Stanford

Bettia Edith Celestin

Postdoctoral Scholar, Pathology

Bio

BIO

Bettia Celestin, MD, MSc, is a French board-certified cardiologist and postdoctoral scholar in the Department of Pathology at Stanford University School of Medicine. Her research focuses on echocardiographic imaging, right heart assessment, pulmonary hypertension, and women's cardiovascular health, with growing interest in sex-specific echocardiographic phenotyping, adverse pregnancy outcomes and cardiovascular risk across the menopausal transition, and AI-enhanced cardiovascular imaging.

Dr. Celestin serves as part of the co-investigator team in the clinical core on a NIH P01 on immune aging, where she leads cardiovascular phenotyping for a deeply characterized immune aging cohort. Her work on AI-based echocardiography implementation in pulmonary arterial hypertension was published in CHEST (2025) and featured on the CHEST Journal Podcast. She has multiple peer-reviewed publications in journals including CHEST, Pulmonary Circulation, Circulation: Cardiovascular Imaging, JAHA, and JACC: Heart Failure, and has presented at national and international conferences including ISHLT and AHA.

Dr. Celestin holds an MD from Sorbonne Paris University and an MSc in Biostatistics from Paris-Saclay University. She completed her cardiology training in France with over 10 years of clinical experience and an expertise in echocardiography. She is an active member of the AHA.

HONORS AND AWARDS

- Medical Doctorate Thesis, Highest Honors (Silver Decoration), Sorbonne Paris Cité and Paris Nord (2017)
- Cardiovascular Institute Travel Award, Stanford Cardiovascular Institute (2023)
- Top Cited Article 2024, Pulmonary Circulation, Wiley (2025)
- Selected Feature Article, CHEST Journal Official Podcast (2026)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Heart Association (AHA) (2025 - present)
- Member, International Society for Heart and Lung Transplantation (ISHLT) (2023 - present)
- Member, Member, Committee on Health Disparities and Health Facility Development, Mentor for Overseas Medical Students French Guiana Territorial Community (2022 - present)
- Reviewer, Journal of the American Heart Association (JAHA) (2023 - present)
- Reviewer, CHEST (2024 - present)
- Reviewer, Frontiers in Cardiovascular Medicine (2026 - present)
- Reviewer, Pulmonary Circulation (2024 - present)

- Reviewer, BMC Cardiovascular Disorders 2024 (2024 - present)
- Reviewer, Digital Health (2026 - present)
- Reviewer, Risk Management and Healthcare Policy (2025 - present)

PROFESSIONAL EDUCATION

- Master of Science, Universite De Paris Xi (Paris-Sud) (2019)
- Bachelor of Engineering, Universite De Paris Xii (Val-De-Marne) (2005)
- Bachelor of Science (BSc), Paris VI University (Pierre and Marie Curie) , Fundamental Sciences (2006)
- Master of Science, Sorbonne Paris Nord , Molecular Biology (2008)
- Master of Science (MSc), Paris-Saclay University , Methodology and Statistics in Biomedical Research (2019)
- Residency and Fellowship, Paris University , Cardiovascular Medicine (2017)
- Doctor of Medicine (MD), Sorbonne Paris Nord , Medicine (2013)
- French Medical Board, French National Medical Council (CNOM) , Cardiovascular Medicine (2017)
- Postdoctoral Research Scholar, Stanford University School of Medicine , Physiology, Imaging, Deep Learning, Exercise Testing, Immunology (2022)

STANFORD ADVISORS

- Thomas Montine, Postdoctoral Faculty Sponsor
- Francois Haddad, Postdoctoral Research Mentor

COMMUNITY AND INTERNATIONAL WORK

- French Guiana Territorial Community: Committee for Health Disparity and Health Facility Development

LINKS

- ORCID: https://orcid.org/0009-0002-3499-6902
- Google scholar: https://scholar.google.com/citations?user=lPBNuEsAAAAJ&hl=en
- Pubmed: https://www.ncbi.nlm.nih.gov/myncbi/bettia.celestin.1/bibliography/public/
- LinkedIn: https://www.linkedin.com/in/bettia-celestin-41603232b
- Research Gate: https://www.researchgate.net/scientific-contributions/Bettia-Celestin-2256707099

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Bettia Celestin is a French board-certified cardiologist and postdoctoral scholar at Stanford University School of Medicine. Her research focuses on advanced cardiovascular imaging, with particular expertise in echocardiographic assessment of the right heart and pulmonary circulation in pulmonary hypertension and heart failure. She has contributed to the development of consistent echocardiographic risk stratification thresholds, novel reference equations for pulmonary artery assessment, and the application of artificial intelligence and deep learning segmentation algorithms to echocardiographic analysis. Her first-author work on AI-based echocardiography in pulmonary arterial hypertension was published in CHEST (2025) and featured on the official CHEST Journal Podcast.

As co-Investigator in the clinical core on NIH P01 AI153559 (PI: Mark Davis), Dr. Celestin manages cardiovascular phenotyping for a deeply characterized immune aging cohort, integrating echocardiography, vascular imaging, and cardiopulmonary exercise testing with immune biomarkers. She also contributes to community-based cardiovascular phenotyping through the Project Baseline Health Study, analyzing cardiac structure and function across the adult lifespan.

Her emerging research focus is on women's cardiovascular health, including sex-specific echocardiographic phenotyping, the cardiovascular consequences of adverse pregnancy outcomes across the menopausal transition, and AI-enhanced cardiovascular imaging in women. This work aims to address the historical under-detection of cardiovascular disease in women and to build evidence-based, sex-specific approaches to cardiovascular screening and risk stratification throughout the female lifespan.

LAB AFFILIATIONS

- Francois Haddad, Core Laboratory (6/2/2022)

Publications

PUBLICATIONS

- **Impact of Donor Left Ventricular Geometric Remodeling and Hypertrophy on Heart Acceptance and Recipient Survival.** *JACC. Heart failure*
  O'Donnell, C., Kim, J. S., Tarun, A., Celestin, B. E., Karius, A. K., Bagherzadeh, S. P., Intrieri, T. A., Tapaskar, N., Zhang, S., Weng, Y., Zaroff, J., Sun, L. Y., Wayda, et al
  2026: 103150

- **Impact of the 2025 ASE Guidelines on the Classification of LV Diastolic Dysfunction in the Community: A Project Baseline Health Study.** *Circulation. Cardiovascular imaging*
  Herrera-Leaño, N., Celestin, B., Santana, E., Sandoval, R., Fahed, G., Khoury, P., O'Sullivan, J. W., Kuznetsova, T., Cauwenberghs, N., Mahaffey, K. W., Douglas, P. S., Daubert, M., Haddad, et al
  2026: e019402

- **Incident Atrial Fibrillation and Flutter in Patients With Pulmonary Arterial Hypertension: Influence of Right Ventricular Dilatation and Reduced Right Atrial Function.** *Journal of the American Heart Association*
  Mohama, D., Worapongsatitaya, P., Celestin, B., Kazmirczak, F., Bagherzadeh, S. P., Daniel, V., Prins, K. W., Prisco, S. Z., Weir, E. K., Archer, S. L., Zamanian, R., Haddad, F., Thenappan, et al
  2026: e045587

- **The added value of ECG on the PREVENT CVD risk score for the prediction of subclinical cardiac disease - insights from Project Baseline Health Study**
  Gjermeni, D., Fahed, G., Santana, E., Celestin, B., Cauwenberghs, N., Bagherzadeh, S. P., Shah, S. H., Kusnetsova, T., Douglas, P. S., Daubert, M. A., Mahaffey, K. W., Haddad, F.
  OXFORD UNIV PRESS.2025

- **Artificial Intelligence-Based Echocardiography in Pulmonary Arterial Hypertension.** *Chest*
  Celestin, B., Bagherzadeh, S. P., Santana, E., Frost, M., Iversen, M., Hermansson, F. N., Sweatt, A., Zamanian, R. T., Hummel, Y. M., Rendon, G. G., Yen, J., Sandros, M., Salerno, et al
  2025

- **Comparison of the Prognostic Value of Right Atrial Echocardiographic Parameters in Pulmonary Arterial Hypertension.** *The Journal of heart and lung transplantation : the official publication of the International Society for Heart Transplantation*
  Mohama, D., Worapongsatitaya, P., Celestin, B., Kazmirczak, F., Bagherzadeh, S. P., Prins, K. W., Prisco, S. Z., Weir, E. K., Zamanian, R., Haddad, D. F., Thenappan, T.
  2025

- **Reference equations for peak oxygen uptake for treadmill cardiopulmonary exercise tests based on the NHANES lean body mass equations, a FRIEND registry study.** *European journal of preventive cardiology*
  Santana, E. J., Kim, D. S., Christle, J. W., Cauwenberghs, N., Celestin, B. E., Tso, J. V., Wheeler, M. T., Ashley, E. A., Peterman, J. E., Gardner, C., Arena, R., Harber, M., Kaminsky, et al
  2025

- **Echocardiographic Grading of Right Ventricular Afterload in Left Heart Disease: Relation to Right Ventricular Function, Pulsatile and Resistant Load, and Outcome.** *Pulmonary circulation*
  Celestin, B. E.
  2025; 15 (1): e70055

- **A generalized equation for predicting peak oxygen consumption during treadmill exercise testing: mitigating the bias from total body mass scaling.** *Frontiers in cardiovascular medicine*

Santana, E. J., Cauwenberghs, N., Celestin, B. E., Kuznetsova, T., Gardner, C., Arena, R., Kaminsky, L. A., Harber, M. P., Ashley, E., Christle, J. W., Myers, J., Haddad, F.
2024; 11: 1393363

- **Novel Reference Equations for Pulmonary Artery Size and Pulsatility Using Echocardiography and their Diagnostic Value in Pulmonary Hypertension.** *Chest*
  Bagherzadeh, S. P., Celestin, B. E., Santana, E. J., Salerno, M., Nadeau, K. C., Sweatt, A. J., Zamanian, R. T., Haddad, F.
  2024
- **Factors associated with lower quarter performance-based balance and strength tests: a cross-sectional analysis from the project baseline health study.** *Frontiers in sports and active living*
  Taylor, K. A., Carroll, M. K., Short, S. A., Celestin, B. E., Gilbertson, A., Olivier, C. B., Haddad, F., Cauwenberghs, N.
  2024; 6: 1393332
- **Tricuspid annular plane systolic excursion in pulmonary hypertension-Moving beyond the sector plane.** *Pulmonary circulation*
  Ichimura, K., Celestin, B. E., Bagherzadeh, S. P., Zamanian, R. T., Salerno, M., Spiekerkoetter, E., Haddad, F.
  2024; 14 (3): e12416
- **Identifying consistent echocardiographic thresholds for risk stratification in pulmonary arterial hypertension.** *Pulmonary circulation*
  Celestin, B. E., Bagherzadeh, S. P., Ichimura, K., Santana, E. J., Sanchez, P. A., Tobore, T., Hemnes, A. R., Noordegraaf, A. V., Salerno, M., Zamanian, R. T., Sweatt, A. J., Haddad, F.
  2024; 14 (2): e12361
- **The Echocardiographic Evaluation of the Right Heart: Current and Future Advances.** *Current cardiology reports*
  O'Donnell, C., Sanchez, P. A., Celestin, B., McConnell, M. V., Haddad, F.
  2023
- **Right Ventricular Dysfunction Patterns Among Patients with COVID-19 in the Intensive Care Unit - a Retrospective Cohort Analysis.** *Annals of the American Thoracic Society*
  Sanchez, P. A., O'Donnell, C. T., Francisco, N., Santana, E. J., Moore, A. R., Pacheco-Navarro, A., Roque, J., Lebold, K. M., Parmer, C. M., Pienkos, S. M., Celestin, B. E., Levitt, J. E., Collins, et al
  2023
- **Determinants of adherence to oral hygiene prophylaxis guidelines in patients with previous infective endocarditis.** *Archives of cardiovascular diseases*
  Celestin, B., Habensus, E. I., Tubiana, S., Préau, M., Millot, S., Lescure, F. X., Kerneis, C., Para, M., Duval, X., Iung, B.
  2023; 116 (4): 176-182
- **Impact of Systematic Whole-body 18F-Fluorodeoxyglucose PET/CT on the Management of Patients Suspected of Infective Endocarditis: The Prospective Multicenter TEPvENDO Study.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*
  Duval, X., Le Moing, V., Tubiana, S., Esposito-Farèse, M., Ilic-Habensus, E., Leclercq, F., Bourdon, A., Goehringer, F., Selton-Suty, C., Chevalier, E., Boutoille, D., Piriou, N., Le Tourneau, et al
  2021; 73 (3): 393-403
- **Phase 3 Trial of RNAi Therapeutic Givosiran for Acute Intermittent Porphyria.** *The New England journal of medicine*
  Balwani, M., Sardh, E., Ventura, P., Peiró, P. A., Rees, D. C., Stölzel, U., Bissell, D. M., Bonkovsky, H. L., Windyga, J., Anderson, K. E., Parker, C., Silver, S. M., Keel, et al
  2020; 382 (24): 2289-2301

PRESENTATIONS

- CHEST Journal Official Podcast: AI-Based Echocardiography in Pulmonary Arterial Hypertension - Podcast
- PVRI Monthly Community Call: AI-Based Echocardiography in Pulmonary Arterial Hypertension - Public
- 2026 Stanford Cancer Survivorship Retreat: Invited Speaker
- Grading Severity of Right Ventricular Dysfunction in Pulmonary Hypertension: A Mechanical Analysis ISHLT (International Society for Heart and Lung Transplantation) - ISHLT (International Society for Heart and Lung Transplantation)
- Echocardiography in Pulmonary Arterial Hypertension Using Deep Learning Segmentation Algorithms, ISHLT (International Society for Heart and Lung Transplantation) - ISHLT (International Society for Heart and Lung Transplantation)
- Fully Automated versus Core Laboratory Analysis of Tricuspid Regurgitation Maximal Velocity in Patients with Pulmonary Hypertension - ISHLT (International Society for Heart and Lung Transplantation)