

Fall 2021

10.591
Case Studies in Bioengineering

T 4-6, W 5-6 pm

Instructor: Prof. Clark K. Colton
(G, open to seniors who have taken 7.01x)

This seminar will consist of analysis and discussion of classic and current papers in bioengineering. Topics will be selected from various areas, including drug delivery, biotechnology, protein and tissue engineering, physiological transport, stem cell technology, biomolecular engineering, and quantitative immunology. Papers will primarily reflect work of senior authors at MIT or in the Boston area. Students will read, discuss, and critique papers together with the Instructor, then have discussions with authors about their work. There will be one written assignment. Topics arranged so far include:

- Improving the Affordability and Accessibility of Vaccines Relevant to Covid-19 (Love)
- Bioartificial Organs for Human Implantation to Cure Diabetes (Colton)
- Nanoparticle Drug Delivery (Hammond)

The seminar will provide students with the following experiences:

- (1) Exposure to important research in bioengineering
- (2) Examples of successful bioengineering research and the strategies for carrying them out.
- (3) Preparation of technical documents, such as critiques, reviews, and proposals.