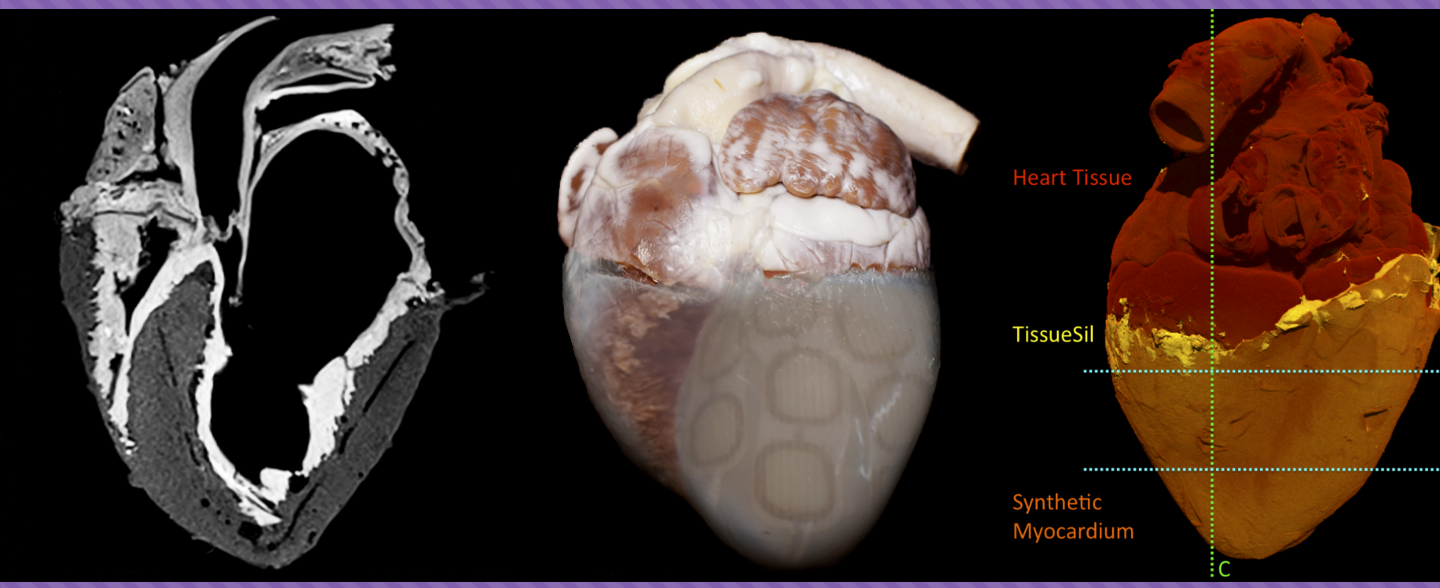
HST.S57 Cardiovascular Engineering

Fall 2021 Seminar Class

Thursday 3-4pm in 66-160

Instructors: Prof. Ellen Roche, Prof. Christopher T. Nguyen, Prof. Shiaulou Yuan



Integrated overview of engineering principles at different scales of the cardiovascular system focusing on biomedical devices, cellular/genetic engineering, and biomedical imaging. Specific topics of interest include stents, ventricular assist devices, biohybrid soft robotics, induced pluripotent stem cells, CRISPR/Cas9, disease modeling in animals, bioreactors, MRI, PET, CT, and optical imaging. Lectures, seminars and one lab per thematic area. Basic physiology, biology, and/or bioengineering is recommended.

Learning Objectives

1. Explain and begin to apply the engineering principles behind the current state of the art in cardiovascular imaging technologies
2. Understand the technological advances associated with cardiovascular device technologies and identify recent trials and trends
3. Recognize cellular and genetic engineering principles of cardiovascular cells and molecules

Class Format

- *Lecture / Seminar /Lab once a week on Thursdays from 3-4pm*
- *Lectures in 66-160. Labs will be at lecture time in IMES or at MGH*
- *1-0-5 format, 6 unit credit*