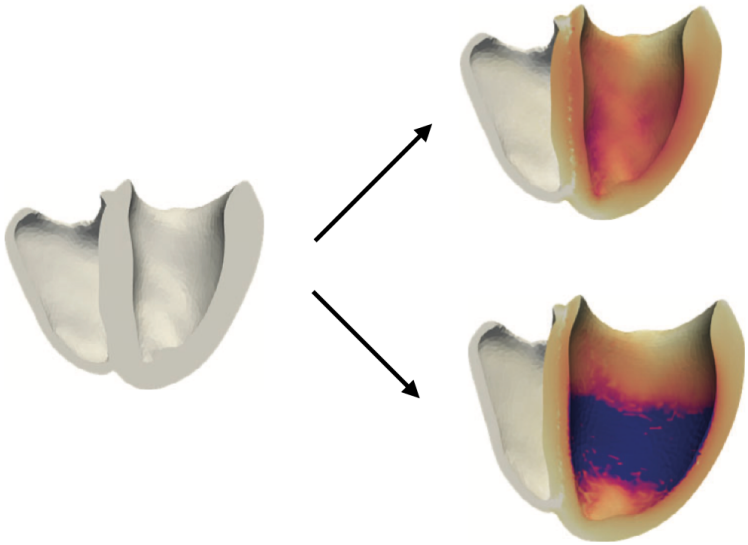
FIMH Workshop:
Computational Modeling of Cardiac Remodeling



From: Gebauer AM, Pfaller MR, Szafron JM, Wall WA. *Int J Numer Methods Biomed Eng* (2024)

Time: Sunday, June 1st, 3:30 – 5:30 PM

Organizers:

- Martin Pfaller, PhD – Yale University, Biomedical Engineering
- Mathias Peirlinck, PhD – Delft University of Technology, Mechanical Engineering

Clinicians (UT Southwestern):

- Nicholas Andersen, MD – Director of the Complex Biventricular Repair Program
  Cardiovascular and Thoracic Surgery, Pediatric Cardiothoracic Surgery, Congenital Heart Disease
- Gloria Ayuba, DO – Director of Structural Imaging
  Internal Medicine – Cardiology, Valvular Heart Disease, Advanced Cardiac Imaging

Program:

3:30 – 3:45	Welcome and introduction
3:45 – 4:15	Clinical case discussions
4:15 – 4:30	Q&A: Engineers ask clinicians
4:30 – 5:00	Chalk talk on mathematical modeling
5:00 – 5:15	Q&A: Clinicians ask engineers
5:15 – 5:30	Summary and closing remarks

Who should attend:
Clinicians and researchers in computational modeling, biomechanics, medical imaging, or systems biology who are interested in applying their expertise to impactful, clinically relevant problems. Participants will leave with a better understanding of clinical challenges, insights into modeling strategies, and inspiration for future work.

Background:
Cardiac remodeling describes the heart's adaptation to various biochemical, mechanical, and electrophysiological stimuli. It is a crucial mechanism in heart disease or chronic pathological conditions, such as single-ventricle heart disease, myocardial infarction, or heart failure, ventricular volume-/pressure-overload (e.g., in valvular diseases), and thus a promising target for computational modeling. This multi-disciplinary workshop will combine perspectives from clinical practice, medical imaging, cardiac mechanobiology, and computational modeling to discuss model use cases, generation, and validation.