Biological fluid mechanics: modeling, simulation, and analysis

TRACK Number (2000 Computational fluid dynamics)

Boyce Griffith\*, Sookkyung lim†
and sarah olson+

† University of North Carolina at Chapel Hill

329 Phillips Hall, Chapel Hill, NC 27599

boyceg@email.unc.edu

\* University of Cincinnati

4199 French Hall West, Cincinnati, OH 45221

sookkyung.lim@uc.edu

+ Worcester Polytechnic Institute

100 Institute Road, Worcester, MA 01609

sdolson@wpi.edu

**Key words:** Biofluids, Fluid-structure interaction

ABSTRACT

Fluid dynamics plays an important role in biological systems at all biological scales, from writhing of DNA, to beating of cilia and swimming microorganisms, to blood flow throughout the circulation, to swimming and flying. Although the underlying fluid-mechanical interactions of such systems are not completely understood, computational fluid mechanics and fluid-structure interaction provides insight and have developed into a highly interdisciplinary research field that integrates research in medicine and biology, engineering, and the mathematical sciences. This mini-symposium will highlight recent developments in mathematical modelling, computer simulation, and computational methods for a range of biological fluids research that aims to provide insight into mechanisms in biological systems.