

The lamprey is a model organism for both neurophysiology and locomotion studies. This talk will present an integrative, multiscale, computational swimming lamprey driven by a central pattern generator (CPG) modeled as a chain of coupled oscillators. The CPG drives muscle kinematics in fluid-structure interactions implemented in an immersed boundary framework to produce the emergent swimming mode. Body curvature changes provide feedback to the CPG. Effects of feedback to the neural activation on swimming performance are estimated and examined.