**Postdoctoral Researcher – Computational Biomechanics in the Department of Surgery at the University of Chicago**

The Department of Surgery, Section of Vascular Surgery & Endovascular Therapy seeks a Postdoctoral Researcher in computational biomechanics to jointly work in the groups of Dr. Luka Pocivavsek and Dr. Nhung Nguyen. This position offers a unique opportunity to work in a collaborative environment with engineers, surgeons, and physicists to tackle several challenging problems in vascular surgery. This position is initially for a one-year term but is renewable dependent upon performance and is partially funded by an existing NIH R01 grant.

Responsibilities:

* Develop finite element models (FEM) to study problems related to remodeling in soft tissues and growth induced by disease and surgery
* Develop numerical and experimental framework for integrating medical images, FEM, and machine learning to determine mechanical properties of the aorta *in vivo*
* Prepare technical papers, research proposals, and grant proposals
* Present research findings at meetings and/or conferences
* Mentor undergraduate, medical and graduate students

Qualifications:

* PhD in Solid Mechanics, Mechanical Engineering, Biomedical Engineering or a related field and it must be completed prior to the start of the appointment, expected to be mid-summer of 2022
* Knowledge of FEM analysis and biomechanics models for soft tissues (nonlinear hyperelasticity, growth, remodeling, viscoelasticity)
* Proficiency in Abaqus (Implicit and Explicit) and implementation of material and element subroutines
* Experience working with complex and patient-specific geometries
* Knowledge of fluid-solid interaction and fracture mechanics
* Ability to work collaboratively while demonstrating initiative and independence
* Excellent interpersonal and written communication skills

Interested candidates should email a single PDF containing a cover letter, curriculum vitae, bibliography, and the names and contact information of three references to [surgbiomech@uchicago.edu](mailto:surgbiomech@uchicago.edu). Please write “Biomechanics Post-doc Application” in the subject line.