

## Séminaire LIONS



***Attention, jour exceptionnel***

**Vendredi 29 mars 2013 à 11h00, pce. 157, bât. 125**

**A mechanistic approach for the safe design of nanomaterials**

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A comprehensive evaluation of the biological and toxicological effects of nanomaterials is necessary for the design of safe products that operate as intended. Attempts to describe and predict these effects are increasingly taking mechanistic considerations into account, shifting the traditional way of conducting the hazard assessment towards a more integrated and efficient methodology that combines both in vitro and in silico models. While these approaches are still in their initial stages, their further development will allow researchers to streamline and prioritize tests on real nanomaterials, while increasing the chances of delivering safer products on the market. This seminar will present and discuss a safe design approach based on four in silico mechanistic models that describe the (i) reactivity and oxidative stress, (ii) binding of plasma protein, (iii) interaction with cells and (iiii) biopersistence of nanoparticles. The concept will be demonstrated and validated on a large number of oxide nanoparticles.