



Session description

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Title of the session: Using Computational and Experimental Techniques to Investigate the Role of Extracellular Matrix in the Mechanical Response of Soft Tissue

Objectives: Extensive clinical and experimental evidence suggests that soft tissue disease is accompanied by micro-structural changes in the extracellular matrix (ECM) of the tissue. These ECM changes are considered as important risk factors for mechanical and hence functional degradation associated with different types and degrees of soft tissue remodelling during the disease process. ECM is already used as a template for tissue engineering scaffolds, which aim at recapitulating the soft tissue mechanical response and functionality. New approaches would be needed to enable us to investigate the important and influential role of ECM protein 3D micro-structure on the mechanical properties of soft tissue in health and disease.

This session welcomes a broad spectrum of studies that address associations between ECM network structures and soft tissue mechanical response in health and disease, through the use of computational and experimental techniques. Accounting for the contribution of different components of ECM protein networks would enable us to determine micro-structural changes that detrimentally affect the soft tissue mechanical response and lead it to its functional decline. Those ECM components could potentially be targeted in the development of new improved approaches for the treatment of soft tissue disease.