

LMU Klinikum · Kreislaufinstitut (IPEK) · Pettenkoferstr. 9 · 80336 München

Prof. Dr. rer. nat. Sabine Steffens
Klinische Pathobiochemie

To the ESC Basic Science Council
Nominating Committee

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Motivation Statement

Dear Colleagues,

Datum
15.04.2024
Ihr Zeichen

It is my pleasure to apply for a position of Treasurer or Nominating Committee Member of the ESC Basic Science Council.

Unser Zeichen

I am a medical scientist with a basic science background specializing in the immunology of atherosclerosis and heart disease. Throughout my career, I have experienced first-hand the importance of the ESC. In 2016, I received the ESC Outstanding Achievement Award, which helped me to increase my visibility as an internationally recognized independent researcher. In addition, it has been an absolute privilege to serve on two different ESC working groups as a Nucleus member over the past few years. The Nucleus teams have accomplished so much in terms of position papers, meetings and webinars, but most importantly they have built a unique collegial network that I am proud to be a part of.

Vorstand
Ärztlicher Direktor:
Prof. Dr. Markus M. Lerch
(Vorsitz)

Kaufmännischer Direktor:
Markus Zendler

Pflegedirektor (komm.):
Alfred Holderied

Vertreter der Medizinischen Fakultät:
Prof. Dr. Thomas Gudermann (Dekan)

Institutionskennzeichen:
260 914 050

Umsatzsteuer-ID:
DE813536017

Das Klinikum der Universität München
ist eine Anstalt des Öffentlichen Rechts

My intention to apply for a position on the Basic Science Council now is to actively support the mission of the Council and scientific activities such as the ESC Basic Science Sessions and the FCVB meeting. I am particularly interested in proposing cutting-edge basic science sessions for the ESC and FCVB meetings to attract both clinical and non-clinical scientists. To further increase scientific exchange, diversity and international visibility, I would like to actively support the interaction with national and international organizations such as the German Cardiac Society and the European Atherosclerosis Society.

For all these reasons, I seek your support for my Basic Science Council candidacy.

With my very best regards,



Sabine Steffens

PhD, FESC

Personal information

Family name, First name: Marten-Steffens, Sabine

Date of birth: 25.07.1973

Nationality: German

Web site: <http://www.klinikum.uni-muenchen.de/Institut-fuer-Prophylaxe-und-Epidemiologie-der-Kreislaufkrankheiten/de/0300-Research/Pathobiochemistry/index.html>

Education

2012 Habilitation

2001 PhD (Dr. rer. nat., supervisor Christof Kramm, gene therapy for cancer)

Faculty of Sciences, University of Düsseldorf, Germany

1997 Master (Biology, supervisor Sven-Erik Behrens, characterisation of viral RNA polymerases)

Faculty of Sciences, University of Giessen, Germany

Career breaks

2005, 2009 Maternity leaves (Sophie, Fiona)

Current position

2013 – Associate Professor (W2) for Clinical Pathobiochemistry

Faculty of Medicine, Institute for Cardiovascular Prevention, Ludwig-Maximilians-University (LMU), Munich, Germany

2024 – Affiliated Group Leader, Institute for Diabetes and Cancer, Helmholtz Munich

Previous positions

2006 – 2013 Senior scientist/group leader (endocannabinoid system in cardiovascular disease)

Faculty of Medicine, Department of Cardiology, University of Geneva, Switzerland

2003 – 2006 Postdoctoral Researcher (supervisor Francois Mach, anti-inflammatory approaches for atherosclerosis)

Faculty of Medicine, Department of Cardiology, University of Geneva, Switzerland

2002 Postdoctoral fellow (retro- and lentiviral vectors for gene therapy of cancer)

Children's Hospital in Philadelphia, USA

Fellowships, awards and other

2023 Offer for a W3 Chair for Molecular Cardiology at HHU Düsseldorf (declined)

2023 Arthur Weber Price and Silver Honorary Needle of the German Cardiac Society

2016 European Society of Cardiology Outstanding Achievement Award

2013 Denber Pinard Award of the Faculty of Medicine, University of Geneva, Switzerland

2005 Swiss Society of Cardiology Research Award

2002 Fellowship (6 months) funded by German Research Foundation, DFG

Teaching

2019 - LMU Master Program Human Biology (lectures, seminars, mentoring, Bioimaging and Cardiovascular units coordinator, examination board)

- member)
- 2018 – Seminars, Collaborative Research Centre (CRC) 1123 Integrated Graduate School PhD program and coordinator of the bioimaging course for the Excellence Master School of Biomedical Science, LMU, Munich, Germany
- 2013 – MD student program of the Medical School, LMU, Munich, Germany
- 2006 – 2013 Problem-based learning (cardiovascular system) and histology course tutor, Medical School, University of Geneva, Switzerland

Supervision of Researchers in Early Career Phases

- 2006 - Supervision of >10 master students, 9 PhD students, 6 MD students, 5 postdocs

Organisation of scientific meetings

- 2022 Co-Organizer of the 3rd DGK/DZHK Translational Workshop, Bonn, Oct 2022
- 2021, 2023 Co-Organizer of the “9th & 10th Cardiac Regeneration and Vascular Biology” Meeting, San Servolo
- 2014 Co-Organizer of ESC Frontiers in Cardiovascular Biology Satellite symposium „Novel Biomarkers in Atherosclerosis“

Institutional responsibilities

- 2023 – LMU Medical Faculty board member
- 2021 – CRC1123 General Secretary
- 2019 – Examination board member, LMU Master Program Human Biology
- 2018 – Speaker of the CRC1123 Integrated Graduate School (IRTG1123)
- 2015, 2022 Mentoring program TANDEMplusMED, University of Aachen, Germany; DGK Mentoring program
- 2014 – CRC1123 Women’s Representative
- 2013 – Professorship search committee member (involved in ~15 nominations at LMU)

Memberships of scientific associations & positions of trust

- 2023 COST Action EU-METAHEART Working Group member
- 2022 - Herzmedizin.de, section editor basic science
- 2022 – German Atherosclerosis Society (DGAF) member
- 2018 – 2022 European Society of Cardiology, Working Group Cellular Biology of the Heart, nucleus member
- 2017 – European Atherosclerosis Society member
- 2014 – German Cardiac Society member (nucleus member of the DGK Working Group Vascular Biology AG4 since 2018; Member DGK Commission Experimental Cardiology (KEK) 2019-2023; KEK Speaker and DGK Board member 2021-2023; Albert Frankel Price board of trustees since 2023; Program Committee Member 2023-2027)
- 2014 – German Centre for Cardiovascular Research (DZHK) member, partner site Munich Heart Alliance, Munich, Germany (DZHK Scientist 2014-2018, Principal Investigator since 2019)
- 2012 – 2016 European Society of Cardiology, Working Group Atherosclerosis & Vascular Biology, nucleus member
- 2012 – European Society of Cardiology Fellow (FESC)
- 2012 – Academia-Net member (network of leading female scientists)

Reviewing activities (selection)

Grant Reviewer: German Research Foundation (DFG), European Research Council; British Heart Foundation and Wellcome Trust, UK; Medical Research, Scotland; Agence Nationale de la Recherche, France; FNRS, Belgium; Foundation for Polish Science; FWF, Austria

Journal Reviewer: Science, Science Translational Medicine, Nature Cardiovascular Research, Nature Communications, European Heart Journal, Circulation, Circulation Research, Basic Research Cardiology (editorial board member, since 2022), Cardiovascular Research, ATVB, JAHA, Molecular Metabolism, Thrombosis and Haemostasis (Section Editor, since 2023), Scientific Reports, British Journal of Pharmacology, Vascular Pharmacology (editorial board member, since 2022)

Current research interests

Innate immune responses and lipid signaling in cardiovascular disease; endocannabinoid system; chronic inflammation in atherosclerosis and related metabolic disorders; myocardial infarction and repair; adverse cardiac remodeling and heart failure; cross talk between pericardial adipose tissue and cardiac inflammation; experimental mouse models (atherosclerosis, myocardial infarction, angiotensin 2-induced cardiac hypertrophy, echocardiography, intraventricular pressure-volume catheter)

Major collaborations

Stephan Herzig, Helmholtz Centre, Munich, Germany (metabolic comorbidities in cardiovascular disease)

Alessandra Moretti, TU Munich (human cardiac disease models)

Beat Lutz, University of Mainz, Germany (lipidomics and floxed *Cnr1* mice) Jan Huisken, University Goettingen, Germany (light sheet microscopy imaging)

Jason Cyster, University of California San Francisco, USA (*Gpr18* knockout mice)

Daniela Carnevale, Rome (retrograde tracing & role of vagal reflexes in pericardial adipose tissue)

Publications

ORCID identifier: 0000-0002-6892-9751; Web of Science Researcher ID: AAV-4551-2020; H-index: 50; times cited: 7'549 (Web of Science); iCite Weighted RCR: 289.87; number of peer-reviewed publications: 62 original studies, 32 reviews, 13 position papers, 6 editorials

Ten selected original papers

Steffens S, Veillard NR, Arnaud C, Pelli G, Burger F, Staub C, Karsak M, Zimmer A, Frossard JL, Mach F (2005). Low dose oral cannabinoid therapy reduces progression of atherosclerosis in mice. *Nature* 434, 782-786.

Steffens S, Burger F, Pelli G, Dean Y, Elson G, Kosco-Vilbois M, Chatenoud L, Mach F (2006). Short-term treatment with anti-CD3 antibody reduces the development and progression of atherosclerosis in mice. *Circulation* 114, 1977-1984.

Montecucco F*, Di Marzo V*, da Silva RF, Vuilleumier N, Capettini L, Lenglet S, Pagano S, Piscitelli F, Quintao S, Bertolotto M, Pelli G, Galan K, Pilet L, Kuzmanovic K, Burger F, Pane B, Spinella G, Braunersreuther V, Gayet-Ageron A, Pende A, Viviani GL, Palombo D, Dallegri F, Roux-Lombard P, Santos RA, Stergiopoulos N, **Steffens S**[#], Mach F[#] (2011). The activation of the cannabinoid receptor type 2 reduces neutrophilic protease-mediated vulnerability in atherosclerotic plaques. *Eur Heart J* 33, 846-856. *shared first/[#]shared senior authors

Schloss MJ, Horckmans M, Nitz K, Duchene J, Drechsler M, Bidzhekov K, Scheiermann C, Weber C, Soehnlein O, **Steffens S** (2016). The time-of-day of myocardial infarction onset affects healing through oscillations in cardiac neutrophil recruitment. *EMBO Mol Med* 8, 937-948.

Horckmans M, Ring L, Duchene J, Santovito D, Schloss MJ, Drechsler M, Weber C, Soehnlein O, **Steffens S** (2017). Neutrophils orchestrate post-myocardial infarction healing by polarizing macrophages towards a reparative phenotype. *Eur Heart J* 38, 187-197.

Rinne P, Rami M, Nuutinen S, Santovito D, van der Vorst EPC, Guillamat-Prats R, Lyytikäinen LP, Raitoharju E, Oksala N, Ring L, Cai M, Hruby VJ, Lehtimäki T, Weber C, **Steffens S** (2017). Melanocortin 1 Receptor Signaling Regulates Cholesterol Transport in Macrophages. *Circulation* 136, 83-97.

Schloss MJ, Hilby M, Nitz K, Guillamat Prats R, Ferraro B, Leoni G, Soehnlein O, Kessler T, Horckmans M, Luckow B, Weber C, Duchene J, **Steffens S** (2017). Ly6C^{high} monocytes oscillate in the heart during homeostasis and after myocardial infarction. *Arteriosclerosis, Thrombosis and Vascular Biology*, 37(9):1640-1645.

Horckmans M, Bianchini M, Santovito D, Megens RTA, Springael JY, Negri I, Vacca M, Eusanio M, Moschetta A, Weber C, Duchene J, **Steffens S** (2018). Pericardial adipose tissue regulates granulopoiesis, fibrosis and cardiac function after myocardial infarction. *Circulation*, 137(9):948-960.

Schloss MJ*, Horckmans M*, Guillamat-Prats R, Hering D, Lauer E, Lenglet S, Weber C, Thomas A, **Steffens S** (2019). *2-arachidonoylglycerol mobilizes myeloid cells and worsens heart function after acute myocardial infarction*. *Cardiovascular Research*. 115(3):602-613
*Equal first author contribution

Guillamat-Prats R, Hering D, Rami M, Härdtnner C, Santovito D, Rinne P, Bindila L, Hristov M, Pagano S, Vuilleumier N, Schmid S, Janjic A, Enard W, Weber C, Maegdefessel L, Faussner A, Hilgendorf I, **Steffens S** (2022). GPR55 in B cells limits atherosclerosis development and regulates plasma cell maturation. *Nature Cardiovascular Research*. 2022 Nov;1:1056-1071. PMID: 36523570



Munich, 15 April 2024