

# Cardiac Imaging, Mechanics, and Modeling Symposium - 2022



Stanford University: Lucas Center for Imaging, Glazer Learning Center

**8:00 AM Arrival + Continental Breakfast**

8:45 AM **Welcome – Daniel Ennis, Stanford University (650-512-9476, Call/Text for Any Reason)**

**9:00 AM Session 1: Cardiac Imaging and Mechanics**

**Moderator – Seraina Dual, KTH Royal Institute of Technology, Stockholm, Sweden**

*Echo Planar Imaging Distortion Correction for Cardiac Diffusion Tensor Imaging.* Tyler Cork, Stanford University

*Quantitative Cardiac Magnetic Resonance Spiral Perfusion Imaging at 3T.* Junyu Wang, Stanford University

*Anatomically-guided deep learning for uncertainty quantification of left ventricle geometry based on short-axis MR images.* Andre Von Zuben, University Central Florida

*Cardiac Kinematics Benchmark – A multicenter study using synthetic and preclinical cine DENSE MRI.* Luigi Perotti, University Central Florida

**10:30 AM Coffee Break**

**11:00 AM Session 2: Myocardial Mechanics and Modeling**

**Moderator – Alexander Kaiser, Stanford University**

*The Mesostructure of the Myocardium.* Alexander Wilson, Stanford University

*Validating MRI-driven Myocardial Stiffness Estimation in vitro synthetic heart models.* Fikunwa Kolewole, Stanford University

*An Efficient Space-Time Adaptive Numerical Method for Fully Coupled Electromechanical Models of Cardiac Tissue.* Dennis Ogiemann, Ruhr-Universität Bochumh.

*A Homogenized Constrained Mixture Model of Cardiac Growth and Remodeling.* Martin Pfaller, Stanford University.

**12:30 PM Hosted Lunch and Group Picture**

**2:00 PM Session 3: Cardiovascular Mechanics and Modeling**

**Moderator – Yuanjia Zhu, Stanford University**

*Controlled Comparison of Simulated Hemodynamics across Tricuspid and Bicuspid Aortic Valves.* Alexander D. Kaiser, Stanford University.

*Estimation of Pressure Drop Across an Aortic Coarctation: A Comparison of 0D and 3D models.* Priya Nair, Stanford University

*Sex matters: understanding male and female hearts.* Sarah St. Pierre, Stanford University.

*The Effect of Prolonged Relaxation on Ventricular Filling: A Finite Element Co-simulation of the Cardiac Ventricles and Circulation.* Mark Ratcliffe, San Francisco VA Medical Center

**3:30 PM Coffee Break**

**4:00 PM Session 4: Cardiovascular Devices**

**Moderator – Martin Pfaller, Stanford University**

*A Novel Selectively Flexible Mitral Annuloplasty Ring Designed Based on Human Imaging Demonstrated Superior Performance in Hemodynamics, Biomechanics, and Mitral Annular Dynamics – A Comprehensive Bench to In Vivo Large Animal Analysis.* Yuanjia Zhu, Stanford University

*Biomimetic Design for Advanced Heart Failure Technologies.* Ileana Pirozzi, Stanford University

*A soft robotic cardiovascular support device: design and patient-specific evaluation.* Seraina Dual, KTH Royal Institute of Technology, Stockholm, Sweden

**5:30 PM Closing Remarks**

**5:45 PM Happy Hour Reception**



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