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"Approaching the Glass Transition from Different Directions"

Wednesday, May 27
135 Shillman
11:45am – 1:00pm

Refreshments will be served

ABSTRACT In recent years a significant amount of experimental work has appeared on glassy systems, both polymeric and small molecule. However, this rich explosion in data has not been met with a concomitant leap in fundamental understanding. We have developed a number of approaches to elucidate some of the underlying mechanisms of behaviour in bulk and confined glassy systems. Using both theory and simulation we have characterized the dynamic heterogeneity associated with approaching the glass transition, explored interfacial behaviour when layering materials of differing mobility, and analyzed the effect of one or more free surfaces on thin films. In our most recent work we have applied a simple thermodynamic model to reveal hints of the underlying glassy nature of a bulk polymer sample, even while above its transition temperature (Tg). A signature feature of all these studies has been our extensive efforts in making connections with a substantive amount of experimental data. This talk will comprise an efficient summary of past progress from these different directions, and will then focus on our most recent results and current understanding.

BIOGRAPHY Jane Lipson is the Albert W. Smith Professor of Chemistry at Dartmouth. She earned all of her degrees at the University of Toronto, and followed that work with a stint as a NATO Fellow at Dartmouth. After a brief hiatus back in Canada she returned to the Chemistry Department at Dartmouth, where she has remained. She has been the recipient of a number of awards, including the Camille and Henry Dreyfus Teacher-Scholar Award, and the American Chemical Society's Arthur K. Doolittle Award. She is a Fellow of the American Physical Society, and has served as Chair of its Polymer Physics Division. In addition to the usual scholarly activities, she currently serves as an Associate Editor for the journal *Macromolecules*.