



Friday, April 7<sup>th</sup> 2017 – 11:00 am  
CFEL Seminar room III, EG 080 (Bldg. 99)

**Dr. Heloise Therien-Aubin**

Max Plank institute for polymer research

## **"Engineering the interface of nanocolloids with polymers"**

In the design of nanocolloids for targeted applications, whether the nanoparticles are used as drug delivery vehicles or as filler in nanocomposites, it is crucial to control the stability, the miscibility and/or the self-assembly of the nanocolloids. In order to gain such control, the surface of the nanocolloid is frequently functionalized by tethering a corona of either small molecules or polymer chains. The nature and the composition of the corona formed by the tethered molecules dictate the interactions between the nanocolloids and their environment and thus the final behavior of the material. Nanoparticles functionalized with a corona of polymer brush were used in the design of hierarchically structured materials and displayed new collective properties. By varying the degree of polymerization, the grafting density and the chemical composition of the polymer chains, a variety of structures were obtained. We now want to establish a correlation between the mesoscopic properties observed in these nanoparticle-based systems with the properties, structure and dynamic of the polymer brush layer.

Host: Dwayne Miller

