**Mechanics of Interpenetrating Biopolymer Networks**

The talk discusses about mechanical properties of biopolymer networks, both model, reconstituted networks, and those in cells, with a goal of understanding mechanical behavior at the level of single cells and of tissue. We investigate the properties of reconstituted networks of actin, microtubules and intermediate filaments, and study ‘active’ networks, where molecular motors induce active motion. These studies provide insight into the mechanical properties of cells. We also investigate mechanical properties of extracellular biopolymer networks, including collagen and fibrin.



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Dave received his B.Sc. in Physics from the University of Waterloo, and his PhD in Physics from Harvard. He worked as a research physicist at Exxon Research and Engineering for nearly 18 years, prior to becoming a Professor of Physics at the University of Pennsylvania, before moving to Harvard in 1999.

Dave is a well-known expert in fields of soft matter physics, biophysics and biotechnology. He is best known for his work in the areas of diffusing-wave spectroscopy, microrheology, microfluidics, single cell analysis and bioanalysis, rheology, fluid mechanics, interface and colloid science, colloid chemistry, biophysics, complex fluids, soft condensed matter physics, phase transitions, the study of glass and amorphous solids, liquid crystals, self-assembly, surface-enhanced light scattering, and diffusion-limited aggregation.

He has published more than 500 peer-reviewed papers, authorized more than 60 patents, and is a Founder of 12 high-tech companies, including RainDance Technologies, GnuBIO, and Capsum. Dave is a member of the National Academy of Sciences, National Academy of Engineering, the American Academy of Arts and Sciences, and foreign member of Chinese Academy of Engineering.