

Franziska Schneider-Warme (Dr. rer. nat.)

Institution: Institute for Experimental Cardiovascular Medicine, University Heart Center Freiburg · Bad Krozingen, and Faculty of Medicine, University of Freiburg, Freiburg, Germany

Contact:

Phone: **+49 761 270 63954**

Email: Franziska.schneider.uhz@uniklinik-freiburg.de

Position: Emmy-Noether group leader

Academic education including academic degrees

- 2004-2009 Study of Biophysics, Humboldt-Universität zu Berlin, Germany
Final degree: Diploma in Biophysics (equivalent to MSc)
- 2006-2007 Exchange semester, Université de Bordeaux, France

Scientific graduation

- 2019- Habilitation at Biological Faculty, University of Freiburg (in process)
- 2010-2014 Dr. rer. nat. (Biophysics), Humboldt-Universität zu Berlin
Title of thesis: Design and electrophysiological characterization of rhodopsin-based optogenetic tools, graded *summa cum laude*

Employment

- Since 2019 Emmy-Noether research group leader, IEKM, UHZ Freiburg · Bad Krozingen
- Since 2016 Head of Cardiac Optogenetics Section, IEKM, UHZ Freiburg · Bad Krozingen
- 2015 Postdoctoral research fellow, National Heart and Lung Institute, Imperial College London, UK
- 2014 Postdoctoral scientist, Humboldt-Universität zu Berlin

Other activities, awards and honours

- 2023-2028 PI within ERC Synergy Grant Consortium “Switchable Rhodopsins in Life Science” (ERC-SOL)
- 2025 Co-organizer International Optogenetics Symposium, Volpriehausen
- 2025 Co-organizer ‘Novel Optical Technology in Cardiac Electrophysiology’ (NOTICE) symposium, Freiburg
- 2024 Co-organizer International Optogenetics Symposium, Berlin
- Since 2023 Module Director for *Molecular and Cell Biology* within new MSc programme Medical Sciences – Cardiovascular Research
- 2023 Co-organizer International CRC 1425 Symposium, Freiburg
- Since 2021 Elected member of the nucleus of the working group ‘Cellular Electrophysiology’ of the German Cardiac Society (DGK)
- Since 2021 Associate investigator within the excellence cluster ‘Centre for Integrative Biological Signalling Studies’ (CIBSS)
- 2020 – 2025 Elected member of the steering committee of DFG Collaborative Research Centre SFB 1425 ‘Heterocellular Nature of Cardiac Lesions’

Since 2019 Member of Spemann Graduate School for Biology and Medicine, Freiburg
 2019 – 2022 Selected member of CORA mentoring programme, University of Freiburg
 2018 Emmy-Noether grant and fellowship
 2016 – 2022 Elected member of the steering committee of DFG Scientific Priority Programme SPP 1926 'Next Generation Optogenetics'
 Since 2016 Member of organizing committee, international mechano-electric coupling (MEC) meetings, Freiburg (2016, 2019, 2023, planned for 2025)
 2014 and 2010 Humboldt-prizes for excellent diploma thesis and excellent dissertation
 2006-2007 Erasmus stipend
 Reviewer for *ERC, DFG, Dutch Research Council*
 Reviewer and/or guest editor for *Biophysical Journal, Cardiovascular Research, Elife, Europace, Frontiers in Physiology, Journal of Physiology, Nature Communications, Nature Cardiovascular Research, Pflügers Archiv, Science Advances, Scientific Reports etc.*

Ten most important publications

1. Chan A, Greiner J, Brennan T, Agrawal A, Hemmer H, Sinning K, Marschhauser L, Cheung W, Zafar I, Klesen A, Seidel T, Vaeth M, Rog-Zielinska E, Kohl P, **Schneider-Warme F**, Grün D. Spatio-temporal dynamics of the fibrotic niche in cardiac repair. *bioRxiv* 2024. <https://doi.org/10.1101/2024.11.10.622609>
2. Fernández MC, Wülfers EM, Josef M, Kohl P, Zgierski-Johnston CM, **Schneider-Warme F**. 3D structure of fibroblasts and macrophages in the healthy and cryo-ablated heart. *bioRxiv* 2023 <https://doi.org/10.1101/2023.11.30.569388>
3. Vierock J*, Peter E*, Grimm C*, Rozenberg A, Chen IW, Tillert L, Castro Scalise AG, Casini M, Augustin S, Tanese D, Forget BC, Peyronnet R, **Schneider-Warme F**, Emiliani V, Béjà O, Hegemann P. WiChR, a highly potassium-selective channelrhodopsin for low-light one- and two-photon inhibition of excitable cells. *Sci Adv* 2022/8:eadd7729 [PMID: [36383037](https://pubmed.ncbi.nlm.nih.gov/36383037/)]
4. Simon-Chica A, Fernández MC, Wülfers EM, Lothar A, Hilgendorf I, Seemann G, Ravens U, Kohl P, **Schneider-Warme F**. Novel insights into the electrophysiology of murine cardiac macrophages: relevance of voltage-gated potassium channels. *Cardiovasc Res* 2022/118:798-813 [PMID: [33823533](https://pubmed.ncbi.nlm.nih.gov/33823533/)]
5. Kopton RA, Baillie JS, Rafferty SA, Moss R, Zgierski-Johnston CM, Prykhozhij SV, Stoyek MR, Smith F, Kohl P, Quinn TA, **Schneider-Warme F**. Cardiac Electrophysiological Effects of Light-Activated Chloride Channels. *Front Physiol* 2018/9:1806 [PMID: [30618818](https://pubmed.ncbi.nlm.nih.gov/30618818/)]
6. Bernal Sierra YA*, Rost BR*, Pofahl M*, Fernandes AM, Kopton RA, Moser S, Holtkamp D, Masala N, Beed P, Tukker JJ, Oldani S, Bönigk W, Kohl P, Baier H, **Schneider-Warme F**, Hegemann P, Beck H, Seifert R, Schmitz D. Potassium channel-based optogenetic silencing. *Nat Commun* 2018/9:4611 [PMID: [30397200](https://pubmed.ncbi.nlm.nih.gov/30397200/)]
7. Rost BR*, **Schneider F***, Grauel MK, Wozny C, Bentz C, Blessing A, Rosenmund T, Jentsch TJ, Schmitz D, Hegemann P, Rosenmund C. Optogenetic acidification of synaptic vesicles and lysosomes. *Nat Neurosci* 2015/18:1845-1852 [PMID: [26551543](https://pubmed.ncbi.nlm.nih.gov/26551543/)]
8. **Schneider F**, Grimm C, Hegemann P. Biophysics of Channelrhodopsin. *Annu Rev Biophys* 2015/44:167-86 [PMID: [26098512](https://pubmed.ncbi.nlm.nih.gov/26098512/)]
9. Wietek J*, Wiegert JS*, Adeishvili N, **Schneider F**, Watanabe H, Tsunoda SP, Vogt A, Elstner M, Oertner TG, Hegemann P. Conversion of channelrhodopsin into a light-gated chloride channel. *Science* 2014/344:409-12 [PMID: [24674867](https://pubmed.ncbi.nlm.nih.gov/24674867/)]
10. Yizhar O*, Fenno LE*, Prigge M, **Schneider F**, Davidson TJ, O'Shea DJ, Sohal VS, Goshen I, Finkelstein J, Paz JT, Stehfest K, Fudim R, Ramakrishnan C, Huguenard JR, Hegemann P, Deisseroth K. Neocortical excitation/inhibition balance in information processing and social dysfunction. *Nature* 2011/477:171-8 [PMID: [21796121](https://pubmed.ncbi.nlm.nih.gov/21796121/)]

* equal contribution