Midterm #2
Thursday 11/16
9:30-10:50
Things to Review

- Polyacrylamide System and MSC differentiation (in-class paper discussion, effect of mechanical microenvironment)
- Controlled release from an implanted material
- Pre-vascularized systems (in-class paper discussion, tri-culture, how did they evaluate function and engraftment)
- Microtechnology approaches for decoupling cell shape, cell-ECM, cell-cell interactions (in-class exercise: 2D vs. 3D, patterning)
- Microtechnology approaches for analyzing mechanical regulation (2D, 3D), decoupling effects of soluble factors or mechanics (in-class exercises)
- Advantages and disadvantages of various stem cells: embryonic stem cells (ES), induced pluripotent stem cells (iPS), adult stem cells including mesenchymal stem cells (MSC) (differentiation capability, sourcing/supply, compatibility, ethics)
- Major design parameters and challenges of tissue engineered therapies