

BIOLOGICAL FLUID MECHANICS: MODELING, SIMULATION, AND ANALYSIS

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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 incompletely 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.