



## Life Engineering Symposium

University of California, San Francisco, Mission Bay Campus - August 19-20, 2005

### ***Synthetic Eukaryotic Cells / Stem Cells***

*Engineering Cellular Niches*

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#### ***Abstract:***

Cellular function is regulated by the cooperative interactions between both nature (the genome) and nurture (the cues presented in the local extracellular environment). We are engineering microenvironments to understand how mammalian cells integrate signals from growth factors, adhesion to extracellular matrix, cell-cell adhesions, and mechanical forces, in order produce coordinated decisions on cell fate and function. I will discuss key challenges associated with engineering cells and their interactions with the outside world in order to produce specified functions.