**CARDIAC KINEMATICS WORKSHOP – FIMH 2025**

Sunday June 1st, 2025 – 9 am



Measured cardiac kinematics       Computational models and Automation       Cardiac strains
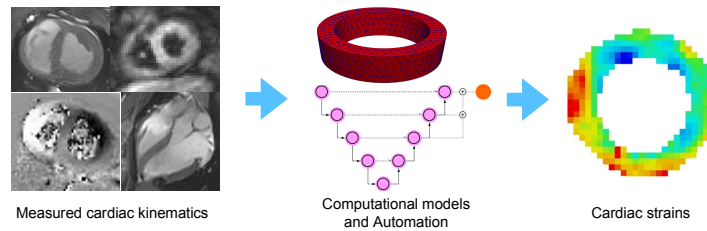
**Agenda**

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| 9:00 am | Opening remarks | |
| 9:05 am | Dr. James Moon - University College London | **"Clinical needs and novel measures for early diagnosis and monitoring disease progression"** |
| 9:30 am | Dr. Animesh (Aashoo) Tandon - Cleveland Clinic | **"Characterizing cardiac kinematics in a clinical setting by combining AI and cardiac MRI"** |
| 9:55 am | Coffee break | |
| 10:15 am | Dr. Alistair Young - King's College London | **"Torsion and shear strains as biomarkers of cardiac function"** |
| 10:40 am | Dr. Martin Genet - École Polytechnique | **"Combining computational models and imaging data to improve the robustness of cardiac strains"** |
| 11:05 am | Dr. Mark Ratcliffe - University of California San Francisco | **"Inverse modeling of cardiac material properties using MRI-based strain: Personal reflections"** |
| 11:30 am | Panel discussion led by Dr. Leon Axel (New York University) and Dr. Martyn Nash (Auckland Bioengineering Institute) | |
| 12:10 am | Closing remarks | |

**Workshop description**

This workshop aims to continue the community wide discussion started at FIMH 2021 and continued at FIHM 2023 on developing robust pipelines and measures of cardiac strains that can be adopted into clinical practice.

Cardiac strains can lead to a more objective clinical assessment based on imaging data and contribute to the development of precise medicine. However, to date, cardiac strains are still not routinely adopted in clinical practice.

The overall goal of this workshop is to work toward identifying which kinematics measures would be useful in the clinic and which are the main obstacles (e.g., automation, reliability, implementation) to their adoption. We will discuss global and local measures of cardiac motion, strains computed from different imaging modalities, and validation pipelines (for example using phantoms). This workshop will help continuing the discussion in the community on the robustness of kinematics measures, what are the best ways to compute them based on the available data, and what parts of the pipelines we should improve.

A potential outcome of this workshop is to set the stage for continuing this discussion in the community by running tests and/or a challenge on computing useful kinematics measures and strains from available clinical images.

Organizing team
Luigi E. Perotti (University of Central Florida)
Vicky Wang (Auckland Bioengineering Institute)
Daniel B. Ennis (Stanford University)