

NIMBioS Investigative Workshop
Modeling Blood Cell Interactions

Wednesday, June 5	
8:00 – 9:00 am	Breakfast
9:00 – 9:30 am	Opening remarks (Gross, Khismatullin)
9:30 – 10:00 am	Scott L. Diamond (University of Pennsylvania) <i>Multiscale and Patient-specific Blood Systems Biology</i>
10:00 – 10:30 am	Scott I. Simon (University of California - Davis) <i>Mechanosensing via a macromolecular complex initiated by tension on LFA-1 bonds</i>
10:30 – 11:00 am	Daniel A. Hammer (University of Pennsylvania) <i>Integrating signal with adhesive dynamics to simulate blood cell adhesion</i>
11:00 – 11:30 am	Coffee break
11:30 – 1:00 pm	Breakout discussion groups: 1. Margination and Interactions of Circulating Cells in Blood Flow I 2. Adhesion of Circulating Cells to Vascular Endothelium I
1:00 – 2:00 pm	Lunch and free discussion
2:00 – 2:30 pm	Manu O. Platt (Georgia Tech) <i>Vascular Remodeling in Sickle Cell Disease Large Arteries</i>
2:30 – 3:00 pm	Xuejin Li (Brown University) <i>Morphology and Chirality Control Self-Assembly of Sickle Hemoglobin inside Red Blood Cells</i>
3:00 – 3:30 pm	Coffee break
3:30 – 5:00 pm	Breakout discussion groups: 1. Sickle Cell Disease 2. Adhesion of Circulating Cells to Vascular Endothelium II
5:00 – 5:30 pm	Reports from group representatives
5:30 – 7:00 pm	Reception

Thursday, June 6

8:00 – 9:00 am	Breakfast
9:00 – 9:30 am	Cyrus Aidun (Georgia Tech) <i>Microstructure and Rheology of Cellular Blood Flow</i>
9:30 – 10:00 am	Dmitry Fedosov (Research Center Juelich) <i>Margination of White Blood Cells in Microvessels</i>
10:00 – 10:30 am	Bingmei Fu (City College of New York) <i>Endothelial Surface Glycocalyx and Tumor Cell Adhesion in a Microvessel</i>
10:30 – 11:00 am	Coffee break
11:00 – 12:30 pm	Breakout discussion groups: 1. Margination and Interactions of Circulating Cells in Blood Flow II 2. Hematogeneous metastasis of cancer
12:30 – 2:00 pm	Lunch and free discussion
2:00 – 2:30 pm	Anne Ridley (King's College London) <i>Roles of Rho GTPases in Leukocyte and Cancer Cell Transendothelial Migration</i>
2:30 – 3:00 pm	Gilda Barabino (Georgia Tech) <i>Investigation of Sickle Cell Disease using Engineering Approaches</i>
3:00 – 3:30 pm	Coffee break
3:30 – 5:00 pm	Breakout discussion groups: 1. Collective Dynamics of Red Blood Cells I 2. Active Migration / Transmigration of Circulating Cells I
5:00 – 5:30 pm	Reports from group representatives
5:30 – 7:00 pm	Catered group dinner and poster session

Friday, June 7

8:00 – 9:00 am	Breakfast
9:00 – 9:30 am	Ken Jacobson (University of North Carolina – Chapel Hill) <i>A Mechanochemical Mechanism for Rapid Changes in Cell Shape</i>
9:30 – 10:00 am	Katarzyna Rejniak (Moffitt Cancer Center) <i>Circulating Tumor Cell Deformations Modulate its Interactions with Endothelium: In Silico Study</i>
10:00 – 10:30 am	Zhangli Peng (M.I.T.) <i>Transport of Diseased Red Blood Cells</i>
10:30 – 11:00 am	Coffee break
11:00 – 12:30 pm	Breakout discussion groups: 1. Active Migration / Transmigration of Circulating Cells II 2. Collective Dynamics of Red Blood Cells II
12:30 – 2:00 pm	Lunch and free discussion
2:00 – 2:30 pm	Reports from group representatives
2:30 – 3:00 pm	Closing remarks