Seminar

Beyond building tissues: the future of regenerative medicine
Dr. Jennifer Elisseff

February 6, 2020
4:00 p.m. – 5:00 p.m.
Room: 66-110
MIT Department of Chemical Engineering

Abstract:
Biomaterial implants have a long history in the clinic but regenerative biomaterials and regenerative medicine therapies in general have been slow to reach patients. Clinical translation provides a unique and critical opportunity to investigate the primary drivers of therapeutic efficacy. A key outcome of our clinical translation experiences in orthopedics and plastic surgery was defining the importance of the adaptive immune system in regenerative and biomaterial responses. We are now mapping the immune and stromal/senescence responses across diverse tissues and in response to biomaterials to determine profiles associated with tissue repair and fibrosis. These results are informing the design of regenerative immunotherapies with applications in tissue repair in addition to age-related tissue dysfunction and cancer.

Bio:
Dr. Elisseff is the Moton Goldberg Professor and Director of the Translational Tissue Engineering Center at Johns Hopkins Department of Biomedical Engineering and the Wilmer Eye Institute with appointments in Chemical and Biological Engineering, Materials Science and Orthopedic Surgery. She was elected a Fellow of the American Institute of Medical and Biological Engineering, the National Academy of Inventors, and a Young Global Leader by World Economic Forum. In 2018, she was elected to the National Academy of Engineering and National Academy of Medicine. Jennifer received a bachelor’s degree in chemistry from Carnegie Mellon University and a PhD in medical engineering from the Harvard–MIT Division of Health Sciences and Technology. Later she was a Fellow at the National Institute of General Medical Sciences, Pharmacology Research Associate Program, where she worked in the National Institute of Dental and Craniofacial Research. She has published over 200 papers, book chapters, and patent applications and received a number of awards including the Carnegie Young Alumni Award and in 2002 she was named by MIT Technology Review as a top innovator under 35. Jennifer’s research focus is the development of biomaterials for regenerative medicine applications in orthopedics, plastic and reconstructive surgery, and ophthalmology. She is now studying Biomaterials-directed Regenerative Immunology and the role of the adaptive immune system in tissue repair. She is committed to the translation of regenerative biomaterials and has founded several companies and participates in several industry advisory boards.