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John H. Dillon Medal Talk: Polymer Droplets

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The simplicity of a liquid droplet, say a dew drop on spider silk, is both esthetically beautiful and scientifically intriguing. The interplay of surface energies, thermal motion, and confinement of the liquid, especially on small length scales can reveal interesting physics. Droplets are an ideal confining geometry because the length scales can be easily controlled and it is possible to arrange the system such that each droplet acts as an independent experiment. The talk will focus on some recent examples where we have used the droplet geometry to learn about material properties. It will become apparent in the presentation that the deviations from the "expected" behaviour in confined systems are far from subtle!