Part A. PERSONAL INFORMATION

First Name *	Luca		
Family Name *	Gerardo-Giorda		
Sex *	Male	Date of Birth *	19/03/1972
ID number Social Security, Passport *	Y2100040Q	Phone Number *	(+43) 73224684141
URL Web			
Email Address	luca.gerardo-giorda@jku.at		
Researcher's identification number	Open Researcher and Contributor ID (ORCID) *	0000-0001-8467-1247	
	Researcher ID		
	Scopus Author ID		

* Mandatory

A.1. Current position

Job Title	Professor (full)	
Starting date	2020	
Institution	Johannes Kepler University Linz	
Department / Centre		
Country		Phone Number	
Keywords	120326 - Simulation; 240400 - Biomathematics; 331400 - Medical technology	

A.2. Previous positions

Period	Job Title / Name of Employer / Country
2014 - 2020	Research Line Leader / BCAM - Basque Center for Applied Mathematics Bilbao
2011 - 2014	Researcher / BCAM - Basque Center for Applied Mathematics Bilbao Spain
2010 - 2011	Research Fellow / Center for Disease Ecology Emory University Atlanta USA
2009 - 2010	Adjunct Faculty / Dept Math&CS Emory University Atlanta USA
2008 - 2010	Research Fellow / Dept Math&CS Emory University Atlanta USA
2004 - 2008	Research Fellow / Dept. Math University of Trento Italy
2003 - 2004	Marie Curie Industry Fellow / Institut Français du Petrôle (IFP), Rueil Malmaison, France

A.3. Education

Degree/Master/PhD	University / Country	Year
PhD in Applied Mathematics	University of Trento, Italy	2002
Laurea in Matematica	Università di Torino, Italia	1996

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Publications

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1. **Scientific paper**. Bianconi, F; Leoni, M; Petras, A; Schena, E; (5/6) Gerardo-Giorda, L (AC); Gizzi, A. 2025. Higher-order thermal modeling and computational analysis of laser ablation in anisotropic cardiac tissue.Biomechanics and Modeling in Mechanobiology. https://doi.org/10.1007/s10237-025-01926-x

2. **Scientific paper**. Anees, M; Moreno Weidmann, Z; Vilades Medel, D; Guerra, JM; (5/6) Gerardo-Giorda, L (AC); Argyrios Petras. 2025. Impact of the dispersive patch placement on dissipated power in radiofrequency ablation for pulmonary vein isolation via a virtual patient study.Scientific Reports. https://doi.org/10.1038/s41598-025-90158-1

3. **Scientific paper**. Petras,A; Amoros Figueras, G; Moreno Weidmann, Z; Garcia Sanchez, T; Vilades Medel, D; Ivorra, A; Guerra, JM; (8/8) Gerardo-Giorda, L (AC). 2025. Is a single lethal electric field threshold sufficient to characterize the lesion size in computational modeling of cardiac pulsed field ablation?. Heart Rhythm 02. https://doi.org/10.1038/s41598-025-90158-1

4. **Scientific paper**. Barnafi, N; Petras, A; (3/3) Gerardo-Giorda, L. 2024. Fully nonlinear inverse poroelasticity: Stress-free configuration recovery.Computer Methods in Applied Mechanics and Engineering. https://doi.org/10.1016/j.cma.2024.116960

5. **Scientific paper**. Petras, A; Leoni, M; Guerra, JM; (4/4) Gerardo-Giorda, L (AC). 2023. Calibration of a three-state cell death model for cardiomyocytes and its application in radiofrequency ablation.Physiological Measurement. https://doi.org/10.1088/1361-6579/acdcdd

6. **Scientific paper**. Kroos, JM; Dassi, F; (3/4) Gerardo-Giorda, L; Perotto, S. 2022. A denoising tool for the reconstruction of cortical geometries from MRI. Mathematics and Computers in Simulation. https://doi.org/10.1016/j.matcom.2021.07.020

7. **Scientific paper**. Molinari, L; (2/3) Gerardo-Giorda, L; Gizzi, A. 2022. A transversely isotropic thermo-hyperelastic constitutive model of myocardial tissue with a three-state cell death dynamics for cardiac radiofrequency ablation. Journal of the Mechanics and Physics of Solids. https://doi.org/10.1016/j.jmps.2022.104810

8. **Scientific paper**. Leoni, M; Szasz, J; Meier, J; (4/4) Gerardo-Giorda, L (AC). 2022. Blood flow but not cannula positioning influences the efficacy of Veno-Venous ECMO therapy. Scientific Reports. https://doi.org/10.1038/s41598-022-23159-z

9. **Scientific paper**. Petras, A; Moreno Weidmann, Z; Echeverria Ferrero, M; Leoni, M; Guerra, JM; (6/6) Gerardo-Giorda, L (AC). 2022. Impact of the electrode tip shape on catheter performance in cardiac radiofrequency ablation. Heart Rhythm 02. https://doi.org/10.1016/j.hroo.2022.07.014

10. **Scientific paper**. Marinelli, I; Thompson, BJ; Parekh, VS; Fletcher, PA; (5/8) Gerardo-Giorda, L; Sherman, AS; Satin, LS; Bertram, R. 2022. Oscillations in K(ATP) conductance drive slow calcium oscillations in pancreatic β-cells. Biophysical Journal. https://doi.org/10.1016/j.bpj.2022.03.015

11. **Scientific paper**. Cusimano, N; (2/3) Gerardo-Giorda, L; Gizzi, A. 2021. A space-fractional bidomain framework for cardiac electrophysiology: 1D alternans dynamics. Chaos: An Interdisciplinary Journal of Nonlinear Science. https://doi.org/10.1063/5.0050897

12. **Scientific paper**. Petras, A; Moreno Weidmann, Z; Leoni, M; (4/5) Gerardo-Giorda, L; Guerra, JM. 2021. Systematic characterization of High-Power Short-Duration Ablation: Insight from an advanced virtual model.Frontiers in Medical Technology. https://doi.org/10.3389/fmedt.2021.747609

13. **Scientific paper**. Conte, M; (2/3) Gerardo-Giorda, L; Groppi, M. 2020. Glioma invasion and its interplay with nervous tissue and therapy: A multiscale model. Journal of Theoretical Biology. https://doi.org/10.1016/j.jtbi.2019.110088

14. **Scientific paper**. Cusimano, N; Fenton, F; Gizzi, A; Filippi, S; (5/5) Gerardo-Giorda, L. 2020. Key aspects for effective mathematical modelling of fractional-diffusion in cardiac electrophysiology: A quantitative study.Communications in Nonlinear Science and Numerical Simulation. https://doi.org/10.1016/j.cnsns.2019.105152

15. **Scientific paper**. Capo Rangel, G; (2/4) Gerardo-Giorda, L; Somersalo, E; Calvetti, D. 2020. Metabolism plays a central role in the cortical spreading depression: Evidence from a mathematical model. Journal of Theoretical Biology. https://doi.org/10.1016/j.jtbi.2019.110093

16 **Scientific paper**. Cusimano, N; Del Teso, F; (3/3) Gerardo-Giorda, L. 2020. Numerical approximations for fractional elliptic equations via the method of semigroups. ESAIM: Mathematical Modelling and Numerical Analysis. https://doi.org/10.1051/m2an/2019076

17 **Scientific paper**. Petras, A; Leoni, M; Guerra, JM; Jansson, J; (5/5) Gerardo-Giorda, L (AC). 2019. A computational model of open-irrigated radiofrequency catheter ablation accounting for mechanical properties of the cardiac tissue. International Journal for Numerical Methods in Biomedical Engineering. https://doi.org/10.1002/cnm.3232

18 **Scientific paper**. Capo Rangel, G; Prezioso, J; (3/5) Gerardo-Giorda, L; Somersalo, E; Calvetti, D. 2019. Brain energetics plays a key role in the coordination of electrophysiology, metabolism and hemodynamics: evidence from an integrated computational model. Journal of Theoretical Biology. https://doi.org/10.1016/j.jtbi.2019.06.003

19 **Scientific paper**. Kroos, JM; de Tommaso, M; Stramaglia, S; Vecchio, W; Burdi, N; (6/6) Gerardo-Giorda, L. 2019. Clinical correlates of mathematical modeling of cortical spreading depression: Single-cases study. Brain and Behavior. https://doi.org/10.1002/brb3.1387

20 **Scientific paper**. Pepper, N; (2/3) Gerardo-Giorda, L; Montomoli, F. 2019. Meta-modeling on detailed geography for accurate prediction of invasive alien species dispersal. Scientific Reports. https://doi.org/10.1038/s41598-019-52763-9

21 **Conference paper**. Anees, M; Moreno Weidmann, Z; Vilades Medel, D; Guerra, JM; (5/6) Gerardo-Giorda, L; Argyrios Petras. 2024. How Does the Dispersive Patch Affect the Efficacy of Radiofrequency Ablation?. Computing in Cardiology. https://doi.org/10.22489/cinc.2024.052

22 **Conference paper**. Leoni, M; Petras, A; Moreno Weidmann, Z; Guerra, JM; (5/5) Gerardo-Giorda, L. 2024. Impact of Catheter Orientation on Cardiac Radiofrequency Ablation. International Workshop on Statistical Atlases and Computational Models of the Heart. https://doi.org/10.1007/978-3-031-52448-6_15

23 **Conference paper**. Leoni, M; Petras, A; Moreno Weidmann, Z; Guerra, JM; (5/5) Gerardo-Giorda, L (AC). 2023. Should I Tilt or Should I Push? Effect of Contact Force and Catheter Inclination in Cardiac Radiofrequency Ablation.Computing in Cardiology. https://doi.org/10.22489/cinc.2023.036

24 **Conference paper**. Petras, A; Leoni, M; Moreno Weidmann, Z; Guerra, JM; (5/5) Gerardo-Giorda, L. 2022. In silico assessment of a multipore electrode design for High Power Short Duration ablation. Computing in Cardiology. https://doi.org/10.22489/cinc.2022.177

25 **Conference paper**. Petras, A; Leoni, M; Jansson, J; Guerra, JM; (5/5) Gerardo-Giorda, L. 2019. Tissue Drives Lesion: Computational Evidence of Interspecies Variability in Cardiac Radiofrequency Ablation. Functional Imaging and Modeling of the Heart. https://doi.org/10.1007/978-3-030-21949-9_16

C.3. Research projects and contracts

1 **Project**. Next generation veno-venous ECMO via flow optimization (ECMOPT). LIT - Linz Institute of Technology. Luca Gerardo-Giorda. (Johannes Kepler University, Linz, Austria). 01/06/2024-31/05/2026. 195.800 €.

2 **Project**. RTI2018-093416-B-I00: Multiscale modeling with applications in quantitative bioscience (MULTIQUANT). AEI/FEDER: Programa estatal de I+D+I orientado a los retos de la sociedad.. Luca Gerardo-Giorda. (ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS). 01/01/2019-31/12/2021. 44.528 €.

3 **Project**. MTM2015-69992-R: Brain electro-metabolic activity: modeling and numerical approximation (BELEMET). MINECO - Programa estatal de I+D+I orientado a los retos de la sociedad.. Luca Gerardo-Giorda. (ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS). 01/01/2016-31/12/2018. 61.710 €.