1153-92-385 **Francesco Pancaldi***, francesp@ucr.edu, and **Samuel Britton**, **Oleg Kim**, **Zhiliang Xu**, **Rustem Litvinov**, **John Weisel** and **Mark Alber**. *A Model of Blood Clot Contraction Mediated by Platelets Contractile Forces.*

Blood clots are fundamental structures whose role is to prevent bleeding after a blood vessel is injured. At the same time, the integrity and stability of these thrombi are fundamental to avoid coagulation related pathologies like strokes and deep vein thrombosis (DVT). In particular, after they are formed blood clots start to contract due to the internal forces exercised by platelets inside the thrombus. In this work, a previously developed fibrin network mechanical model is coupled with a new model accounting for the contractile effect of platelets and their physical properties. Simulations suggest that the mechanism of platelets sensing fiber stiffness, and adapting their contractile forces, is fundamental for the formation of the distinct contraction phases of a blood clot, observed in experiments. Additionally, different densities and distributions of platelets are shown to determine different compression dynamics for the simulated thrombus. Lastly, the impacts of different platelet activation regimes on the contraction phases observable in a blood clot are studied, providing valuable insight for future experiments and possible treatments of hemorrhagic and coagulation related diseases. (Received September 02, 2019)