Martin R. Pfaller

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Computational Biomechanics Laboratory
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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 growth and remodeling. 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 **Postdoc**, *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
PI: Alison L. Marsden

2019 **Ph.D.**, *Mechanical Engineering*, TU Munich
Thesis: Predictive Computational Modeling of Patient-Specific Cardiac Mechanics
PIs: Cristóbal Bertoglio, Wolfgang A. Wall

2013 **M.Sc.**, *Mechanical Engineering*, TU Munich
Thesis: Instabilities During Mucosal Folding Induced by Volumetric Growth
PIs: Ellen Kuhl, Wolfgang A. Wall

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

Honors and Awards

2022 – 2027 **NIH Pathway to Independence Award (K99/R00)**, National Heart, Lung, and Blood Institute
$1,000,000. Mentored and independent research on computational modeling of heart failure (**summary**)

2022 – 2024 **Instructor K Award Support**, Stanford Maternal and Child Health Research Institute
$100,000. Supplement to research expenses of NIH K99 award

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
- **svZeroDSolver**: 0D fluid dynamics solver for lumped-parameter networks of blood vessels
- **svOneDSolver**: 1D fluid dynamics solver for a network of cylindrical blood vessels
- **svMultiPhysics**: 3D finite element solver for electrophysiology, elastodynamics, and fluid dynamics
- **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

Review

- **Grants**
  - American Heart Association (AHA) – Pre- and Post-doctoral Fellowship
  - Dutch Research Council (NWO) – Vidi Program
  - Swiss National Science Foundation (SNSF) – Project funding
  - UK Research and Innovation (UKRI) – Engineering and Physical Sciences Research Council
  - Oak Ridge Associated Universities (ORAU) – Ralph E. Powe Junior Faculty Award
- **Journals**
  - Ann Biomed Eng
  - Bioengineering
  - Biomech Model Mechanobiol
  - Cardiovasc Eng Technol
  - Comput Methods Programs Biomed
  - Comput Methods Biomech Biomed Eng
  - Comput Fluids
  - Comput Biol Med
  - eLife
  - Eur Radiol
  - Front Physiol
  - Int J Mech Sci
  - Int J Numer Methods Biomed Eng
  - J Biomech Eng
  - J Soc Cardiovasc Angiogr Interv
  - Med Image Anal
  - npj Digit Med
  - Philos Trans R Soc A
  - R Soc Open Sci
- **Programs**
  - Stanford Cardiovascular Institute Summer Research Program
  - Stanford Maternal & Child Health Research Institute Postdoctoral Fellowship Mock Review
  - Yale Biomedical Engineering Ph.D. Program
  - Yale Personalized Medicine & Applied Engineering M.S. Program
  - Yale First-Year Summer Research Fellowship
  - Yale Dean's Fellowship
- **Others**
  - Biomechanics of Living Organs (Elsevier) book series
  - Functional Imaging and Modeling of the Heart (FIMH) conference

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

Teaching Experience

2025, 2026 **Computational Mechanics**, *Instructor (∼15 grad and undergrad students)*, BENG 5570, Yale
Created a new course on nonlinear continuum mechanics and finite element methods

2024, 2025 **Mathematical Methods**, *Instructor (∼25 grad students)*, ENAS 5000, 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, 65k 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

Postdoc

Since 2025 **Federica Ninno**, Reduced-order cardiac biomechanics. [P16]

PhD students

Since 2025 **Shiyi Chen**, Fluid-solid-growth interaction.

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

2020 – 2025 **Janina Datz**, Mechanical effects of coronary in-stent restenosis (co-supervised with Prof. Wolfgang Wall). [A26,A29]

2020 – 2024 **Amadeus Gebauer**, Mechanobiology-Based Computational Modeling of Organ-Scale Cardiac Growth and Remodeling (co-supervised with Prof. Wolfgang Wall). [A15,A22]

2020 – 2024 **Natalia Rubio**, Hybrid Data-Driven Physics-Based Reduced-Order Models for Cardiovascular Flows (co-supervised with Prof. Alison Marsden). [A17,A24,B1]

2021 – 2023 **Priya Nair**, Simulation-based treatment planning in patients with aortic coarctations (co-supervised with Prof. Alison Marsden). [A14,A19]

2021 – 2023 **Erica Schwarz**, Computational modeling of tissue-engineered vascular grafts (co-supervised with Prof. Alison Marsden). [A16,A21,I1,P8,P9,P10,P12,P13,I4]

2019 – 2023 **Jonathan Pham**, Interactive geometry-editing for vascular anatomies (co-supervised with Prof. Alison Marsden). A9,A11,A12,B1

PhD students (examination committee)

2026 **Emmanuel Mintah**, Cell Geometry and Mechanics in Mitosis, Confluent Monolayers, and Developing Tissues (supervised by Prof. Corey O'Hern).

2025 **Rosie Barrows**, Insights into Atrial Fibrillation Pathology and Management using Four-chamber Electromechanical Heart Models (supervised by Prof. Steven Niederer).

Master's students

2024 – 2025 **Nadine Rosete**, Estimating myocardial stiffness from ex vivo inflation experiments.

2023 – 2024 **Yuecheng Yu**, Computational modeling of cardiac growth and remodeling.

2022 **Jakob Richter**, Multi-fidelity boundary condition tuning for cardiovascular fluid dynamics simulations under uncertainty. A28,A27,A20,P14,P11

2018 **Magnus Mechler**, Projection-based hyper-reduction for 3D-0D coupled cardiovascular mechanics.

2018 **Maximilian Gruber**, Electrophysiological simulation of atrial fibrillation.

2017 **Johannes Lang**, Projection-based parametric model order reduction for 3D-0D coupled cardiac mechanics. A7,P3

2017 **Miriam Bastian**, Influence of pericardial boundary conditions on systolic cardiac function in mechanical simulations.

2016 **Sebastian Kaltenbach**, Reduced-order mathematical modeling of cardiac growth and remodeling.

2015 **Jonas Schollenberger**, A lumped parameter model of cerebral blood flow regulation: Applications to simulation of carotid endarterectomy.

Undergraduate students

2025 – 2026 **Sofia Martinez Lozoya**, Computational modeling of spinal ischemia during aneurysm repair.

2025 – 2026 **Jordan Thomas**, Estimation of 0D parameters.

2025 **Joshua Rodriguez**, Estimating pulmonary artery stiffness from MRI.

2020 – 2021 **Elena Martinez**, Modeling blood pressure losses over blood vessel junctions.

2018 **Lukas Küchle**, Implementation and verification of a Gauss-point-based fiber formulation.

2016 – 2017 **Raphael Gebhart**, Live quizzes for Solid Mechanics lectures.

2016 **Martina Weigl**, Segmentation of a four-chamber cardiac geometry. A4,P6,P2

2015 **Christina Insam**, A reduced-order model of left ventricular mechanics using a prolate spheroid geometry.

Journal Articles

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

Submitted

S1. Codoni D, Dave S, Parker DW, Brown AL, Jilberto J, Zhao H, Adil D, Sexton ZA, **Pfaller MR**, Bucelli M, Shadden SC, Taylor CA, Marsden AL. svMultiPhysics: A finite element-based solver for cardiovascular simulations, 2026. **arXiv**

Accepted

A29. Datz JC,* Steinbrecher I, Krefting J, Engel L-C, Popp A, **Pfaller MR**, Schunkert H, Wall WA. Influence of coronary plaque morphology on local mechanical states and associated in-stent restenosis, *Journal of Biomechanical Engineering*, 2026. **DOI**

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 Workshop

W1. **Pfaller MR**, Peirlinck M. Computational Modeling of Cardiac Remodeling, *Functional Imaging and Modeling of the Heart*, Dallas, TX, 2025. **Program**

Invited talks

I4. **Pfaller MR**,* Latorre M, Schwarz EL, Gerosa FM, Szafron JM, Humphrey JD, Marsden AL. Cardiovascular Fluid-Solid-Growth Interaction, *World Congress of Computational Mechanics*, Munich, Germany, 2026.

I3. **Pfaller MR**.* Predicting Growth and Remodeling of Cardiovascular Tissue, *RWTH Aachen University*, Aachen, Germany, 2026.

I2. **Pfaller MR**.* Predicting the Path to Heart Failure with Multiscale-Models, *Cardiovascular Implant Durability Conference*, Monterey, CA, 2025.

I1. **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.

Conference Abstracts and Proceedings

P16. Ninno F,* **Pfaller MR**. Calibration of a spherical ventricular model using pressure-volume loops, *9th International Conference on Computational and Mathematical Biomedical Engineering – CMBE*, P Nithiarasu and C Vergara (Eds.), Kobe, Japan, 2026.

P15. Díaz Jordá T,* **Pfaller MR**, Latorre M, Parikh S. Establishing a Mechanical Homeostatic State in the Cardiac System to Study Growth and Remodeling of the Myocardial Tissue, *Computing in Cardiology*, São Paulo, Brazil, 2025.

P14. 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.

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, *Biomedical Engineering Society*, Seattle, WA, 2023.

P12. **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, *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.