

December, 16<sup>th</sup> 2024

## **Motivation letter: ISHR-European section council membership**

Dear Nominating Committee Members,

It is with great pleasure that I submit my application to join the council of the ISHR-European section, aiming to contribute actively to the cardiovascular research community in Europe and beyond.

My primary research area is cardiovascular aging and related disease (Abdellatif et al. *Nature Rev Cardiol* 2023). Specifically, my research lies at the intersection of cardiac metabolism and quality control mechanisms, exploring their therapeutic potential in delaying cardiac aging and treating common age-related cardiac disorders, like heart failure with preserved ejection fraction (HFpEF). For instance, we discovered the cardioprotective efficacy of spermidine in cardiac aging and disease, which was published in *Nature Medicine* (2016) and *Circulation Research* (2018). This groundbreaking work has amassed >1000 citations to date and paved the way for several ongoing clinical trials, including NCT04405388, where I have contributed to both design and execution. Additionally, we secured significant funding this year through the Cluster of Excellence 'Metabolic Control of Aging and Disease' to further explore the clinical potential of spermidine in humans. Besides, I have also contributed to the coordination of the European Research Network (ERA-CVD): Metabolic Therapy for diastolic HeArt FailURe. This project yielded seminal epidemiological and preclinical evidence on nicotinamide as a potential HFpEF therapy, with findings published in *Science Translational Medicine* (2021) and *Circulation* (2021). To advance this potential novel therapy to the clinic, I completed an MSc in Clinical Trials at the University of Oxford, where I refined the design of an upcoming outcome trial testing this treatment in patients. More recently, we resolved a dilemma surrounding the impact of insulin/insulin-like growth factor 1 (IGF1) signaling on cardiac health. Specifically, we revealed that this master nutrient-sensing pathway plays a dual biphasic role in regulating cardiac health during the lifespan. Our findings, published in *Circulation* (2022), also showed that autophagy acts as a central checkpoint mediating the late-life geroprotective effects of insulin/IGF1 inhibition in the heart. Last but not least, I am currently coordinating a recently funded ERA4Health project entitled 'Energizing the failing heart', which builds on these observations to further expand our understanding and potential treatment strategies for heart failure.

Collectively, my contributions to the field have been recognized with a number of prizes, including the prestigious Elisabeth Lutz Prize 2025 (Austrian Academy of Science), Oskar-Lapp Prize 2023 (German Society of Cardiology) and the Guido Tarone award 2020 (European Society of Cardiology [ESC] Heart Failure Association). In addition, my research has resulted in three patent applications and two ongoing bench-to-bedside clinical trials. These achievements were recognized by invitations to international and national conferences and elected memberships. These include the ESC WG on

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Myocardial Function Nucleus (2022-2026), where I also serve as the Treasurer, the ESC Congress Program Committee (2020-2022), the ESC Research and Grants Committee (2020-2022) and the Scientists of Tomorrow Nucleus (2018-2021). Furthermore, I was as a founding member of the ESC Board Committee for Young Cardiovascular Professionals (2019-2022).

Currently, as the group leader of the Cardiovascular Aging Research Team at the Medical University of Graz (Austria), I am excited to contribute my expertise and scientific insights to the ISHR-European section. I look forward to the opportunity to contribute to the ISHR and advance its mission.

Thank you for considering my application!

Sincerely yours,  
Mahmoud Abdellatif

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**CURRICULUM VITAE: Mahmoud ABDELLATIF****PERSONAL INFORMATION**

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ORCID/Researcher ID	<b>ORCID ID:</b> 0000-0002-5042-9054

**RESEARCH FOCUS**

My primary research area is cardiac aging and its connection to disease. Specifically, my work has focused on identifying the role of autophagy in the aging heart and developing innovative experimental therapies to reactivate it, thereby promoting longevity and preventing, treating or reversing common age-related cardiac disorders, especially heart failure with preserved ejection fraction.

**DEGREES**

2023	<b>MSc in Clinical Trials</b> , (Grade: Distinction; highest honor)
2019	<b>PhD in Molecular Medicine</b> , (Thesis Grade: 1; highest honor)
2015	<b>MSc in cardiovascular pathophysiology</b> , (Grade: A; highest honor)
2013	<b>Bachelor of Medicine and Surgery</b> , (Grade: Excellent; highest honor)

**EDUCATION**

2021-2023	<b>MSc studies</b> at the Nuffield Department of Population Health, <b>University of Oxford</b> Thesis Supervisors: Jane Armitage, Elizabeth Stokes
2015-2019	<b>PhD studies</b> at the Department of Cardiology, <b>Medical University of Graz</b> , Austria PhD thesis Supervisors: Simon Sedej, Frank Madeo
2013-2015	<b>MSc studies</b> at the Department of Physiology, Faculty of Medicine, <b>University of Porto</b> , Portugal. MSc thesis Supervisors: Adelino Leite-Moreira, Andre Lourenco.
2007-2013	<b>Human Medicine studies</b> at <b>University of Granada</b> , Spain and <b>Sohag University</b> , Egypt

**ACADEMIC CAREER**

2023	<b>Assistant (Tenure Track) Professor</b> , Division of Cardiology, Medical University of Graz
2022	<b>Group Leader</b> , University Heart Center Graz, Medical University of Graz
2021-2022	<b>Marie-Curie Postdoctoral Fellow</b> , Metabolomics platform (Institute Gustave Roussy) and Centre de Recherche des Cordeliers (Sorbonne University), Paris, France
2019-2020	<b>Postdoctoral Researcher</b> , Division of Cardiology, Medical University of Graz, Austria
2017	<b>Visiting Researcher</b> , Bayer Pharmaceuticals R&D Center, Wuppertal, Germany
2015-2019	<b>PhD Candidate</b> , Division of Cardiology, Medical University of Graz, Austria
2013-2015	<b>Research Fellow</b> , Cardiovascular R&D Unit, University of Porto, Portugal

**FUNDING (a total of 3.3 mil €)**

2024	<b>European (ERA4Health) Transnational Grant</b> , <u>Coordinator</u> (Total funding: € 1 158 000)
2024	<b>Cluster of Excellence</b> , Austrian Science Fund (FWF) (€ 621 000; out of € 30M in total)
2023	<b>Young Researcher Group Funding</b> , BioTechMed-Graz (€ 660 000)
2022	<b>FWF standalone project</b> , Austrian Science Fund (FWF) (€ 281 000)
2021	<b>Marie-Curie Individual Fellowship</b> , European Commission (€ 197 000)
2021	<b>Paris Region Fellowship Programme</b> , Ile de France (€ 147 000; <i>gracefully declined</i> )
2020	<b>Start Funding Program</b> , Medical University of Graz (€ 80 000)
2020	<b>European Society of Cardiology Research Grant</b> (€ 25 000)

2019 **Austrian Society of Cardiology Presidential Research Grant** (€ 45 000)

## MENTORING OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2018- Supervisor of 2 post-doctoral fellows and 5 PhD students;  
Co-supervisor of 5 PhD students 1 MSc student and 4 MD students  
(Medical University of Graz, Austria)
- 2021-2023 Tutor of 2 PhD student and 2 post-doctoral fellow  
(Institute Gustave Roussy/Centre de Recherche des Cordeliers, Paris, France.)

## AWARDS AND HONORS (selection)

- 2025 **Elisabeth Lutz Prize**, Austrian Academy of Science
- 2024 **Paracelsus Prize**, Austrian Society of Internal Medicine
- 2023 **Oskar Lapp Prize**, German Society of Cardiology
- 2022 **Richard Pacher Award** for exceptional publications in heart failure research, Swiss- German- Austrian Societies of Cardiology joint meeting
- 2022 **Excellence award** for the best researcher in the University Heart Center Graz
- 2021 **Research Prize of the Heart and Diabetes Working Group**, German Society of Cardiology
- 2020 **Guido Tarone Award**, Heart Failure Association of the European Society of Cardiology
- 2019 **Best Abstract Award**, Austrian Society of Cardiology
- 2019 **Best Poster Prize**, Graz Cardio Summit, Medical University of Graz
- 2017 **Best Publication Award**, Austrian Society of Cardiology
- 2017 **Young investigator Award**, ESC Heart Failure Association (Winter Meeting)
- 2017 **Sanofi-Aventis Best Paper Award**, Medical University of Graz, Austria
- 2017 **Heart Failure Meeting Grant**, ESC Heart Failure Association
- 2016 **European Society of Cardiology Congress Educational Grant**, European Society of Cardiology

## INVITED SCIENTIFIC TALKS (selection)

- 2024 **Austrian Society of Cardiology Conference**, Salzburg, Austria
- 2024 **ESC Heart Failure Association Winter Meeting**, Sophia Antipolis, France
- 2023 **Joint Meeting of the ESC working Groups on Myocardial Function & Cellular Biology**, Naples, Italy
- 2023 **The 12<sup>th</sup> International Congress on Lipid & Atherosclerosis**, Seoul, Republic of Korea
- 2023 **The 5<sup>th</sup> Graz International Cardiovascular Conference**, Graz, Austria
- 2023 **HEAL (Heart, Energy and Life) International Symposium**, Busan, Republic of Korea
- 2023 **European Society of Clinical Investigation**, Prague, Czech Republic
- 2022 **Frontiers in CardioVascular Biomedicine**, Budapest, Hungary
- 2020 **European Society of Cardiology Congress**, held online due to the Covid-19 pandemic
- 2019 **European Society of Cardiology Congress**, Paris, France
- 2019 **Joint Meeting of the ESC working Groups on Myocardial Function & Cellular Biology**, Naples, Italy
- 2019 **CardioCure Symposium**, Innsbruck, Austria
- 2018 **European Society of Cardiology Congress**, Munich, Germany
- 2017 **Austrian Society of Cardiology Conference**, Salzburg, Austria
- 2017 **Göttingen Channels Meeting**, Göttingen, Germany

## SERVICE

- 2020- Grant reviews: *German Centre for Cardiovascular Research & European Society of Cardiology*
- 2018- Manuscript reviews: *The Lancet Healthy Longevity, European Heart Journal, Journal of the American College of Cardiology, Circulation, Aging Cell, Nature Aging, Nature Communications, Experimental Gerontology, EMBO Molecular Medicine, European Journal of Heart Failure, Journal of the American Heart Association, Cardiovascular Research, Atherosclerosis, Journal of Physiology, ESC Heart Failure, Signal transduction and targeted therapies, Journal of Cellular and Molecular Medicine, PLOS Biology, etc.*

## COMMISSIONS OF TRUST

2022-2026	Nucleus Member and Treasurer of the ESC WG on Myocardial Function
2020-2022	ESC Research and Grants Committee & ESC Congress Programme Committee
2019-2022	ESC Board Committee for Young Cardiovascular Professionals
2019-2021	Nucleus Member of the European Society of Cardiology Scientists of Tomorrow

## Institutional responsibilities

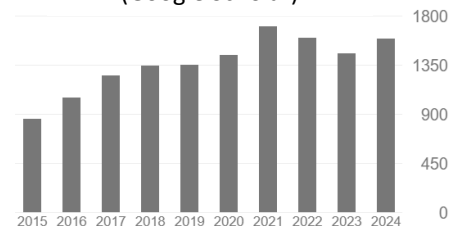
2023-	Faculty Member of the PhD Program Molecular Medicine, Medical University of Graz
2023-	Board Member of MedUniGraz Flagship Consortium: Vascular Health in Aging and Disease
2019-	Co-lead and lecturer of the post-grad course: Basic and translational principles of aging

## Bibliography

### Publication Metrics (as of 16.12.2024)

• Total publications (PubMed)	<b>56</b>
• As first, last or corresponding author	<b>29</b>
• Cumulative Impact Factor	<b>824</b>
• Citations (Google Scholar)	<b>&gt;16,500</b>
• H-index (Google Scholar)	<b>21</b>
• Patent applications	<b>3</b>

Citations per year  
(Google Scholar)



### Top Selected Publications (IF: Impact Factor)

1. **Abdellatif M<sup>✉</sup> et al.**, Hallmarks of Cardiovascular Aging. *Nature Reviews Cardiology*. 2023; May 16. DOI: 10.1038/s41569-023-00881-3. [IF=49.4]
2. **Abdellatif M<sup>✉</sup> et al.**, Actionable autophagy checkpoints in cardiovascular ageing. *European Heart Journal*. 2023 Dec 7;44(46):4819-4821 [IF=39.3]
3. **Abdellatif M<sup>✉</sup> et al.**, Fine-tuning cardiac IGF1 receptor signaling to promote health and longevity. *Circulation*. 2022; May 26: 101161CIRCULATIONAHA122059863. [IF=37.8]
4. **Abdellatif M et al.**, Nicotinamide for the treatment of heart failure with preserved ejection fraction. *Science Translational Medicine*. 2021. DOI: 10.1126/scitranslmed.abd7064. [IF=19.3]
5. **Abdellatif M et al.**, NAD<sup>+</sup> metabolism in cardiac health, aging and disease. *Circulation*. 2021 Nov 30;144(22):1795-1817. DOI: 10.1161/CIRCULATIONAHA.121.056589. [IF=37.8]
6. Eisenberg T\*, **Abdellatif M\* et al.**, Cardioprotection and lifespan extension by the natural polyamine spermidine. *Nature Medicine*. 2017; 22(12):1428-1438. DOI: 10.1038/nm.4222 [IF=82.9]  
\*equally contributing first authors
7. **Abdellatif M et al.**, Autophagy in cardiovascular aging. *Circulation Research*. 2018; 123(7): 803-824. DOI: 10.1161/CIRCRESAHA.118.312208 [IF=20.1]
8. Schreiber R, Diwoky C, Schoiswohl G, Feiler U, Wongsiriroj N, **Abdellatif M et al.**, Cold-Induced Thermogenesis Depends on ATGL-Mediated Lipolysis in Cardiac Muscle, but Not Brown Adipose Tissue. *Cell Metabolism*. 2017; 26(5): 753-763. DOI: 10.1016/j.cmet.2017.09.004 [IF=29.0]
9. Carmona-Gutierrez D, [...], **Abdellatif M et al.**, The flavonoid 4,4'-dimethoxychalcone promotes autophagy-dependent longevity across species. *Nature Communications*. 2019; Feb 19;10(1):651. DOI: 10.1038/s41467-019-08555-w [IF=17.7]
10. Hofer S, [...], **Abdellatif M et al.**, Spermidine is essential for fasting-mediated autophagy and longevity. *Nature Cell Biology*. 2024 (in press). [IF=28.2]

✉ **Corresponding author**