Biological fluid-structure interaction at low to intermediate Reynolds numbers

From the complex dynamics of bacterial swarms to the swimming and feeding of marine organisms, the biological world has much to offer in the way of development of bio-inspired innovations in engineering. In this invited session, we aim to highlight the research and methodologies used to examine biological fluid-structure interaction systems at both the cellular and organismal level. With Reynolds numbers that range from low and intermediate scales, many diverse methodologies have been developed in response to the fluid dynamics that emerge surrounding locomotion and fluid transport systems in biology. In addition, many of the systems examined have ingrained multi-physics that drive the mechanics behind many of the complex motions and observed behaviors. This session will gather recent innovations of the field and allow a platform for understanding the physics that undergird these biological systems, while also detailing potential applications in the engineering world. Submissions are encouraged from both reduced and high-fidelity models.

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