

Analyzing the effect of mechanical and chemical properties of the heart structure on the process of valvulogenesis through FE based models – Jonathan Butcher

Valvulogenesis is an extremely complex process by which a fragile gelatinous matrix is populated and remodelled during embryonic development into thin fibrous leaflets capable of maintaining unidirectional flow over a lifetime.

Computational models have been developed and studied to analyse the effect of mechanical properties like stress, pressure on the valvulogenesis. What the lack is integrating the effect of chemical properties and the signalling mechanism which plays a significant role in the development process.

Developing computational models of the developmental cues and simulating phenotypes that incorporates the physical as well as the chemical properties would provide information that can have a positive impact on analyzing such systems.

Schedule Plan

<div>Month</div> <div>Work</div>	August				September				October				November				December			
Initial Literature review																				
Project description																				
Literature study																				
Software Analysis																				
Understanding previous models																				
Result Discussion																				
Introduction																				
Methods																				
Analysis																				
Discussion																				
Presentation																				

Fig: Layout of the Timetable