Day 1: Thursday, July 27th

9:00~9:10am
Jacob White (MIT) or Boo Cheong Khoo (NUS)
“Overview of CE SMA-II program”

Session 1: Engineering and Modeling at the Nanoscale: Nanofluidics
9:10~9:35am (20 min talk / 5 min Q&A)
Jongyoon Han (MIT)
“New Engineering Opportunities and Challenges in Nanofluidics”

9:35~10:00am (20 min talk / 5 min Q&A)
Lian Hing Tan (SMA-II) and Laura Proctor (MIT)
“Modeling of concentration polarization in nanofluidic devices” (tentative)

10:00~10:25am (20 min talk / 5 min Q&A)
Dmitry Vasilyev and Jacob White (MIT)
"Extracting Reduced Order Models of Microfluidic Channels” (presented by J. White)

10:25~10:45am
Coffee Break

10:45~11:00am (20 min talk / 5 min Q&A)
Jianping Fu (MIT)
“Anisotropic Nanofluidic filter array for continuous-flow biomolecule separation”

11:00~11:25am (20 min talk / 5 min Q&A)
Duong-Hong Duc (NUS)
“Modeling of molecular filtration in nanofluidic sieving systems”

11:25~11:50am (20 min talk / 5 min Q&A)
Zirui Li (NUS)
“Modified SPH method for simulating molecular filtration in nanofluidic sieving systems”

11:50~12:05pm (20 min talk / 5 min Q&A)
Nam-Trung Nguyen (NTU)
“SU-8 as material for polymeric microdevices”
12:25~1:30pm
Lunch Break

Session 2: Engineering and Modeling at the Microscale: Massively parallel Cell traps and Filters
1:30~1:55pm (20 min talk / 5 min Q&A)
Joel Voldman (MIT)
“New Opportunities in Cellular BioMEMS” (tentative)

1:55~2:20pm (20 min talk / 5 min Q&A)
Le Duc Vinh (NUS)
“An Immersed Interface Method for Viscous Flow and Deformable Boundary Interaction”

2:20~2:45pm (20 min talk / 5 min Q&A)
Li Changming (NTU)
“Microfluidic bionanosystems”

2:45~3:10pm (20 min talk / 5 min Q&A)
Cui Haihang, Research Fellow (NUS)
“Design and Experimentation of particle trap”

3:10~3:30pm
Coffee Break

3:30~3:55pm (20 min talk / 5 min Q&A)
Wang Zhengfeng (SIMTech)
“Platform Integration for Hybrid Microelectrofluidic Systems”

3:55~4:20pm (20 min talk / 5 min Q&A)
Lim Kian-Meng (NUS)
“Accelerated boundary element method for Laplace and Poisson problems”

4:20~4:45pm (20 min talk / 5 min Q&A)
Brian Taff (MIT)
“Cell Trap Array” (tentative)

4:45~5:10pm (20 min talk / 5 min Q&A)
Wang Shengyin (NUS)
“Large deformation analysis of red blood cells in a microfluidic channel”

5:10~5:30pm
Coffee/Snack-hour social / Wrap-up discussion / Interaction

6:00pm~???
(Optional: Social hours with SMA students (current/new) over dinner)
Day 2: Friday, July 28th

Session 3: New challenges and opportunities in modeling and simulations
9:00~9:25am (20 min talk / 5 min Q&A)
Karen Wilcox (MIT)
“Model-Constrained Optimization for Reduction of Large-Scale Systems”

9:25~9:50am (20 min talk / 5 min Q&A)
Bo S. Kim (MIT)
“Biological Networks” (tentative)

9:50~10:15am (20 min talk / 5 min Q&A)
Jaydeep Bardhan (MIT)
“to be determined”

10:15~10:35am
Coffee Break

10:35~11:00am (20 min talk / 5 min Q&A)
Evert Klaseboer (IHPC)
“Bubble dynamics” (tentative)

11:00am~11:25am (20 min talk / 5 min Q&A)
Shihhsien Kuo and Jacob White (MIT)
“Higher Order Methods for Analyzing Biomolecules in Ionic Solutions” (presented by J. White)

11:25am~11:50pm (20 min talk / 5 min Q&A)
Carlos Coelho and Jacob White (MIT)
“to be determined”

11:50~12:00pm
Wrap up