“Building with Proteins”

All proteins are made from different combinations of the same 20 amino acids, yet their physico-chemical properties vary tremendously: oxygen transport by hemoglobin; light harvesting and energy conversion by photosystem assemblies; environmental protection by keratin-based hair and hooves; light sensing by photoreceptors; structural support by spider silk. No man-made material comes close to the optimized functionality of these protein-based systems. I will discuss how it is possible to harness the diverse properties of proteins to create new and useful materials and interfaces. I will present examples of how we can use proteins with unique physical and chemical properties to realize novel user-specified supramolecular structures and functional materials. I will also discuss with the audience current challenges in materials science, and consider how it may be possible to address these challenges using proteins.

Host: Professor Eric Altman