August 9 (Monday)

9:00-9:05 Welcome remarks

Morning session. *Chair: Sarah Olson*

9:05-10:05 Ming-Chih Lai
***Tutorial** on immersed boundary method*

10:05-10:45 Robert Guy
A multigrid method for the coupled implicit immersed boundary equations

10:45-11:15 Break

11:15-11:55 Sookkyung Lim
A general version of the immersed boundary method and its applications

11:55-1:30 **Lunch** (not provided)

Afternoon session. *Chair: Christina Hamlet*

1:30-2:30 Lisa Fauci
***Keynote lecture**: Recent insights into swimming and pumping using an immersed boundary framework*

2:30-3:10 Boyce Griffith
Two extensions to the immersed boundary method: Physical boundary conditions and finite element elasticity

3:10-3:40 Break

3:40-4:20 Yoichiro Mori
Convergence theory of the immersed boundary method

4:30-5:30 **Welcome reception** (Fields Institute)

August 10 (Tuesday)

Morning session. *Chair: Karin Liederman*

9:00-10:00 Anita Layton
***Tutorial** on immersed interface method*

10:00-10:40 Sheng Xu
Coupling Newton dynamics and fluid dynamics in the immersed interface method for simulating insect flight

10:40-11:10 Break

11:10-11:50 Khoo-Boo Cheong
Numerical study of a permeable capsule/cell under Stokes flows by the immersed interface method

11:50-12:30 Tom Beale
Numerical methods for interfaces and regularizing effects in difference equations

12:30-2:00 **Lunch** (not provided)

Afternoon session. *Chair: Elizabeth Bouzarth*

2:00-3:00 Zhilin Li
***Keynote lecture**: The augmented IIM and application to free boundary/moving interface problems*

3:00-3:40 Shu Takagi
A novel finite difference approach for fluid-structure interaction problems with Eulerian representation
3:40-4:10 Break
4:10-4:50 Kaz Shugiyama
Particle-in-cell approach for fluid-structure interaction problems

6:00-8:00 **Dinner** (Blu Ristorante, tickets required)

August 11 (Wednesday)

Morning session. *Chair: Hoa Nguyen*
9:00-10:00 John Dolbow
***Keynote lecture**: Recent advances in embedded finite element methods*
10:00-10:40 Christina Hamlet
Numerical simulations compared to PIV images of flow around the bell of the upside down jellyfish
10:40-11:10 Break
11:10-11:50 Xiao-Ping Wang
Phase field modeling of the wetting on rough surfaces

11:50-1:50 **Lunch** (provided) **and Poster** (Note: at Fields Institute)

Afternoon session. *Chair: Lauren Cooper*
1:50-2:30 Yuan-Nan Young
Dynamics of polarly driven elastic filaments in Stokes flow
2:30-3:10 Elizabeth Bouzarth
Using regularized Stokeslets to model inextensible fibers in cellular Stokes flow
3:10-3:40 Break
3:40-4:20 Michael Nicholas
Regularized slender body theory
4:20-5:00 Peng Gao
Propulsion of water walkers: a fluid dynamic study

August 12 (Thursday)

Morning session. *Chair: Mike Nicholas*
9:00-10:00 John Lowengrub
***Keynote lecture**: Dynamics of multicomponent vesicles in a viscous fluid*
10:00-10:40 Wanda Strychaslski
A computational model of bleb formation
10:40-11:10 Break
11:10-11:50 John Stockie
Porous immersed boundaries

11:50-1:30 **Lunch** (not provided)

Afternoon session. *Chair: Wanda Strychaslski*
1:30-2:10 Weiqing Ren

	A continuum model for the moving contact line problem and the spreading of liquid thin films
2:10-2:50	Karin Liederman
	A spatial-temporal model of blood coagulation and platelet deposition under flow
2:50-3:20	Break
3:20-4:00	Lee Wang Lung
	Muco-ciliary transport: Effect of variation in the depth of PCL and surface tension
4:00-4:40	Songming Hou
	Interface problems and interface shape classification

August 13 (Friday)

Morning session. *Chair: Owen Lewis*

9:00-10:00	Sheldon Wang
	***Keynote lecture**: Current challenges of immersed methods*
10:00-10:40	Jin Wang
	Two-phase viscous flow and numerical study
10:40-11:10	Break
11:10-11:50	Rangarajan Sudarsan
	Effect of biofilm deformation on mass transfer and detachment forces
11:50-12:30	Sean Cohen
	Efficient computation of two-dimensional plasma expansion due to laser ablation
12:30-12:35	Closing remarks