

**Partial list of hands-on projects that we studied during the biofluid classes at CMU:**

- 1) Design of a microbioreactor for neural stem cell expansion using CFD to improve perfusion - Usha Kuppuswamy
- 2) Analysis and measurement of static propulsive thrust of a single flagella using 3D PIV - Umit Danis
- 3) Forming Lattices of Cells using External Electric Fields - Kyuho Hwang
- 4) Computational Fluid Dynamics in Porous Medium - Gail M. Siewiorek
- 5) An automated parametric CFD model to study flow dynamics and particulate transfer in central airways - Beautia Dew
- 6) Computational Fluid Dynamics of Coanda Effect Thrombectomy Catheter Device in the Artery - Joshua (Cheng-Shiu) Chung
- 7) High speed micro PIV velocity acquisition using Confocal microscopy - Ngoc Nguyen
- 8) Patient-specific CFD modeling of coronary arteries - Pedro Alvarez
- 9) Endothelial fluid dynamics - Libby Booth
- 10) Internal microinjection flow - Peng Liu
- 11) Blood damage models for medical device (FDA) applications - Andy Rape
- 12) Fluid dynamic design of biomicrofluidic channels - Tony YongTae Kim