



Department of  
**Biomedical Engineering**  
UNIVERSITY OF WISCONSIN-MADISON

## **Cardiovascular Biomechanics Lab**

### PhD Research Positions

The Cardiovascular Biomechanics Lab is part of the Departments of Biomedical Engineering and Mechanical Engineering at the University of Wisconsin–Madison. We are currently seeking motivated individuals with interests in computational modeling, biomechanics, bioengineering, tissue characterization, cardiovascular physiology, and/or mechanical testing for Graduate Research Assistantships. At the University of Wisconsin–Madison Graduate Research Assistantships are offered to provide financial support for PhD applicants by individual faculty members.

Research in our laboratory is focused on predicting when and where pathologic changes to cardiovascular soft tissues alter their material properties causing disruption or reduction in function. Specifically, we seek to predict both sudden failure, such as the rupture of a myocardial infarct or aortic aneurysm, and gradual functional losses, such as ventricular hypertrophy and heart failure or aneurysm dilation. To accomplish this, we couple computational and experimental techniques to both generate and validate temporal and spatial predictions of tissue mechanics.

Some open projects include:

- Determining how rupture risk relates to the boundary topology and regional changes in material properties in healthy and diseased tissue.
- Creating a coupled computational model of the ascending aorta and left ventricle to predict how valve disease contributes to the dysfunction and remodeling of both tissues.

For more information visit [cbl.engr.wisc.edu](http://cbl.engr.wisc.edu)

#### **Application Process:**

Interested candidates should contact Dr. Colleen Witzenburg for further information:  
[witzenburg@wisc.edu](mailto:witzenburg@wisc.edu)