UNIVERSITY OF MARYLAND

GLENN L. MARTIN INSTITUTE OF TECHNOLOGY
A. JAMES CLARK SCHOOL OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING

Post-Doctoral Opportunities in Medical Robotics and Design Optimization at the University of Maryland, College Park

Post-doctoral positions are available at the University of Maryland, College Park in the areas of Medical Robotics and Design Optimization to research techniques for optimal design of 3D printable Aortic grafts to treat and improve the lives of children with Congenital Heart Disease. Possible research topics include but are not limited to (1) Optimization algorithms for multi-fidelity, multi-physics-simulation-based or data-driven design optimization techniques, (2) Computational Fluid Dynamics and Fluid-Structure Interaction modeling, (3) incorporation of novel manufacturing/material constraints into optimization algorithms, or (4) validation, testing, and comparison of simulated versus as-manufactured designs for in-vivo or in-vitro models. Qualified applicants will have experience in **at least one** of the following areas: (1) Optimization, (2) Fluid Dynamics, (3) Biomedical devices/robotics, or (4) Multi-physics simulation.

We encourage candidates with the following qualifications to apply:

- a PhD in Engineering, Computer Science, Biomedical Sciences, Applied Mathematics, or a related field
- proficiency writing or using code for optimization and simulation
- a track record of scholarly research
- strong motivation with excellent written and speaking communication skills
- the ability to work on multi-disciplinary teams

The follow particular skills are highly desirable, though not required:

- Experience with hemodynamics or fluid-structure interaction
- Experience with Adjoint-based optimization methods or machine learning
- Experience working with clinical collaborators or with in-vivo or in-vitro testing of biocompatible devices/materials.

The appointments will be in the Department of Mechanical Engineering, full-time, for at least two-years with the possibility of renewals pending satisfactory performance and funding. Remuneration will be highly competitive and based on qualifications. The expected start date is Fall 2018 but applicants will be considered on a continuing basis until the positions are filled.

Technical inquiries about this position may be directed to:
Dr. Axel Krieger (axel@umd.edu) and Dr. Mark Fuge (fuge@umd.edu).