1065-70-253 **Magdalena M Musielak***, Department of Mathematics, The George Washington University, 2115 G St. NW, Room 240, Washington, DC 20052. *Point-IBCell model for growth of multicellular tissues.* Preliminary report.

We present a biomechanical model of growth of multicellular tissues, based on an immersed boundary method that couples mechanics of elastic cells with the dynamics of the viscous incompressible fluid, motion of which is governed by the Navier-Stokes equations. Individual cells are represented here as single points connected by springs to neighboring cells. Voronoi Tessellation technique is used to reproduce the individual cell membranes, which allows for a realistic representation of the whole tissue composed of individual cells inhomogeneous in their shape and behavior, but acting together as one complex tissue. Our approach, dictated by the trade-off between computational cost and biological realism, allows us to handle large number of cells with simplified cell geometry, that interact with their immediate neighbors, but still treat them as individual entities that act independently of others, e.g. have individual cell cycle. (Received September 14, 2010)