Martin R. Pfaller

Yale University
Department of Biomedical Engineering
10 Hillhouse Ave, New Haven, CT 06511, USA

Computational Biomechanics Laboratory
martin.pfaller@yale.edu
Google Scholar

Research Vision

My vision is to develop personalized computational models to predict, prevent, and promote recovery from cardiovascular diseases. Our physics-based and data-driven biomechanical models include cardiac mechanics, cardiovascular fluid dynamics, and long-term tissue adaptation. We develop methods for finite element simulations, machine learning, reduced-order modeling, and uncertainty quantification to build fast yet accurate models. We collaborate with clinicians and groups focused on medical imaging and tissue-scale experiments.

Academic Employment

Since 2024 **Assistant Professor**, *Biomedical Engineering*, Yale University

2022 – 2024 **Instructor**, *Pediatrics – Cardiology*, Stanford University
Principal investigator on NIH K99 award

2019 – 2022 **Postdoctoral Scholar**, *Pediatrics – Cardiology*, Stanford University
Co-supervised undergraduate and graduate students, led open-source software development

2014 – 2018 **Research and Teaching Assistant**, *Mechanical Engineering*, TU Munich
Supervised student thesis projects, taught undergraduate classes, started research collaborations

Education and Training

2022 **Postdoc**, *Pediatrics – Cardiology*, Stanford University
Focus: Cardiovascular Fluid Dynamics, Growth and Remodeling

2019 **Ph.D.**, *Mechanical Engineering*, TU Munich
Thesis: Predictive Computational Modeling of Patient-Specific Cardiac Mechanics

2013 **M.Sc.**, *Mechanical Engineering*, TU Munich
Thesis: Instabilities During Mucosal Folding Induced by Volumetric Growth

2012 **B.Sc.**, *Mechanical Engineering*, TU Munich
Thesis: Skew Maximum-Entropy Prior Functions for Convection-Diffusion Problems

Honors and Awards

2022 – 2027 **NIH Pathway to Independence Award (K99/R00)**, National Heart, Lung, and Blood Institute
Award for mentored and independent research on computational modeling of heart failure, $1M (**summary**)

2022 – 2024 **Instructor K Award Support**, Stanford Maternal and Child Health Research Institute
Supplement to research expenses of NIH K99 award, $100k

2022 **Travel Awards**, Additional Ventures & Stanford Cardiovascular Institute

2019 **Dissertation Award**, Association of German Engineers (VDI)

2016, 2017 **Awards for Outstanding Teaching**, *Student Council Mechanical Engineering*, TU Munich
As head teaching assistant for undergraduate classes in engineering mechanics with 700 students

2013 **Exchange Scholarships**, German Academic Exchange Service (DAAD) & Erich Müller-Stiftung
Support for research exchange at Stanford University during Master's thesis

Open-Source Projects

Development, maintenance, and administration of open-source scientific software projects and repositories

- **SimVacsular**: Cardiovascular fluid dynamics simulation suite with a graphical user interface
- **svMultiPhysics**: 3D finite element solver for electrophysiology, elastodynamics, and fluid dynamics
- **svZeroDSolver**: 0D fluid dynamics solver for lumped-parameter networks of blood vessels
- **svOneDSolver**: 1D fluid dynamics solver for a network of cylindrical blood vessels
- **Vascular Model Repository**: Curated subject-specific fluid dynamics models of blood vessels
- **4C**: 3D multi-physics finite element solver, pre-/post-processing tools for cardiac simulations

Professional Service

- **Grant Review**:
  American Heart Association (AHA) – Predoctoral Fellowship, Dutch Research Council (NWO) – Vidi Program, UK Research and Innovation (UKRI) – Engineering and Physical Sciences Research Council
- **Program Review**:
  Stanford Maternal & Child Health Research Institute Postdoctoral Fellowship Mock Review, Stanford Cardiovascular Institute Summer Research Program, Yale Biomedical Engineering Graduate Program, Yale First-Year Summer Research Fellowship
- **Journal Peer Review**:
  Annals of Biomedical Engineering, Bioengineering, Biomechanics and Modeling in Mechanobiology, Cardiovascular Engineering and Technology, Computer Methods and Programs in Biomedicine, Computer Methods in Biomechanics and Biomedical Engineering, Computers in Biology and Medicine, eLife, European Radiology, Frontiers in Physiology, International Journal for Numerical Methods in Biomedical Engineering, Journal of Biomechanical Engineering, Journal of the Society for Cardiovascular Angiography & Interventions, Medical Image Analysis, npj Digital Medicine, Philosophical Transactions of the Royal Society A, Royal Society Open Science
- **Other Review**:
  Biomechanics of Living Organs Book Series (Elsevier), Functional Imaging and Modeling of the Heart Conference (FIMH)

Work Experience

2019 **Software Engineer**, Cortex (acquired by Boston Scientific)
Devised simulation tools to diagnose atrial fibrillation and guide catheter ablation surgery

2012 – 2013 **Student Trainee**, *Research and Development*, BMW
- Preformed stress analysis calculations for electric motors
- Enabled a fast prototyping process by giving design recommendations based on simulations

2011 – 2012 **Student Trainee**, *Corporate Technology*, Siemens
- Implemented software for communication between various finite element solvers
- Reduced costs for software licenses by using open-source software for the simulation process

2009 – 2011 **Undergraduate Teaching Assistant**, *Mechanical Engineering*, TU Munich
- Gained a deep understanding of mechanical engineering core subjects by teaching others
- Taught a class of non-engineering undergraduate students in solid mechanics

Outreach

Since 2024 **Tutor**, New Haven Counts
Academic after-school support in mathematics

Performed in ”science slams,” giving entertaining short talks about my scientific research to a general audience:

2020 **Participant**, invited by the German Academic International Network (**YouTube**)

2017 **Winner**, invited by the Mechanical Engineering Student Council, TU Munich

Teaching Experience

2025 **Computational Mechanics**, *Instructor (14 grad and undergrad students)*, ENAS 762, Yale
Created a new course on nonlinear continuum mechanics and finite element methods

2024 **Mathematical Methods**, *Instructor (26 grad students)*, ENAS 500, Yale
Engineering math for first-year graduate students

2020 – 2023 **Bioengineering**, *Guest lecturer (20 grad and medical students)*, Stanford
Taught selected lectures in several courses on biomechanics
- BIOE 285 – Computational Modeling in the Cardiovascular System
- BIOE 390 – Introduction to Bioengineering Research
- BIOE 301C – Diagnostic Devices Lab

2021 **Nonlinear Continuum Mechanics**, *Instructor (5 grad students)*, Stanford
Created and taught a mini-course for lab-members

2021 **SimVascular software workshop**, *Instructor (30 participants)*, SB3C conference, Stanford
Taught a section on reduced-order modeling in our open-source software

2017 – 2018 **Solid Mechanics 3 – Dynamics**, *Teaching assistant*, TU Munich
Organized online course and lecture recordings, transitioned teaching responsibilities

2017 **Solid Mechanics 2 – Elastostatics**, *Head teaching assistant*, TU Munich
Transitioned to teaching with five teaching assistants, introduced computer-based exam reviews

2016 – 2017 **Solid Mechanics 1 – Statics**, *Head teaching assistant (703 undergrad students)*, TU Munich
Taught weekly exercises, supervised 23 section leaders, introduced lecture recordings

2016 **Visualization in Solid Mechanics**, *Instructor (20 undergrad students)*, TU Munich
Mentored teams of highly talented students developing their own teaching software

2015 – 2016 **Solid Mechanics 3 – Dynamics**, *Head teaching assistant (610 undergrad students)*, TU Munich
Taught weekly exercises, supervised 17 section leaders, introduced live quizzes

2015 **Solid Mechanics 2 – Elastostatics**, *Teaching assistant*, TU Munich
Created video tutorials. See e.g. tutorial on Mohr's Circle on **YouTube** (German, 60k views)

2014 – 2015 **Solid Mechanics 1 – Statics**, *Teaching assistant*, TU Munich
Created video tutorials. See e.g. tutorial on influence lines on **YouTube** (German, 15k views)

Research Supervision

Postdocs

Since 2025 **Federica Ninno**, Computational biomechanics. *Yale*

PhD students

Since 2025 **Katrin Kösler**, Computational modeling of cardiac growth and remodeling. *Yale*

2025 **Emma Van Epps**, Reduced-order left-ventricular mechanics. *Yale*

2025 **Elsie Devey**, Computational modeling of diffusion processes for drug delivery. *Yale*

2024 **Christina Sun**, Parameter estimation using physics-informed neural networks. *Yale*

PhD students (co-supervised)

2023 **Anjini Chandra**, Fluid-solid-growth interaction in tissue-engineered vascular grafts. *Stanford*

2022 **Faiza Tabassum**, Reduced-order modeling of blood flow. *TU Munich*

2021 – 2023 **Priya Nair**, Simulation-based treatment planning in patients with aortic coarctations. *Stanford*

2021 – 2023 **Erica Schwarz**, Computational modeling of tissue-engineered vascular grafts. *Stanford*

2020 – 2025 **Janina Datz**, Mechanical effects of coronary in-stent restenosis. *TU Munich*

2020 – 2024 **Amadeus Gebauer**, Multi-scale modeling of cardiac growth and remodeling. *TU Munich*

2020 – 2024 **Natalia Rubio**, Machine learning-enhanced reduced-order models of blood flow. *Stanford*

2020 – 2023	**Numì Sveinsson Cepero**, Automatic segmentation of blood vessels.	*UC Berkeley*
2020	**Luca Pegolotti**, Model order reduction of blood flow.	*Stanford*
2019 – 2023	**Jonathan Pham**, Interactive geometry-editing for vascular anatomies.	*Stanford*

Master's students

2024 – 2025	**Nadine Rosete**, Estimating myocardial stiffness from ex vivo inflation experiments.	*Yale*
2023 – 2024	**Yuecheng Yu**, Computational modeling of cardiac growth and remodeling.	*Stanford*
2022	**Jakob Richter**, Multi-fidelity boundary condition tuning for cardiovascular fluid dynamics simulations under uncertainty.	*Stanford*
2018	**Amadeus Gebauer**, Growth and remodeling for cardiac mechanics simulations.	*TU Munich*
2018	**Magnus Mechler**, Projection-based hyper-reduction for 3D-0D coupled cardiovascular mechanics.	*TU Munich*
2018	**Maximilian Gruber**, Electrophysiological simulation of atrial fibrillation.	*TU Munich*
2017	**Johannes Lang**, Projection-based parametric model order reduction for 3D-0D coupled cardiac mechanics.	*TU Munich*
2017	**Miriam Bastian**, Influence of pericardial boundary conditions on systolic cardiac function in mechanical simulations.	*TU Munich*
2016	**Sebastian Kaltenbach**, Reduced-order mathematical modeling of cardiac growth and remodeling.	*TU Munich*
2015	**Jonas Schollenberger**, A lumped parameter model of cerebral blood flow regulation: Applications to simulation of carotid endarterectomy.	*TU Munich*

Undergraduate students

Since 2025	**Joshua Rodriguez**, Estimating pulmonary artery stiffness from MRI.	*Yale*
Since 2025	**David Vasquez**, Segmenting ex vivo hearts from CT.	*Yale*
2020 – 2021	**Elena Martinez**, Modeling blood pressure losses over blood vessel junctions.	*Stanford*
2018	**Lukas Küchle**, Implementation and verification of a Gauss-point-based fiber formulation.	*TU Munich*
2016 – 2017	**Raphael Gebhart**, Live quizzes for Solid Mechanics lectures.	*TU Munich*
2016	**Martina Weigl**, Segmentation of a four-chamber cardiac geometry.	*TU Munich*
2016	**Janina Datz**, Estimation of cardiac muscle fiber architecture from diffusion-weighted magnetic resonance imaging.	*TU Munich*
2015	**Christina Insam**, A reduced-order model of left ventricular mechanics using a prolate spheroid geometry.	*TU Munich*
2015 – 2016	**Martina Weigl**, Implementation of a Laplace fiber lifting class in Python.	*TU Munich*

Journal Articles

Google Scholar, **(co-)supervised trainees**, * corresponding/presenting, ‡ equal contribution

A28. Menon K,‡ **Richter J**,‡ Pfaller MR,‡ Pham J, Mathew EM, Harold KE, Dorn NC, Verma A, Marsden AL. svZeroDSolver: A modular package for lumped-parameter cardiovascular simulations, *Journal of Open Source Software*, 2025. **DOI**

A27. **Richter J**, Nitzler J, Pegolotti L, Menon K, Biehler J, Wall WA, Schiavazzi DE, Marsden AL, Pfaller MR.* Bayesian Windkessel calibration using optimized 0D surrogate models, *Philosophical Transactions of the Royal Society A*, 2025. **DOI**

A26. **Datz JC**,* Steinbrecher I, Meier C, Hagmeyer N, Engel L-C, Popp A, Pfaller MR, Schunkert H, Wall WA. Patient-specific coronary angioplasty simulations – A mixed-dimensional finite element modeling approach, *Computers in Biology and Medicine*, 2025. **DOI**

A25. Aróstica R, Nolte D, Brown A, Gebauer A, Karabelas E, Jilberto J, Salvador M, Bucelli M, Piersanti R, Osouli K, Augustin C, Finsberg H, Shi L, Hirschvogel M, Pfaller M, Africa P, Gsell M, Marsden A, Nordsletten D, Regazzoni F, Plank G, Sundnes J, Dede' L, Peirlinck M, Vedula V, Wall W, Bertoglio C.* A software benchmark for cardiac elastodynamics, *Computer Methods in Applied Mechanics and Engineering*, 2025. **DOI**

A24. **Rubio NL**, Pegolotti L, Pfaller MR, Darve EF, Marsden AL.* Hybrid Physics-Based and Data-Driven Modeling of Vascular Bifurcation Pressure Differences, *Computers in Biology and Medicine*, 2025. **DOI**

A23. Bäumler K,‡ Rolf-Pissarczyk M,‡ Schussnig R, Mistelbauer G, Pfaller MR, Marsden AL, Fleischmann D, Holzapfel GA.* Assessment of aortic dissection remodeling with patient-specific fluid-structure interaction models, *IEEE Transactions on Biomedical Engineering*, 2024. **DOI**

A22. **Gebauer AM**,* Pfaller MR, Szafron JM, Wall WA. Adaptive integration of history variables in constrained mixture models for organ-scale growth and remodeling, *International Journal for Numerical Methods in Biomedical Engineering*, 2024. **DOI**

A21. Pfaller MR,* Latorre M, **Schwarz EL**, Gerosa FM, Szafron JM, Humphrey JD, Marsden AL. FSGe: A fast and strongly-coupled 3D fluid-solid-growth interaction method, *Computer Methods in Applied Mechanics and Engineering*, 2024. **DOI**

A20. Lee JD, **Richter J**, Pfaller MR, Szafron JM, Menon K, Zanoni A, Ma MR, Feinstein JA, Kreutzer J, Marsden AL, Schiavazzi DE.* A Probabilistic Neural Twin for Treatment Planning in Peripheral Pulmonary Artery Stenosis, *International Journal for Numerical Methods in Biomedical Engineering*, 2024. **DOI**

A19. **Nair PJ**,* Pfaller MR, Dual SA, McElhinney DB, Ennis DB, Marsden AL. Non-invasive estimation of pressure drop across aortic coarctations: Validation of 0D and 3D computational models with in vivo measurements, *Annals of Biomedical Engineering*, 2024. **DOI**

A18. Brown A, Salvador M, Shi L, Pfaller MR, Hu Z, Harold K, Hsiai T, Vedula V, Marsden AL. A Modular Framework for Implicit 3D-0D Coupling in Cardiac Mechanics, *Computer Methods in Applied Mechanics and Engineering*, 2024. **DOI**

A17. Pegolotti L,* Pfaller MR, Rubio NL, Ding K, Brugarolas Brufau R, Darve E, Marsden AL. Learning Reduced-Order Models for Cardiovascular Simulations with Graph Neural Networks, *Computers in Biology and Medicine*, 2024. **DOI**

A16. **Schwarz EL**,* Pfaller MR, Szafron JM, Latorre M, Lindsey SE, Breuer CK, Humphrey JD, Marsden AL. A Fluid-Solid-Growth Solver for Cardiovascular Modeling, *Computer Methods in Applied Mechanics and Engineering*, 2023. **DOI**

A15. **Gebauer AM**,* Pfaller MR, Braeu FA, Cyron CJ, Wall WA. A homogenized constrained mixture model of cardiac growth and remodeling: Analyzing mechanobiological stability and reversal, *Biomechanics and Modeling in Mechanobiology*, 2023. **DOI**

A14. **Nair PJ**,* Pfaller MR, Dual SA, Loecher M, McElhinney DB, Ennis DB, Marsden AL. Hemodynamics in Patients with Aortic Coarctation: A Comparison of in vivo 4D-Flow MRI and FSI Simulation, *Functional Imaging and Modeling of the Heart*, 2023. **DOI** (best poster award)

A13. Schwarz EL, Pegolotti L, Pfaller MR, Marsden AL.* Beyond CFD: Emerging Methodologies for Predictive Simulation in Cardiovascular Health and Disease, *Biophysics Reviews*, 2023. **DOI**

A12. **Pham J**,* Wyetzner S, Pfaller MR, Parker DW, James DL, Marsden AL. svMorph: Interactive geometry-editing tools for virtual patient-specific vascular anatomies, *Journal of Biomechanical Engineering*, 2023. **DOI**

A11. Pfaller MR,* **Pham J**, Verma A, Pegolotti L, Wilson NM, Parker DW, Yang W, Marsden AL. Automated generation of 0D and 1D reduced-order models of patient-specific blood flow, *International Journal for Numerical Methods in Biomedical Engineering*, 2022. **DOI** (***Journal Cover***, *Top 10 most cited* and *Top 10% most downloaded* in 2022–2023)

A10. Anbazhakan S,‡ Rios Coronado PE,‡ Sy-Quia ANL, Seow A, Hands AM, Zhao M, Dong ML, Pfaller MR, Raftrey BC, Cook CK, Bernstein D, Nieman K, Paşca AM, Marsden AL,* Red-Horse K.* Blood flow modeling reveals improved collateral artery performance during mammalian heart regeneration, *Nature Cardiovascular Research*, 2022. **DOI**

A9. Pfaller MR,* **Pham J**, Wilson NM, Parker DW, Marsden AL. On the periodicity of cardiovascular fluid dynamics simulations, *Annals of Biomedical Engineering*, 2021. **DOI**

A8. **Pegolotti L**,* Pfaller MR, Marsden AL, Deparis S. Model order reduction of flow based on a modular geometrical approximation of blood vessels, *Computer Methods in Applied Mechanics and Engineering*, 2021. **DOI**

A7. Pfaller MR,* Cruz Varona M, **Lang J**, Bertoglio C, Wall WA. Parametric model order reduction and its application to inverse analysis of large nonlinear coupled cardiac problems, *International Journal for Numerical Methods in Biomedical Engineering*, 2020. **DOI** (***Top Articles in 2020-2021***)

A6. Pivovarov D, Willner K, Steinmann P, Brumme S, Müller M, Srisupattarawanit T, Ostermeyer GP, Henning C, Ricken T, Kastian S, Reese S, Moser D, Grasedyck L, Biehler J, Pfaller M, Wall W, Kohlsche T, von Estorff O, Gruhlke R, Eigel M, Ehre M, Papaioannou I, Straub D, Leyendecker S.* Challenges of order reduction techniques for problems involving polymorphic uncertainty, *GAMM Mitteilungen*, 2019. **DOI**

A5. Hörmann JM, Pfaller MR, Avena L, Bertoglio C,* Wall WA. Automatic estimation of atrial fiber orientations for patient-specific modeling of cardiac electromechanics using image-registration, *International Journal for Numerical Methods in Biomedical Engineering*, 2019. **DOI**

A4. Pfaller MR,* Hörmann JM, **Weigl M**, Nagler A, Chabiniok R, Bertoglio C, Wall WA. The importance of the pericardium for cardiac biomechanics: From physiology to computational modeling, *Biomechanics and Modeling in Mechanobiology*, 2019. **DOI**

A3. Hörmann JM, Bertoglio C, Kronbichler M,* Pfaller MR, Chabiniok R, Wall WA. An adaptive hybridizable discontinuous Galerkin approach for cardiac electrophysiology, *International Journal for Numerical Methods in Biomedical Engineering*, 2018. **DOI**

A2. Hörmann JM, Bertoglio C,* Nagler A, Pfaller MR, Bourier F, Hadamitzky M, Deisenhofer I, Wall WA. Multiphysics modeling of the atrial systole under standard ablation strategies, *Cardiovascular Engineering and Technology*, 2017. **DOI**

A1. Eskandari M, Pfaller MR, Kuhl E.* On the role of mechanics in chronic lung disease, *Materials*, 2013. **DOI**

Book Chapter

B1. Pfaller MR, Pegolotti L, **Pham J**, **Rubio NL**, Marsden AL. Reduced Order Modeling of Cardiovascular Hemodynamics, *Biomechanics of the Aorta: Modelling for Patient Care*, edited by C Gasser, S Avril, J Elefteriades, 2024. **DOI**

Conference Abstracts and Proceedings

P15. **Richter J**, Nitzler J, Pegolotti L, Menon K, Biehler J, Wall WA, Schiavazzi DE, Marsden AL, Pfaller MR.* Bayesian Windkessel calibration using optimized 0D surrogate models, *Fickle Heart: The intersection of UQ, AI and Digital Twins*, Cambridge, UK, 2024.

P14. Pfaller MR,* Latorre M, **Schwarz EL**, Gerosa FM, Szafron JM, Humphrey JD, Marsden AL. FSGe: A Computational Model for Equilibrated Cardiovascular Fluid-Solid-Growth Interaction, *Biomedical Engineering Society*, Seattle, WA, 2023.

P13. Pfaller MR,* Latorre M, **Schwarz EL**, Gerosa FM, Szafron JM, Humphrey JD, Marsden AL. FSGe: A Computational Model for Equilibrated Cardiovascular Fluid-Solid-Growth Interaction, *Towards a More Perfect Union: Multi-Scale Models of Muscle and Their Experimental Validation*, Canterbury, England, 2023.

P12. Pfaller MR,* Latorre M, **Schwarz EL**, Gerosa FM, Szafron JM, Humphrey JD, Marsden AL. FSGe: A Com-

putational Model for Equilibrated Cardiovascular Fluid-Solid-Growth Interaction, *Summer Biomechanics, Bioengineering, and Biotransport Conference*, Vail, CO, 2023.

P11. **Richter J**,* Pegolotti L, Menon K, Nitzler J, Biehler J, Wall WA, Schiavazzi DE, Marsden AL, Pfaller MR. Efficient Multi-Fidelity Estimation of Boundary Conditions for Cardiovascular Hemodynamics, *22nd Computational Fluids Conference*, Cannes, France, 2023.

P10. Pfaller MR,* Latorre M, **Schwarz EL**, Gerosa FM, Szafron JM, Humphrey JD, Marsden AL. FSGe: A Computational Model for Equilibrated Cardiovascular Fluid-Solid-Growth Interaction, *Cardiac Physiome*, Irvine, CA, 2023.

P9. Pfaller MR,* Latorre M, **Schwarz EL**, Szafron JM, Humphrey JD, Marsden AL. A Computational Model for Cardiovascular Fluid-Solid-Growth Interaction, *Additional Ventures Single Ventricle Investigator Meeting*, Baltimore, MD, 2022.

P8. Pfaller MR,* Latorre M, **Schwarz EL**, Szafron JM, Humphrey JD, Marsden AL. A Computational Model for Cardiovascular Fluid-Solid-Growth Interaction, *7th International Conference on Computational and Mathematical Biomedical Engineering – CMBE*, P Nithiarasu and C Vergara (Eds.), Milan, Italy, 2022.

P7. Pfaller MR,* Lan IS, Wilson NM, Parker DW, Marsden AL. The Vascular Model Repository and SimVascular, *Society for Cardiovascular Magnetic Resonance (SCMR) Virtual Scientific Sessions*, **online**, 2021.

P6. Pfaller MR,* Hörmann JM, **Weigl M**, Nagler A, Chabiniok R, Bertoglio C, Wall WA. Physiology, computational modeling, and impact of pericardial boundary conditions, *Modelling the Cardiac Function*, **online**, 2020.

P5. Pfaller MR,* Wilson NM, Yang W, Parker DW, Marsden AL. Automated reduced-order modeling for a repository of large-scale patient-specific blood flow simulations, *Virtual Physiological Human Conference*, online, 2020.

P4. Pfaller MR,* Wilson NM, Yang W, Parker DW, Marsden AL. Automatic creation of one-dimensional flow models from three-dimensional anatomical geometries, *Summer Biomechanics, Bioengineering, and Biotransport Conference*, **online**, 2020.

P3. Pfaller MR,* **Lang J**, Cruz Varona M, Biehler J, Bertoglio C, Wall WA. Parametric model order reduction using POD for coupled nonlinear cardiac mechanics, *6th European Conference on Computational Mechanics – ECCM-ECFD*, Glasgow, United Kingdom, 2018.

P2. Pfaller MR,* Nagler A, Hörmann JM, **Weigl M**, Bertoglio C, Kozerke S, Stoeck CT, Wall WA. Influence of Fiber Architecture and Pericardial Boundary Conditions on Cardiac Mechanics Simulations, *7th European Congress on Computational Methods in Applied Sciences and Engineering – ECCOMAS*, Crete Island, Greece, 2016.

P1. Pfaller MR,* Nagler A, Bertoglio C, Hirschvogel M, Wall WA. Pericardial Boundary Conditions for Cardiac Mechanics Simulations, *4th International Conference on Computational and Mathematical Biomedical Engineering – CMBE*, P Nithiarasu and E Budyn (Eds.), Cachan, France, 2015.