

Stanford



Jonathan Massey

Postdoctoral Scholar, Mechanical Engineering

 Curriculum Vitae available Online

Bio

BIO

Recently, I completed my PhD at the University of Southampton, where my research focused on the role of surface texture in the hydrodynamics of aquatic locomotion. This project advanced our understanding of the multiscale interactions involved, addressing whether fish scales might actually enhance swimming efficiency.

I have joined Prof. McKeon's group as part of the SAPHiRe project (Shear stress And Propagating Pressure at High Reynolds). This multi-facility (Stanford, Princeton, and Melbourne) experimental campaign focuses on measurements of wall-pressure and shear-stress fluctuations in high Reynolds number (Re) boundary layers, advancing our understanding of noise and drag in high-Re settings. My role in the project involves modelling these wall quantities using resolvent analysis. Previous models are based on extrapolations from low-Re physics, so I will incorporate new techniques to improve upon these in parallel with the experimental campaign.

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University Of Southampton (2024)
- Bachelor of Engineering, University Of Southampton (2019)
- PhD, University of Southampton , Fluid Dynamics (2024)

STANFORD ADVISORS

- Beverley McKeon, Postdoctoral Faculty Sponsor

Research & Scholarship

PROJECTS

- Modelling the impact of large-scale fluctuations on sub-convective pressure and wall shear stress.

LAB AFFILIATIONS

- Beverley McKeon, McKeon Lab (8/5/2024)

Publications

PUBLICATIONS

- **A systematic investigation into the effect of roughness on self-propelled swimming plates** *JOURNAL OF FLUID MECHANICS*
Massey, J. O., Ganapathisubramani, B., Weymouth, G. D.
2023; 971