
| 18. | Stress signaling response in PAH   | Tohoku University  | Senai, Japan     | 01/04/2019    |
| 19. | BRD4 inhibitors: new therapeutic endeavor in PAH                         | 83 <sup>rd</sup> Annual Scientific Meeting of the Japanese Circulation Society | Yokohama, Japan  | 29-31/03/2019 |
| 20. | DNA repair, the dark side of PAH   | 83 <sup>rd</sup> Annual Scientific Meeting of the Japanese Circulation Society | Yokohama, Japan  | 29-31/03/2019 |
| 21. | BRD4 a new hope in PAH   | International Symposium Pulmonary Hypertension and Cor Pulmonale               | Giessen, Germany | 4-6/03/2019   |
| 22. | Olaparib is a PARP-targeting therapy to PAH                              | American Heart Association congress  | Chicago, USA     | 11/11/2018    |
| 23. | Systemic abnormalities in Pulmonary Arterial Hypertension                | American Thoracic Society congress   | San Diego, USA   | 21/05/2018    |
| 24. | Nuclear and mitochondrial DNA damage and pulmonary hypertension          | Grand Rounds in Pulmonary Hypertension   | Stanford, USA    | 23/04/2018    |
| 25. | Cellular stress pathways in PAH  | Pulmonary Vascular Research Institute congress                                 | Singapore        | 25/01/2018    |
| 26. | Reproducibility and methodological issues in PAH research                | Pulmonary Vascular Research Institute congress                                 | Singapore        | 25/01/2018    |

#### **D) Forthcoming contributions**

#### **E) Creative outputs**

1. Television interview Thursday 30, 2019 in French about new clinical study on Apabetalone. Interview is called “ Un nouveau médicament contre l'hypertension artérielle pulmonaire” on Radio-Canada (2019) <https://ici.radio-canada.ca/info/videos/media-8097163/un-nouveau-medicament-contre-lhypertension-arterielle-pulmonaire>

2. Clinical Research promoted by Laval University (2019) <https://nouvelles.ulaval.ca/2019/05/30/pour-mieux-traiter-lhypertension-arterielle-pulmonaire-a:9e56e366-829d-435d-a75a-d956bfb5fba5>

3. Clinical Research promoted by PHA Canada (2019) <https://phacanada.ca/News-Media/News/Archive/PAH-first-global-study-in-epigenetics-to-treat-thi>

5. Interview and documentary made by Quebec Heart and Lung Institute to promote PHVBRG research and clinical trial (2019) <https://www.youtube.com/watch?v=8jCuq6kB0-o>

6. Interview with WSPHA to promote research on pulmonary arterial hypertension (2019) [http://www.wsphassociation.org/2019/12/02/sebastien\\_bonnet/](http://www.wsphassociation.org/2019/12/02/sebastien_bonnet/)

### **F) Patent**

#### **PARP and PAH (principal)**

« Inhibition des poly (ADB-ribose) polymérase (PARP) dans l'hypertension pulmonaire »

Role for PARP inhibitor for pulmonary hypertension, US (R#000819-0154)

Jean Yves Masson (33%); Guy Poirier (33%) and Sébastien Bonnet (34%).

Locality = Québec / Status = Ongoing

Date of filing = July 29<sup>th</sup>, 2011

## Section 4 - Leadership

**International leadership overview:** At the international level, I have been nominated **A)** fellow of the American Heart Association (AHA); **B)** chair of the 3CPR council at AHA (3<sup>rd</sup> Canadian and 1<sup>st</sup> PhD); **C)** Chair of award nominating committee of the AHA; **D)** Chair of the pulmonary circulation program and knowledge transmission committee at the American Thoracic Society (1<sup>st</sup> Canadian); **E)** the North American representative (representing North American researchers) and **F)** the chair of the scientific committee for the Pulmonary Vascular Research Institute (PVRI) (2<sup>nd</sup> Canadian); **G)** member of the Scientific Board of the World Symposium on PAH, responsible for international guidelines (**one of the 10 researchers among all clinical & basic PAH scientists worldwide and 1<sup>st</sup> Canadian**); **H)** on the editorial board of 4 journals including Journal of American Heart Association; ATVB and associate editor for 8 journals including AJP Cell; AJP Lung; AJP Heart; ERJ; Pulmonary Circulation; Circulation until 2018; Circulation research until 2020; **I)** member of several advisory boards for pharmaceutical companies to develop new anti-PAH drugs (Janssen; Morphic; Allinaire) or conduct clinical trial (Janssen, Resverlogix and AZ), further attesting my international leadership. **J)** Thanks to my strong collaborations with the industry, I created my own start-up (HVL Therapeutics Inc). Profits and Rx&D credits from this start-up (≈350K\$/yr) are reinvested in my research program.

### **International position (last 5 year)**

- 2023 World symposium PHA association Task force 1 leader
- 2020-today Scientific advisory board member of the WSPHA association
- 2023 Chair – Award nominating committee, American Heart Association
- 2023-2025 Former chair of 3CPR council, American Heart Association
- 2020-2023 Member, International nominating committee, American Thoracic Society
- 2020-2023 3CPR Council Chair, American Heart Association
- 2019 Member of the scientific board of the World Symposia on Pulmonary Hypertension Association and 7<sup>th</sup> WSPH Orlando 2023
- 2019 3CPR Council Vice-chair of American Heart Association
- 2018 Member of the Medical Think Tank Program committee, PHA Canada's National PH Medical Think Tank,
- 2018-2020 Chair, Elect program committee, American Thoracic Society
- 2018-2020 PVRI Program committee
- 2017-today North America representative at PVRI
- 2017-2019 Chair SCILL committee, American Heart Association

### **International position in pharmaceutical company**

- 2021-today Morphic Therapeutic SAB member
- 2020-today Janssen Endothelin task force member
- 2021-today Sunshine bio Inc SAB member
- 2020-today Allinaire Therapeutic SAB member
- 2023-today Chiesi PAH advisory board member

## Section 5 – Training and Supervisory Experience

PHVBRG research group consists of an international, ethnic and sex and gender diverse team of 7 PhD candidates, an MSc graduate student, 7 research technician and 2 post-doctoral fellow and 1 invited professor from Lebanon, Tunisia, Japan, China and France. PHVBRG will continue to prioritize Equity, Diversity and Inclusion policies i.e. Indigenous, minorities and female students and technicians (presently 60% of our group members are females).

**Training/Mentoring Philosophy:** PHVBRG research training environment aligns perfectly with the high-quality personnel-training requirement associated with this Canada Research Chair. We believe this training program will develop the next generation of internationally competitive scientists, many of whom will be underrepresented in the scientific field (i.e., visible minorities, women). Our research program prides itself on the inclusion of underrepresented individuals in the scientific fields (as seen by our current trainees). In fact, a component of PHVBRG funding plan is dedicated to recruit and provide salary support to underrepresented individuals. In addition, our training program strongly follows the Equity, Diversity and Inclusion guidelines provided by the Government of Canada. This includes, actively posting positions for all genders, minorities, and underrepresented individuals during his recruitment process. Furthermore (under his initiative as Associate Chair of Graduate Studies) his Department (Medicine) has secured additional funds to provide salary for international (and underrepresented) individuals, as part of a recruitment plan into their graduate program. Finally, our mentoring style encompasses a philosophical component. In addition to providing the necessary skills for our trainees to integrate and adapt into the scientific community, we provide a strong training platform for our trainees to be leaders in their respective fields of interest, regardless of their ethnicity, sex or gender. For this reason, the PHVBRG believe that mentoring of a trainee does not completely end upon completion of their training program in our lab but is a life-long commitment (where he will continue to provide mentorship and support throughout their careers).

**Research Training Plan:** Our research training plan will provide several opportunities for our trainees to discover important signaling pathways related to the Cardiopulmonary field, including the role of epigenetic factors on the myocardium, the pulmonary circulation, and the potential to identify novel therapeutic targets to treat pulmonary hypertension and right heart failure.

The PHVBRG training plan has three main pillars:

**1) Research:** The PHVBRG program provides a strong research training platform. We provide direct technical training to all our trainees as we had obtained over the years worldly recognized comprehensive skill set in biochemistry, molecular biology, multi-omics approaches, physiology, medical imaging and translational research.

**2) Environment and Collaboration:** In addition to the research tools in our laboratory, our trainees are placed in a successful research environment with wide access to well-equipped core facilities at the CRIUCPQ that will further improve their overall training and expertise. This includes use of the Animal Physiology core facility as part of the CRIUCPQ animal facility, which will provide training/expertise on assessing in vivo physiology and medical imaging, as well as the proteomics and Mass Spectrometry Facility, which will provide training/expertise on all experiments in need of mass spectrometry. Our trainees will also have access to a multitude of collaborators to fit their research needs. For example, We have strong collaborations with Pre. Soni Pullamsetti (Max Plank Institute Giessen Germany); Pr Dejesus Perez (Stanford University USA); Pr Marc Humbert (Universite Paris Saclay France) to name a few...

**3) Professional Development:** Our group provide a strong platform for the professional development of our trainees. This includes presenting concepts and data in an understandable and logical manner and is the purpose of his weekly lab meetings and journal clubs. Our trainees will present their work at local (2-3 times a year), national and international (once a year) meetings to not only enhance their professional development, but also meet and interact with other professionals in this field. Our program will provide trainees with the required skills to generate presentations of high quality, to give strong oral or poster presentations and to answer questions in a succinct manner. Trainees will also be involved in publishing a minimum of 3 first-author articles and 1-2 reviews/editorials in top-tier journals during their 3–5-year training program. Finally, our trainees will also apply to various scholarships/fellowship and/or

grants and will therefore gain experience and expertise in art of grant writing, including proposing the most relevant experiments to address the hypothesis, along with potential mitigation strategies, alternative findings/explanations, and feasible timelines. We believe that these skills are necessary for future scientists to succeed as independent research investigators.

**Trainee Supervision:** Since 2008, I have had the privilege of welcoming and supervise a diverse cohort of Canadian and international students at the master's, doctoral, and postdoctoral levels. Moreover, I have also supervised many undergraduate research interns. My main role has been to ensure their success to the best of their potential, ensuring they emerge from their academic journeys with a sense of pride and the confidence to take on the job market.

***My mentorship has been recognized internationally (contribution to training guidelines<sup>(33)</sup>) and locally (recipient of the Yves Morin & finalist of the Jacques Leblanc awards and Univ. Laval (UL) excellence award in mentorship). Consistently, 8 of my past trainees are now faculty and 3 have been recruited in UL and have secured funds (FRQS; Heart & Stroke, CFI and CIHR) under my mentorship. Finally, our multidisciplinary and translational envision is certainly a major strength of our group, which is the top priority of many institutions in Canada. This is evident in our group by the multiple collaborations both at basic and clinical research levels locally and with some of the world's most prestigious institutions. Both teaching and global reach are essential cores of our institutions Dare to Deliver.***

Here is a list of students and postdoctoral interns who I have supervised in the past 5 years, along with any applicable awards.

| Name                | Degree        | D / C* | Financial support                      | Start Date | End Date | Title  | Awards   |
|---------------------|---------------|--------|--|------------|----------|--|--|
| Yanqin Niu          | Post-Doctoral | D      | Mitac post-doctoral scholarship        | 08/2023    |          | Role of cellular senescence in pulmonary arterial hypertension               |  |
| Andréanne Pelletier | Undergraduate | D      | Emploi été Canada                      | 05/2023    | 09/2023  | Role of integrin signaling in pulmonary hypertension and right heart failure |  |
| Laura Langevin      | Undergraduate | D      | Emploi été Canada                      | 05/2023    | 09/2023  | Inflammation and metabolic syndrome in cardiovascular disease                |  |
| Yukimitsu Kuwabara  | Post-Doctoral | D      | Mitac Post-Doctoral scholarship        | 05/2023    |          | Role of APEX in RV failure associated with pulmonary arterial hypertension   |  |
| Gabriel Law         | Undergraduate |        | Local funds                            | 09/2022    | 12/2022  | Role of Integrin in PAH  |  |
| Manon Mougín        | Master        | D      | Local Funds                            | 09/2022    |          | Role au Aurora Kinase in PAH   |  |
| Sarah-Ève Lemay     | PhD           | D      | FRQS / PHA Canada doctoral scholarship | 05/2022    |          | Role of integrin signaling in pulmonary hypertension and right heart failure | 2023 : Conrand and Comroe finalist, American Heart Association<br>2023: Doctoral Training scholarship – Fonds de recherche en santé du Québec<br>2023: Doctoral Training scholarship (1 <sup>st</sup> rank) – CRIUCPQ, Laval University (Declined)<br>2022 : PHA Canada Paroian Family PH Research Scholarship – Pulmonary hypertension Association Canada<br>2022: Animal Welfare Excellence Award, Direction des services vétérinaires, Laval University<br>2022: RSRQ Travel Award<br>2022: Travel Award – American Heart Association<br>2022: Research excellence Award – Faculty of medicine, Laval University<br>2022: Fast track admission to PhD scholarship |
| Tetsuro Yokokawa    | Post-doctoral | D      | Mitac Post-doctoral scholarship        | 03/2021    | 04/2022  | Role of hnRNPA1 in pulmonary arterial hypertension                           | 2021: Travel Award AHA   |
| Yann Grobs          | PhD           | D      | PHA canada                             | 09/2020    |          | Role of ACLY in coronary artery disease                                      | 2021: Best abstract Basic Research (PVRI)  |

| Name              | Degree        | D / C* | Financial support               | Start Date | End Date | Title   | Awards   |
|-------------------|---------------|--------|---------------------------------|------------|----------|---|--|
|                   |               |        | doctoral scholarship            |            |          |   | 2022: CRIUCPQ Doctorate Scholarship<br>2022: PHA Canada research Scholarship   |
| Mélanie Sauvaget  | Master        | D      | RSRQ                            | 01/2021    | 04/2022  | Role of Aurora Kinase in PAH                            | 2021: RSRQ master scholarship<br>2021: Best poster presentation (master) - JSRSR   |
| Sarah-Eve Lemay   | Master        | D      | FRQS                            | 01/2021    | 04/2022  | Role of Integrin in PAH                                 | 2021: CRIUCPQ master scholarship (declined)<br>2021: FRQS master scholarship<br>2021: Best poster presentation (master) – Journées scientifiques CRIUCPQ   |
| Charlotte Romanet | PhD           | D      | Local Funds                     | 09/2019    |          | Role of ACLY in PAH                                     |  |
| Sarah-Ève Lemay   | Undergraduate | D      | Local Funds                     | 09/2019    | 12/2019  | Role of P300 in PAH                                     |  |
| William Robert    | Undergraduate | D      | Local Funds                     | 05/2019    | 08/2019  | Role of p53 in PAH                                      |  |
| Florence Mazoyer  | Undergraduate | D      | Local Funds                     | 05/2019    | 08/2019  | Role of lncRNA H19 in PAH                               |  |
| Mélanie Sauvaget  | Undergraduate | D      | Local funds                     | 04/2019    | 06/2019  | Le syndrome métabolique en HTAP                         |  |
| Arthur Crison     | Undergraduate | D      | No financial support            | 04/2019    | 06/2019  | Role of lncRNA H19 in PAH                               |  |
| Tsukasa Shimauchi | Postdoctoral  | C      | Mitac post-doctoral scholarship | 02/2019    | 12/2022  | Role of metabolism dysfunction in cardiomyocytes in PAH | 2021: Conrand and Comroe finalist, AHA<br>2020: ATS Public Advisory Roundtable (PAR) award for best abstract<br>2020: Jane Morse award for best abstract, ATS<br>2020: Best abstract award, fundamental research, PRVI   |
| Kassandra Gagnon  | Undergraduate | D      | Local funds                     | 01/2019    | 04/2019  | Role of lncRNA H19 in PAH                               |  |
| Alice Bourgeois   | PhD           | C      | FRQS                            | 01/2019    |          | Role of p300 in PAH                                     | 2020: Paul Dudley White International Scholar award from American Heart Association (authors with highest ranked abstract from Canada at scientific session)<br>2020: Emerging researcher Award, Department of Medicine, Laval University<br>2019: FRQS doctoral scholarship |

| Name                   | Degree        | D / C* | Financial support                 | Start Date | End Date | Title                                  | Awards  |
|------------------------|---------------|--------|-----------------------------------|------------|----------|--|---|
| Charifa Awada          | PhD           | C      | Local funds                       | 09/2018    | 12/2022  | Role of G9a methyltransferase in PAH   |   |
| Nicolas Duchesnay      | Undergraduate | D      | Emploi été Canada                 | 05/2018    | 08/2018  | Role de CHK1 en HTAP                   |   |
| Antoine Piedvache      | Undergraduate | D      | No financial support              | 03/2018    | 06/2018  | Implication de EZH2 en HTAP            |   |
| Junichi Omura          | Postdoctoral  | D      | Local funds                       | 09/2017    | 09/2020  | Role of lncRNA H19 as biomarker in PAH | 2020: Best abstract award, clinical research, PVRI<br>2019: Finalist – Courmand and Comroe competition, American Heart Association<br>2019: Best abstract in Pulmonary Arterial Hypertension, European Respiratory Society<br>2019: Abstract scholarship for ATS international conference<br>2019: Best abstract award ATS<br>2019: Presentation award, category postdoctoral fellowship, Pulmonary Vascular Research Institute annual congress<br>2018: Travel award from CIHR<br>2018: Paul Dudley White International Scholar award from American Heart Association (authors with highest ranked abstract from Canada at scientific session)<br>2018: Best abstract award, 3CPR, AHA<br>2017: ATVB Young Investigator travel award, American Heart Association Scientific session 2017 |
| <b>Karima Habbout</b>  | PhD           | C      | FRQS scholarship                  | 06/2017    | 07/2021  | Implication of EZH2 in PAH             | 2018: Travel Award from American Heart Association<br>FRQS Scholarship, 2019<br>PHA Canada Scholarship, 2019  |
| <b>Alice Bourgeois</b> | Master        | D      | PHA canada master trainee support | 01/2017    | 12/2018  | Role of CHK1 in PAH                    | 2020: maîtrise nommée au tableau d'honneur de la faculté des études supérieures et postdoctorales   |

| Name                   | Degree | D / C* | Financial support | Start Date | End Date | Title                | Awards  |
|------------------------|--------|--------|-------------------|------------|----------|----------------------|---|
| <b>Géraldine Vitry</b> | PhD    | C      | Local funds       | 09/2016    | 01/2023  | Rôle de MTH1 en HTAP | 2018: Travel Award from American Heart Association<br>2018: Oral presentation award, master student in Respirology axis, CRIUCPQ' research days<br>2017: Mohammed Family PH Research Scholarship from Pulmonary Hypertension Association of Canada<br>2020: Award for best abstract in pulmonary cirtulatory research, American Thoracic Society<br>2019: PHA Canada scholarship, paroian family student fellowship |

## Section 6 – Other Contributions

*Over the years I have established strong collaborations with the industry (e.g. Janssen, Merck and Bayer) that allowed my colleague S. Provencher and I to create our own start-up in 2013 (HVL Therapeutics Inc). Profits and Rx&D credits from this start-up (~200K\$/yr) are entirely re-invested in our own original research program. Thus over the past 10 years we have generated in getting close to 3 millions dollars of industrial funds all of which were re-invest in the PHVBRG to acquire new equipment's and to cover the salary of 7 full times technicians.*

*Finally, one of the priorities of the group is also to increase the awareness of the Canadian population and of the provincial and federal governments about PAH, which is associated with a major health and socio-economic burden in Canada and worldwide. The members of the research group in PAH directed by myself have organized or participated to several interviews and articles in the medias for health care professionals or for the general public. We also helped and will continue to do so PAH patients association in Québec and Canada. We have already organized many public activities to increase awareness of the population and provide patients the latest information on ongoing basic and clinical research in PAH. Thus the PHVBRG is recognized by both the Canadian and Quebec PAH associations as the Canadian leader in PAH research and patient care; the PHVBRG website (<https://phrg.ca>) that provide comprehensive information about PAH ongoing research is thus listed on the Canadian, American PAH patient association.*

I am an editor and reviewer for several international scientific journals. I actively participate in the review process for grants and scholarships from both Canadian and international organizations. I am also involved locally at the research center of the IUCPQ and at Laval University. Here are the details.

### Université Laval/IUCPQ research center committees

- Full time member of the Research Ethics committee, IUCPQ-UL (11/2021 – today)
- Full time member, animal care ethics committee, Laval University (09/2020 - today)
- Alternate member of the Research Ethics Committee, IUCPQ-UL (11/2018 – 11/2021)
- Member of the examining board, IUCPQ scientific research day, May 30-31st 2018
- Board member, med. unit (SPUL), Dept. Medicine, Laval University selection of new professors committee (2014 – today)
- Board member, med. unit (SPUL), Dept. Medicine, Laval University, career promotion committee (2014 – today)
- Internal reviewer for Laval University – Canadian Foundation for Innovation

### Evaluation of scholarship and grant

- Evaluation of doctoral scholarship applications 2019-2020, FRQS, committee FF4-8D
- Grant reviewer (CIHR, FRQS, HSFC, ANR, Fond national Suisse, fond national Belgique)

### Editorial board journals

- Journal of American Heart Association
- ATVB
- International Journal of Molecular Sciences
- Circulation
- Pulmonary Circulation
- Circulation Research
- European Respiratory Journal
- Canadian Respiratory Journal
- Atherosclerosis and vascular medicine
- American Journal of Physiology – cell physiology

**Awards and Honors (past 5 years only)**

- 2023 American Heart Association Council Chair Honor for Outstanding leadership in Cardiopulmonary and resuscitation research
- 2022 Virtuose de la santé – Tribute to underline the remarkable contribution of honored resesarchers, their dedication in research and in training high caliber succession in health sciences – Laval University
- 2021 Recognition gala, Quebec Heart and Lung Research Institute – Laval University. Best Researcher Award
- 2020 Distinguished Scientist of FRQS
- 2019 Yves-Morin Award from department of medicine, University Laval. This award recognizes the scientific mentoring. Co-award with Dr Provencher
- 2019 Recognition award of Pulmonary Vascular Research Institute for scientific program committee

**Volunteering**

- 2018-2019 Fundraising for pulmonary arterial hypertension disease managed by IUCPQ foundation, group running called «À plein poumons pour l’HTAP»
- 2018-ongoing PHA Canada volunteer
- 2018-ongoing HTAP Quebec Volunteer

1. A. Courboulin *et al.*, Role for miR-204 in human pulmonary arterial hypertension. *J Exp Med* **208**, 535-548 (2011).
2. J. Meloche *et al.*, miR-223 reverses experimental pulmonary arterial hypertension. *Am J Physiol Cell Physiol* **309**, C363-372 (2015).
3. V. D. F. D. e. al, Multicenter Preclinical Validation of BET Inhibition for the Treatment of Pulmonary Arterial Hypertension. *American Journal of Respiratory and Critical Care Medicine*, (2019).
4. J. Meloche *et al.*, Bromodomain-Containing Protein 4: The Epigenetic Origin of Pulmonary Arterial Hypertension. *Circ Res* **117**, 525-535 (2015).
5. P. Chelladurai *et al.*, Targeting histone acetylation in pulmonary hypertension and right ventricular hypertrophy. *Br J Pharmacol*, (2019).
6. F. Potus *et al.*, Downregulation of MicroRNA-126 Contributes to the Failing Right Ventricle in Pulmonary Arterial Hypertension. *Circulation* **132**, 932-943 (2015).
7. J. Omura *et al.*, Identification of The Long Non-Coding RNA H19 as a New Biomarker and Therapeutic Target in Right Ventricular Failure in Pulmonary Arterial Hypertension. *Circulation*, (2020).
8. F. Potus *et al.*, Impaired angiogenesis and peripheral muscle microcirculation loss contribute to exercise intolerance in pulmonary arterial hypertension. *Am J Respir Crit Care Med* **190**, 318-328 (2014).
9. J. Meloche *et al.*, Role for DNA damage signaling in pulmonary arterial hypertension. *Circulation* **129**, 786-797 (2014).
10. B. Ranchoux *et al.*, DNA Damage and Pulmonary Hypertension. *International journal of molecular sciences* **17**, (2016).
11. A. Bourgeois *et al.*, Inhibition of CHK 1 (Checkpoint Kinase 1) Elicits Therapeutic Effects in Pulmonary Arterial Hypertension. *Arterioscler Thromb Vasc Biol* **39**, 1667-1681 (2019).
12. O. Boucherat *et al.*, The cancer theory of pulmonary arterial hypertension. *Pulm Circ* **7**, 285-299 (2017).
13. O. Boucherat *et al.*, HDAC6: A Novel Histone Deacetylase Implicated in Pulmonary Arterial Hypertension. *Sci Rep* **7**, 4546 (2017).
14. A. Bourgeois *et al.*, FOXM1 promotes pulmonary artery smooth muscle cell expansion in pulmonary arterial hypertension. *J Mol Med (Berl)* **96**, 223-235 (2018).
15. R. Paulin *et al.*, Signal transducers and activators of transcription-3/pim1 axis plays a critical role in the pathogenesis of human pulmonary arterial hypertension. *Circulation* **123**, 1205-1215 (2011).
16. M. S. McMurtry *et al.*, Gene therapy targeting survivin selectively induces pulmonary vascular apoptosis and reverses pulmonary arterial hypertension. *J Clin Invest* **115**, 1479-1491 (2005).
17. S. Renard *et al.*, Pim-1: A new biomarker in pulmonary arterial hypertension. *Pulm Circ* **3**, 74-81 (2013).
18. O. Boucherat *et al.*, Mitochondrial HSP90 Accumulation Promotes Vascular Remodeling in Pulmonary Arterial Hypertension. *Am J Respir Crit Care Med* **198**, 90-103 (2018).
19. S. Bonnet *et al.*, An abnormal mitochondrial-hypoxia inducible factor-1 $\alpha$ -Kv channel pathway disrupts oxygen sensing and triggers pulmonary arterial hypertension in fawn hooded rats: similarities to human pulmonary arterial hypertension. *Circulation* **113**, 2630-2641 (2006).
20. S. Bonnet *et al.*, The nuclear factor of activated T cells in pulmonary arterial hypertension can be therapeutically targeted. *Proceedings of the National Academy of Sciences of the United States of America* **104**, 11418-11423 (2007).

21. P. Dromparis *et al.*, Uncoupling protein 2 deficiency mimics the effects of hypoxia and endoplasmic reticulum stress on mitochondria and triggers pseudohypoxic pulmonary vascular remodeling and pulmonary hypertension. *Circ Res* **113**, 126-136 (2013).
22. R. Paulin *et al.*, Sirtuin 3 deficiency is associated with inhibited mitochondrial function and pulmonary arterial hypertension in rodents and humans. *Cell Metab* **20**, 827-839 (2014).
23. G. Sutendra *et al.*, Fatty acid oxidation and malonyl-CoA decarboxylase in the vascular remodeling of pulmonary hypertension. *Sci Transl Med* **2**, 44ra58 (2010).
24. S. Bonnet *et al.*, A mitochondria-K<sup>+</sup> channel axis is suppressed in cancer and its normalization promotes apoptosis and inhibits cancer growth. *Cancer Cell* **11**, 37-51 (2007).
25. S. Malenfant *et al.*, Compromised Cerebrovascular Regulation and Cerebral Oxygenation in Pulmonary Arterial Hypertension. *Journal of the American Heart Association* **6**, (2017).
26. S. Malenfant *et al.*, Skeletal muscle proteomic signature and metabolic impairment in pulmonary hypertension. *J Mol Med (Berl)* **93**, 573-584 (2015).
27. J. Meloche *et al.*, Implication of Inflammation and Epigenetic Readers in Coronary Artery Remodeling in Patients With Pulmonary Arterial Hypertension. *Arterioscler Thromb Vasc Biol*, (2017).
28. S. Malenfant *et al.*, Continuous reduction in cerebral oxygenation during endurance exercise in patients with pulmonary arterial hypertension. *Physiol Rep* **8**, e14389 (2020).
29. N. P. Nickel *et al.*, Beyond the Lungs: Systemic Manifestations of Pulmonary Arterial Hypertension. *Am J Respir Crit Care Med* **201**, 148-157 (2020).
30. S. Bonnet *et al.*, Dehydroepiandrosterone (DHEA) prevents and reverses chronic hypoxic pulmonary hypertension. *Proceedings of the National Academy of Sciences of the United States of America* **100**, 9488-9493 (2003).
31. S. Bonnet *et al.*, Dehydroepiandrosterone reverses systemic vascular remodeling through the inhibition of the Akt/GSK3- $\beta$ /NFAT axis. *Circulation* **120**, 1231-1240 (2009).
32. R. Paulin *et al.*, Dehydroepiandrosterone inhibits the Src/STAT3 constitutive activation in pulmonary arterial hypertension. *Am J Physiol Heart Circ Physiol* **301**, H1798-1809 (2011).
33. S. Agarwal *et al.*, Career Development of Young Physician-Scientists in the Cardiovascular Sciences: Perspective and Advice From the Early Career Committee of the Cardiopulmonary, Critical Care, and Resuscitation Council of the American Heart Association. *Circ Res* **122**, 1330-1333 (2018).