



Montague-CTE Scholar
Waithaka Mwangi (2013-2014)

College of Veterinary Medicine & Biomedical Sciences



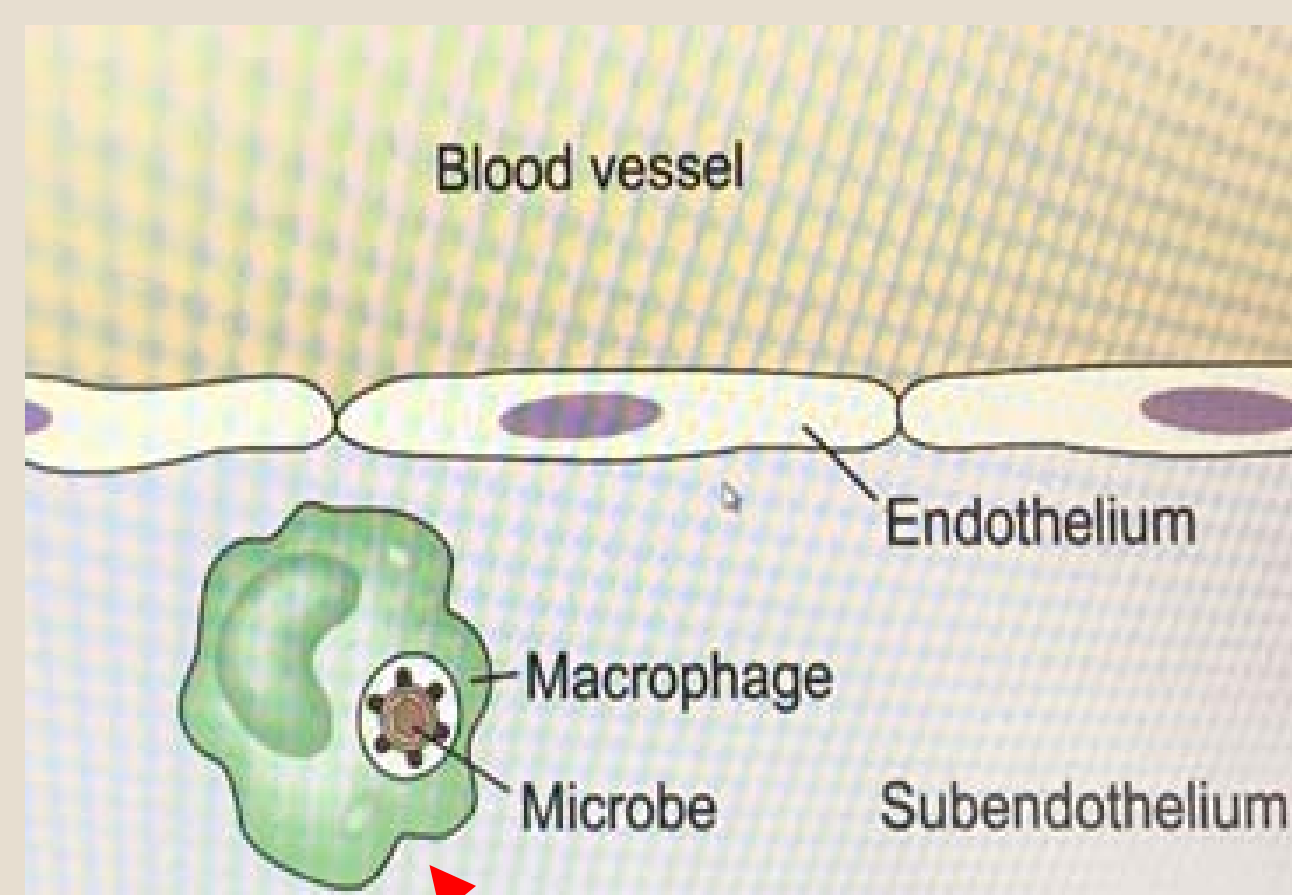
**CENTER FOR
TEACHING EXCELLENCE**
TEXAS A&M UNIVERSITY

Enhancing Undergraduate Student Learning and Understanding of Immunology

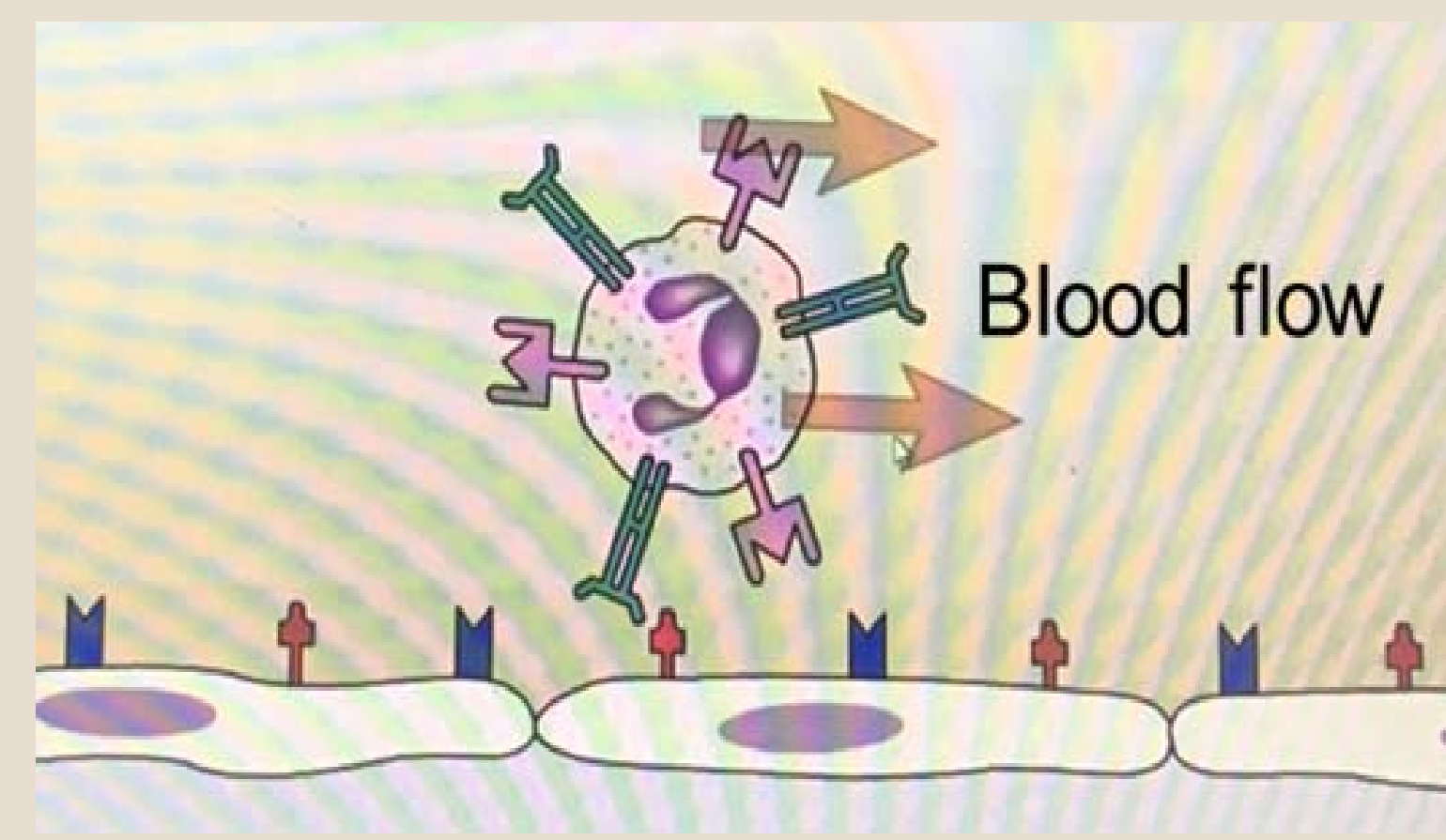
Learning and understanding immunological concepts is challenging given that the subject consists of many components and dynamic mechanisms that work interactively in health and in disease. I used Montague-CTE Scholar Award to enhance student learning and understanding of immunology. Specifically, I incorporated animations and YouTube video clips to enhance visualization of immunological functions and concepts.

Outcome: Improved performance as judged by grades from the last class (A:77.3%; B: 13.6%; C: 9.1%).

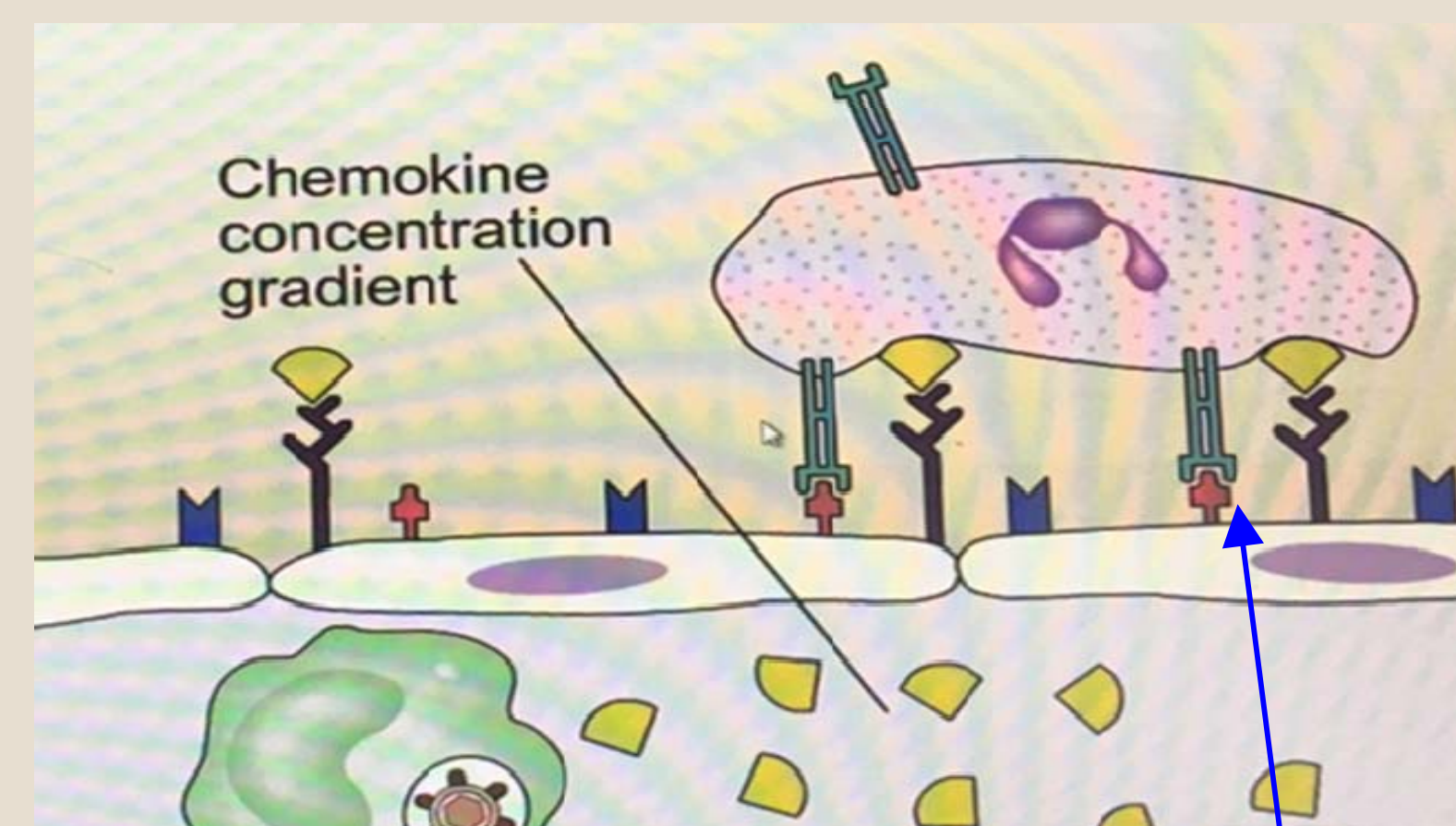
Example of animation: Migration of cells from a blood vessel into infected tissue to fight pathogen



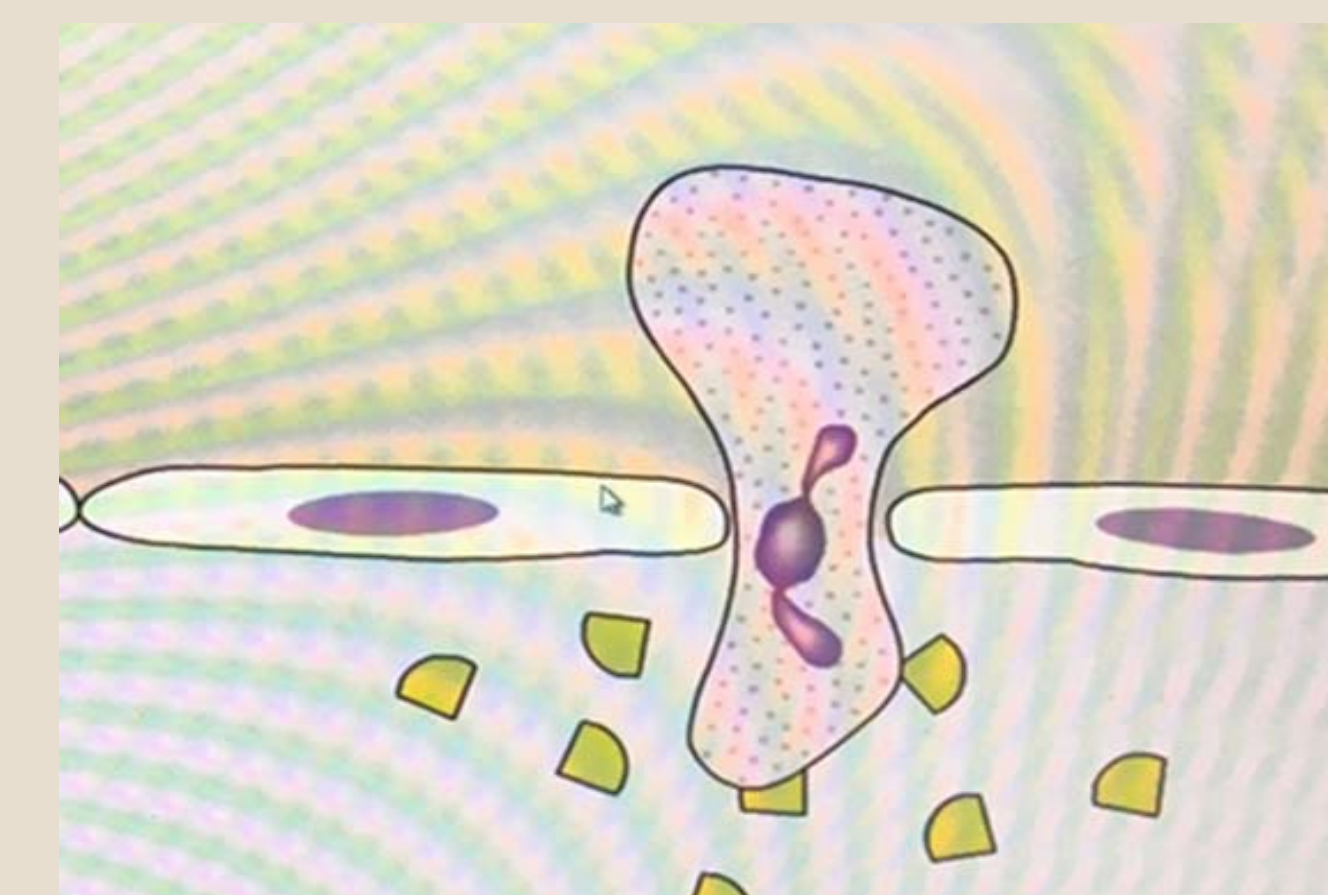
Infected cell



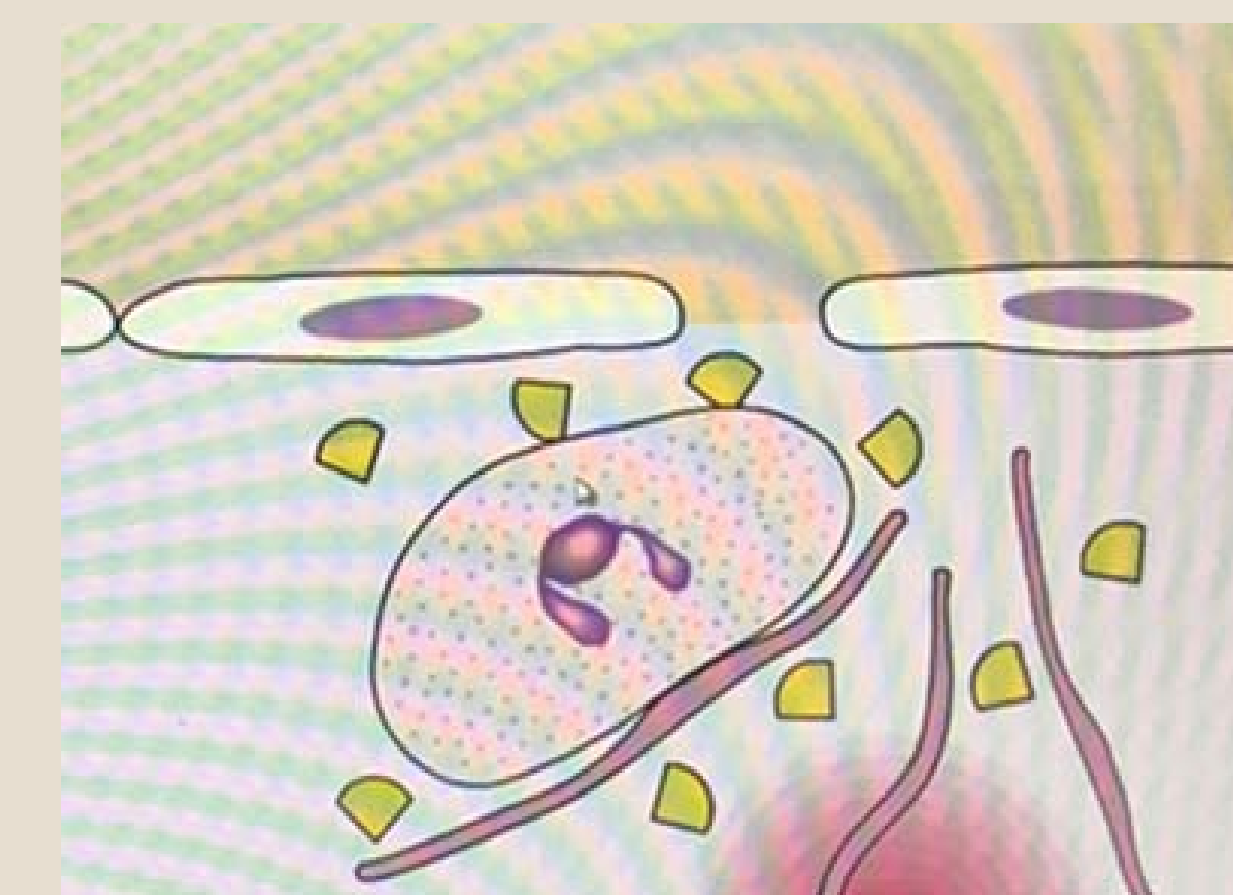
Cells in blood cross the endothelium into the infection site to fight pathogen. This process is called **extravasation**



Infected cell secretes chemokines that induce expression of **adhesive molecules** which mediate cell arrest by endothelium



cell migrates through gaps between the endothelium barrier in response to chemokine gradient



Homing to infection site to fight pathogen