

Eva Maria Wölfel – Curriculum Vitae

Research career and scientific focus

I am fascinated by the interplay of molecular, chemical, and physical mechanisms which determine tissue function in health and disease. Bone strength is determined by the amount and quality of bone matrix, however, only the first is accessible in clinical praxis. My research focuses on deciphering the underlying molecular mechanisms of bone fragility independent of bone mass in age and disease, such as diabetes. I combine my expertise in skeletal biology with the application of cutting-edge engineering technologies and identified profound bone matrix impairments in a specific subgroup of individuals with type 2 diabetes. I aim to improve our understanding of bone matrix changes and its contribution to bone fragility to refine diagnosis of fracture risk and discover novel treatment avenues targeting bone quality in clinical care.

Current and previous employments

- 01/23 – 12/26 **PostDoc at Department of Molecular Endocrinology (KMEB)**, University of Southern Denmark (SDU) and Odense University Hospital (OUH)
01/22 – 12/22 Guest researcher as **PostDoc at KMEB**, SDU and OUH
10/21 – 12/22 **PostDoc at Heisenberg Research Group**, Dept. of Osteology and Biomechanics (IOBM), University Medical Centre Hamburg-Eppendorf (UKE), Germany

Education

- 08/16 – 09/21 **PhD at Heisenberg Research Group**, IOBM, UKE, Germany; “Bone material quality in type 1 and type 2 diabetes mellitus” PhD supervisor: Prof. Björn Busse
10/13 – 01/16 **Master of Science Biomedical Engineering** RWTH Aachen University, “Towards Smooth Muscle Cell Differentiation of Adipose Tissue-Derived Mesenchymal Stem Cells in Fibrin Gels” Supervisors: Profs. Sabine Neuss-Stein & Willi Jahnen-Dechent
10/09 – 10/12 **Bachelor of Science in General Engineering Science, Mechanical Engineering** Hamburg University of Technology, Germany

Academic awards and honours

- 2026 **IFMRS-ECTS exchange program** to present at the **Japanese Society for Bone and Mineral Research** annual meeting, Chiba, Japan
2026 **Danish Diabetes and Endocrine Academy (DDEA) Early-Career Researcher Award** in classical endocrinology
2025 **Selected member of the European Calcified Tissue Society Academy**
2023 **Best presentation award** Seminar of Endocrinology Research Unit, SDU and Steno Diabetes Centre Odense
2022 **Von Recklinghausen Price** German Society for Endocrinology
2019 **Fellowship from the Endocrine Fellow Foundation** 13th Fellows Forum on Metabolic Bone Diseases in Orlando, USA
2018 & 2019 **3 Travel grants** from American Society for Bone and Mineral Research (ASBMR), German Society of Biomechanics, and University of Hamburg

Larger Grants

- 2024 **Hanseatic Life Science Research Infrastructure Consortium** pilot project (30 284 €) “Effects of type 2 diabetes mellitus on bone marrow microangiopathy and its implications for stem cell recruitment”

- 2023 **European Calcified Tissue Society (ECTS) Basic/Translational Research Fellowship** (10 000 €) “Targeting miRNAs to revert advanced glycation end-products induced cellular impairments”
- 2022 **Transition funding for non-physicians** by UKE (64 506,81 €) “Deciphering the underlying mechanisms of fracture susceptibility in type 2 diabetes mellitus”
- 2021 **Forum for Medical Technology Hamburg** (23 750 €) “Effects of type 2 diabetes mellitus on the fracture toughness and biomechanical properties in cortical bone”
- 2021 **EndoVerein project funding** (40 000€) “High resolution multi-scale analysis of subchondral bone and the tibia plateau in type 2 diabetes mellitus and osteoarthritis”

Commissions of trust

- 2026 **Scientific program committee** ECTS annual meeting 2027
- 2025 **Peer-mentoring group** with quarterly-yearly meetings
- 2023 **Organizing committee** Danish Diabetes and Endocrine Academy annual day 2024
- 2022 **Lecturer and organizer** “Bone biomechanics and musculoskeletal imaging” training course of an ERC MSCA ITN Horizon 2020 program (UKE)
- Since 2020 **Reviewer** for *Bone Reports*, *Journal of Bone and Mineral Research*, *Bone* and others

Invited talks and presentations

- 2026 **Osteology**, Frankfurt am Main, Germany
- 2025 **Webinar** at seminar series of the **International Society of Bone Morphometry**
- 2024 **PhD school European Calcified Tissue Society**, Dubrovnik, Croatia
- 2024 **PhD school Metabolic Bone Disease** in Odense, Denmark
- 2024 **Symposium Clinical Metabolic Physiology**, Aarhus, Denmark
- 2020 + 2023 **Osteology**, digital and Salzburg, Austria
- 2022 **International Society of Bone Morphometry**, Odense, Denmark
- 2022 Pre-meeting **European Calcified Tissue Society**, Helsinki, Finland

International relations

- 2019 **Research visit at Biomedical Engineering Department** Rensselaer Polytechnic Institute, Troy, NY, USA; Prof Deepak Vashishth
- 2018 **Research visits at Advanced Light Source** Lawrence Berkeley National Lab University of California, Berkeley, CA, USA

Supervision & Mentoring

Currently: Co-supervisor of 1 PhD student and **Supervisor** of 1 medical students at SDU
Previous supervision: 4 master, 4 bachelor, 1 medical doctoral student, and 1 medical student

Project design and management experiences

- 2026 **Co-leader** of the Danish Structural Imaging and Biomechanics Analysis Resource (DanSIBAR) (NNF25OC0101496) and nanoindentation infrastructure (CF24-1503)
- 2025 German Electron Synchrotron (DESY) **Beamline proposal** “Deciphering the impact of bone marrow microangiopathy in type 2 diabetes mellitus on bone quality” – **Co-PI and project lead**
- 2025 **Negotiation and Collaboration Skills Course** MB & Partners (DDEA)
- 2025 **Mentoring for Change** Faculty of Health Science, SDU
- Since 2024 **Collaboration partner in several clinical trials:**
 Ongoing: NCT06789900, NCT06050577, NCT06722560, NCT07010432 (collaboration with Novo Nordisk A/S); Completed: NCT04702516

- 2024 **Leadership and Management Skills Course** hfp consulting (DDEA)
- 2023 **Leadership Education for Advancement (LEAD) program** (ASBMR)
- 2023 **European Synchrotron Radiation Facility (ESRF) Beamline proposal**
"Microvascular disease induced osteocytic matrix changes in type 2 diabetic bone" –
Co-PI and project leader
- 2022 **Self-leadership course** by the European Molecular Biology Organization
- 2021 German Electron Synchrotron (DESY) **Beamline proposal** "Small angle X-ray
Scattering with simultaneous nanoindentation" – **Co-PI and project lead**
- 2019 **Writing** grant application; **project management**; PhD student **enrollment** of ERC
ITN "Training network for research into bone Fragility In Diabetes in Europe –
towards a personalised medicine approach - FIDELIO"
- 2017 – 2021 **Student representation** in PhD board for non-medical scientists at UKE