



Fayth L. Miles  
Biological Sciences Department  
Cancer Biology Research Laboratory  
University of Delaware, Newark, DE USA

# Prostate Cancer-A Big Problem



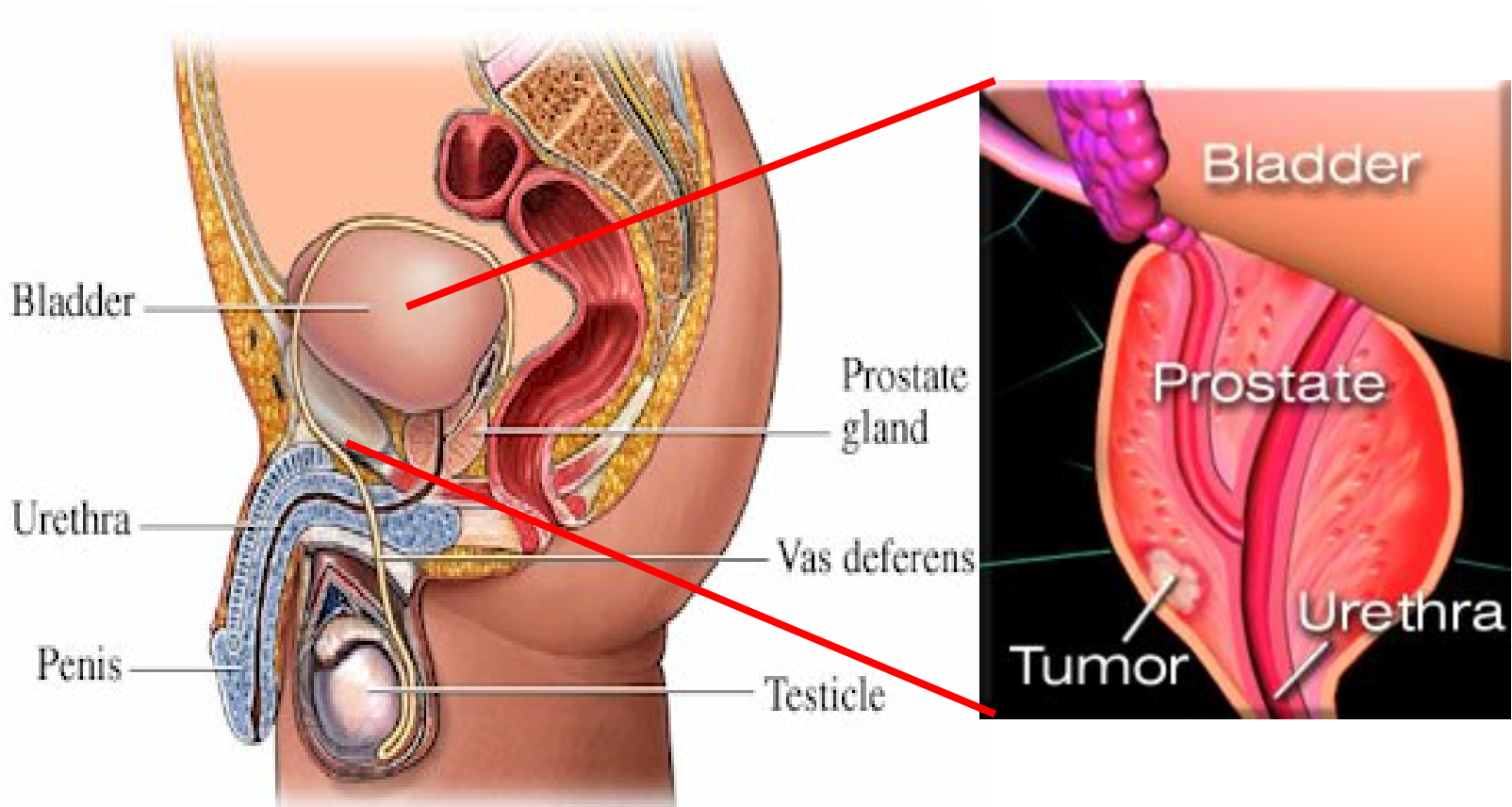
The Rose Bowl (~90,000 capacity)



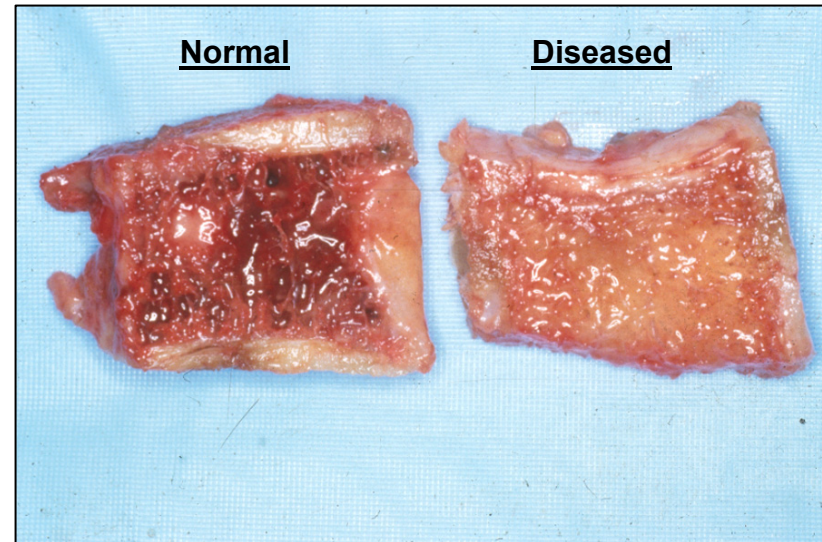
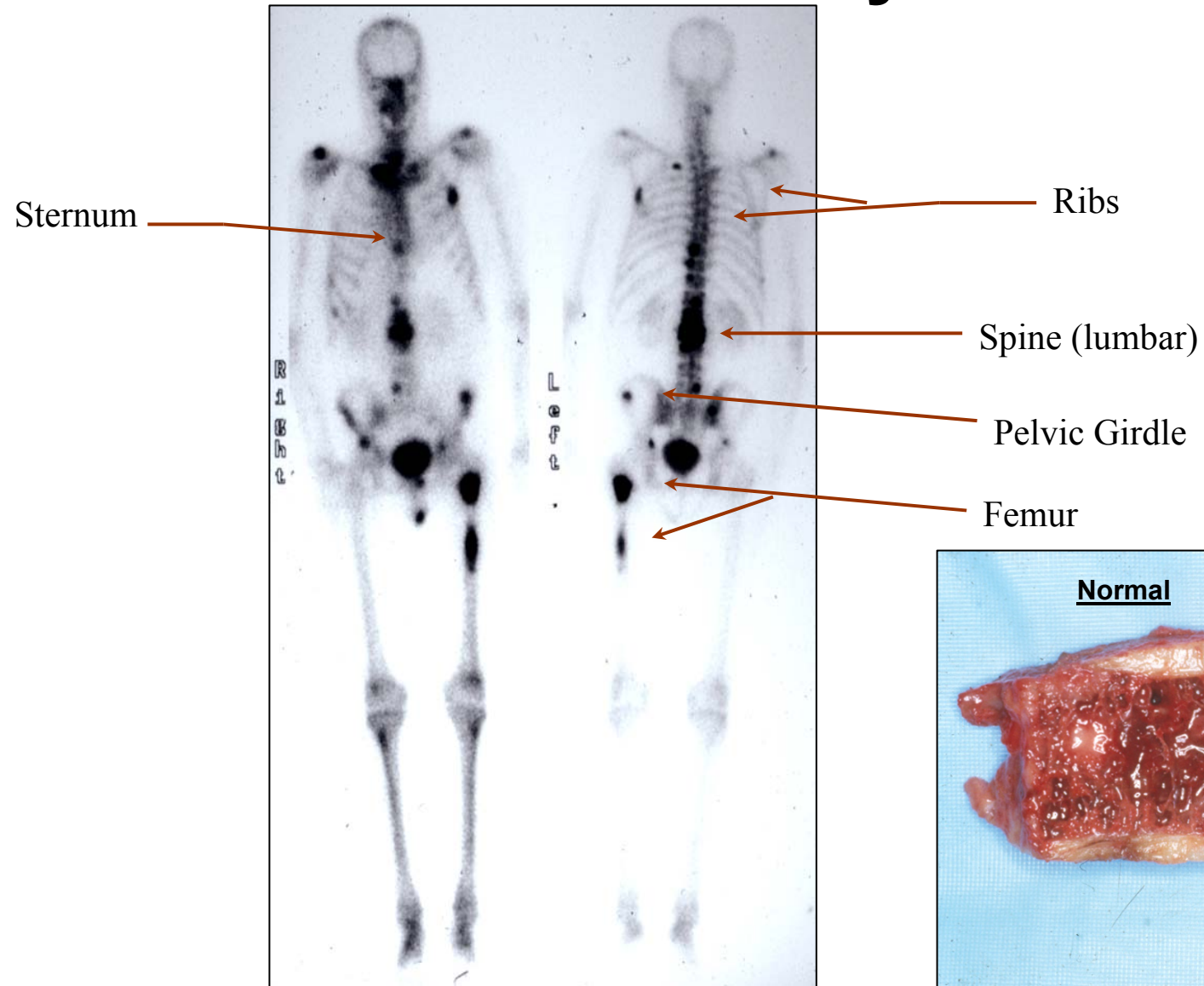
**~240,000 new cases/yr**

<http://www.roadtrips.com/rose-bowl.php> 9/5/06

# The Prostate

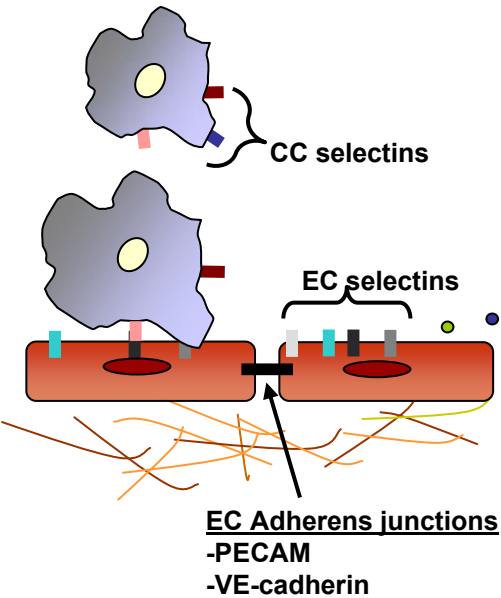


# Prostate Cancer Metastasizes Preferentially to Bone



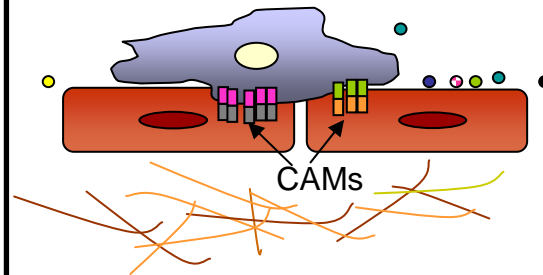
# Prostate Cancer (PC) Adhesion to Bone Marrow Endothelial Cells

(1) PC **“docks”** to endothelial cell (EC)

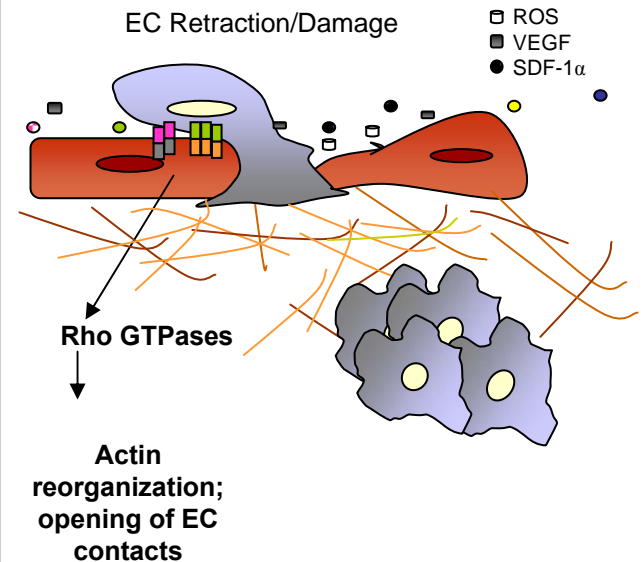


(2) PC **“Locks”** to EC

(TGF- $\beta$ 1)



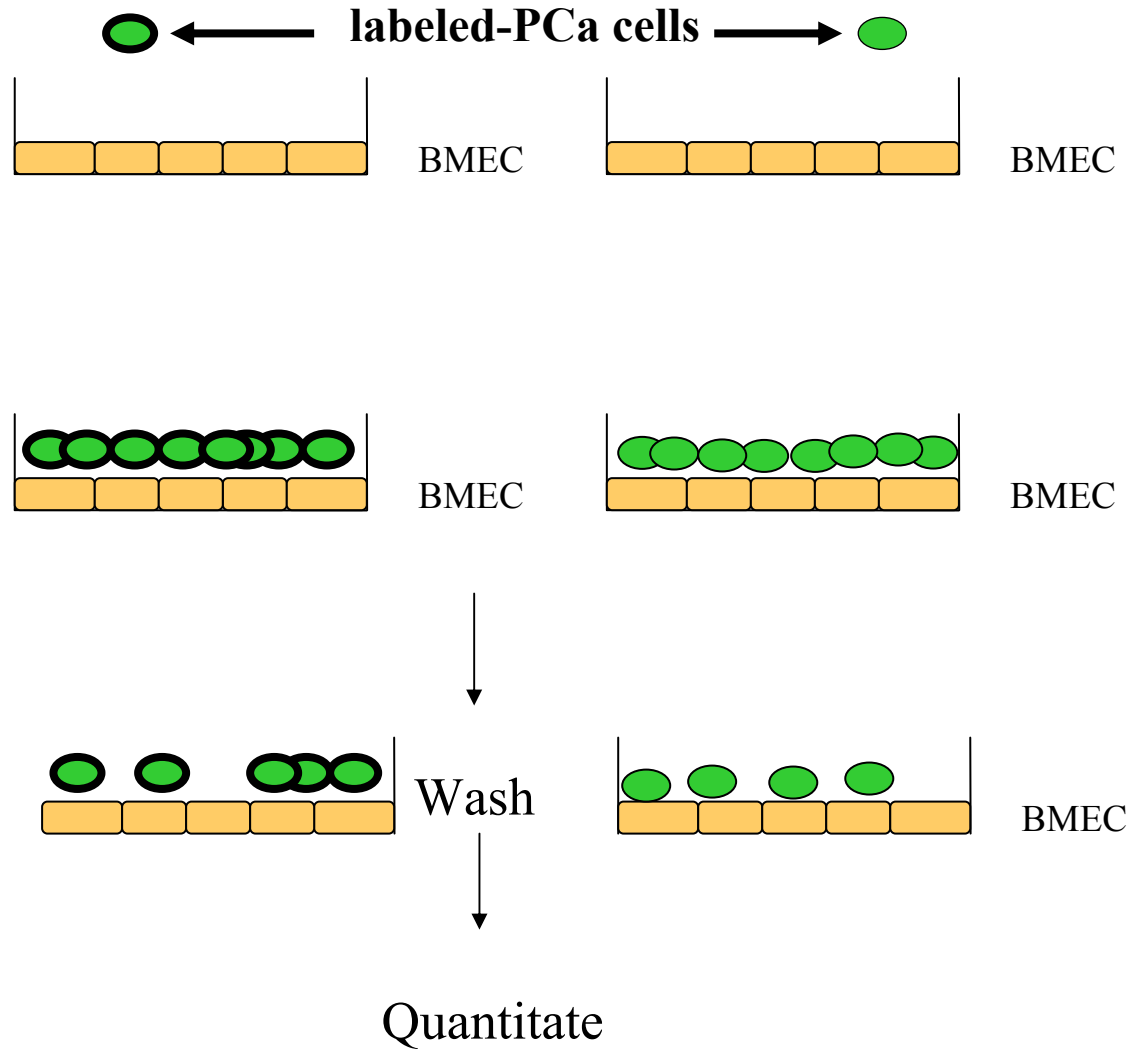
(3) PC **migrates** through EC



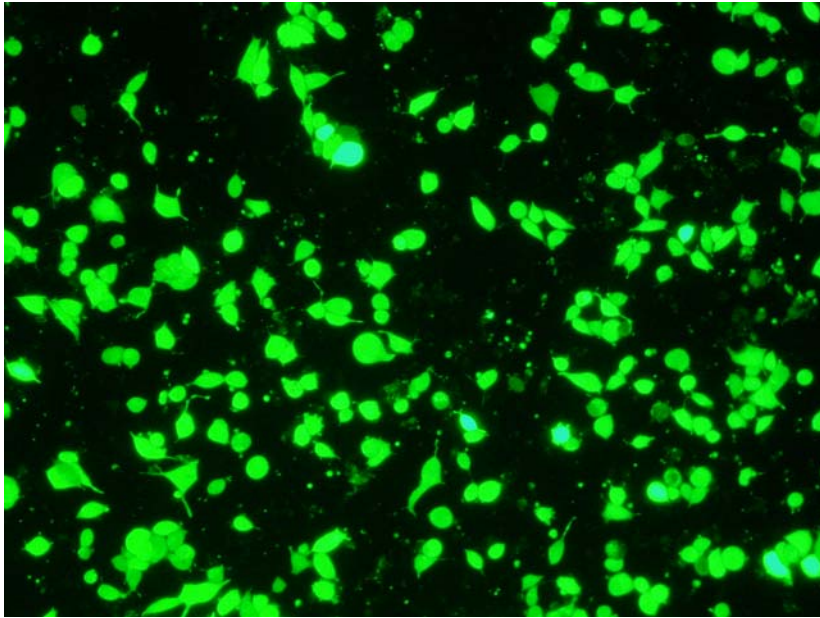
# Cell Adhesion Assay

**TGF- $\beta$ 1-treated**

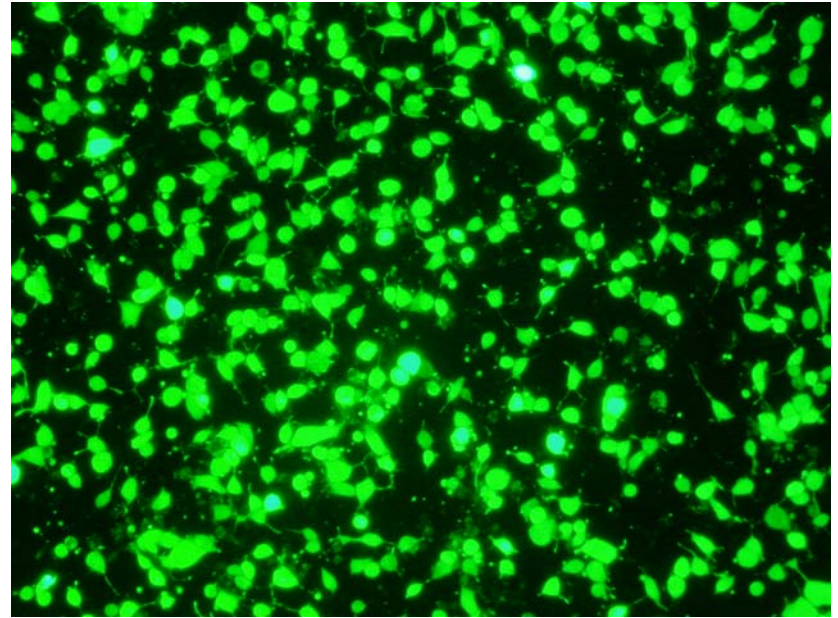
**control**



# Adhesion to Bone Marrow Endothelial Cells

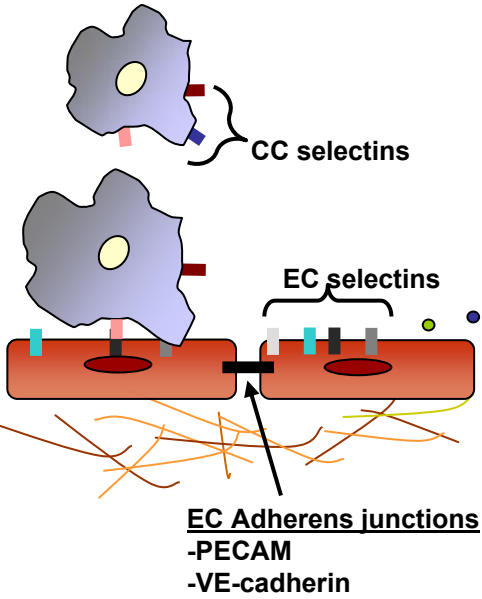


**control**

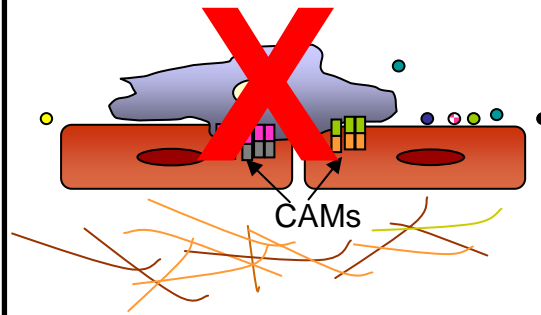


**18-hour TGF- $\beta$ 1**

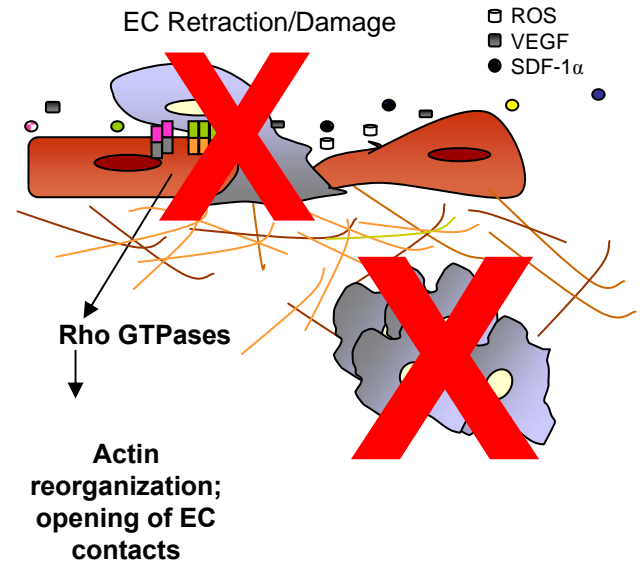
(1) Prostate Cancer cell (PC) **“docks”** to endothelial cell (EC)



(2) PC **“Locks”** to EC



(3) PC **migrates** through EC

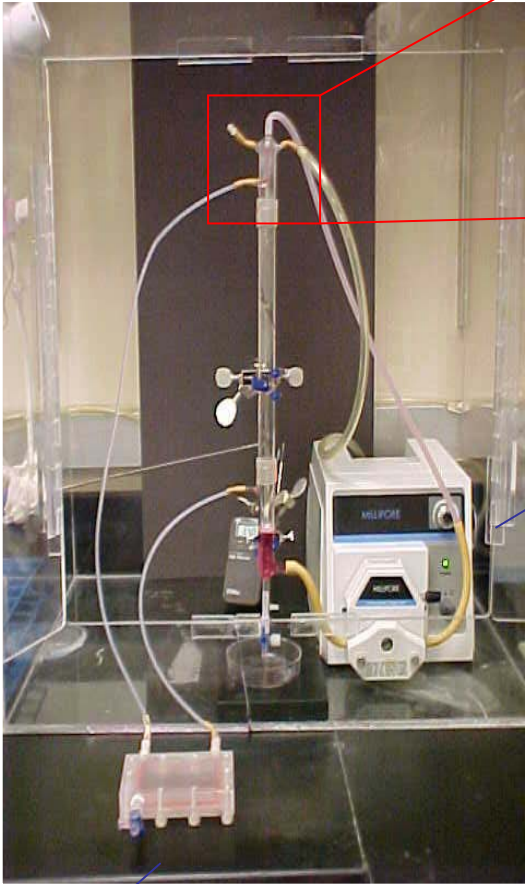




**Fluid shear flow loop**

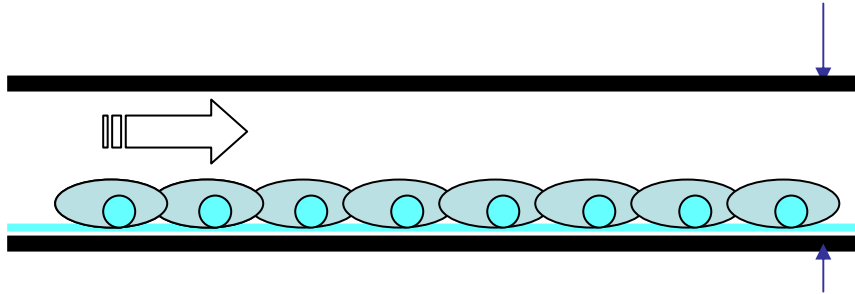


**Media reservoir**



**Pump**

**Chamber**



**(Monolayer of cells under a well defined laminar steady fluid shear of 12 dynes/cm<sup>2</sup>)**